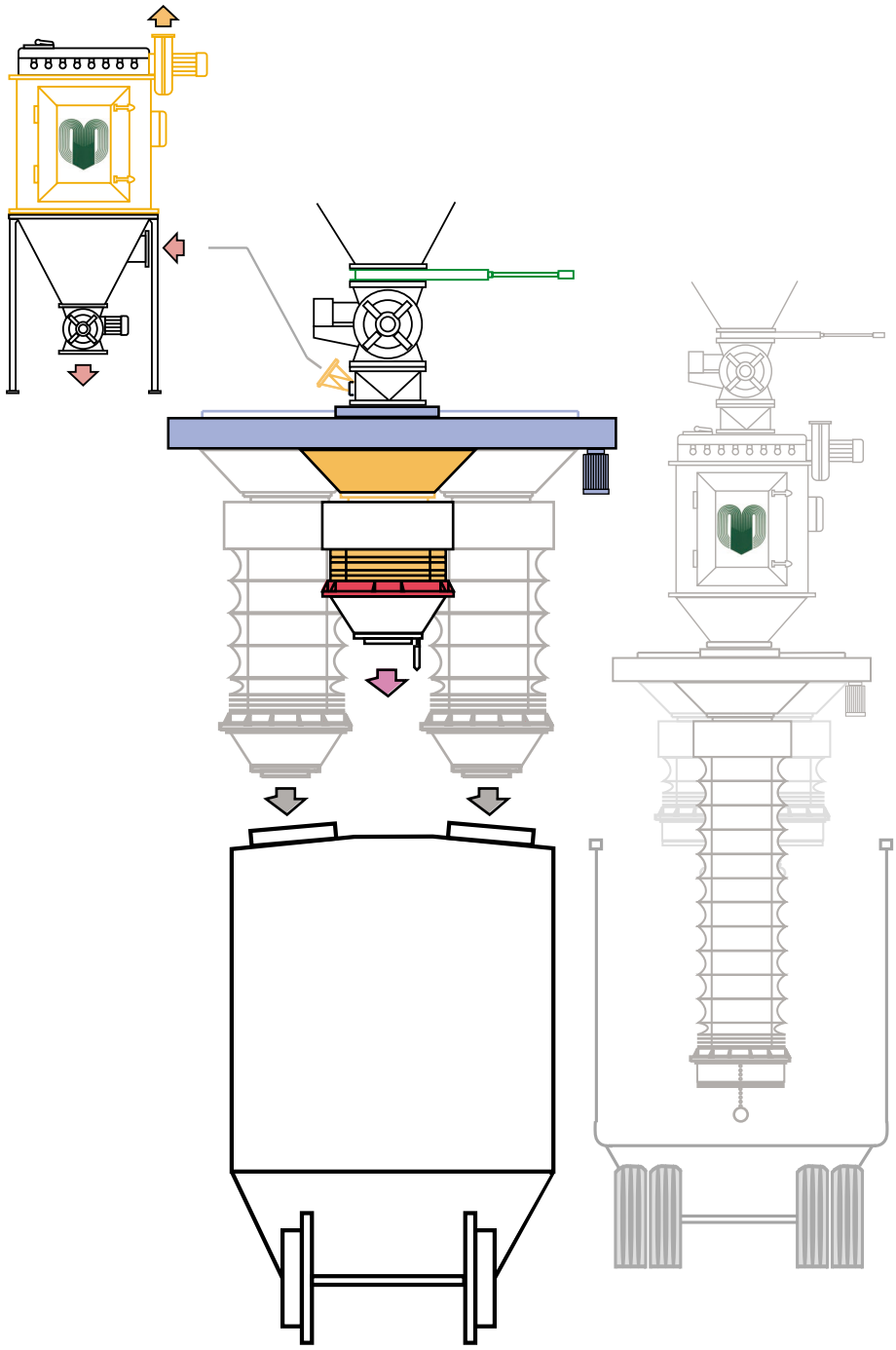

TECHNICAL SPECIFICATIONS
MIDWEST International
INTERNALLY VENTED SINGLE DIRECTION SPOUT POSITIONER

TO 1400TPH*

SERIES
300
600
900
1200
1800

MSPV

TECHNICAL SPECIFICATIONS
PARAGON™ SERIES
Internally Vented Single Direction Spout Positioner

DESIGN CRITERIA: The equipment described in this technical specification is designed to be used with an MV Series MIDWEST Paragon™ Series internally vented retractable bulk loading spout for positioning the spout discharge over the top of trucks or railcars to facilitate loading. This combination can significantly reduce the loading time by positioning the spout discharge instead of moving the vehicle.

DESCRIPTION: The MIDWEST Internally Vented Spout Positioner with MV22, MV30 or MV36 Series Internally Vented Loading Spout connected to the lower flange of the positioner or with a Vaculoader® or Compaculoader™ located on the top of the positioner, is designed to load vehicles in up to half the normal loading time and dust free if applied, installed and operated properly. This system is designed to load up to *1400 TPH of 60 PCF dry free flowing moderately aerated fines or the equivalent capacity of granular or lumpy products. Consult factory for throughput capacities, velocities and hopper design to accommodate required loading rate. Because of its internally vented feature the complete stack up of modules or "system" is placed under a negative pressure or vacuum which when maintained, will not allow dust to escape to the atmosphere. Using this MIDWEST system, the operator can horizontally position the MSPV Series positioner and loading spout back and forth across a truck or railcar or parallel to the vehicle, to reach side hatches or to fill both sides of an open vehicle. When installed parallel to the flow of traffic the loading operator can position the Retractable Bulk Loading Spout discharge over a truck or railcar hatch without having to move the vehicle. With several sizes of horizontal positioner travels available it is also possible to reach more than one hatch without moving the vehicle.

STANDARD MIDWEST MSPV SPOUT POSITIONER TRAVELS AVAILABLE

MSPV 300	(12" Travel)
MSPV 600	(24" Travel)
MSPV 900	(36" Travel)
MSPV 1200	(48" Travel)
MSPV 1800	(72" Travel)

For travels greater than above refer to the MRSPV-2 Roundabout™ Series positioner.

MAIN PAN: ASTM-A-36 carbon steel 3/16" thick all welded box construction with square product inlet, refer to MIDWEST Sales Drawing and structural steel support angles on top which provides a variety of installation support options. Underside of main pan lined with 316L (2B) bright finish stainless steel providing low coefficient of friction between hopper seal and main pan.

POSITIONER INLET: Flanged 18" x 18" square inlet flange to accept a MIDWEST Vaculoader® or Compaculoader™ for a complete internally vented system or optional inlet venting transition 12" high with 6" or 8" diameter flanged dust outlet (standard), which is designed to be connected to a suitable dust collector, bag house or scrubber. NOTE: This MIDWEST system is internally vented and requires no flexible duct.

DRIVE: Electric motor positioning drive assembly includes 1/2 HP TEFC motor and reducer mounted under the main pan for weather protection. A rotating NEMA 4 SPDT (2) position limit switch protects the gear reducer from damage by shutting off the motor when full limits of horizontal positioning travel have been reached. This switch must be adjusted in the field after installation and before using. A third limit switch position can be furnished as an accessory for use in automatically stopping the positioner travel in an intermediate position or for providing a signal. A heavy duty chain and sprocket drive is located under the main pan to shuttle the positioner hopper from end to end of positioner travel. Consult factory for aerated low profile hoppers and hopper configurations other than standard.

POSITIONER TRAVEL: Horizontal travels of 1 ft (300), 2 ft (600), 3ft (900), 4ft (1200) and 6 ft (1800) are available as standard. NOTE: Models indicated are nominal metric sizes. Contact factory for travels other than standard or for information on the MIDWEST Roundabout™ Multiple Direction Positioner with horizontal travel to 16 ft.

HOPPER: Positioner hopper is 11GA and includes double wall construction to provide smooth flow of product from the inlet venturi into the MV Series Bulk Loading Spout. The positioner discharge venturi is 10% larger than the inlet venturi for the appropriate MV Series spout. Specify Class of construction IA, II, III, IIIA, IV or V available. Hopper top seal includes (4) part labyrinth felt seal 1" x 1" captivated in a rectangular cavity and spring loaded flat wafer springs apply seal pressure against stainless steel surface under main pan. Hopper includes exclusive MIDWEST heavy duty cam rollers with adjustable up/down eccentrics to allow field adjusting of hopper seal against main pan stainless steel bearing plate.

HOPPER OUTLET: Bolts to top of MV Series Retractable Bulk Loading Spout. Support angles on hopper provide additional support for MV Series loading spout and allows for field leveling.

CLASSES OF CONSTRUCTION AVAILABLE:

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)

PAINT: Mechanical Clean with (3) mils white two part epoxy standard. Consult factory for optional paint systems.

ASSEMBLY: The MIDWEST Internally Vented Spout Positioner is factory tested and shipped completely assembled in the inverted position. The Rotating Limit Switch must be field adjusted for full end positions of travel or the warranty is void. Refer to MIDWEST Instruction Manual.

ESTIMATED MECHANICAL FIELD ERECTION: Two (2) hours excluding dust piping and structural modifications.

ESTIMATED ELECTRICAL FIELD WIRING: One (1) hour with power available within 7 feet providing prewiring option is purchased.

FIELD SUPERVISION: Erection and/or start up assistance by MIDWEST is available at a per diem cost. Consult factory for prices.

INSTRUCTION MANUALS: MIDWEST provides two Installation Operating and Maintenance Manuals, one shipped with equipment and one forwarded to the Purchasing Department at time of shipment. Additional copies can be purchased at additional cost.

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:

INLET VENTING TRANSITIONS: Adds 12" to overall height. This inlet venting transition is for use without Vaculoader® or Compaculoader™. Installed inside the venting transition, the product venturi is sized to accommodate the product flow from the silo discharge, Airflo™ Air Gravity Conveyor or Multiflo™ Screw Conveyer. Specify Class IA, II, III, IV, or V construction. Factory engineered product venturi diameter assures the flow into the positioner hopper of 10 percent less than the flow through the MIDWEST Paragon™ Series Retractable Bulk Loading Spout reducing the possibility or aerated product pressurizing the positioner hopper.

PREWIRING/PREPIPING: MIDWEST Internally Vented Spout Positioner accessories can be prewired to a common NEMA 4X junction box with a numbered terminal strip located on main pan. The drive motor is not prewired unless purchased.

MOTOR PREWIRING: Spout positioner motor can be prewired to a common NEMA 4X junction box near the accessory prewiring junction box and to also accept the intermediate spout motor prewiring.

AUTOMATIC RETURN TO CENTER FEATURE: With appropriate push button installed in operator control panel or pendant the spout postioner can automatically be returned to the center position after each loading has been completed.

PAL™ PROGRAMMABLE AUTOMATED LOCATOR: This optional PAL™ automatic hatch finder is located on the Paragon™ series loading spout and automatically seeks and locates an open truck hatch. Operator actuated, this hatch finder will "hunt" for an open hatch in both directions of travel. When activated, the Paragon™ Series Bulk Loading Spout will lower down to a point 6" above the truck hatch and begin seeking an "opening". When found the loading spout will lower down and into the hatch. Slack cable limit switch contact will inform the operator that the silo withdrawal valve can be opened and loading can begin. Optional green "ready to load" light can be included in the control panel or pendant or the system can be completely automatic with the slack cable limit switch signals automatically opening the product withdrawal valve.

MOTOR CONTROLS, (MCC): Electric motor starter(s) can be provided for the spout positioner and the Paragon™ Series retractable bulk loading spout. NEMA 4 or 4X enclosures standard, NEMA 7/9 (XP) available.

ACCESSORIES:

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

LIMIT SWITCH, THIRD INTERMEDIATE POSITION: Provides intermediate signal to stop hopper movement between each end of horizontal travel limits.

OVER TRAVEL LIMIT SWITCH KIT: Avoids positioner hopper over travel if rotating limit switch is not adjusted properly.

AIR VIBRATOR KIT "A" : For positioners with Vaculoader® or Compaculoader™ and without inlet venting transition. Two (2) piston type air vibrators can be located on each side of hopper to vibrate loose product from inside product area and dust withdrawal surfaces during or after loading. Vibrators are controlled by a 120 VAC NEMA 4X solenoid valve (standard) and are connected by a flexible air line festooned on the outside of hopper. Air supply and field connection to valve are the customer's responsibilities. Dry air consumption 6 CFM @ 45 to 100 PSI required for peak performance.

AIR VIBRATOR KIT "B" : Same as air vibrator kit "A" except includes (3) piston type air vibrators. Applicable to positioners using inlet transition with flanged dust outlet, ie; non Vaculoader® or Compactuloader™ applications.

FILTER REGULATOR LUBRICATOR (VIBRATORS): Includes .5 (1/2") NPT maintenance valve with lockout feature.

NOTE: Positioner hopper includes two (2) air vibrator mounting pads as standard.

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

EQUIPMENT OUTLINED IS AVAILABLE. CONSULT MIDWEST FOR DETAILS.

MIDWEST International
Midwest Plaza
105 Stover Road
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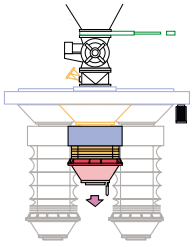
USA
Phone: (231) 547-4000
Fax: (231) 547-9453
International Fax: (231)547-0269
Web Site: www.midwestmagic.com
"e" mail: midwest@freeway.net

INTER LTD

An Air Ecology Company



Form 0531
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TECHNICAL DATA

MSPV PARAGON™ SERIES

INTERNALLY VENTED HORIZONTAL SPOUT POSITIONER

Loading Capacities

PRODUCT	TEMP (F/C)	DENSITY (PCF)	LOAD STPH	RATE MTPH

SCREEN ANALYSIS

[ ] % [ ] IN/MM [ ] % [ ] IN/MM

MODEL	TRAVEL	WEIGHT
☐ MSPV 300	1' (305)	790 LBS (359) KG
☐ MSPV 600	2' (610)	900 LBS (409) KG
☐ MSPV 900	3' (914)	1040 LBS (473) KG
☐ MSPV 1200	4' (1219)	1375 LBS (625) KG
☐ MSPV 1800	6' (1829)	1800 LBS (818) KG

Standard shipping container shipped completely assembled and inverted, strapped to wood skid.

Classes of Construction Available:

Class I	☐	**Abrasive or Corrosive Fines:** *(High-density AR Cross-Linked Polymer) Temperature Rating: to +176 F, -40 F. Product Flow Area.*
Class I FG	☐	**Abrasive Fines:** *Same as Class I except White Food Grade Polymer.*
Class IA	☐	**Non-Abrasive Fines:** *A36 Carbon Steel Product Flow Area.*
Class IB	☐	**Contamination Free Fines and Pellets:** *Aluminum Construction 6061-T6 Castings, Extrusions and/or Machined (spun).*
Class II	☐	**Abrasive Granules:** *250 BHN AR Steel, Product Flow Area.*
Class III	☐	**Corrosive Fines, Granules, Soft Lumps:** *Stainless Steel Product Flow Area, 304 SS, 316 SS, 316 L (2B or 4B) available (specify).*
Class III FG	☐	**Food Grade Products:** *Same Construction as Class III with Ground and Polished Welds.*
Class IIIA	☐	**Corrosive or Non-Contaminate Environment:** *Stainless Steel Fabricated Components 304 SS, 316 SS, 316 L 2B and 4B available (specify) Non-Product Flow Area.*
Class IIIA/FG	☐	**Corrosive or Non-Contaminate Environment:** *Same as Class IIIA with Stainless Steel Fastenings. Non-Product Flow Area.*
Class IVA	☐	**Hot Materials:** *Temperature of Product being loaded, 177 F to 400 F, High Temp Rhinoflex™ Flexible Outer Spout "Orange" Color.*
Class IVB	☐	**Hot Materials:** *To 1000 F, Rhinoflex™ Fiberglass, "White" Color.*
Class V	☐	**Abrasive Granules and Lumps with Sharp Edges:** *High Impact 400 BHN AR Steel.*
Class VA	☐	**Abrasive Granules and Lumps with Sharp Edges:** *High Impact 400 BHN AR Steel with Rock Box. Applicable to Loading Spout Venturies or (NSP) Inlet Transitions Only.*
Class VT	☐	**Abrasive Lumps and High Impact:** *Triten™ Hard Coat*

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.

NOTE: All standard fastenings are zinc plated to resist surface rust. Stainless steel and grade 8 high strength fastenings are available. Standard loading spout lift rings are cast 6061T6 machined aluminum alloy and are unpainted. Cast malleable steel (painted) and cast stainless steel available. Contact factory for (NSP) cost.

Important

Loading capacities are based on product bulk density of 60 PCF fines and 12 FT/SEC vertical entry velocity. Variations in density and lump size will affect loading capacity. Variations in entry velocity and trajectories other than vertical product entry could cause premature wear in product flow areas. Midwest recommendations for classes of construction are based on product samples supplied.

Drive Data

Reducer Capacity: 914 in LBS Ratio 60:1

Motor: .5 HP [ ] RPM [ ] Vac 3 PH

[ ] Hz TEFC NEMA 56C Frame

Horizontal Positioning Velocity: 14 FPM

Special : (NSP) [ ]

Accessories

☐ Limit Switch, Third Intermediate Position

☐ Air Vibrator Kit: (6 CFM, 45 to 80 PSIG Required)
NEMA 14x Solenoid Valve [ ] VAC

☐ Automatic Return to Center Kit

Options

☐ Explosion Proof (XP) Electrics, NEMA [ ]

☐ Accessory Prewiring, NEMA [ ] IP [ ]

☐ Inlet Venting Transition with [ ] IN. Venturi
Class [ ] Flow Area [ ] SQ. IN.

☐ Intrinsically Safe Barrier (Control Voltage)

☐ Other [ ]

Air Withdrawl Guide

Consult Midwest for verification

*Based on 60 PCF fines. Add air gravity conveyor aeration and 50% of silo aeration air if applicable.

Revised: 17 Oct. 2001