

Elster Perfection  
LP Gas Distribution  
Products



elster  
Perfection



# Elster Perfection...

Our commitment is to consistently provide you with optimum solutions — through superior products, enterprise-wide solutions, industry leading technical capabilities and end-to-end services.

Elster Perfection is focused on helping you meet your job site needs and lowering your installation costs. Elster's enterprise-wide solution approach helps you meet these challenges through our unique combination of World Class Products, Value-Added Services, and Expertise at the local level.

## Bringing world class products to you

Whether application requirements are simple or complex, the breadth and depth of Elster Perfection's product line provides the optimal solution.

At Elster Perfection, we deliver complete LP gas solutions through well-known products that customers have relied upon for years. Elster Perfection product lines are engineered utilizing the most current technologies required to implement a fast and safe solution in virtually every situation. When you choose Elster Perfection, you're assured of obtaining the most advanced, proven technology. We design our new products to be compatible with current systems, while leveraging the best from the latest R&D technologies.

## Reliability you can trust

Exceptional performance with superior reliability and time proven products

For over 35 years, Elster Perfection has been supplying products for gas distribution systems around the world. During this time, we've earned the confidence of our customers. The reason... with millions of our products in use in every conceivable climate and soil condition, our products continue to deliver safe, uninterrupted service.

For many years, copper tubing and heat-fused polyethylene represented the preferred piping systems for LP gas installation.

The 1992 edition of NFPA-58 permitted the use of mechanical joining for polyethylene piping systems. These revisions made NFPA-58 consistent with the natural gas codes that have permitted mechanical joining of polyethylene gas piping for many years.

Since the NFPA-58 revisions, Elster Perfection's Permasert system has become established and accepted as an industry standard. Elster Perfection's Permasert system provides fast, safe and easy connections in all weather conditions without special tools or costly equipment.

## Improving gas distribution integrity

Elster Perfection molds a complete line of mechanically joined products from PE4710/Bimodal PE3408. This resin shares many of the same properties as PE2406 and PE3408, while offering several significant performance enhancements. PE4710/ Bimodal PE3408 offers:

- Excellent resistance to Rapid Crack Propagation (RCP) and Slow Crack Growth (SCG)
- 20 and 60 times more resistant to SCG than typical PE2406 and PE3408
- Greater than 6,000 hours PENT (PE Notching Test)
- A proven track record around the world for more than 20 years



# Permasert®...The heart of our system

The Permasert polyethylene mechanical coupling revolutionized the natural gas industry in 1976 for the same reason it's still number one today... it's safe and remarkably easy to install.

Permasert couplings are non-corrosive and require no cathodic protection or protective coatings.

Permasert fittings utilize a slotted, tapered collet to "grip" the tubing. With this system, the greater the pull-out force, the more tightly the collet grips the tubing. As a result, the pull-out strength of Permasert couplings is greater than the connected polyethylene tubing. The coupling's one piece construction ensures consistent, gas-tight connections in any weather conditions.

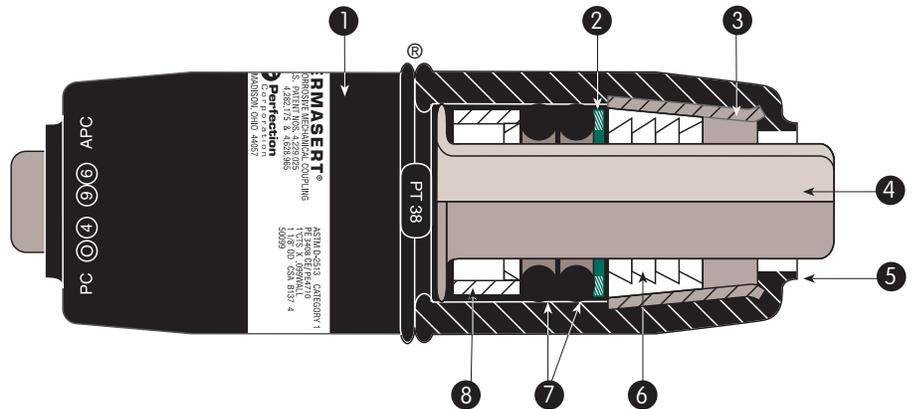
### Benefits

- Complete system complies with NFPA-58
- Fast and easy installation, requires only one person
- Total installed cost savings versus electrofusion and heat-fusion joined polyethylene
- No special tools or costly installation equipment
- No special training required to install
- Non-corrosive couplings eliminate need for protective coatings and cathodic protection
- Safe, dependable performance since market introduction in 1975
- Minimal stress on PE tubing
- Molded from industry leading PE4710/Bimodal PE3408 resin

### The foundation of our system

Permasert® mechanical couplings are available in many different configurations and sizes to satisfy widely varying field requirements. Among the styles of Permasert couplings are straight couplings, reducing couplings, repair couplings, 3-way tees, 3-way reducing tees, elbows, wyes, blind end caps, blind end stubs, and our CopperSert™ transition coupling.

- Sizes from 1/2" CTS (5/8" OD) to 2" IPS (20mm to 63mm)
- Available for all plastic pipe wall thicknesses



- 1 Permasert® Coupling - Molded from PE4710/Bimodal PE3408 resin. Permasert meets or exceeds ASTM D-2513, category 1; US DOT Part 192; NFPA 58; ISO 4437; and NFT 54 069/54 067; IAPMO®/UPC® listed; and CSA B 137.4 and DVGW VP 600 (G94e153) certified
- 2 Thrust Washer - Provides even distribution of force on the collet
- 3 Support Ring - Stainless steel ring molded into body of coupling for added strength
- 4 Stiffener - Zinc-plated steel stiffener guarantees proper alignment and adds support
- 5 Moisture Seal - Prevents entry of dust, dirt and moisture
- 6 Collet - Tapered gripping collet prevents pipe pull-out
- 7 "O" Rings - BUNA-N (Nitrile) elastomer seals provide permanent leak-proof protection
- 8 Spacer Retainer Ring - Guarantees precise centering of pipe and increases the locking power of collet



# All-Flex Servi-Sert® field assembled risers

Easy-to-install Servi-Sert® swivel-head adapter prevents the “PE Twist” of compression style risers

In 1992, Elster Perfection introduced our Permaseert® mechanical joining system to the LP gas industry, helping you save money by making fast and easy polyethylene LP hook-ups. Since that time, we’ve continued to develop innovative new products designed to make your job even easier. Our Servi-Sert® All-Flex Riser allows you to install a continuous PE service line from the first-stage to the second-stage regulator.

All-Flex field assembled risers feature the industry’s only built-in swivel head for fast, easy connections without the need for other fittings. In addition, if you must service or replace a regulator, All-Flex Servi-Sert® risers are easy to disconnect.

And if you’re running service lines to a grill, pool heater or other outdoor appliance, we’ve got the elbow, tee or PE-to-copper transition fittings you need. Of course, all of our industry leading PE products are NFPA-58, IAPMO, CSA listed and third party certified.

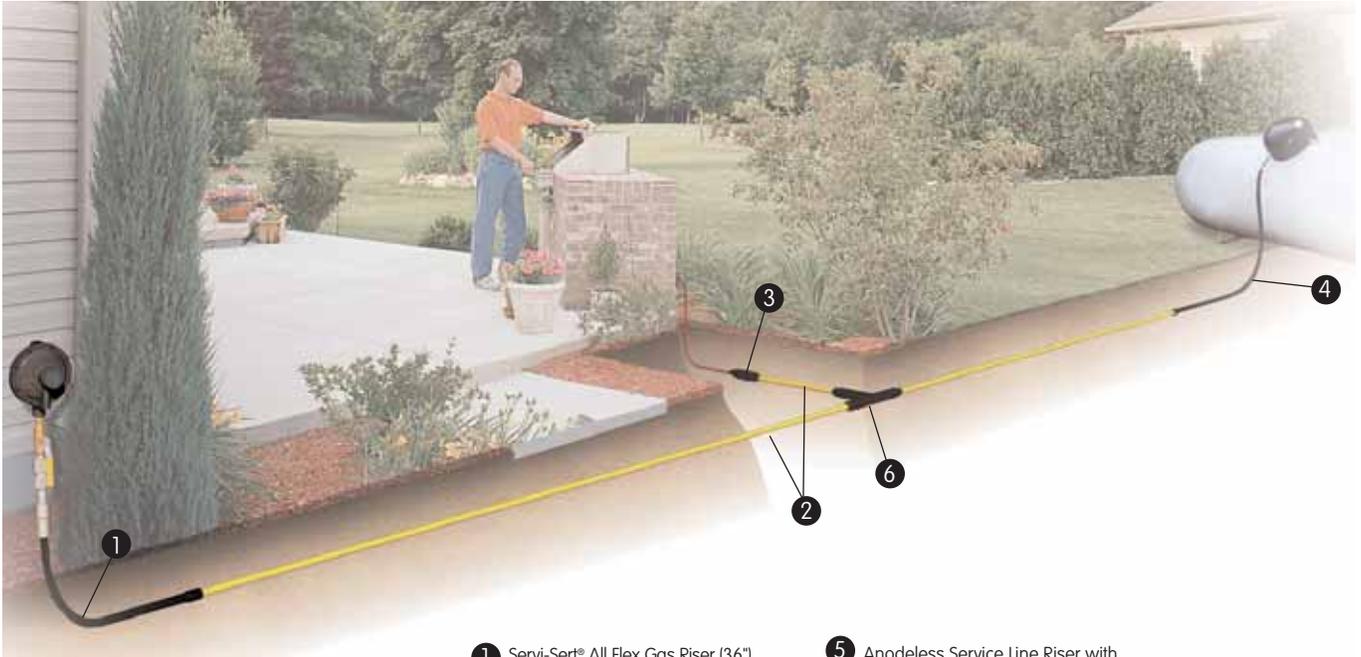


## Benefits

- Real swivel-head adapter makes a stress-free connection for installing into regulator without twisting the PE tubing ... unlike compression type risers
- No deformation of PE tubing with All-Flex ... unlike compression type risers
- Hand assembled Servi-Sert adapter requires no wrenches
- All-Flex riser can be unscrewed from regulator for service work
- All-Flex available in sizes from 1/2" IPS to 1-1/2" IPS
- Elster Perfection's complete system of LP gas products is available from the industry's leading distributors
- All-Flex available in threaded outlet sizes 1/2" NPT to 1-1/2" NPT and PE inlet sizes 1/2" CTS to 1-1/4" IPS

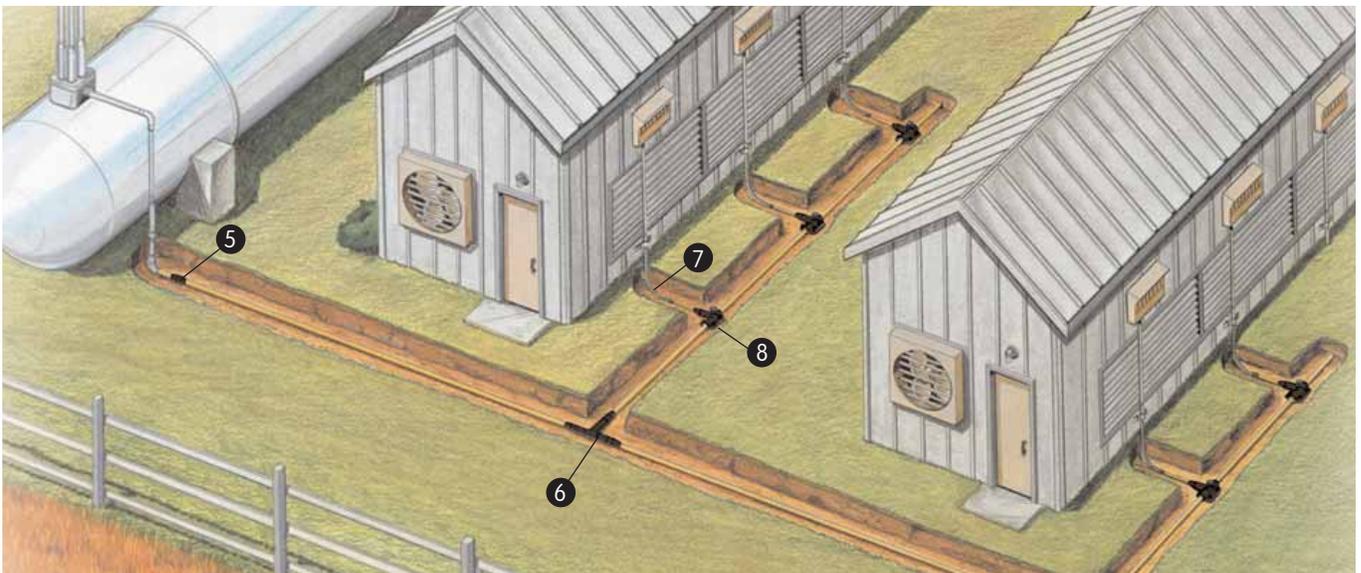
# Installing a propane gas distribution system has never been so easy...

## Tank to home



- 1 Servi-Sert® All Flex Gas Riser (36")
- 2 1/2" CTS .090" PE 2406 Pipe
- 3 CopperSert™ Copper-to-PE Transition
- 4 Servi-Sert® All Flex Gas Riser (84")
- 5 Anodeless Service Line Riser with Permaser® Coupling
- 6 Permaser® Three-Way Tee
- 7 Anodeless Service Line Riser with Permaser® Coupling (3/4" IPS)
- 8 PermaLock® Mechanical Tapping Tee (PMTT) (2" IPS x 3/4" IPS)

## Tank to work



# Permasert® Mechanical Couplings

## Permasert® Mechanical Couplings



Size	SDR/Wall	Part Number
1/2" CTS	.090"	50100
1/2" IPS	SDR 9.3	50701
3/4" IPS	SDR 11	50030
1" CTS	.090/.099/.102"	50103
1" IPS	SDR 11	50601
1-1/4" IPS	SDR 10	50035010
1-1/2" IPS	SDR 11	50361
2" IPS	SDR 11	50314

## Permasert® Elbows



Size	SDR/Wall	Part Number
1/2" CTS	.090"	50294
1/2" IPS	SDR 9.3	50732100
3/4" IPS	SDR 11	51620
1" CTS	.090/.099/.102"	51333
1" IPS	SDR 11	50636
1-1/4" IPS	SDR 10	50325010
2" IPS	SDR 11	50315

## Permasert® Blind End Stubs

(Dead-End Fitting - One End Functional)



Size	SDR/Wall	Part Number
1/2" CTS	.090"	50015
3/4" IPS	SDR 11	50809
1" CTS	.090/.099/.102"	50048
1-1/4" IPS	SDR 10	50024100
2" IPS	SDR 11	51770

## Permasert® Blind End Caps

(Stop and Go - Both Ends Functional)



Size	SDR/Wall	Part Number
1/2" CTS	.090"	50016
3/4" IPS	SDR 11	50026
1" CTS	.090/.099/.102"	50045
1-1/4" IPS	SDR 10	50033
2" IPS	SDR 11	50317

## Permasert® Repair Couplings



Size	SDR/Wall	Overall Length	Part Number
1/2" CTS	.090"	12"	50056
3/4" IPS	SDR 11	12"	50175
1" CTS	.090/.099/.102"	12"	50172
1" IPS	SDR 11	12"	50640
1-1/4" IPS	SDR 10	13"	50320100
2" IPS	SDR 10	15"	50341

## Permasert® Three-Way Tees



Size	SDR/Wall	Part Number
1/2" CTS	.090"	50199
1/2" IPS	SDR 9,3	50730100
3/4" IPS	SDR 11	50929
1" CTS	.090/.099/.102"	50292
1" IPS	SDR 11	50634
1-1/4" IPS	SDR 10	50320100
2" IPS	SDR 11	50316

## Permasert® Three-Way Reducing Tees



Size	SDR/Wall	Size	SDR/Wall	Size	SDR/Wall	Part No.
1/2" CTS	.090"	1/2" CTS	.090"	1" CTS	.090/.099/.102"	51335
3/4" IPS	SDR 11	3/4" IPS	SDR 11	1/2" CTS	.090	50461
1" CTS	.090/.099/.102"	1" CTS	.090/.099/.102"	1/2" CTS	.090	50451
1-1/4" IPS	SDR 10	1-1/4" IPS	SDR 10	1" CTS	.090/.099/.102"	50328100
2" IPS	SDR 11	2" IPS	SDR 11	1" CTS	.090/.099/.102"	50348100
2" IPS	SDR 11	2" IPS	SDR 11	1-1/4" IPS	SDR 10	51323100

## Permasert® Reducing Couplings



Size	SDR/Wall	Size	SDR/Wall	Part Number
1/2" CTS	.090"	1" CTS	.090/.099/.102"	50149
1/2" CTS	.090"	3/4" IPS	SDR 11	50969
1" CTS	.090/.099/.102"	1-1/4" IPS	SDR 10	50192
1" IPS	SDR 11	3/4" IPS	SDR 11	51432
1-1/4" IPS	SDR 10	3/4" IPS	SDR 11	50195010
1-1/4" IPS	SDR 10	1" IPS	SDR 11	50343010
1-1/4" IPS	SDR 10	2" IPS	SDR 11	50333010

# All-Flex Servi-Sert® Risers



Elster Perfection's fully approved Servi-Sert All-Flex riser kits are available in 84" lengths for the first-stage regulator (tank side) and 36" lengths for the second-stage regular (house side). Sold in kit form, as required by NFPA-58/1998 Edition, these risers feature pull-out proof, third-party design-certified Servi-Sert service heads and PVC sunlight resistant, coated steel flex that meets crush strength requirements. These risers are lined with a plastic centering device that provides an annular insulating air space. A moisture seal permanently affixed to the end of the riser provides moisture, corrosion, and shear.

## All-Flex Servi-Sert® Field Assembled Risers With Liners

With swivel connector/union



Outlet	Inlet	SDR/Wall	Overall Length	Part Number
1/2" IPS	1/2" CTS	.090"	84"	71353
1/2" IPS	1/2" CTS	.090"	36"	71354
3/4" IPS	1/2" CTS	.090"	84"	71355
3/4" IPS	1/2" CTS	.090"	60"	71461
3/4" IPS	1/2" CTS	.090"	36"	71356
3/4" IPS	3/4" IPS	SDR 11	84"	71412
3/4" IPS	3/4" IPS	SDR 11	60"	71411
3/4" IPS	3/4" IPS	SDR 11	36"	71410
3/4" IPS	1" CTS	.090/.099/.102"	36"	71511
3/4" IPS	1" CTS	.090/.099/.102"	84"	71510

## Rigid & Stub Flex Servi-Sert® Field Assembled Risers

Rigid (pre-bent) with liners (centering sleeves)



Outlet	Inlet	SDR/Wall	Vertical	Horizontal	Part Number
1/2" IPS	1/2" CTS	.090"	30"	24"	71350
3/4" IPS	1/2" CTS	.090"	30"	24"	71453
3/4" IPS	3/4" IPS	SDR 11	30"	24"	71304
1" IPS	1" CTS	.090/.099/.102"	30"	24"	71720

Stub flex with liners (centering sleeves)

Outlet	Inlet	SDR/Wall	Nipple	Flex	Part Number
1/2" IPS	1/2" CTS	.090"	15"	36"	71351
3/4" IPS	1/2" CTS	.090"	15"	36"	71463
3/4" IPS	3/4" IPS	SDR 11	17-1/2"	36"	71721
1" IPS	1" CTS	.090/.099/.102"	17-1/2"	36"	71600
1" IPS	1" IPS	SDR 11	18"	36"	71731

# Anodeless Service Line Risers & Transition Fittings



Elster Perfection anodeless risers and steel-to-polyethylene transition fittings are ideal for gas and oil applications. They provide a connection with a pull-out strength greater than the PE tubing to which it's connected.

- Outlet sizes from 1/2" IPS to 12" IPS
- Inlet sizes from 1/2" CTS to 12" IPS
- Available with Permasert couplings or fusion connection on polyethylene inlet
- Risers available with an additional below grade gas tight seal
- Galvanized or epoxy coated casings available
- Flexible casings available
- Custom configurations available
- PELT™ risers (Perfection Extended Life Technology) resist effects of chemical, atmospheric, ultraviolet and physical attack, and deliver excellent above ground corrosion resistance
- Flanged, threaded, and weld style transition fittings and risers available

## Anodeless Service Line Risers - Permasert® Mechanical Ends



Outlet	Inlet	SDR/Wall	Vertical	Horizontal	Part Number
1/2" IPS	1/2" CTS	.090"	18"	18"	77205
3/4" IPS	1/2" CTS	.090"	30"	24"	77181*
3/4" IPS	1/2" CTS	.090"	18"	18"	77195
3/4" IPS	1/2" CTS	.090"	22"	18"	77201
3/4" IPS	3/4" IPS	SDR 11	30"	26"	79354*
3/4" IPS	1" CTS	.090/.099/.102"	30"	26"	77120*
1" IPS	1" IPS	SDR 11	30"	26"	79350*
1-1/4" IPS	1-1/4" IPS	SDR 10	30"	24"	75901*
1-1/2" IPS	1-1/2" IPS	SDR 11	32"	29"	79784*
2" IPS	2" IPS	SDR 11	30"	15"	75906*

\*IAPMO/UPC Listed

## Anodeless Service Line Risers - Fusion Ends



Outlet	Inlet	SDR/Wall	Vertical	Horizontal	Part Number
3/4" IPS	1/2" CTS	.090"	30"	24"	75169
3/4" IPS	1/2" CTS	.090"	18"	18"	75678
3/4" IPS	1/2" CTS	.090"	22"	18"	77202
3/4" IPS	3/4" IPS	SDR 11	30"	26"	79353
3/4" IPS	1" CTS	.099"	30"	26"	77121*
1" IPS	1" IPS	SDR 11	30"	31-1/2"	75751
1-1/4" IPS	1-1/4" IPS	SDR 10	30"	24"	75900
2" IPS	2" IPS	SDR 11	30"	12-1/4"	79811

\*IAPMO/UPC Listed

## Transition Fittings



Description	Size	SDR/Wall	Material	Part Number
Threaded	3/4" IPS x 1/2" CTS	x .090"	2406	700205
Welded	3/4" IPS x 1/2" CTS	x .090"	2406	700310
Threaded	3/4" IPS x 3/4" IPS	x SDR 11	2406	700802
Threaded	1" IPS x 1" CTS	x .099"	2406	701407
Threaded	1-1/4" IPS x 1-1/4" IPS	x SDR 10	2406	702204
Threaded	1-1/4" IPS x 1-1/4" IPS	x SDR 11	2406	702205
Threaded	2" IPS x 2" IPS	x SDR 11	2406	702602

Meets or exceeds the requirements of ASTM D-2513 category 1, ANSI B 1.20, ANSI B 31.8, US DOT Part 192, NFPA-58 and CSA B137.4

# Servi-Sert® Fittings



The Elster Perfection service-head adapter fitting, Servi-Sert, out-performs all conventional service heads for both safety and ease of installation. Servi-Sert functions on the same principle as our Permasert couplings, providing a permanent, leak-proof seal. It also offers you the security of knowing its pull-out strength is greater than the connected polyethylene tubing. Servi-Sert fittings are zinc-plated for extra protection against corrosion. These fittings deliver long term reliability by operating as a single, self-contained unit with no loose parts to be dropped, lost or misoriented during assembly.

- Threaded outlet sizes from 1/2" NPT to 1-1/2" NPT
- PE sizes from 1/2" CTS to 1-1/4" IPS (Metric sizes also available)
- Available for all plastic pipe wall thicknesses
- Servi-Sert top connected risers available with flexible and pre-bent steel casings

NPT Male (Outlet)	PE Size	SDR/Wall	NPT Female (Outlet)	Part Number
1/2"	1/2" CTS	.090"	3/4"	71110
1/2"	1/2" CTS	.062"	3/4"	71111
3/4"	1/2" CTS	.090"	3/4"	71100
3/4"	1/2" CTS	.090"	1"	71170
3/4"	3/4" CTS	.090"	1-1/4"	71132
3/4"	3/4" IPS	SDR 11	1-1/4"	71161
3/4"	1" CTS	.090"/.099"/.102"	1-1/4"	71121

Meets or exceeds requirements of ASTM D-2513 category 1, ANSI B 1.20, ANSI B 31.8, US DOT Part 192, NFPA-58 and CSA B137.4

# Riser Mounting Brackets



Elster Perfection's brackets are epoxy coated (gray) with cadmium-plated washers, bolts and nuts. All parts are packaged for easy storage and handling.

Description	Size	Nominal Building Offset	Part Number
Wall Brackets	3/4" and 2" IPS Casing	4"	74506
		6"	74500
		9"	74491
Universal Mount Bracket Kit	3/4" - 2" IPS	Adjustable	74440
Accessory Post	1-1/4" x 5'	For Post Mount or Remote Meter Hookup with 74440	31733
Wall Mounting Hardware (expansion anchors, washer and bolts)			09800

# Tools & Accessories

Elster Perfection offers a complete line of tools and accessories to assist field crews during the installation of our gas distribution products. Among these items are chamfering tools and kits, PE cutters/snippers, tools for mechanical tees, protective sleeves, tubing end protectors, marking pencils, polyethylene clamping devices, moisture seals and gaskets.

Description	Size	Part Number
Chamfering Tool	1/2" CTS x 1" CTS	51004
Chamfering Tool	1/2" CTS x 3/4" IPS	51016
Chamfering Tool	1" CTS x 3/4" CTS	51019
Chamfering Tool	1" IPS x 3/4" IPS	51008
Chamfering Tool	1-1/4" IPS x 1-1/4" CTS	51028
Chamfering Tool	1-1/2" IPS	51041
Chamfering Tool	2" IPS	51040
Plastic Cutter	Capacity: 1-1/4" CTS	55225
Plastic Cutter	Capacity: 2" IPS	55227
Tool Kit for Mechanical Tee	PMTT Installation Tool (5/16" Hex Tee Handle)	55685
Pressure Test Cap for Mechanical Tee		55651

# Coppersert™ Copper-to-PE Transition Couplings



These reliable couplings combine a brass 45° flare fitting for copper tubing with a Permasert coupling for polyethylene (PE) piping. These transition couplings are fast and easy to install and place minimal stress on PE piping.

- Copper sizes range from 1/4" to 5/8" O.D. and PE sizes range from 1/2" CTS to 1" IPS
- Configurations available include couplings, tees, ells, and reducing couplings
- Molded from industry proven polyethylene. Pull-out strength is greater than the connecting PE piping itself
- Fittings should be protected against corrosion as warranted by soil conditions in accordance with NFPA-58 and CFR 49 Part 192 as required

Size	SDR/Wall	Copper Size	Part Number
1/2" CTS	.090"	1/4" O.D.	41120
1/2" CTS	.090"	3/8" O.D.	41007
1/2" CTS	.090"	1/2" O.D.	41013
1/2" CTS	.090"	5/8" O.D.	41002
3/4" IPS	SDR 11	5/8" O.D.	41130
1" CTS	.090/.099/.102"	5/8" O.D.	41150

Laboratory tested for regulatory compliance and meet or exceed the requirements of ASTM D-2513 category 1, US DOT part 192 and NFPA-58.

# PermaLock® Mechanical Tapping Tees



Our full-encirclement mechanical tapping tee is the safe, reliable and economical way to join a polyethylene service line to a polyethylene gas main.

- Permasert or fusion outlet sizes from 1/2" CTS to 2" IPS (20mm to 63mm)
- Can be installed in less than five minutes using only a 5/16" hex bit. No need to shut down the main
- Ratchet-style cutter sleeve threads into gas main to lock and seal the tapping tee to the main. Minimal protrusion of cutter sleeve into the main facilitates pigging of gas line
- Molded from PE4710/Bimodal PE3408 materials that meet or exceed requirements of ASTM D-2513 and ISO 4437
- Saddle fusion and electrofusion tapping tees with Permasert coupling outlets available
- Large 0.8" cutter/port size on 2" through 8" tees

Size	Permasert Outlet	SDR/Wall	Cutter Size	Part Number
1-1/4" IPS	1/2" CTS	.090"	.55"	54201
1-1/4" IPS	1" CTS	.090/.099/.102"	.55"	54251
2" IPS	1/2" CTS	.090"	.80"	55702
2" IPS	3/4" IPS	SDR 11	.80"	55901
2" IPS	1" CTS	.090/.099/.102"	.80"	55802
2" IPS	1" IPS	SDR 11	.80"	55951
2" IPS	1-1/4" IPS	SDR 9.3/10	.80"	55982
2" IPS	2" IPS	SDR 11	.80"	55990
4" IPS	1/2" CTS	.090"	.80"	55716
4" IPS	3/4" IPS	SDR 11	.80"	55902
4" IPS	1" CTS	.090/.099/.102"	.80"	55811
4" IPS	1" IPS	SDR 11	.80"	55953
4" IPS	1-1/4" IPS	SDR 9.3/10	.80"	55986
4" IPS	2" IPS	SDR 11	.80"	55992

# PSV™ Polyethylene Shut-Off Valves



The Elster Perfection PSV polyethylene shut-off valve replaces non-PE and metallic valves to provide economical compatibility with all PE gas distribution systems. These PSV® valves eliminate the need for corrosion inhibiting coatings, cathodic protection, federally mandated corrosion inspection and record-keeping.

- Sizes from 1/2" to 8"
- 1/2" to 1-1/4" sizes are available with quarter turn (90°) or full turn (360°) actuators
- Temperatures from -20°F to 100°F
- Available with Permasert outlets from 1/2" CTS through 2" IPS
- Fusion outlets available from 1/2" CTS through 8" IPS

Size	SDR/Wall	Part Number
1/2" CTS	.090"	45051
3/4" IPS	SDR 11	45100
1" CTS	.090/.099/.102"	45071
1" IPS	SDR 11	45200
1-1/4" IPS	SDR 9.3/10	45170100
2" IPS (MBV)*	SDR 11	46011

\* Modified ball valve.

Meets or exceeds requirements of ASTM D-2513, US DOT Part 192, ANSI B16.40 and CSA B137.4

Note: PSV also available with buff and socket-fusion outlet ends.

# Permasert® XL Large Diameter Mechanical Couplings



Elster Perfection's large diameter mechanical couplings provide the non-corrosive benefits of plastic combined with the fast, easy installation features of mechanical couplings for joining LP distribution piping.

- Plastic construction with 304 series stainless hardware
- Fast and easy installation, requires only one person
- Total installed cost savings compared to alternate methods
- No special tools or equipment required
- All weather installation

Size	SDR/Wall	Part Number
2" IPS	SDR 11	55161
	SDR 9/9.3	55162
3" IPS	SDR 11/11.5	55131
	SDR 9.3	55132
	SDR 13.5	55133
4" IPS	SDR 11/11.5	55101
	SDR 9.3	55102
	SDR 13.5	55103
6" IPS	SDR 11	55183
	SDR 11.5	55182
	SDR 13.5	55181
8" IPS	SDR 11	55196
	SDR 13.5	55198



## EFV excess flow valves

The Elster Perfection EFV, prevents catastrophic gas leakage by automatically shutting off gas flow when flow exceeds a predetermined rate. Elster Perfection excess flow valves are incorporated into our gas distribution products for easy installation in your distribution system.

- Available in Permasert couplings, fusion and mechanical tapping tees.
- Available in fusion outlet sticks, steel pipe nipples, and incorporated into our PSV valves
- Self-actuating valve with automatic reset
- Comply with the requirements of MSS SP-115 and US DOT CFR Title 49, Part 192.381

## Prefabricated meter sets & steel products

Elster Perfection meter loops, bends, swivels and meter manifold/headers can simplify your meter set installations. Our precision fabricated products are ideal for both single dwelling and multiple family/commercial applications. The Elster Perfection prefabricated meter sets simplify installation, reduce the number of threaded joints (potential leak points) and improve the appearance of your finished installation.

- Custom configurations and assemblies available
- All welds meet the requirements of US DOT CFR 49, Part 192 and ASME Section IX

## Polyethylene pipe & tubing (PE2406/Yellow) line sizing chart for LP gas vapor

Line sizing for LP gas vapor between 1st and 2nd stage regulators allowing a pressure drop of 1 psi at 10 psi setting.

Tubing Length (ft) *	1/2" CTS	1/2" IPS	3/4" IPS
	SDR 7 (.090")	SDR 9.3 (.090")	SDR 11 (.095")
Maximum LP Gas Vapor Capacity (thousands of BTU/hr)			
10	1406	4235	8940
20	944	2843	6001
30	747	2252	4753
40	634	1908	4029
50	557	1679	3544
60	502	1512	3191
70	459	1383	2920
80	425	1281	2704
90	397	1197	2527
100	374	1127	2379
125	329	991	2092
150	296	893	1884
175	271	817	1724
200	251	756	1597
225	235	707	1492
250	221	665	1405
275	209	630	1330
300	199	599	1265
350	182	548	1157
400	169	508	1072

Tubing Length (ft) *	1" CTS	1" IPS	1-1/4" IPS	2" IPS
	SDR 11.5 (.099")	SDR 11 (.119")	SDR 10 (.166")	SDR 11 (.216")
Maximum LP Gas Vapor Capacity (thousands of BTU/hr)				
10	10803	16486	28912	82488
20	7252	11067	19409	55373
30	5744	8766	15372	43858
40	4868	7429	13029	37171
50	4282	6535	11460	32695
60	3856	5884	10319	29441
70	3529	5385	9444	26944
80	3268	4987	8746	24953
90	3054	4661	8173	23319
100	2874	4387	7693	21948
125	2528	3858	6766	19305
150	2277	3474	6093	17384
175	2084	3180	5576	15909
200	1930	2945	5164	14733
225	1803	2752	4826	13768
250	1697	2590	4542	12959
275	1607	2452	4300	12268
300	1528	2332	4090	11669
350	1399	2134	3743	10680
400	1295	1976	3467	9890

\* Total length of piping from outlet of first stage regulator to inlet of farthest second stage regulator.

Note: Polyethylene pipe/tubing shall be limited to vapor service, not exceeding 30 psig, and must be installed outdoors and underground.

The above numbers were calculated by using the Mueller formula for high pressure installations of smooth pipe such as plastic, copper, brass, etc. carrying gas at pressures greater than 1 psig.



## About Elster Perfection

Elster Perfection is the world's leading manufacturer of non-metallic mechanical joining products for natural gas and propane gas distribution systems. Elster Perfection's complete mechanical polyethylene gas distribution system allows installers to connect with integrity, safety, and speed without using special tools or expensive equipment.

## About Elster Group

Elster Group is the world's leading manufacturer and supplier of highly accurate, high quality, integrated metering and utilization solutions to the gas, electricity and water industries. In addition, through its subsidiary Ipsen International, it is the leading global manufacturer of high level thermo-chemical treatment equipment.

The group has over 8,500 staff, operations in 38 countries and serves over 115 markets around the world. Elster's high quality products and systems reflect the wealth of knowledge and experience gained from over 170 years of dedication to measuring precious resources and energy.

Elster Perfection  
222 Lake Street  
Madison, Ohio 44057-3189  
United States  
T +1 440 428 1171  
T +1 800 544 6344  
F +1 440 466 7351  
perfection@elster-perfection.com  
www.elster.com  
www.elster-perfection.com

©2007 Elster Perfection. All Rights Reserved.

® Registered trademark of Elster Perfection Corporation

Information contained herein is subject to change without notice. Product specifications may change. Contact your Elster Perfection representative for the most current product information.

Printed in the United States.

Publication EP-BR005 - EN - P – November 2007  
Supersedes LITB#-01000

ISO 9001:2000  
CERTIFIED