Shaker type dust collector with envelope filter

- Efficiency of 99% @ 5-10 microns
- Modular for various air volume capacities
- Automatic cleaning shaker system
- Rugged painted steel cabinet and structure

Diversified Air Systems, Inc.
MAXVIBE  Multiple pocket type dust collector with shaker cleaning

Designed for various air volume applications and solid particles filtration, the MAXVIBE dust collector is ideal for small to medium size shops and industries, training facilities or vocational schools. The narrow footprint of the MAXVIBE unit means that it may be installed inside or outside of the facility without losing valuable floor space. The 99% efficiency filter pocket envelope allows clean air to be recycled back into the premises for maximum energy savings. Usage may vary from wood transforming industries, ferrous or non-ferrous manufacturing shops, plastics and composites fabrication as well as pharmaceutical plants and food industries. The manual or motorized cleaning systems dislodge particles from the filter and are then stored in a variety of bins, drawers or drums. Safety features such as explosion relief vents, back draft dampers or spark detection and extinguishing systems are available.

Industrial Air Specialists

With our headquarters in Louisville, Kentucky, Diversified Air Systems, Inc. has been providing quality air solutions to industrial and commercial facilities since 1981. During our more than thirty years of operation, Diversified Air Systems, Inc. has established two important company traditions: offering state-of-the-art equipment at competitive prices and achieving long-term customer satisfaction.

The staff of Diversified Air Systems, Inc. includes five application engineers, with a combined experience of more than 75 years in the air filtration and HVAC industry. Whether your facility requires an air filtration system for dust, mist, or fumes, or an HVAC solution to meet ventilation needs, Diversified Air Systems, Inc. has the equipment and expertise to meet the need.

Services include air quality analysis, system design, equipment sales, turnkey installation, onsite servicing, and supply of replacement filters and accessories.

Other Filtration Systems available:

- Air Cleaners
- Containment Booths
- Decontamination Booths
- Downdraft Tables
- Dust Collectors
- Fans and Blowers
- Gas & Odor Control
- High Vacuum Systems
- Mist Collectors
- Paint Booths
- Stainless Steel Collectors
- Vehicle Exhaust Systems
- Wet Dust Collectors

Please call 800-264-8958
**Envelope filters / Shaker type cleaning**

Most of our competitors do not include these standard features:

- Powerful 1 H.P. motor for shaker mechanism
- Low or high profile dust storage system
- Dust inlet with abrasion resistant feature
- Choice of interior or exterior installation
- Minimal field assembly required
- No extra cost for location selection of explosion relief vent

**Typical applications for the MAXVIBE**

- Wood shops, cabinetery making
- Training centers and vocational schools
- Grinding, sanding or buffing applications
- Plastic and composites shops
- Metal transforming facilities
- Food / pharmaceutical powders

DAMV-1800 with explosion vent, silencer and lockable access doors to (4) dust storage drums

DAMV-270 with low profile dust storage drawer and top sound enclosure
**GENERAL DESCRIPTION**

Dust and particles are carried from source capture drops into the main duct connected to the MAXVIBE unit. Larger particles fall by gravity into the hopper toward the dust storage drum or canister. Finer particles are vacuumed upward into the high efficiency multi pocket filter envelope. The sound insulated fan mounted on top of the unit recycles clean air into the premises if desired or permitted. When the unit is shut down, the electronic control panel activates the cleaning cycle by shaking the filter envelope creating upper oscillation instead of usual bottom filter shaking which may result in lesser efficient cleaning. Filter inspection may be carried by simply opening the access door when unit is shut down.

*Note:*

**DUST COLLECTOR INSTALLATION:** To ensure proper installation, refer to local building laws and requirements. Support ground have to meet requirements for weight of dust collector and adjacent equipment.
**MAXVIBE GENERAL DATA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Filter surface Sq. ft/Sq. m</th>
<th>Number of filters</th>
<th>Number of pockets</th>
<th>Capacity C.F.M./L/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAMV-170</td>
<td>170/15</td>
<td>1</td>
<td>8</td>
<td>675 to 1400/320 to 660</td>
</tr>
<tr>
<td>DAMV-270</td>
<td>274/25</td>
<td>1</td>
<td>12</td>
<td>850 to 2200/400 to 1040</td>
</tr>
<tr>
<td>DAMV-350</td>
<td>361/35</td>
<td>1</td>
<td>16</td>
<td>1125 to 2925/530 to 1380</td>
</tr>
<tr>
<td>DAMV-450</td>
<td>449/42</td>
<td>1</td>
<td>16</td>
<td>1400 to 3650/660 to 1720</td>
</tr>
<tr>
<td>DAMV-570</td>
<td>570/51</td>
<td>1</td>
<td>24</td>
<td>1700 to 4625/800 to 2180</td>
</tr>
<tr>
<td>DAMV-700</td>
<td>722/67</td>
<td>2</td>
<td>32</td>
<td>2175 to 5700/1025 to 2690</td>
</tr>
<tr>
<td>DAMV-900</td>
<td>898/83</td>
<td>2</td>
<td>32</td>
<td>2400 to 8000/1130 to 3140</td>
</tr>
<tr>
<td>DAMV-1140</td>
<td>1140/104.8</td>
<td>2</td>
<td>98</td>
<td>3600 to 9400/1700 to 4435</td>
</tr>
<tr>
<td>DAMV-1350</td>
<td>1347/125</td>
<td>3</td>
<td>48</td>
<td>3900 to 10800/1810 to 5100</td>
</tr>
<tr>
<td>DAMV-1800</td>
<td>1796/167</td>
<td>4</td>
<td>64</td>
<td>5200 to 14400/680 to 1890</td>
</tr>
<tr>
<td>DAMV-2280</td>
<td>2280/209</td>
<td>4</td>
<td>96</td>
<td>8320 to 18280/3925 to 8630</td>
</tr>
</tbody>
</table>

Note: Air volume capacities indicated above per MAXVIBE selection is with a + or - 8 to 1 air to cloth ratio. The purpose of this ratio is to extend filter life and lower static pressure. D.A.S. may agree to a 10 to 1 air to cloth ratio in certain applications. Example: DAMV-700 can be used with a 7000 CFM fan for a 10 to 1 air to cloth ratio.

**Recommended duct velocities for particulates**

<table>
<thead>
<tr>
<th>Type of dust</th>
<th>F.P.M. /meter per second</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal dust</td>
<td>4200 / 21</td>
</tr>
<tr>
<td>Sawdust (dry)</td>
<td>3800 / 19</td>
</tr>
<tr>
<td>Cement dust</td>
<td>7000 / 35</td>
</tr>
<tr>
<td>Wood dust</td>
<td>4000 / 20</td>
</tr>
</tbody>
</table>

Note: other particle velocities may be required. Refer to Industrial Ventilation Handbook for more details or contact DAS.

**Filtration note:** Safety after-filter system can be specified in the unlikely event of main filter envelope failure. Contact DAS for information and details.

**Principle of operation**

During operation, dust-laden air ① enters the collector from the top of the hopper. The dusty air will first deflect off the baffle plate ② forcing the larger particles down into the dust bin ③, the air velocity is also reduced in this section. The fine remaining dust is then carried upwards ④ into the envelope filter ⑤ and forced onto the filter fabric surface.

The now cleaned air is drawn into the backward inclined impeller ⑥ and is then exhausted outside ⑦ of the collector. The "dust cake" formed on the dirty side of the filter can be dislodged by the automatic filter shaking mechanism ⑧. The acoustical motor plenum ensures quiet operation ⑨. Optional fan outlet silencers are also available.
MAXVIBE MODEL NUMBERS AND DIMENSIONS

DAMV-170/270/350/450/570  DAMV-DB (Dust Bin)

Sound Levels (dBA)

Note: because of different motor, sound enclosure and explosion relief vent configurations, dimensions may vary from those indicated below. Factory will supply submittals with proper selection.

<table>
<thead>
<tr>
<th>Model</th>
<th>170</th>
<th>270</th>
<th>350</th>
<th>450</th>
<th>570</th>
</tr>
</thead>
<tbody>
<tr>
<td>With sound insulated fan plenum</td>
<td>86</td>
<td>86</td>
<td>88</td>
<td>90</td>
<td>93</td>
</tr>
<tr>
<td>Without sound insulated fan plenum</td>
<td>73</td>
<td>74</td>
<td>76</td>
<td>78</td>
<td>80</td>
</tr>
</tbody>
</table>

CHART 3

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimensions [inches] / [mm]</th>
<th>Weight (no motor, no enclosure, no relief vent) [lbs] / [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>170</td>
<td>A: 48.5/1212; B: 38.25/956; C: 45.5/1137; D: 35/875; E: 64.5/1612; F: 125.25/3131; G: 16.12/403</td>
<td>1050/477</td>
</tr>
<tr>
<td>270/350</td>
<td>A: 55.25/1381; B: 48.5/1212; C: 62.75/1568; D: 48.5/1212; E: 71/1775; F: 124.5/3112; G: 20/510</td>
<td>1250/568</td>
</tr>
<tr>
<td>450</td>
<td>A: 55.25/1381; B: 48.5/1212; C: 62.75/1568; D: 48.5/1212; E: 71/1775; F: 133.25/3331; G: 24/610</td>
<td>1450/659</td>
</tr>
<tr>
<td>570</td>
<td>A: 55.25/1381; B: 48.5/1212; C: 62.75/1568; D: 48.5/1212; E: 71/1775; F: 145.25/3690; G: 30/760</td>
<td>170/775</td>
</tr>
<tr>
<td>170-DB</td>
<td>A: 45.12/1128; B: 38.62/965; C: 45.62/1140; D: 34.37/860; E: 35/875; F: 95/2375; G: 92/420</td>
<td>92/420</td>
</tr>
<tr>
<td>270/350</td>
<td>A: 55.25/1381; B: 48.5/1212; C: 62.75/1568; D: 48.5/1212; E: 49/1245; F: 102.5/2590; G: 20/510</td>
<td>1125/510</td>
</tr>
<tr>
<td>450-DB</td>
<td>A: 55.25/1381; B: 48.5/1212; C: 62.75/1568; D: 48.5/1212; E: 49/1245; F: 111.25/2825; G: 24/610</td>
<td>1140/520</td>
</tr>
</tbody>
</table>
**MAXVIBE MODEL NUMBERS AND DIMENSIONS**

**DAMV-700/900/1140**

**DAMV-1350**

Note: because of different motor, sound enclosure and explosion relief vent configurations, dimensions may vary from those indicated below. Factory will supply submittals with proper selection.

Note on sound levels: Because of different motor selection and sound fan plenum configurations, sound levels will be supplied with selection of collector and fan size.

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimensions [inches] / [mm]</th>
<th>Weight (no motor, no enclosure, no relief vent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>700</td>
<td>102.75 / 2568</td>
<td>96 / 2400</td>
</tr>
<tr>
<td>900</td>
<td>102.75 / 2568</td>
<td>96 / 2400</td>
</tr>
<tr>
<td>1140</td>
<td>102.75 / 2568</td>
<td>96 / 2400</td>
</tr>
<tr>
<td>1350</td>
<td>153.5 / 3837</td>
<td>143.75 / 3593</td>
</tr>
</tbody>
</table>
MAXVIBE MODEL NUMBERS AND DIMENSIONS

DAMV-1800/2280

Note: because of different motor, sound enclosure and explosion relief vent configurations, dimensions of such are not indicated below. Factory will supply submittals with proper selection.

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimensions [inches] / [mm]</th>
<th>Weight (no motor, no enclosure, no relief vent) [lbs] / [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800</td>
<td>A 110.75 / 2768; B 96 / 2400; C 119 / 2975; D 96 / 2400; E 89.5 / 2237; F 152 / 3800</td>
<td>152 / 3800; 5700 / 2590</td>
</tr>
<tr>
<td>2280</td>
<td>A 110.75 / 295; B 96 / 2400; C 119 / 2975; D 96 / 2400; E 90 / 226; F 165 / 370</td>
<td>165 / 370; 6100/ 2700</td>
</tr>
</tbody>
</table>

Note on sound levels: Because of different motor selection and sound fan plenum configurations, sound levels will be supplied with selection of collector and fan size.

DAMV-BV 170/270/350/450 (Bin vent configuration only)

Note: because of different explosion relief vent configurations, dimensions of such are not indicated below. Factory will supply submittals with proper selection.

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimensions [inches] / [mm]</th>
<th>Weight (no relief vent) [lbs] / [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>170</td>
<td>A 53.25/1331; B 37.5/937; B1 42/1050; C 45.8/1145; D 34/850; D1 38.75/968</td>
<td>38.75 / 968; 76.25 / 1906; 575 / 261</td>
</tr>
<tr>
<td>270/350</td>
<td>53.25 / 1331; 47.75 / 1193; 52.5 / 1312; 65.5 / 1637; 47.75 / 1193; 52.5 / 1312</td>
<td>52.5 / 1312; 69.75 / 1743; 680 / 309</td>
</tr>
<tr>
<td>450</td>
<td>63.25 / 1581; 47.75 / 1193; 52.5 / 1312; 65.5 / 1637; 47.75 / 1193; 52.5 / 1312</td>
<td>52.5 / 1312; 78 / 1950; 725 / 329</td>
</tr>
</tbody>
</table>
Fan drives: fan curves indicated above are direct drive type, 3500 RPM.

Fan notes: Fans suggested above as per MAXVIBE model selected are for references only. DAS can supply alternate fans for specific air volume or static pressure required. Impeller width will be as per fan selection.

DAS uses standard non-sparking impellers on MAXVIBE dust collectors when applications call for wood dusts or reactive alloys and metals.
**Construction**

The filter cabinet and hopper assembly are made with degreased 11 to 14 gauge mild steel folded and/or welded sheet plates and channels. Protection of surface is ensured by a epoxy primer coat with two (2) coats of air dried polyurethane final paint. Cross braces on the rugged support structure and filter cabinet are assembled to resist damages in seismic zone 4.

The highly efficient sateen filter envelope (99% @ 5-10 microns) prevents “dust caking” which would normally increase static pressure resulting in lower air volume through weeks and months of regular usage. The top mounted direct drive fan assembly usually consists of a non-sparking backward inclined impeller located on the clean side of the dust collector.

All access doors, joints and folds are sealed with gaskets to prevent air leakage.

**Safety rules and requirements**

The MAXVIBE is an enclosure type dust collector. MAXVIBE dust collectors can be used with different dusts such as wood, metal, composites, chemicals, agricultural or food grade.

**Wood dust applications.**

In wood dust applications and for air volumes of 1500 C.F.M and more, the collector must be specified in accordance with NFPA 664 standards and regulations. The MAXVIBE dust collector must not be used in mixed applications of wood dusts and non reactive metal grinding, sanding or buffing dusts. The MAXVIBE dust collector should not be connected to sanders or abrasive planers with mechanical material feeds unless it is equiped with a spark detection/extinguishing safety device.

**Reactive metals application.**

The National Fire Protection Agency (NFPA) standard 484 defines aluminum, magnesium, tantalum, titanium and zirconium as reactive metals so it is imperative that NFPA 484 standard be observed at all times and that the collector be installed outside of the facility or premises with all required safety devices. Grinding operations shall not be served by the same Maxivibe collector as buffing/polishing operations.

The MAXVIBE dust collector should include a sign indicating **CAUTION** when used with explosive dusts.

The MAXVIBE dust collector should include a sign indicating **WARNING** when used with aluminum dusts advising danger of mixing with other dusts.

**Shipping**

In order to facilitate shipping and installation, DAS usually ships DAMV dust collectors with the fan factory mounted on the cabinet. Hopper and support structure are shipped fully assembled ready for cabinet mount. Larger DAMV models may require more extensive field assembly.

Optional equipment such as dampers or silencers are shipped separate and require field assembly. Explosion venting doors are factory installed on the dust collector cabinet.

**Shaker cleaning note:**

MAXVIBE collector does not have capability of cleaning while in operation. Cleaning cycle is performed upon every unit shutdown. DAS or representative should be made aware of dust load and type of dust before selection.
Optional accessories and description

**Explosion venting doors**

Requirement by NFPA for reactive material collection and storage of particles such as wood, aluminum and/or magnesium dusts and chips.

**Fan outlet silencers**

Sound attenuators for high velocity discharge at fan outlets.

**Micro switches**

Current sensors connected to shop equipment for automatic fan start/stop.

**Rotary airlock**

Rotary airlock for constant dust discharge.

**Slide / blast gates**

Used for shutting off air vacuum on specific shop equipment.

**Blowback dampers**

Safety device preventing flames or explosion in dust collector from coming back into the building.

**Spark detection/extinguishing systems**

Recommended safety device for highly abrasive metal or wood transforming applications

**Sprinklers**

Safety device used to extinguish possible fires in dust collectors.

**Abort dampers**

Safety device preventing a possible explosion in a dust collector from coming back into the building and exhausting pressure into the atmosphere.

**Safety device and equipment notes:** Design built and/or engineered dust collecting equipment may require different safety devices as described above. Refer to NFPA rules and regulations for appropriate devices. DAS or its representative may also guide you in proper selection of equipment as per the application.

It is highly recommended to refer to local building laws and safety requirements prior to selecting or installing any type of dust collecting equipment.

**Installation note:** It is recommended to allow 36” (0.9 meter) work and access space around the collector for installation and possible maintenance.
Create your MAXVIBE specification

1. **Dust collector should include:**
   - 11 and 14 gauge mild steel epoxy primer coat (4000 hours salt spray test) with two (2) coats of air dried polyurethane final paint, cabinet and support structure with pre-drilled holes for floor anchoring, high efficiency (99% @ 5-10 microns) multi-pocket filter envelope, filter surface equivalent to model number, sealed frame access door to filter envelope, electronic control panel with timer for shaker cleaning in NEMA 4 enclosure, direct drive TEFC motor with non-sparking backward inclined impeller for wood dusts or reactive metals, sound insulated fan plenum, dirty air inlet with dust deflector in hopper section, clean air outlet on top of collector, lift lugs for filter cabinet positioning, 1 H.P. shaker motor with oscillating pattern for better cleaning efficiency, joints and folds sealed with gaskets to prevent air leakage.

2. **Model to be:**
   - DAMV-170
   - DAMV-270
   - DAMV-350
   - DAMV-450
   - DAMV-570
   - DAMV-700
   - DAMV-900
   - DAMV-1140
   - DAMV-1350
   - DAMV-1800
   - DAMV-2280

3. **Fan to be:**
   - 3 H.P. □
   - 20 H.P. □
   - 5 H.P. □
   - 30 H.P. □
   - 10 H.P. □
   - 40 H.P. □
   - 15 H.P. □
   - 50 H.P. □

4. **Fan performance to be:**
   - ___CFM@___" S.P. (Ex: 5000 CFM@ 6" S.P.)
   - ___L/s@___pa S.P. (Ex: 2360 L/s @ 1500 pa S.P.)

5. **Voltage to be:**
   - 230/1/60 □
   - 208/3/60 □
   - 460/3/60 □
   - 575/3/60 □

6. **Dust storage capacity should be with:**
   - a) 20 gallon bin (25 gallon U.S.) □
   - b) 45 gallon drum (55 gallon U.S.) □
   - c) drum dolly with swivel casters □
   - d) no dust storage, bin vent configuration □

7. **Unit to be equipped with:**
   - a) NFPA explosion relief vent □
   - b) sprinkler head □
   - c) abort damper □
   - d) blowback damper □
   - e) spark detection/extinguishing system □
   - f) micro switches for automatic fan operation □
   - g) rotary airlock □
   - h) slide/blast gates □
   - i) pressure differential indicator □
   - j) anti-static filter fabric □
   - k) fan outlet silencer in lieu of sound insulated plenum □
   - l) safety after-filter cabinet with primary 30% pleated filters and secondary 85% polyester bag filters. □
   - m) tamper proof cabinet access door □
   - n) support structure and hopper enclosure with access door □

8. **Unit designed for:**
   - a) interior installation □
   - b) exterior installation □

---

*Diversified Air Systems, Inc.*
10801 Electron Drive, Louisville, Kentucky 40299
Toll free: (800) 264-8958
Tel.: (502) 267-0333 • Fax: (502) 267-4241
Website: www.diversair.com • email: info@diversair.com