Valves

Handling the world's dry bulk solids™

Technical Bulletin

QUANTUM® SERIES ORIFICE GATE™ SHIMMING INSTRUCTIONS

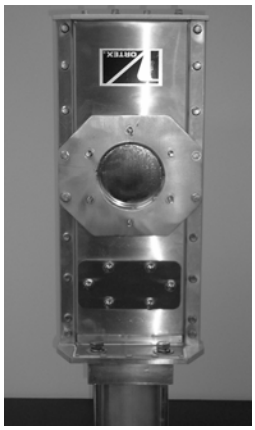
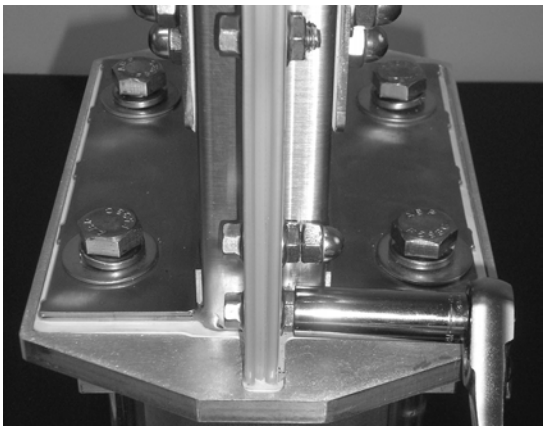
The performance of the Vortex® Quantum® Series Orifice Gate™ can be enhanced by re-shimming, while the valve remains in service. This valve has a compression load on the blade. **Reducing the compression load**, by increasing the amount of shim in the valve, allows the valve to actuate more easily. **Increasing the compression load**, by reducing the amount of shim in the valve, allows the valve to seal better. Example: If a valve is not actuating smoothly because of material build up or because of low air pressure, adding .75mm shim thickness will allow the valve to actuate smoothly. Conversely, if a valve is dusting, reducing the shim by .75mm shim thickness will create a better seal, assuming the pressure plates are not scarred or severely worn.

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.**

Follow all applicable "cautions" and lockout/tagout safety procedures as outlined in product safety manual.

Increasing compression load:

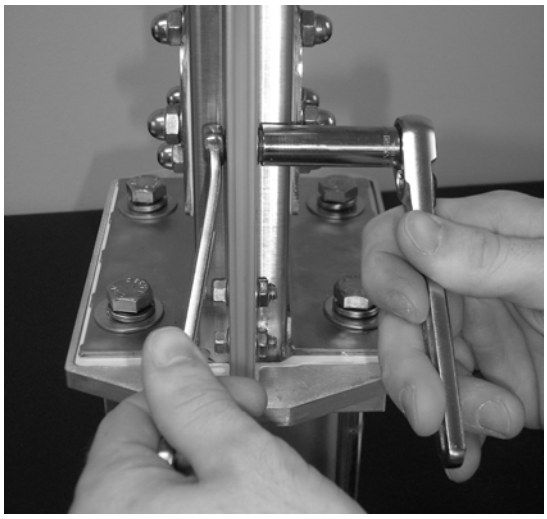
Step 1	
Loosen all of the fasteners that hold the power plate and end plate onto the valve.	 

Step 2	
Remove all cap nuts on both sides of the valve that run the length of the side seal flanges.	 

Step 3

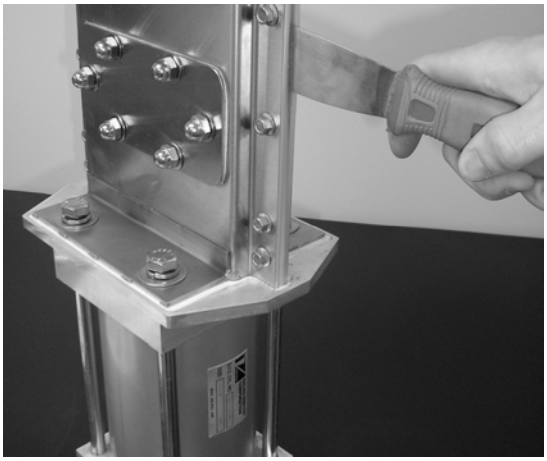
Loosen, but do not remove, the hex nuts directly underneath the cap nuts that were loosened along the side seal flanges.

Note: When working with an –AP or –DIN model there are hex nuts located within the ANSI or DIN flange that are bolted through the side seal flanges. These will need to be loosened.



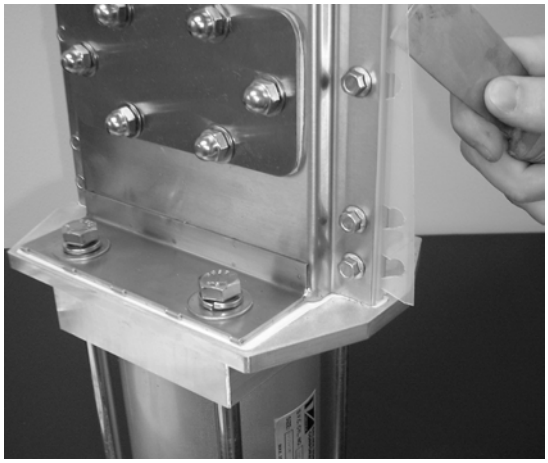
Step 4

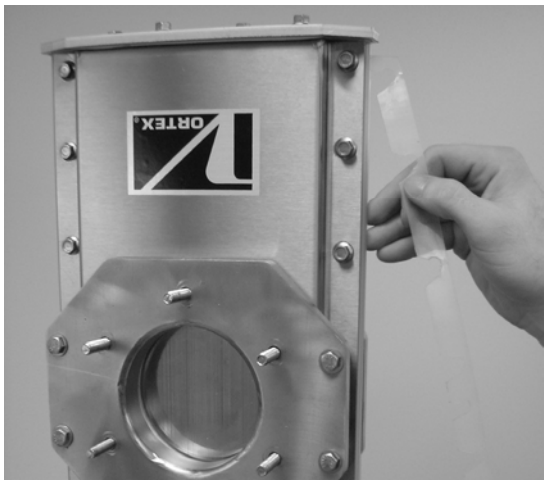
If needed use a flat knife to slightly increase the separation in the split shim seal to allow removal of shim.



Step 5

Use the flat knife to pull/pick out a .75mm shim from the side of the valve.

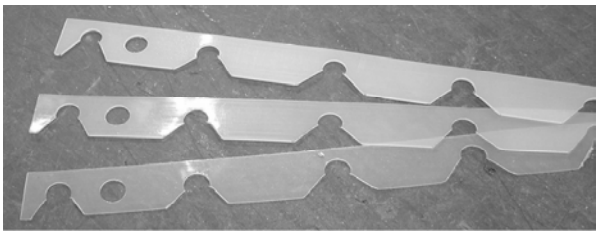


Step 6	
Remove a 8mm shim from both sides of the valve. Re-tighten the hex nuts along the side seal flanges after removal. Care must be taken to remove the same thickness of shim from both sides of the valve to avoid uneven loading.	

Step 7
Re-tighten the fasteners on the side shim flanges, end plate, and power plate and replace all cap nuts. When reinstalling cap nuts, a small application of thread-locker is recommended.

Reducing compression load:

Follow same instructions as above, only add shim instead of removing it. Remember, shim is added equally to either side of the valve.



Shim is available individually, or in kits containing .5mm, .75mm and 1.25mm thicknesses.

For test purposes only, the gate should operate smoothly at approximately 2.5 barg. (If not, more shim may need to be added or subtracted.) Increasing the amount of shim will reduce the amount of pressure required for actuation, reducing the amount of shim will increase the required pressure. A minimum of 5 barg is needed when the valve is returned to system operation.

Badly worn or damaged Pressure Plates with Load Seals or damaged blade must be replaced.