

TO 2000 TPH

VALVES

TECHNICAL SPECIFICATIONS

MIDWEST International

DUST SEALED ROTARY 90 DEGREE

SILO WITHDRAWAL VALVE

TECHNICAL SPECIFICATIONS

ROTARY SILO WITHDRAWAL VALVE

DESIGN CRITERIA: The valves described in this technical specification are designed to withdraw abrasive dry, aerated bulk powder and fines (cement, flyash, PVC resins, lime, etc.) from a silo, hopper or bin, through a **MIDWEST** Retractable Bulk Loading Spout and into a truck or railcar. This valve is ideal for withdrawing highly aerated fines from a silo and will not leak under pressure.

DESCRIPTION: The **MRWV MIDWEST Paragon®** Series Rotary Silo Withdrawal Valve is of robust cast steel construction with a cast machined ductile rotor slotted through the center and when actuated 90 degrees from the closed position, allows aerated product to be withdrawn from a silo, bin or hopper. This withdrawal valve is designed to be located under an aerated hopper bottom bin or silo, usually with an emergency **MIDWEST Xtrathin™** Hammer Gate or **MIDWEST** manual **MFCV Flocon™** Hand Wheel Operated Flow Control Valve above it for flow control and emergency shut off. The **MRWV** series silo withdrawal valve allows for remote actuation when the machined rotor is turned 90 degrees. Actuation available is manual, pneumatic or electric. A short transition is used between the bottom flange of the **MIDWEST MRWV** Series Valve and the top of the **MIDWEST Paragon™** Series truck or railcar bulk loading spout, with square to round transition or to fit on top of a **MIDWEST Vaculoader®**, **Compaculoader™** or any horizontal internally vented spout positioners including the **Roundabout™** rotational and **Flattop™** (4) way spout positioners. Optional discharge transitions and a variety of accessories are available.

MODEL **MRWV** SERIES 90 DEGREE SILO WITHDRAWAL VALVE

VALVE BODY: Cast ductile steel with precision machined cast internal rotor and with robust machined inlet and outlet flanges that will not deflect.

PRODUCT INLET: Flanged to allow bolting to silo or bin bottom flange or **MIDWEST MHG** Series **Xtrathin™** Hammer Gate or **MLAG** Series Flow Control Valve. (Refer to Accessories and Options) Consult factory for special inlet transitions to interface with other equipment.

PRODUCT FLOW AREA: Unrestricted flow of aerated dry bulk powders and fines through the precision machined cast rotor. Refer to drawing and rated valve throughput capacities based on 60 PCF fines.

BEARINGS AND SHAFT: Rotor actuation shaft oversized machined steel, keyed both ends to accept manual, pneumatic or electric actuation with bearings lubricated for life yet easily replaceable.

ACTUATION: Standard **MIDWEST MRWV** Series Withdrawal Valves include manual operating arm as standard which can be operated from a platform or using linkage from a remote position or chain wheel actuation. Pneumatic and electric actuation also available. (Refer to Accessories and Options).

CLASSES OF CONSTRUCTION AVAILABLE:

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|------------------|-----------------------------------------------------------------------------------------------|
| Class I | *Abrasive Fines (High-density AR cross-linked polymer) to 176° F and -40° F |
| Class I (FG) | *Abrasive Fines (Same as Class I except White Food Grade) |
| Class I A | Mildly Abrasive Granules (A36 carbon steel) |
| Class I B | *Contamination Free Fines and Pellets (6061 T6 aluminum) |
| Class II | *Abrasive Granules (250 BHN AR steel) |
| Class III | Stainless Steel Product Flow Area only (304 furnished as standard, 316 available) |
| Class III (FG) | Food Grade Products (Same as class III with ground and polished welds) |
| Class III A | Stainless Steel all Fabricated Metal Components (304 furnished as standard, 316L available) |
| Class III A (FG) | *Corrosive or Non-Contaminate Environment (Same as Class III A with stainless steel fastings) |
| Class IV A | High Temperature 177° F to 400° F |
| Class IV B | *High Temperature to 1000° F |
| Class V | Abrasive Lumps High Impact (400 BHN AR steel) |
| Class V A | *Abrasive Lumps High Impact (400 BHN AR steel Venturi, with integral rockbox to reduce wear) |
| Class V T | Abrasive Lumps High Impact (Triten™ Hard Coat) |

* (Not Available)

OPTIONAL PREWIRING/PREPIPING: Includes all necessary components, wiring, piping and junction boxes with **Red** "open" and **Green** "closed" (or reversed) indicator lights installed and prewired to solenoid valve. Limit switch NEMA 4X enclosure NEMA 7 and 9 (**XP**) available.

CAUTION: Many dry bulk products contain explosive dust. **MIDWEST** offers explosion proof (**XP**) electrics as an option for all electrical components and PLC controls. Intrinsically safe barriers are also available for hazardous areas. Consult factory for additional information and pricing.

OPTIONS AVAILABLE:

PREWIRING/PREPIPING: Includes all necessary components including wiring, piping and junction boxes to factory prewire and prepipes. Specify electrical enclosures, NEMA 4X standard, NEMA 7/9 (**XP**) available.

ACCESSORIES:

NOTE: Accessories items are shipped in kit form to be field installed however, are factory installed if **MIDWEST** prewiring option is purchased.

THIRD INTERMEDIATE LIMIT SWITCH (DRIBBLE) POSITION: When adjusted this accessory allows operator to

remotely top off a vehicle by partially opening and closing the withdrawal valve. Available for pneumatic and electric actuation only.

PNEUMATIC ACTUATION KIT: Includes one 3.25" diameter heavy duty pneumatic cylinder, electric solenoid valve, (specify voltage), two (2) proximity limit switches are available to signal full open, full closed position. Third intermediate "dribble" limit switch position is also available. Pneumatic actuation kit is complete with mounting bracket, cylinder clevis, pins and all mounting components.

ELECTRIC ACTUATION KIT: Includes electric motor reducer driven linear actuation (specify voltage), two limit switches available to signal full open and full closed position. Third intermediate "dribble" limit switch position also available.

SOLENOID VALVE KIT: Nema 4X dust tight, water tight for pneumatic actuation, (specify voltage). (XP) available, consult factory.

LIMIT SWITCH KIT,(PNEUMATIC) "A": Two (2) Reed type sliding (adjustable) limit switches standard for open/closed operation. Additional limit switches available for variable opening or for "dribble mode" when topping off a truck or railcar.

LIMIT SWITCH KIT,(PNEUMATIC) "B": Two (2) lever limit switches for open/closed operation, NEMA 4.

FILTER, REGULATOR, LUBRICATOR (FRL): For pneumatic cylinder actuation, 3/8" NPT.

HAMMER GATE: MIDWEST MHG Series Xtrathin™ Manual Hammer Gate for installation above MIDWEST Power Operated Sliding Knife Gate. Used in an emergency to shut off bottom of silo, bin or hopper for installation, removal or maintenance of MIDWEST retractable loading spouts or power operated sliding knife gates used also for shut off or silo isolation during silo construction.

SILO WITHDRAWAL FLOW CONTROL: This Flocon™ sliding knife gate with 3/8" thick stainless steel machined knife blade includes the proprietary MLA manual or electric actuated linear actuator with visual position indicator providing accurate position of valve blade. This compact linear actuator is completely sealed from product area.

TRANSITION: For direct mounting between MIDWEST MRWV valve discharge and top of MIDWEST MC22, MD30 or ME36 EV/OV Retractable Bulk Loading Spouts, specify loading spout model when ordering. Standard height of 9" (228.6), flanged top and bottom. Other heights available to insure 6 to 12 FPS free fall entry velocity of certain products. Available in Class IA, II, III, and IIIA construction. Consult factory for size or construction other than standard.

NOTE: Actuation Kits include brackets and all fastenings to make installation complete.

Technical specifications are subject to change without prior notification

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EQUIPMENT INDICATED IN SOLID
COLOR IS INCLUDED IN THIS
TECHNICAL SPECIFICATION.

EQUIPMENT OUTLINED IS
AVAILABLE. CONSULT **MIDWEST**
FOR DETAILS.

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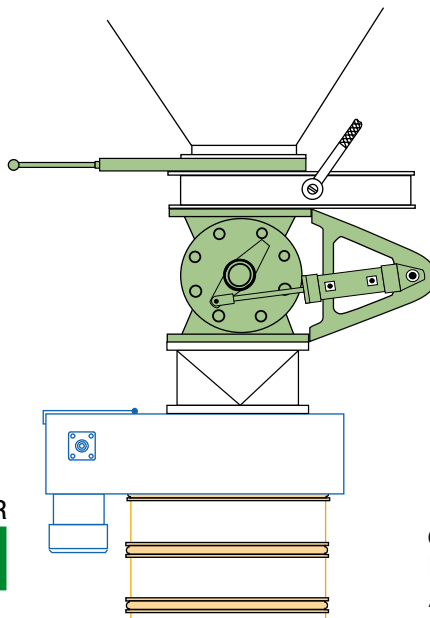
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