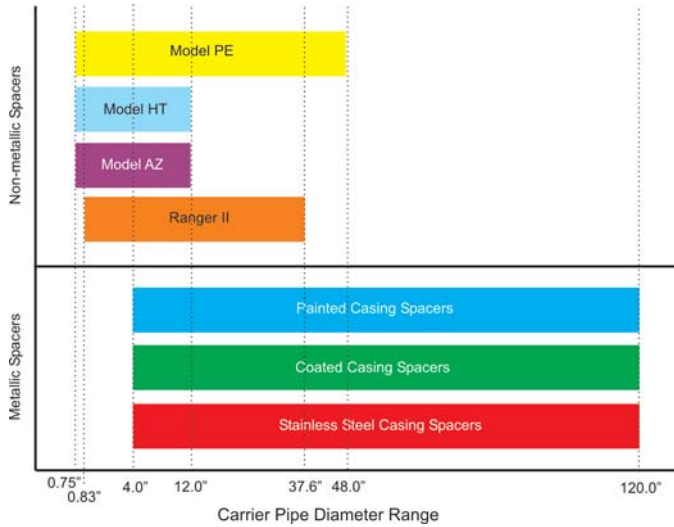
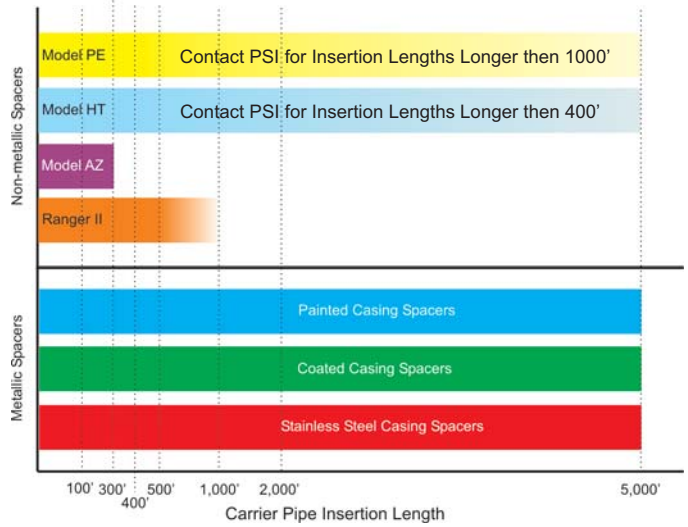


PSI Casing Spacer Standard Model Guidelines

Carrier Pipe Diameter Range Options



Carrier Pipe Insertion Length



Carrier Pipe Compatibility with Spacer Model - Guidelines

	Non-metallic Casing Spacers				Metallic Casing Spacers	
	Model PE	Model HT	Model AZ	Ranger II®	Models A, C & S with 8" Band	Models A, C & S with 12" Band
Steel	E	E	S	E	E	E
Steel (Mortar Coated)	U	U	U	U	NR	E
Ductile Iron	U	U	U	G	G	E
Cement	U	U	U	U	E	E
Profile Pipe	U	U	U	S	E	E
Clay	NR	NR	U	U	E	E
HDPE	NR	NR	S	E	E	E
PVC Water Pipe	NR	NR	G	E	E	E
PVC Sewer Pipe	NR	NR	G	E	E	E

E = Excellent
NR = Not Recommended
G = Good
F = Fair
S = Satisfactory
U = Unsatisfactory

General Notes:The foregoing performance data are intended as guidelines only. Performance suitability for specific applications should be determined by the user. Variation in carrier pipe type, carrier pipe diameter, casing length, casing condition, and position may preclude suggested service use. Casing Spacer selection is at the sole risk of the user. Consult with a specialist or PSI factory for specific applications. PSI's responsibilities will be limited to those listed in the PSI standard warranties. **Consult with a specialist or PSI factory for specific applications.**

Standard Material Property Comparison - PSI Casing Spacers

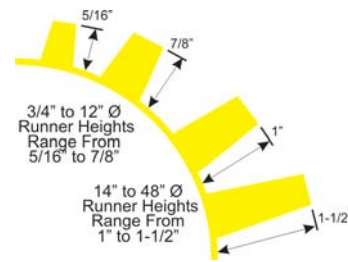
For detailed information and higher/lower metallic temp. range please view specific Model pages.

	Non-metallic Casing Spacers				Metallic Casing Spacers			
	Model PE	Model HT	Model AZ	Ranger II®	Models A8 - A12	Models C8 - C12	Models S8 - S12	Models SL8
Band Material	Polyethylene	Poly-carbonate	Polypropylene	Polypropylene	14 Gauge Painted Steel	14 Gauge PVC Coated Steel	14 Gauge 304 Stainless Steel	16 Gauge 304 Stainless Steel
Runner Material	Polyethylene	Poly-carbonate	Polypropylene	Polypropylene	Glass Reinforced Nylon	Glass Reinforced Nylon	Glass Reinforced Nylon	Glass Reinforced Nylon
Riser Material	None	None	None	None	10 Gauge Painted Steel	10 Gauge Coated Steel	10 Gauge Stainless Steel	12 Gauge Stainless Steel
Liner Material	None	HighTemp Plastic	None	None	Polyvinyl Chloride	Polyvinyl Chloride	Polyvinyl Chloride	Polyvinyl Chloride
Hardware	Plated Steel	Plated Steel	Plated Steel	None	Plated or 304 Stainless Steel	Plated or 304 Stainless Steel	304 Stainless Steel	304 Stainless Steel
Compressive Strength	3,200 psi	3,200 psi	3,200 psi	3,200 psi	18,000 psi	18,000 psi	18,000 psi	18,000 psi
Temperature Range	180°F. Max	280°F. Max	-40°F to +180° F	-22°F to +212° F	-40°F to +170° F	-40°F to +170° F	-40°F to +170° F	-40°F to +170° F

General Runner Height Options - PSI Casing Spacers

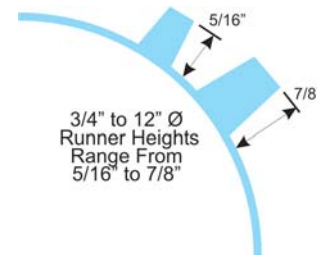
Model PE Non-metallic Casing Spacers

- Model PE runners are molded as an integral part of each segment.
- Runner heights range from 5/16" (7.94mm) to 1-1/2" (38.1mm) depending on model dimensions.
- Runner height is symmetrical around spacer.
- Runner/Band width for PE spacers is 3.0" (76.19mm) through 6.25" (158.75mm).
- Refer to pages 4 - 5 for detailed information on PE Casing Spacers.



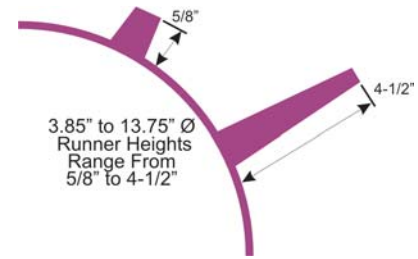
Model HT (High Temp) Non-metallic Casing Spacers*

- Model HT runners are molded as an integral part of each segment.
- Runner height range from 5/16" (8.0mm) to 7/8" (48.5mm) depending on model dimensions.
- Runner height is symmetrical around spacer.
- Runner/Band width for HT spacers is 3.0" (7.94mm) through 5.0" (127.0mm).
- Refer to pages 6 - 7 for detailed information on HT Casing Spacers.



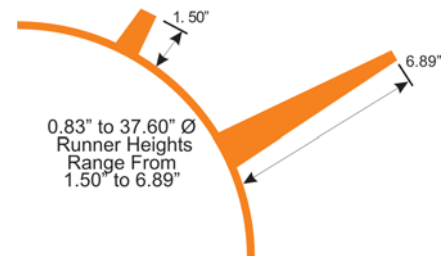
Model AZ Non-metallic Casing Spacers*

- Model AZ runners are molded as an integral part of each segment.
- Runner height range from 5/8" (15.9mm) to 4-1/2" (114.3mm).
- Runner height is symmetrical around spacer.
- Runner/Band width for AZ spacers is 5.2" (132.0mm).
- Refer to pages 8 - 9 for detailed information on AZ Casing Spacers.



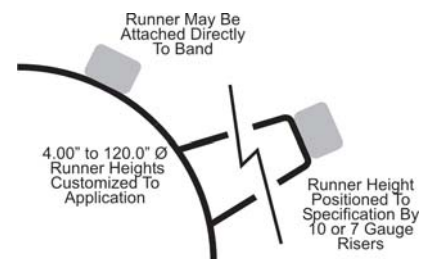
Ranger II® Non-metallic Casing Spacers*

- Ranger II runners are molded as an integral part of each segment.
- Runner height range from 1.50" (38.1mm) to 6.89" (175.0mm).
- Runners may be placed asymmetrically around spacer.
- Runner/Segment widths for Ranger II spacers is 2.13" (54.1mm) through 8.86" (225.04mm).
- Refer to pages 10 - 13 for detailed information on Ranger II Casing Spacers.



Metallic Casing Spacers Painted [(A), Coated (C) & Stainless Steel (S)]

- 1" (25.4mm) or 2" (50.8mm) wide nylon or polyester glass reinforced runners.
- Effective runner height = 1.07" (27.2mm) or 1.70" (43.2mm).
- Runners may be attached directly to spacer band.
- Runners may be attached on top of 10 or 7 gauge risers to accommodate any runner height configuration.
- Metallic spacers available in 8.0" (203.2mm) or 12.0" (304.79mm) wide bands.
- Refer to page 14 - 19 for detailed information on painted, coated or stainless steel casing spacers.

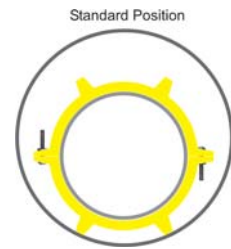


***Caution Note**
If casing pipe has offsets or weld beads in excess of 1/8",
consider using a metallic casing spacer.

Position Within Casing Options

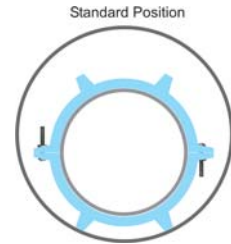
Model PE Non-metallic Casing Spacers

- Standard position within casing.
- Runner height must be symmetrical around spacer.
- Refer to pages 4 - 5 for detailed information on PE Casing Spacers.



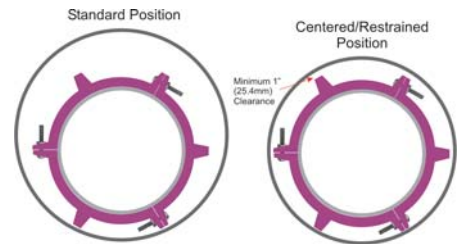
Model HT (High Temp) Non-metallic Casing Spacers

- Standard position within casing.
- Runner height must be symmetrical around spacer.
- Refer to pages 6 - 7 for detailed information on PE Casing Spacers.



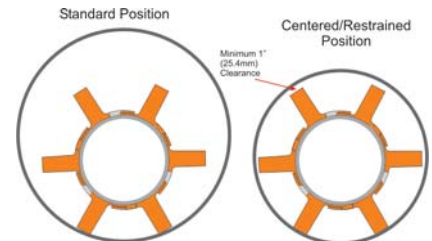
Model AZ Non-metallic Casing Spacers

- Two positions within casing possible - standard (clear bell) and centered-restrained.
- Runner height must be symmetrical around spacer.
- Refer to page 8 - 9 for detailed information on PE Casing Spacers.



Ranger II® Non-metallic Casing Spacers

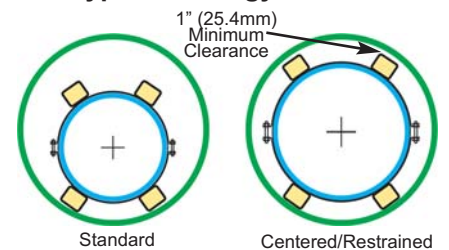
- Multiple positions within casing possible.
- Different height runner segments may be mixed around carrier pipe.
- Runner height may be asymmetrical around carrier pipe.
- Positioning options include: standard (clear bell), centered, centered-restrained and non-centered-restrained
- Refer to page 10 - 13 for detailed information on Ranger II® Casing Spacers.



Metallic Casing Spacers Painted [(A), Coated (C) & Stainless Steel (S)]

- Multiple positions within casing possible.
- Runner height may be asymmetrical around carrier pipe.
- Positioning options include: standard (clear bell), centered, centered/restrained and non-centered/restrained
- Refer to pages 14-19 for detailed information on Metallic Casing Spacers.

Typical - Energy Market



Typical - Water Market

