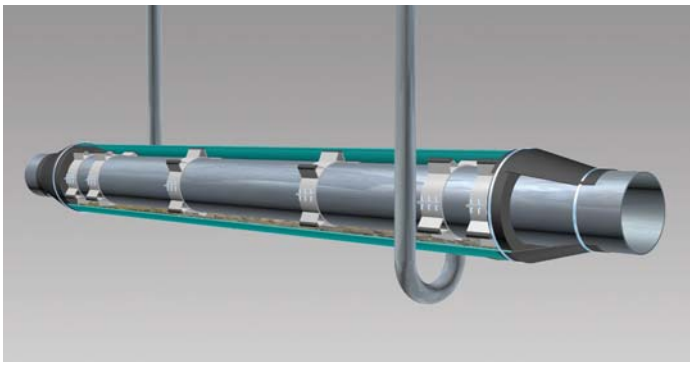
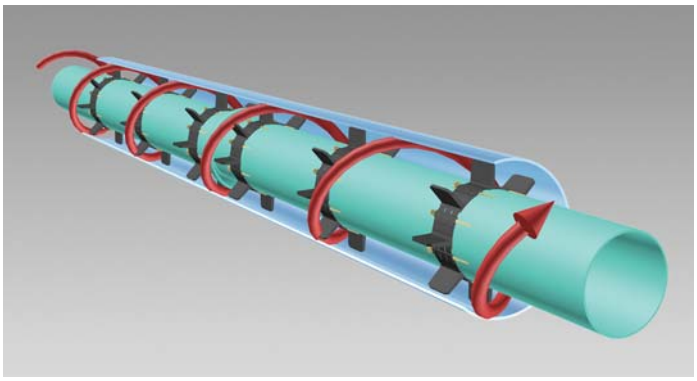
Casing Spacer Field Terminology





Casing Fill – Casing fill materials may include sand, gravel, cement or wax. Under normal circumstances Model A Painted Spacers are provide excellent support and durability for these applications, therefore it is not necessary to use stainless steel casing spacers for filled applications. Casing fill material encapsulates the spacers and carrier pipe, supports both, and provides an additional non-conductive barrier between casing and carrier pipes.
For wax filling application, please specify the TPE Liner and use Link-Seal® Modular Seals in combination with Model W end seals.

Rifling – Rifling occurs when the carrier pipe rotates or turns, as much as 360-degrees, inside the casing as the push or pull progresses. Casing spacers with a symmetrical design are used to allow for rotation. Runner/Riser configurations are made to equal heights and uniform position to allow for uniform loading and equal carrier pipe support to accommodate rifling. The chance your carrier pipe will rifle during the push or pull will depend on a number of factors. Best engineering practice is to order casing spacers with a symmetrical runner configuration to accommodate the possibility of rifling in the first place.

Condition of Casing – It's important to determine the condition of the inside surface of the casing pipe prior to installation. Rough, corroded and/or uneven surfaces - "high and low" weld beads and other anomalies on the interior pipe surface can drastically reduce the effectiveness of any casing spacer. PSI metallic casing spacers are suggested, when surface conditions are marginal, because runners on metallic casing spacers are much more resistant to abrasion then runners on plastic spacers. If you are unsure of the casing condition, pipe inspection services using cameras to analyze the interior of a pipe may be used or you may also simply pull a 20 ft section of pipe through the casing as a test or field trial .

7-Gauge vs. 10-Gauge Riser Material – An increase in applications requiring heavier, larger diameter pipes has initiated the need for more robust casing spacers. To meet this need, PSI offers 7-gauge riser material as a substitute for 10-gauge risers. 7-gauge risers provide additional strength and stability when supporting large diameter Steel ML&C (Mortar Lined and Coated) or Concrete pipe that may be carrying heavier, higher density fluids.

Wood Skids vs. Casing Spacers - Wood skids are a poor substitute for casing spacers. A casing spacer is an engineered product that has been used for decades to ease carrier pipe insertion, protect both casing and carrier pipes and maintain physical and electrical separation to preserve the corrosion mitigation (protection) program designed for the piping system.

A comparison...PSI casing spacers versus banded wood skids

PSI Casing Spacer	Banded Wood Skids
Low Labor Cost - Installed By One Person	Labor Intensive, High Labor Costs
Easily Secured In Place	Easily Dislodged
Quick Installation	Hard to Field Construct
Supports Pipe and Protects Coating	Rots and Allows Settlement
Assured Electrical Insulation	Non-Insulating - Allows Corrosion
Resists Weight of Pipe and Product	Uneven Load on Pipe
Long Term Corrosion Protection	Allows Bacteria & Differential Oxygen Concentration Corrosion
Eliminates Grout, Blown Sand or Pea Gravel	Requires Annulus Space Filler
Engineered for the Project	At Discretion of Job Site Laborer

Wood Lagging Corrosion Issue: Wood should not be used in a cased crossing. It has the potential to accelerate corrosion concerns. When dry, wood has good dielectric resistance. When wet (as is likely in a buried casing) it has a dielectric resistance than can be magnitudes lower; allowing corrosion on metallic (Steel, D.I) carrier pipes. This presents concerns if wood were used in a casing to isolate or support the carrier pipe within the casing. Furthermore, when wood rots, the bacteria will attack metallic pipe in form of Microbiologically Influenced Corrosion.

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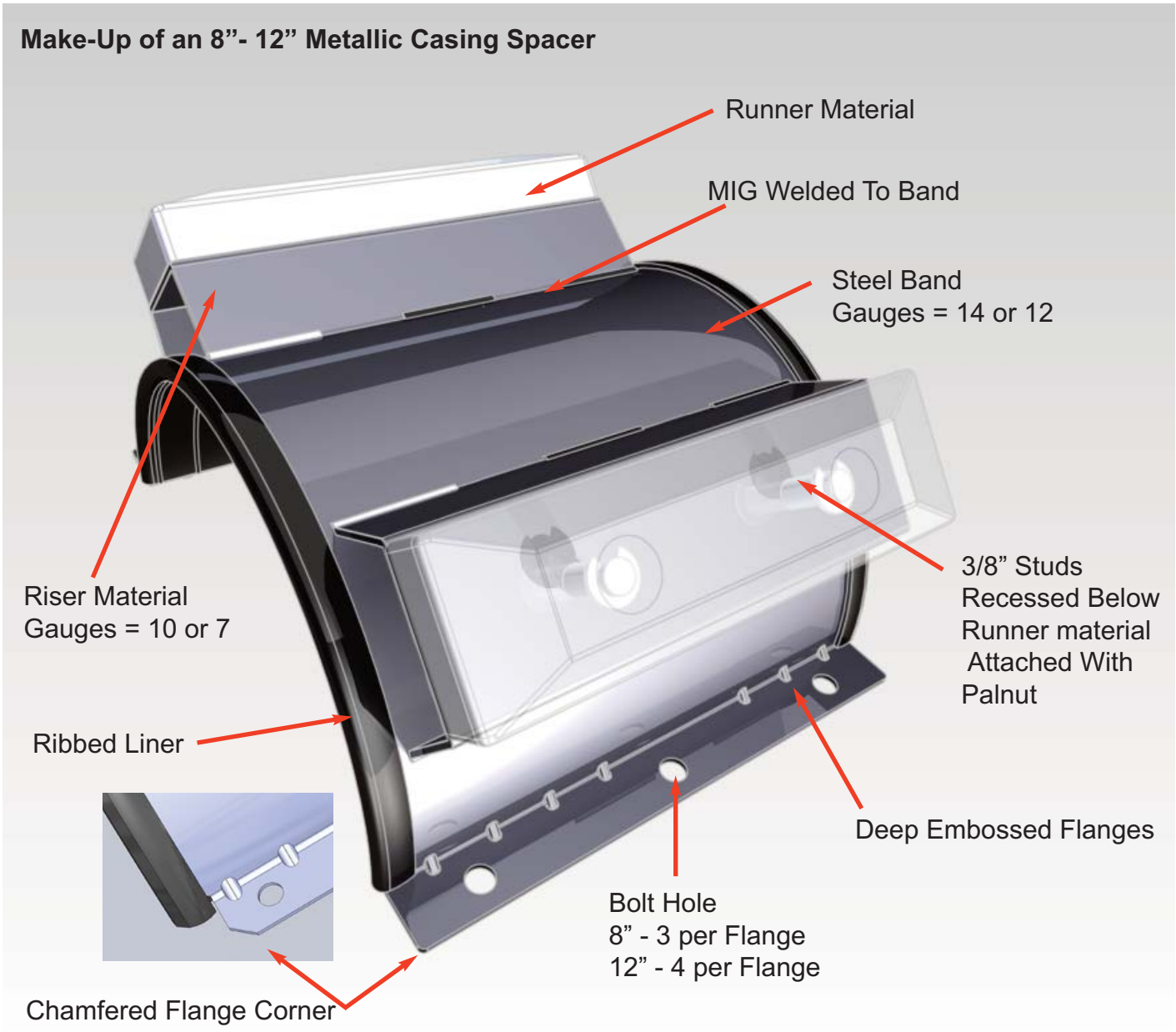
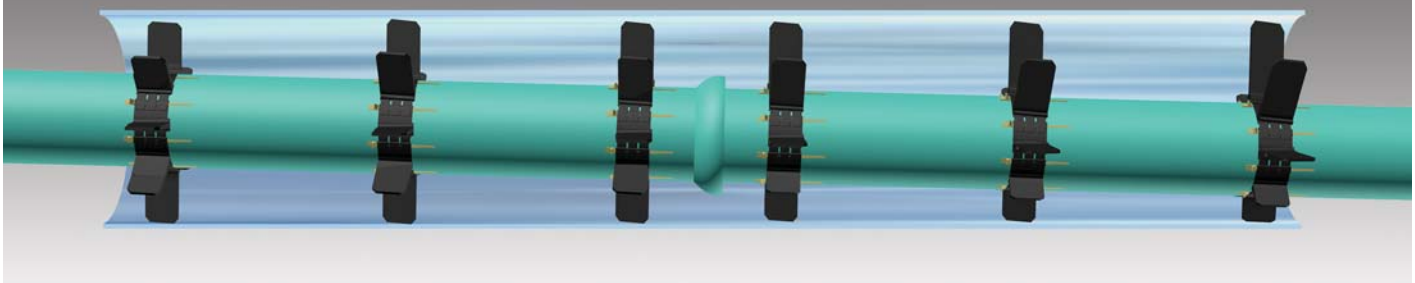
Make-Up of an 8”- 12” Metallic Casing Spacer



Using Casing Spacers for Gravity Feed Pipe or to Adjust for Grade



Both metallic and non-metallic casing spacers may be used to create a sloped carrier pipe (i.e. gravity feed sewer pipe) within a level casing or to compensate for a non-level casing pipe by using spacers with varying height runners to level the carrier pipe.

Please contact PSI for more information on how to order casing spacers for these types of applications.