

Model No. HDPXX

HDPV2 GATE

The HDPV2 Gate was originally developed to isolate silos in applications where high pressure aeration is used to fluidize powder discharge. Over time, the HDPV2 Gate has been redesigned and modified for greater application versatility.

Ideal application: Higher-pressure applications when handling non-abrasive to moderately abrasive powders, pellets or granules.

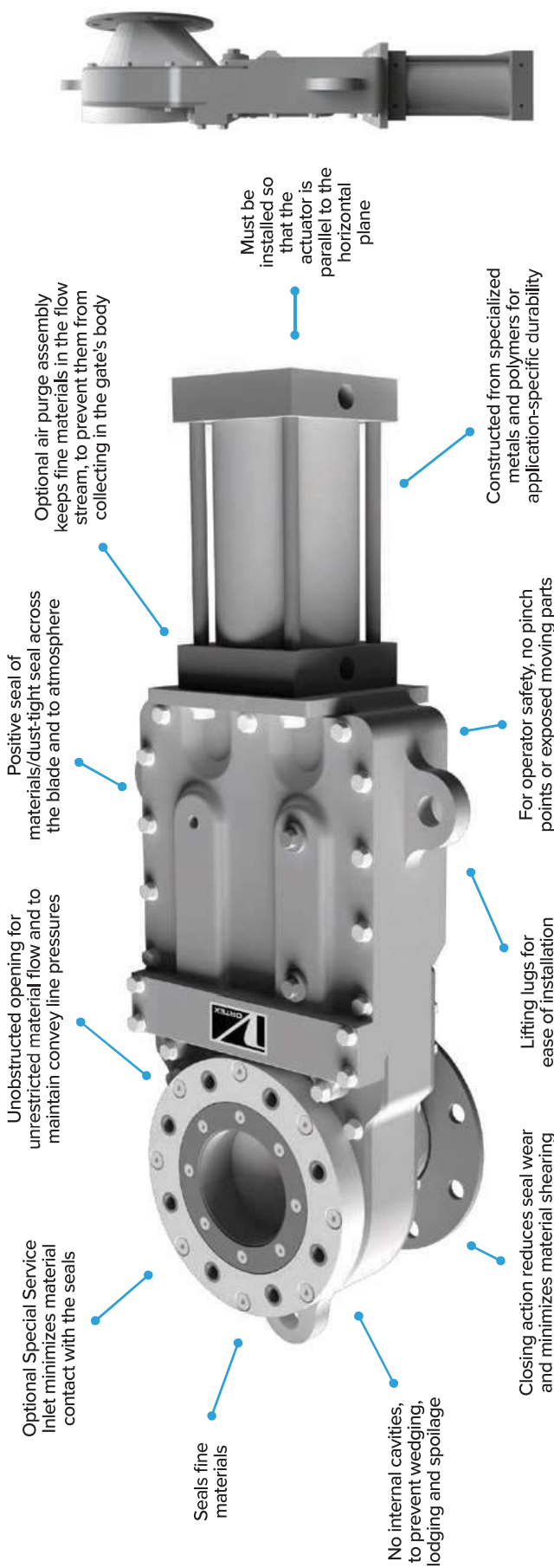


Standard Inlet



Special Service Inlet

OPTIONS



KEY FEATURES



Externally adjustable blade for in-line maintenance



Patented "rising blade" action to positively seal against high pressures



Replaceable parts for in-line maintenance and prolonged service life



End seal displacement pocket to prevent material packing upon closure

TECHNICAL SPECIFICATIONS

Conveyance Type	Gravity flow, dilute phase and dense phase pneumatic conveying applications up to 75 psig 5 barg +0.5 MPa, depending on gate size. Can be used in pressure or vacuum systems.
Materials Handled	Non-abrasive to moderately abrasive powders, pellets and granules. Well-suited for handling sticky and/or corrosive materials, and for wash-down.
Standard Sizes	4 – 16 in 100 – 405 mm ID & OD diameters are available. Also available in schedule 10, 20 or 40 pipe sizes.
Opening	Available in round sizes
Overall Height	8 – 9 in 200 – 230 mm
Weight	75 – 425 lb 35 – 195 kg
Flange Options	ANSI #125/150, DIN PN10 Custom flanges are available
Material Temperatures	250° F 120° C for standard gate, with modifications that allow up to 400° F 205° C
Body/Frame Construction	Cast aluminum
Material Contact Options	304 or 316L stainless steel, carbon steel
O-Ring Seal Construction	Silicone
Drive/Actuation	Double-acting air cylinder (see pages 61 & 62)
Position Confirmation	Magnetic reed, proximity or mechanical limit switches (see page 63)
Material Flow Controls	AVP (see pages 65 & 66)
Other Options	Sealed body air purge (see page 64) Special Service Inlet (see page 67)
Compliance	ATEX Zone 20 (internal), ATEX Zone 21 (external), FDA



THE POWER OF COMPARISON

Vortex HDPV2 Gate vs. Alternatives

- Many alternative slide gates and butterfly valves rely on seals which are directly exposed to the material flow stream. These seals rapidly erode or tear away in service. This deficiency promotes leakage of materials and dusts past the gate and to atmosphere, in addition to actuation issues and several other maintenance concerns. The Vortex® HDPV2 Gate™ addresses these issues by incorporating a durable, silicone (durometer 70) O-ring seal, which provides greater wear resistance and longer service life than alternative sealing materials. To hinder materials from migrating into the gate body, the HDPV2 Gate also features a bonnet seal cartridge, which houses a PTFE-treated packing gland. PTFE-treated packing gland also provides greater wear resistance and longer service life than alternative sealing materials. Within the bonnet seal cartridge, the packing gland expands to create a dust-tight seal around the vertical perimeter of the blade. The bonnet seal cartridge shields the packing gland from the material flow stream, to protect it from abrasion. This design maintains the gate's positive seal with infrequent maintenance intervention. Once the packing gland has experienced significant frictional wear, it can be removed and replaced to restore the gate's dust-tight seal. This maintenance process can be performed while the gate remains in-line.
- A butterfly valve's rotating disc is directly exposed to the material flow stream, which creates wear to the disc itself. The exposed disc also disrupts convey line pressures and obstructs material flow as they pass through the valve, which can cause line plugs and other maintenance concerns. To resolve these issues, when the HDPV2 Gate is open, its sliding blade is recessed to create an unobstructed opening that maintains convey line pressure and allows unrestricted material movement.
- The HDPV2 Gate is specifically designed to mechanically clear materials away from the sealing surfaces with each actuation. The HDPV2 Gate's packing gland is designed to mechanically self-clean the blade with each opening stroke. This prevents the blade from carrying materials back into the gate body, which could otherwise cause actuation issues and other maintenance concerns. At the closing end of the gate, the HDPV2 Gate can be designed with a partial Special Service Inlet to create a slight void between the leading edge of the blade, the material flow stream, and the O-ring seal. As the leading edge of the blade nears the O-ring seal, a Special Service Inlet ensures any residual materials remaining at the blade's leading edge have an opportunity to fall away into the process line, prior to the blade contacting the O-ring seal. By protecting the O-ring seal from material contact, it reduces seal wear and maintains the gate's positive seal with infrequent maintenance intervention.
- Many alternative slide gates pack materials into an end seal, preventing positive closure. This promotes material leakage through the valve, can cause blade damage, and can cause other actuation issues. Upon gate closure, the HDPV2 Gate's sliding blade "rises" upward into a seat, rather than a true end seal, so that materials remaining at the leading edge of the blade can fall away into the process line below, rather than packing into an end seal. The rising blade design also lifts the blade against the O-ring seal for a better seal of materials and dusts in high pressure applications.
- When the gate is closed, if materials and dusts begin to leak past the blade, it indicates the O-ring seal has partially worn and the compression load is lessened, causing the blade to no longer be forced against the O-ring seal as it should be. With this maintenance indication, the HDPV2 Gate's blade is externally adjustable to restore the gate's dust-tight seal. Using simple tools, the nut beneath the lower bonnet cover can be tightened. This "lifts" the blade to restore its compression load against the O-ring seal. This maintenance process can be performed while the gate remains in-line, and can be repeated several times before the O-ring seal must be replaced.

For more information & technical resources, please visit:

www.vortexglobal.com