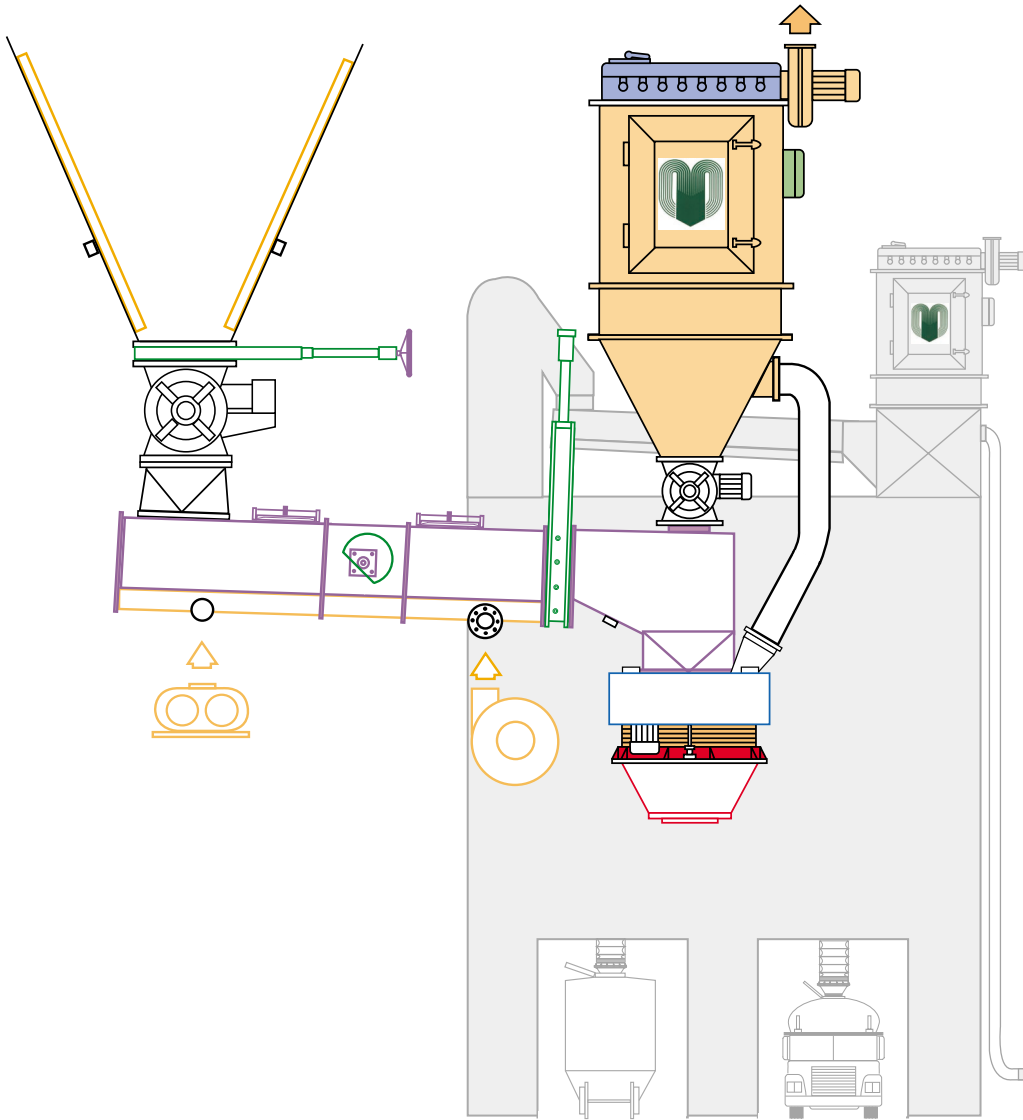


TO 5000 CFM



MDC 37 C  
MDC 43 C  
MDC 54 C

SERIES

MDC

TECHNICAL SPECIFICATIONS  
MIDWEST VACUPAC™ SERIES  
DUST COLLECTOR

# TECHNICAL SPECIFICATIONS

## VACUPAC™ SERIES

### DUST COLLECTOR

**DESIGN CRITERIA:** The equipment described in this technical specification is designed to control fugitive dust generated when loading, conveying or handling dry dusty bulk products and will reduce or eliminate dust in compliance with most federal and local EPA regulations. This equipment is considered by most agencies to be the Best Available Current Technology (BACT) in terms of dust control if it is installed, operated and maintained according to instructions.

**DESCRIPTION:** The **MIDWEST Vacupac™** Dust Collector is designed to vent retractable bulk loading and stacking spouts, **Airflo™** air gravity conveyors, bucket elevators, conveyor hoods or transfer points, bagging machines, IBC container filling stations and silos, hoppers or bins. The **Vacupac™** Dust Collector includes a clean air plenum and fan which places the dirty air chamber under a negative pressure or vacuum. Wide "V" pleat **Polyflex™** filter cartridges trap the dust or solids in suspension also referred to as particulate, on the outside of the filters where it is purged off with the integral compressed air filter purging system. When operating properly dust laden air passes through the filter media with only clean air exhausted to the outside and with dust trapped on the outside of the filter media. Dust is purged off automatically by the filter air purging system. Options and accessories are available. Specify class of construction: IA, IB, III, IIIA and IV available. The **Vacupac™** is a **MIDWEST** trademark. Consult factory for system design assistance.

## MODEL **MDC** SERIES 37/43/54 C

**FILTER MODULE:** Constructed from ASTM A36 carbon steel welded and bolted components. **Sealmaster™** top access door with **Camloc™** "T" handles allows quick inspection of inside of clean air plenum without use of tools. Filter module construction includes two (2) large **Sealmaster™** hinged doors providing inspection and maintenance access to filters. These hinged doors are robust molded polymer with 1/2" diameter endless "O" ring seal compressed in half round cavity molded into back side of door. All cast aluminum machined **Sealmaster™** doors are also available for high temperature applications. All four corners are radiused to eliminate leaking at square corners. The **Sealmaster™** filter doors are prehung in a heavy cast aluminum frame riveted and sealed to the filter module housing. This rain proof construction is ideal for outside applications. Air purging system with filter purging controls and clean air fan included. Air compressor and dryer package available as are several other options and accessories. **Vacupac™** Filter Modules are available in optional materials of construction, i.e.; Class IA, IB, III, IIIA and IV.

**TUBE SHEET:** ASTM-36 carbon steel, with filter cartridge openings for 5.5" diameter **Polyflex™** "V" pleat cartridges. Class III stainless steel construction available.

**FILTERS:** Pleated filter cartridges are standard in this series **Vacupac™** Dust Collector which results in low air to cloth ratios. Filter Cartridges are "V" pleat **Polyflex™** spun bond as standard, other media available including Nomex, Gortex, or Teflon type coated filters. Cast machined aluminum filter adaptors are

riveted to bottom of tube sheet allowing "twistlock" installation or removal. Metal filter parts are galvanized or optional stainless steel (specify). Consult factory for other media. **Magnetic non "UL" approved blowout doors available for explosion proof (XP) hazardous areas.** Contact factory for prices and additional information.

**FILTER ACCESS DOORS:** Two large heavy duty hinged polyvinyl crosslinked molded **Sealmaster™** prehung doors with special 1/2" diameter closed cell endless foam "O" Ring seal compressed into special cast aluminum door frame eliminates dust leakage and are rainproof. Two cast aluminum **Camlock™** adjustable filter door clamps and "T" handles maintain watertight integrity. Door hinges are bronze bushed with stainless steel pins and are easily removable. For high temperature applications over 200 degrees F, cast aluminum Class IV hinged doors are available. Consult factory for details.

**CLEAN AIR PLENUM:** Clean air plenum 11 gauge, Class IA construction standard with flanged outlet for clean air fan. Includes 8" diameter inspection door with (1) **Camlock™** handle.

**FILTER PURGING SYSTEM:** Automatic sequential filter purging system includes factory adjusted timed compressed air sequential purging of filters and Photohelic pressure differential backup purging with digital readout and glass enclosure cover as standard. NEMA 4 controller located on fan side of the Dust Collector filter housing. Heavy duty pilot purging valves are standard, solenoid valves are available. Air accumulator included constructed from A36 carbon steel. Class III stainless steel accumulator available. Air purging system prepped and prewired as standard. Purging air must be dry instrument air with no moisture. Contact factory for **explosion proof (XP) electrics.**

**PHOTOHELIC PRESSURE DIFFERENTIAL SYSTEM WITH DIGITAL READOUT:** This system is supplemental to the timed sequential purging system and overrides the timed sequential purging system if the pressure differential between the dirty air side and clean air side of the filter system reaches a preset pressure. In effect, the filters will purge automatically if the timed sequential purging system is out of adjustment.

**HOPPER:** Flanged to connect to **Vacupac™** Filter Module. Standard sloped sides of 55 degree angle to encourage collected dust to slide down. Flanged discharge 6", 8" or 10" square (specify) to allow installation of **MIDWEST** rotary air lock valve or can be direct connected to vent pipe or top of **Airflo™** air gravity conveyor. Standard construction 11GA A36 carbon steel, Class IA, IB, III and IIIA available. NOTE: Hoppers include (4) air vibrator mounting pads as standard.

**FLANGED DUST HOPPER INLET(S):** Flanged to connect to vent dust piping. Standard sizes 6" and 8" diameter, other sizes available (specify). NOTE: Dust piping (by others) and inlet flange diameters to be sized for 4000 to 4500 fpm velocity to discourage dust buildup inside dust piping.

**SUPPORT SYSTEM:** Heavy duty support system constructed from 3" wide structural channel and welded 2"x2" A36 square tubing with floor mounting foot pads. Class III stainless steel construction available for corrosive applications.

## 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 AR	**Abrasive Lumps High Impact (400 BHN 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)

**CLASSES OF**

\*(Applies to **Sealmaster™** standard doors only)

\*\* (Not applicable to **Vacupac™** Dust Collectors)

**PAINT:** (3) mils white powder coat over near white sand blast is standard. Consult factory for optional paint systems.

**ASSEMBLY:** **Vacupac™** Dust Collector modules are factory assembled and tested prior to shipment. Consult factory for typical application drawings or application assistance.

**ESTIMATED MECHANICAL FIELD ERECTION:** Four (4) hours not including dust piping and dust discharge after site is prepared for installation. Power lifting equipment and safety precautions necessary.

**ELECTRICAL INSTALLATION:** Four (4) hours estimated with power within 10 ft.

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

**INSTRUCTION MANUAL:** **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:

**AIR COMPRESSOR DRIER:** Complete 80-100 PSI air compressor and minus 42° F dewpoint desiccant drier system with receiver all mounted on skid for field installation available from factory. This piped and prewired system is designed to provide peak efficiency for **Vacupac™** purging, pneumatic silo withdrawal valves or gates and air vibrator system. Consult factory for air volume required for specific application. Specify if motor starter and drier or vented enclosure is required.

**FILTER MODULE (XP) BLOWOUT DOOR:** Designed to quickly release positive pressure caused by an explosion. Magnetically held closed door is a static design and includes no moving parts. **NOTE: Non "UL" approved.**

**FILTER MODULE RISER:** Allows base unit to accept longer filters. Nominal height, 1'-0, or 2'-0 high, Class IA, IB, III or IIIA available.

**ROTARY AIR LOCK VALVE:** Available in sizes 6", 8" or 10" square. Includes 1/2 HP 3 phase electric motor and reducer.

**LEVEL SENSOR:** Type "C" capacitance located on hopper to provide signal if collected dust level inside hopper contacts probe. This is a feature to consider should rotary valve malfunction.

## ACCESSORIES AVAILABLE:

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

**FILTER REGULATOR WITH GAUGE:** Including brass maintenance valve with lockout feature. Available for installation on **Vacupac™** Dust Collector accumulator to supply filter purging system with properly regulated dry compressed air. 1" NPT all models of **Vacupac™** Dust Collectors. Note: Compressed air must be dry instrument air, -42 degree dewpoint.

**AIR VIBRATOR KIT:** Two (2) or (4) piston type air vibrators can be located on sides of **Vacupac™** Dust Collector hopper to vibrate loose product from the inside surfaces of the hopper. Vibrators are controlled by a 115 VAC NEMA 4X solenoid valve located on the top of the unit near the compressed air accumulator for accessibility. Optional voltages available. A separate air regulator/lubricator is available with air vibrator kit as air vibrators operate at peak efficiency regulated to 6 CFM @45 to 80 PSIG. Vibrators (two standard, four available), tubing and fittings available as a kit or factory installed if prewiring option is purchased.

**REGULATOR - LUBRICATOR:** Pneumatic, for vibrator system, .5" (1/2") NPT or .75(3/4) NPT as determined by **MIDWEST**.

Technical specifications are subject to change without prior notification

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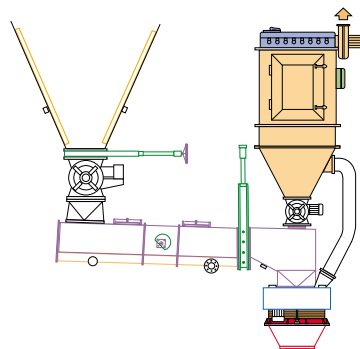
EQUIPMENT INDICATED IN SOLID COLOR IS INCLUDED IN THIS TECHNICAL SPECIFICATION.

EQUIPMENT OUTLINED IS AVAILABLE. CONSULT MIDWEST FOR DETAILS.

**MIDWEST International**

Midwest Plaza  
105 Stover Road  
Charlevoix Michigan 49720-0438  
USA  
Phone: (231) 547-4000  
Fax: (231) 547-9453  
International Fax: (231) 547-0269  
Web Site: [www.midwestmagic.com](http://www.midwestmagic.com)  
"e" mail: [midwest@freeway.net](mailto:midwest@freeway.net)

I N T E R  
  
LTD



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# TECHNICAL DATA

## MDC VACUPAC™ SERIES DUST COLLECTOR

### BULK MATERIAL DATA

PRODUCT	TEMP	DENSITY (PCF)
<input type="text"/>	<input type="text"/>	<input type="text"/>

### SCREEN ANALYSIS

<input type="text"/> %	<input type="text"/> IN/MM	<input type="text"/> %	<input type="text"/> IN/MM
<input type="text"/> MICRONS	MOISTURE CONTENT	<input type="text"/> %	

MODEL	STANDARD			CFM	NET WEIGHT WITHOUT FAN
	MEDIA AREA	MEDIA (1.5)	OPTIONS (2.0)		
<input type="checkbox"/> MDC 37	259	388	518	<input type="text"/> 551 LBS. (250) KG.	
<input type="checkbox"/> MDC 37	346	519	692	<input type="text"/> 626 LBS. (285) KG.	
<input type="checkbox"/> MDC 37	432	648	864	<input type="text"/> 680 LBS. (309) KG.	
<input type="checkbox"/> MDC 43	432	648	864	<input type="text"/> 730 LBS. (332) KG.	
<input type="checkbox"/> MDC 43	576	864	1125	<input type="text"/> 790 LBS. (358) KG.	
<input type="checkbox"/> MDC 43	720	1080	1440	<input type="text"/> 880 LBS. (400) KG.	
<input type="checkbox"/> MDC 54	691	1036	1382	<input type="text"/> 990 LBS. (450) KG.	
<input type="checkbox"/> MDC 54	922	1383	1844	<input type="text"/> 1079 LBS. (490) KG.	
<input type="checkbox"/> MDC 54	1152	1728	2304	<input type="text"/> 1208 LBS. (549) KG.	

### 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 IFG  **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.

### 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.

### Accessories

- Pneumatic Maintenance Valve with Lock Out Feature, Filter Regulator. (Purge) 1.0 IN. NPT
- Air Vibrator Kit:  Vibrators (2 or 4)
- Pneumatic Regulator, Lubricator (Vibrators) .5 NPT

### Options

- Prepipe "A" Purging System, Filter Regulator
- Prewire, Prepipe "B" (2) Vibrators
- Prewire, Prepipe "C" (4) Vibrators
- Motor Prewiring: NEMA  For  Motors, Fan Side
- Motor Controls (MCC) NEMA
- Riser:  12"  24"
- Base Support Pads (4)
- Floor Support System  IN
- Fan, Clean Air:  HP, Volts , 3 Phase RPM  CFM
- Intrinsically Safe Barrier (For NEMA 7/9 XP 120V or 220V ! Phase Applications)  Barriers
- Explosion Proof (XP) Electrics (Fan Motors)
- Explosion Proof (XP) Electrics (Pruge Controller)
- Fan Motor, Mill and Chemical Duty
- Rotary Air Lock Valve  x ,  HP  Vac NEMA
- Special Paint:

### Air Withdrawal Guide

REFER TO APPROPRIATE MDC VACUPAC™ DUST COLLECTOR DRAWING OR SPOUT DRAWINGS FOR AIR WITHDRAWAL RECOMMENDATIONS AND GUIDE. CONSULT FACTORY FOR VERIFICATION.

**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.

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