



# Valves

## Handling the world's dry bulk solids™



### Technical Bulletin

#### Vortex® Maintenance Gate™ -- Replacing Bonnet Seal

The bonnet seal of the Vortex® Maintenance Gate™ is designed to seal up to 1 barg differential pressure with the blade in the full open position (depending on gate size). Typically, the gate is actuated infrequently making replacement of the maintenance gate bonnet seal an unlikely occurrence.

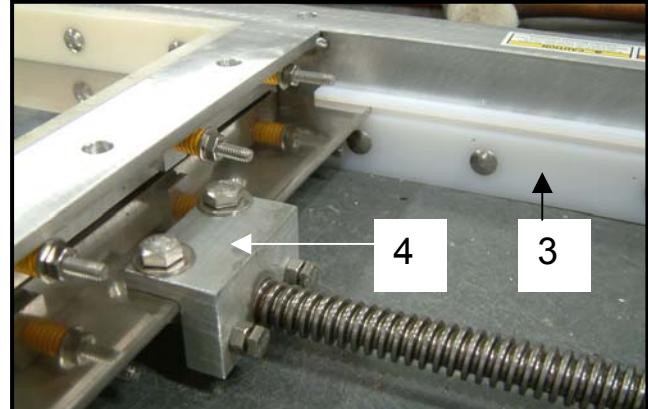
Adjustable tension springs provide a “live” load on the braided Teflon bonnet seal. Increasing the load on the seal (by manually tightening the nuts that hold the pressure springs) should be attempted prior to replacing the bonnet seal material.

As with any Vortex® valve, read and follow all safety instructions prior to installing, maintaining or operating equipment. Failure to comply with instructions may result in personal Injury.



#### Replacing bonnet seal

- 1) Take the gate out of service.
  - 2) Remove the Top Bonnet Cover
  - 3) Remove the two Blade Support Guides
  - 4) Detach the Clevis from the Blade
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- 5) Individually loosen (but do not remove) the Nuts holding the Pressure Springs in place (on either side of the blade).
  - 6) Remove the Nuts, Washers and Pressure Springs.
  - 7) Remove 90° aluminum Clips (included in models that are 250mm and larger)



8) Remove the Seal Retainer Bar.



9) Remove the Blade.



10) Utilizing two softer pieces of metal (e.g. aluminum), and taking care not to scratch the blade, clamp the blade to the end of a workbench. (Note placement of clevis mounting holes.)



11) Slide Seal Retainer Bar onto blade.  
Grooved seal retaining slot should be visible.



12) The Braided Teflon Seal Packing Material is configured in a slight rectangle. Holding the material lengthwise, cut one end of the material at a 45° angle

13) Lengthwise, begin inserting the Packing Material into the grooved retaining slot.



14) Form the material around the edge of the blade and continue on the underneath side.



15) Utilizing a small piece of aluminum bar and a hammer, "tap" the Packing Material into the groove around the corner of the blade.



16) Make sure there is a "snug" fit on the top, side, and bottom. Be careful not to scratch or damage the blade.



17) Work the material all the way around the Seal Retainer Groove. Cut the Packing Material at a 45° angle, allowing a slight material overlap.



18) Pull Packing Material around other Blade edge.



19) Utilizing aluminum bar, tap material into groove on top and bottom of blade.



20) Utilizing aluminum bar, make sure material is snug around the top, side, and bottom of the Blade edge.



21) Unclamp Blade and Seal Retainer Bar from workbench and carefully slide it into Maintenance Gate frame.



22) Reverse the procedures from step 7 to reassemble the gate. (When tightening the Nuts holding the Pressure Springs, alternately tighten Nuts on either side of the Blade that are not directly opposite each other.)