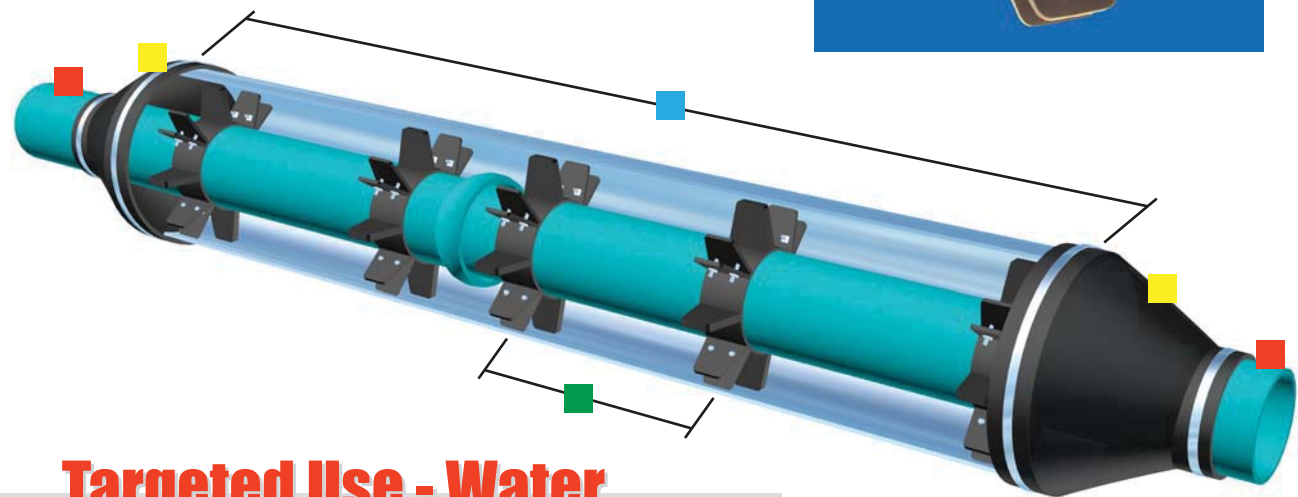
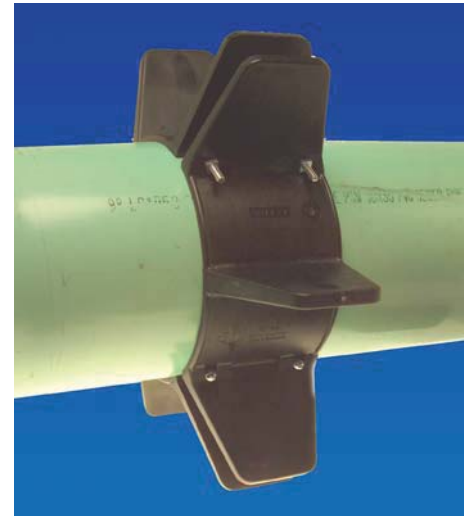
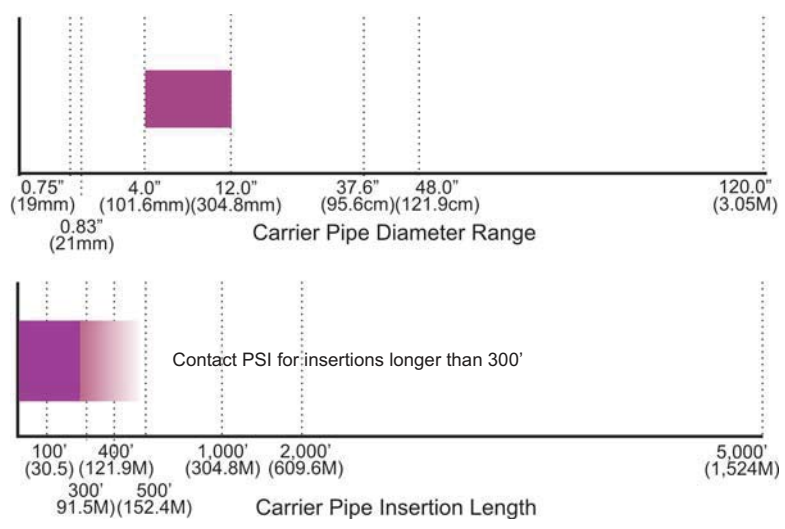


Model AZ

Non-metallic Casing Spacers

PSI Model AZ Non-metallic Casing Spacers

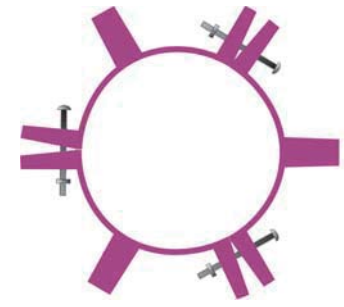


Targeted Use - Water

- For carrier pipe diameters ranging from 3.85" (9.78cm) to 13.75" (34.9cm).
 - For carrier pipe insertion lengths up to 300 feet.* (91.5M)
 - Spacing Recommendation: Max 8' (243.8cm) between spacers, Max 2' (61.0cm) from casing pipe end, Max 2' (61.0cm) on each side of bell or mechanical joint.
 - Recommended End Seals: Model C, S, W, and R.
- *Model AZ Casing Isolators are designed primarily for smaller diameter steel or polyethylene carrier pipes (ANSI O.D. pipe without a bell or mechanical joint). We do not recommend that they be used on any carrier pipe over 12" (30.5cm) in diameter or for installations over 400 feet (121.9M) long without consulting with PSI. AZ Isolators should **not** be used on concrete carrier pipe or heavy type pipe.

Model AZ non-metallic casing spacers are designed for use with water and sewer pipes 3.85" (9.78cm) to 13.75" 34.9cm) in diameter. They are an economical alternative to banded wood skids and stainless steel bands for inserting pipes into casings. AZ spacers also eliminate the need for sand or grout filling of the annular space in the casing. All are adaptable to a wide variety of carrier pipe O.D.'s found on PVC Pressure/Sewer Pipe, DI-Ductile Iron, C-900, P.E., and IPS-Steel Pipes

- Benefits/Features**
- Variable O.D.'s of casing spacer to fit multiple sized space.
 - Manufactured from UV resistant polypropylene.
 - Runner heights may be interchangeable or field cut to adjust for grade.
 - Corrosion protection - only metal components are steel bolts/nuts.
 - One piece molded construction for maximum load bearing.
 - Allen head bolts for improved spacer tightening.



PSI Model HT Non-metallic Casing Spacers

Material Specifications

SPECIFICATION	ASTM TEST	VALUE
Band/Runner Segments		Injected Molded Virgin Polycarbonate
Tensile Strength	D790	8,100 - 9,000 psi
Compressive Strength	D695	12,500 psi
Water Absorption	D570	0.1%
Temperature		280°F. Max. (138°C.)
Impact Strength	D256	1.5 - 2.0 ft lb/in. (0.8 - 1.07 newton-meters/cm)
Dielectric Strength	D149	450 Volts/Mil.
Color		Black

Liner - T.P.E. Liner (HT Models 6x10 through 12x16)

Thickness	0.118" (3.0mm)
Hardness	Shore "A" 73
Dielectric Strength	
1/8" (3.18mm) Surge Test	60,000 V min.
Step-by-step Test	58,000 V min.
Water Absorption	1% max.

Runners - Sizes and Configurations

3/4" (19mm) through 12" (305mm) = 2-piece with molded-in runners

Hardware

Metallic - Bolts and Square Nuts = Plated Steel

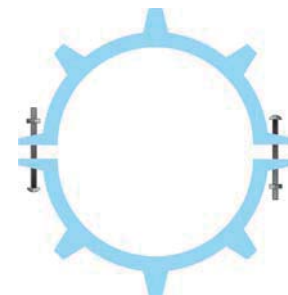
Non-metallic - Bolts and Nuts = High Temp Plastic

Model HT Band Width and Runner Height

Model Size	Band Width	Runner Height
3/4 X 2	3.0" (76.19mm)	5/16" (7.94mm)
1 X 3	3.0" (76.19mm)	1/2" (12.7mm)
1-1/4 X 3	3.0" (76.19mm)	1/2" (12.7mm)
1-1/2 X 3	3.0" (76.19mm)	1/2" (12.7mm)
2 x 4	4.0" (101.6mm)	5/8" (15.88mm)
3 x 6	4.0" (101.6mm)	5/8" (15.88mm)
4 X 8	4.0" (101.6mm)	1" (25.4mm)
6 X 10*	4.0" (101.6mm)	1" (25.4mm)
8 x 12*	5.0" (127.0mm)	1" (25.4mm)
10 X 14*	5.0" (127.0mm)	7/8" (22.23mm)
12 X 16*	5.0" (127.0mm)	7/8" (22.23mm)

* = Sold with Liner.

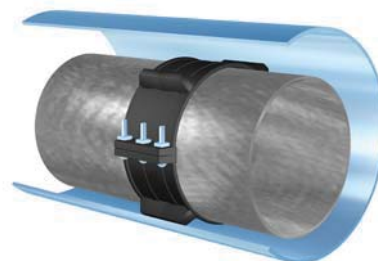
Note: Model HT Sized for Nominal Steel and IPS Pipe.



2-Piece
For 3/4" to 12" (1.9 to 30.48cm).



Position In Casing

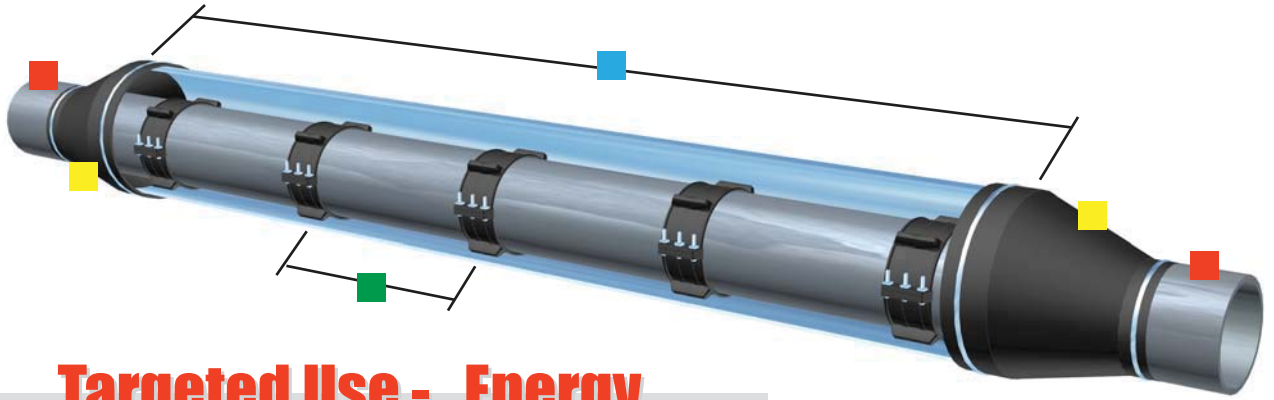
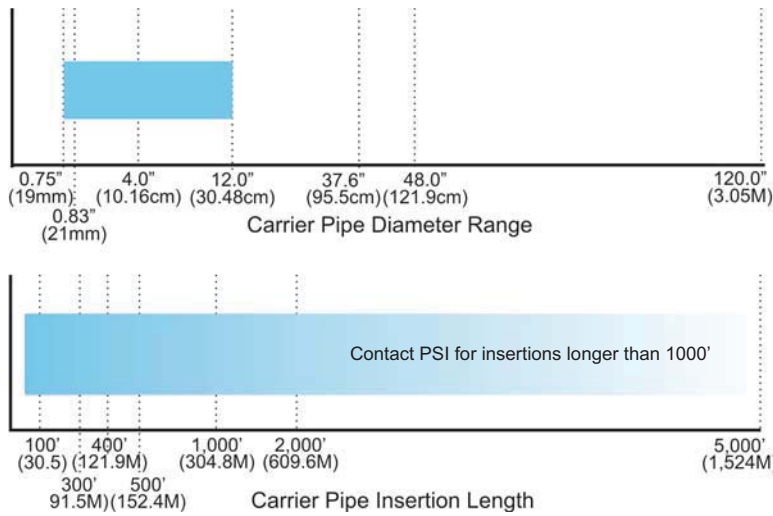


Model HT Standard
S = Standard



For Hi-Temp Applications over 12" Nominal O.D. Use Metallic Casing Spacers with T.P.E Liner. Model A Spacers used on an insulated steel pipe.

PSI Model HT Non-metallic Casing Spacers



Targeted Use - Energy

- For carrier pipe diameters (Nominal Steel & IPS) ranging from 3/4" (19.1mm) to 12" (304.8mm)
- For carrier pipe insertion lengths up to 400 feet.* (121.9M)
- Spacing Recommendation: Max 8' (243.8cm) between spacers, Max 2' (61.0cm) from casing pipe end.
- Recommended End Seals: Model C, S, W, R and FW.

*Model HT Casing Isolators are designed primarily for smaller diameter steel or polyethylene carrier pipes (ANSI O.D. pipe without a bell or mechanical joint). We do not recommend that they be used on any carrier pipe over 12" (30.5cm) in diameter or for installations over 400 feet (121.9M) long without consulting with PSI. HT Isolators should **not** be used on concrete carrier pipe.

Benefits/Features

- May be used for high-temperature applications.
- Unique formulation of polymers allows isolator/spacer to be used in applications where temperatures may reach 280-degrees F. (138-degrees C.)
- Ribbed inner surface prevents slippage and guards against coating damage.
- Lightweight for ease of handling and installation.
- Screwdriver is only tool needed for installation.
- Model available with non-metallic hardware.
- Eliminates the need for grout, blown sand or pea gravel.

Polycarbonate is used in the manufacture of the Hi-Temp isolators/spacers giving them the ability to be used for applications that may reach 280-degrees F. (138-degrees C.). In addition to heat resistance, they also offer excellent electrical isolation, high abrasion resistance and low coefficient of friction for a wide variety of double containment carrier/casing pipe applications. Light in weight and easy to handle during installation, Model HT casing isolators also feature ribbed inner surface that prevents slippage and guards against carrier pipe coating damage. The outer surface may include any one of several molded runners to accommodate 2" (50.8mm) x 4" (101.6mm) or larger carrier/casing differentials.

PSI Model PE Non-metallic Casing Spacers

Material Specifications

SPECIFICATION	ASTM TEST	VALUE
Band/Runner Segments		Injection Molding Virgin Polyethylene
Tensile Strength	D638, D651	3,100 - 5,500 psi 218 - 387 kg/cm ²
Compressive Strength	D693	3,200 psi (225kg/cm ²)
Water Absorption	D570	0.1%
Temperature		180°F. Max. (82°C.)
Impact Strength	D256	1.5-2.0 ft lb/in. (0.8-1.07 newton-meters/cm)
Dielectric Strength	D149	450 Volts/Mil.
Color		White
Liner - None		
Runners - Sizes and Configurations		
3/4" (19mm) through 12" (305mm) = 2-piece with molded-in runners		
14" (356mm) and larger = Multiple segments with molded-in runners.		
Hardware		
Metallic - Bolts and Square Nuts = Plated Steel		
Non-metallic - Bolts and Nuts = High Temp Plastic		

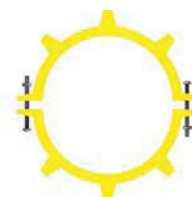
Model PE Band Width and Runner Height

Model Size	Band Width	Runner Height
3/4 X 2	3.0" (76.19mm)	5/16" (7.94mm)
1 X 3	3.0" (76.19mm)	1/2" (12.7mm)
1-1/4 X 3	3.0" (76.19mm)	1/2" (12.7mm)
1-1/2 X 3	3.0" (76.19mm)	1/2" (12.7mm)
2 x 4	4.0" (101.6mm)	5/8" (15.88mm)
2-1/2 X 5	4.0" (101.6mm)	5/8" (15.88mm)
3 x 6	4.0" (101.6mm)	5/8" (15.88mm)
4 X 6	4.0" (101.6mm)	9/16" (14.29mm)
4 X 8	4.0" (101.6mm)	1" (25.4mm)
6 x 8	4.0" (101.6mm)	9/16" (14.29mm)
6 X 10	4.0" (101.6mm)	1" (25.4mm)
6 X 10(S)	4.0" (101.6mm)	9/16" (14.29mm)
8 x 10	4.0" (101.6mm)	9/16" (14.29mm)
8 x 12	5.0" (127.0mm)	1" (25.4mm)
8 X 12(S)	5.0" (127.0mm)	7/8" (22.23mm)
10 X 14	5.0" (127.0mm)	7/8" (22.23mm)
10 X 16(S)	5.0" (127.0mm)	7/8" (22.23mm)
12 X 16	5.0" (127.0mm)	7/8" (22.23mm)
All Multiple Segments* (4" Differential)	6.25" (158.75mm)	1" (25.4mm)
All Multiple Segments* (6" Differential)	6.25" (158.75mm)	1-1/2" (38.1mm)

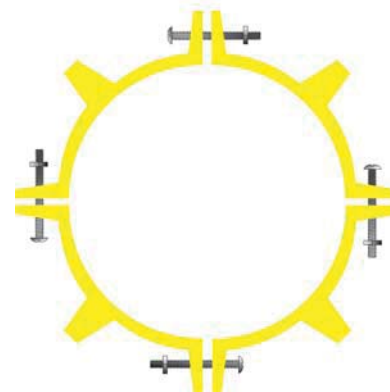
(S) = Somatic Coated Pipe

Note: Model PE Sized for Nominal Steel and IPS Pipe.

* = Download Model Size information from www.pipeline Seal.com

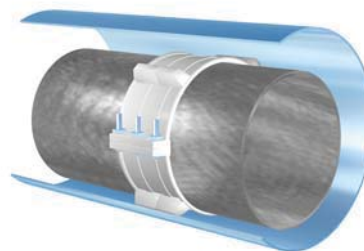


2-Piece
For 3/4" to 12" (1.9 to 30.48cm).



Multi-Segment
For 14" (35.56cm) and above.

Position In Casing



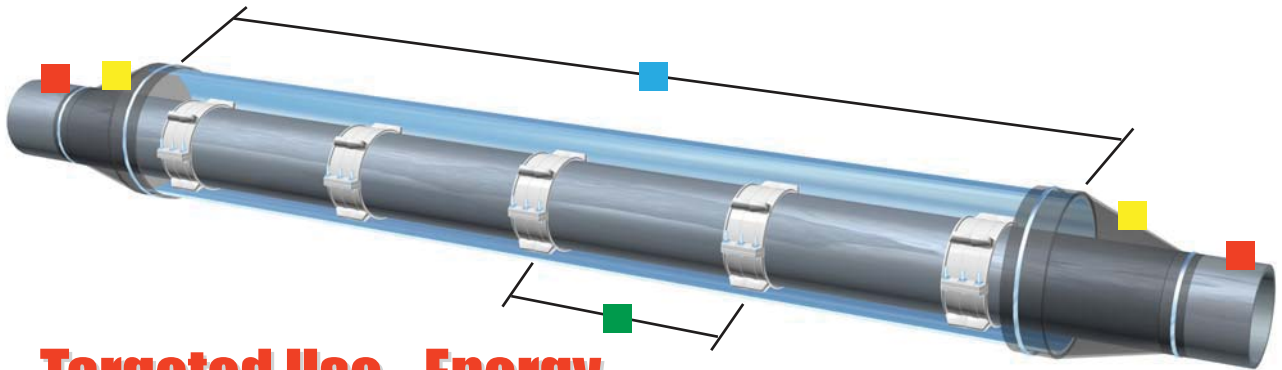
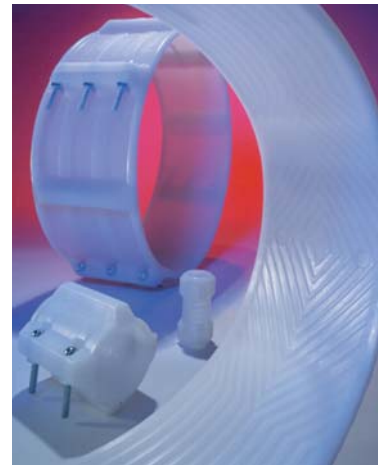
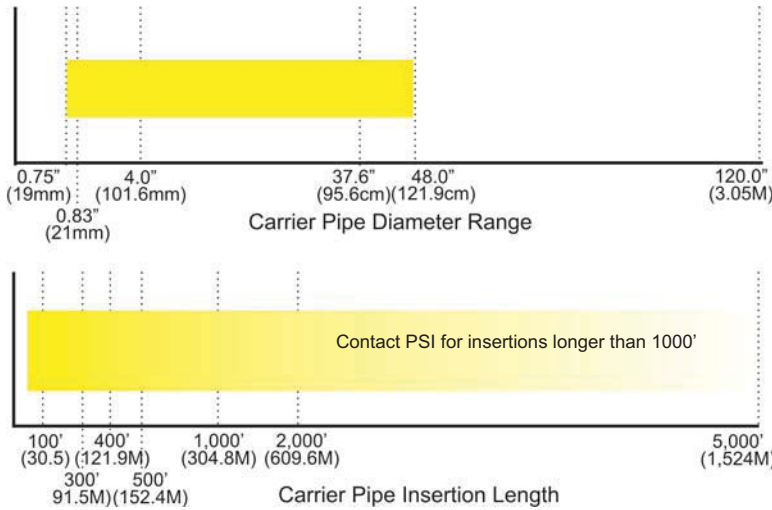
Model PE Standard
S = Standard



Circa. 1979, Model PE installed on steel pipe. Experience and today's application would target a steel casing spacer, or more PE's spaced at 6 ft. (1.83M).

Model PE Non-metallic Casing Spacers

PSI Model PE Non-metallic Casing Spacers



Targeted Use - Energy

- For carrier pipe diameters (Nominal Steel & IPS) ranging from 3/4" (19.1mm) to 48" (121.92cm)
- For carrier pipe insertion lengths up to 1,000 feet.* (304.8M)
- Spacing Recommendation: Max 8' (243.8cm) between spacers, Max 2' (61.0cm) from casing pipe end.
- Recommended End Seals: Model C, S, W, R and FW.

*Model PE Casing Spacers are designed primarily for smaller diameter steel or polyethylene carrier pipes (ANSI O.D. pipe without a bell or mechanical joint). We do not recommend that they be used on any carrier pipe over 24" (61.0cm) in diameter or for installations over 400 feet (121.9M) long without consulting with PSI. PE Isolators should **not** be used on concrete carrier pipe.

Benefits/Features

- Ribbed inner surface prevents slippage & guards against coating damage.
- Molded from virgin polyethylene material.
- Lightweight for ease of handling and installation.
- Screwdriver is only tool needed for installation.
- Model available with non-metallic hardware.
- Eliminates the need for grout, blown sand or pea gravel.

High density (linear), injection molded virgin Polyethylene casing isolators/spacers provide positive electrical isolation, high abrasion resistance and low coefficient of friction for a wide variety of double containment carrier/casing pipe applications. They are extremely light in weight and easy to handle during installation. A ribbed inner surface prevents slippage and guards against carrier pipe coating damage while the outer surface may include any one of several molded runners to accommodate 2" (50.8mm) x 4" (101.6mm) or larger carrier/casing differentials.

One piece solid molded segments provide for maximum load bearing. Hardware includes cadmium plated steel bolts and nuts. A screwdriver is the only tool needed for installation.

