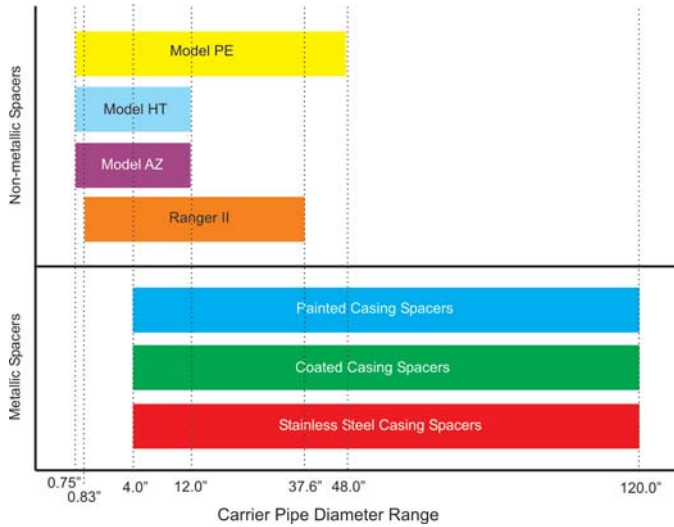
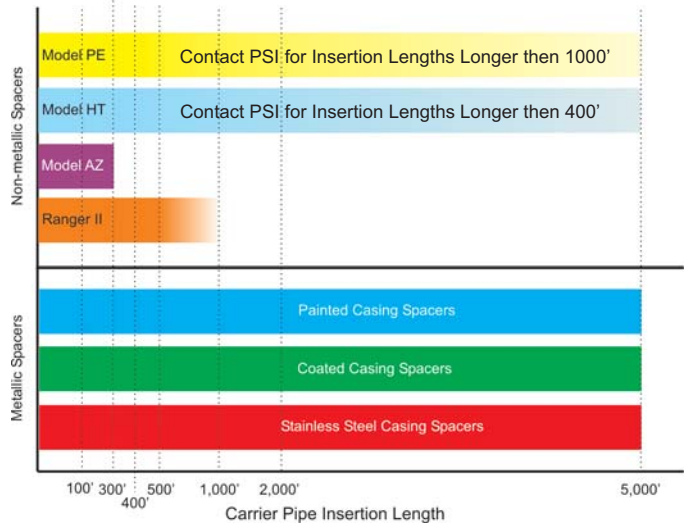


# PSI Casing Spacer Standard Model Guidelines

## 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

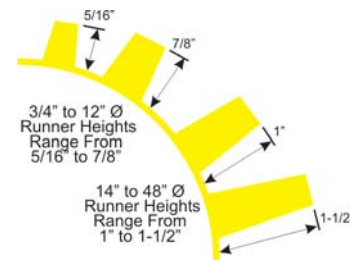
For detailed information and higher/lower metallic temp. range please view specific Model pages.

|                      | 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

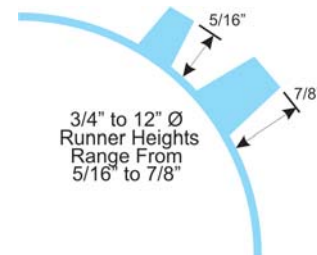
## Model PE Non-metallic Casing Spacers

- 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.



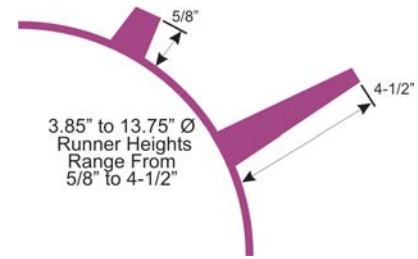
## Model HT (High Temp) Non-metallic Casing Spacers\*

- 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.



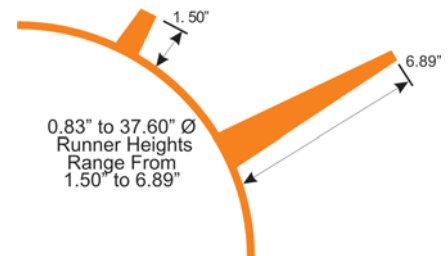
## Model AZ Non-metallic Casing Spacers\*

- 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.



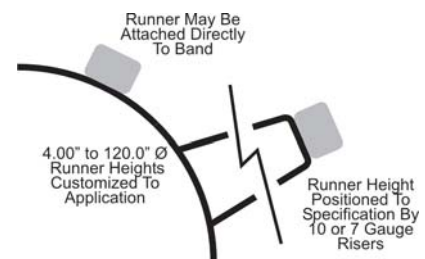
## Ranger II® Non-metallic Casing Spacers\*

- 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.

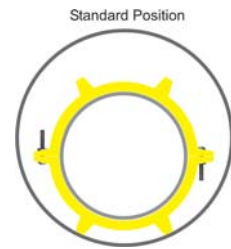


**\*Caution Note**  
If casing pipe has offsets or weld beads in excess of 1/8", consider using a metallic casing spacer.

# Position Within Casing Options

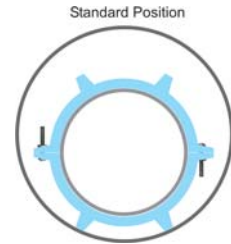
## Model PE Non-metallic Casing Spacers

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



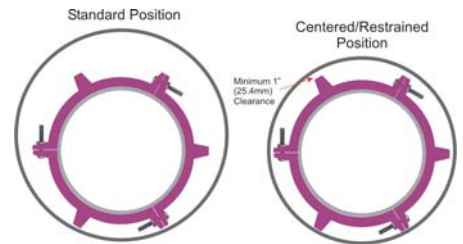
## Model HT (High Temp) Non-metallic Casing Spacers

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



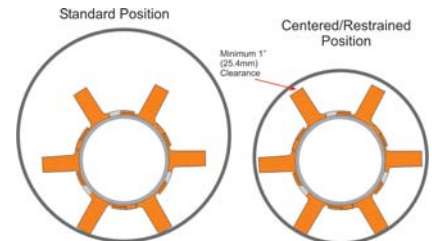
## Model AZ Non-metallic Casing Spacers

- 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

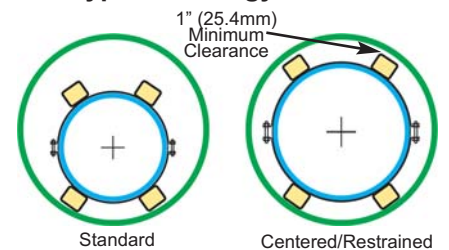
- Multiple positions within casing possible.
- Different height runner segments may be mixed around carrier pipe.
- Runner height may be asymmetrical around carrier pipe.
- Positioning options include: standard (clear bell), centered, centered-restrained and non-centered-restrained
- Refer to page 10 - 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

