Desktop Duster Box

ZVB Series

Integrated the static neutralization, dust removal and dust collection processes into one box!

3 functions in 1 unit!
All in one

- **Dust removal**
- **Dust collection**
- **Static neutralization**

Adopted a dedicated ionizer with improved static neutralization efficiency.

RoHS

Blow nozzle with improved dust removal efficiency

Pneumatic dust collector enables quick dust collection response.

A4 size [ZVB20]
- 210 x 297 mm (Dimensions)
- 202 x 212 mm (Static neutralization space)

A3 size [ZVB40]
- 400 x 384 mm (Dimensions)
- 392 x 298 mm (Static neutralization space)

Supports workpieces of various sizes.

- Smartphone
- Lamp cover
- Cosmetic case
- Lens
- Electronic components
- Parts for home appliances
Improved the static neutralization and dust removal efficiency with a separate ion blow and air blow structure!

**Ionizer**

Offset voltage: ±10 V
- Static neutralization distance: 100 mm
Discharge time: 0.3 s
- 1000 V to 100 V

Secured a large static neutralization space.
Reduced the dust collector space using a pneumatic dust collector (vacuum flow), to secure the static neutralization space to the utmost.

<table>
<thead>
<tr>
<th>Model</th>
<th>Size</th>
<th>Static neutralization space (Width x Depth)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZVB20</td>
<td>A4</td>
<td>202 x 212</td>
</tr>
<tr>
<td>ZVB40</td>
<td>A3</td>
<td>392 x 298</td>
</tr>
</tbody>
</table>

Minimized attenuation of ion
Separate ion blow/air blow structure. Reduced the attenuation of the ion by an air blow.

Adopted a nozzle that neutralizes static electricity in a wide range.
Adopted a diffusion type nozzle for the ionizer, so that ionized air reaches all corners of the box. Supports an extensive range of large workpieces.

Easy maintenance of emitter
Since the emitter can be removed easily, replacement and cleaning can also be performed easily.

Nozzle dedicated for the blow without impairing the generation efficiency of the ion
Equipped with an additional air blow nozzle only for dust removal. Besides the ionized air, the angle and flow rate of the air blow can be adjusted (Optional). The pressure can also be adjusted with an additional air blow pressure regulator installed on the back side of the body.

Adopted a maintenance-free pneumatic dust collector.
Since a built-in pneumatic dust collector blows the sucked in dust to the exhaust port by the power of compressed air, dust will not remain inside the dust collector. The maintenance-free dust collector without a drive unit also reduces the risks of malfunction.

Quick dust collection response
The pneumatic dust collector starts collecting dust immediately after the built-in solenoid valve is opened. Reduces the cycle time with a quick response, from the input of an electrical signal to the start of suction.

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# How to Order

**Desktop Duster Box**

**ZVB Series**

![Image of duster box]

**RoHS**

## How to Order

### ZVB 20 – B S A –

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td><strong>Additional air blow</strong></td>
<td><strong>Photoelectric sensor</strong></td>
<td><strong>AC adapter</strong></td>
<td><strong>Option</strong></td>
</tr>
<tr>
<td>20</td>
<td>B</td>
<td>Nil</td>
<td>Nil</td>
<td>None</td>
</tr>
<tr>
<td>40</td>
<td>B</td>
<td>S</td>
<td>A</td>
<td>Nil</td>
</tr>
</tbody>
</table>

### Options

- **3 m exhaust duct hose**
  - Model: ZVB-D3A
  - ZVB20…1 set
  - ZVB40…2 sets

- **Dust collecting bag**
  - Model: ZVB-P1A
  - ZVB20…1 set
  - ZVB40…2 sets

- **AC adapter**
  - Model: ZVB-AC1
  - Nil

- **Emitter**
  - Model: IZN10-NT-X325

- **Additional air blow nozzle**
  - Model: ZVB-N10A

- **Suction slope**
  - For ZVB20
  - Model: ZVB-V20A
  - Nil
  - With photoelectric sensor
  - With AC adapter

- **Suction slope**
  - For ZVB40
  - Model: ZVB-V40A
  - Nil

### Specifications

<table>
<thead>
<tr>
<th>Component</th>
<th>Item</th>
<th>Model</th>
<th>ZVB20</th>
<th>ZVB40</th>
</tr>
</thead>
<tbody>
<tr>
<td>I onizer</td>
<td>Type</td>
<td>Nozzle type</td>
<td>Corona discharge type</td>
<td>High frequency AC type</td>
</tr>
<tr>
<td></td>
<td>Number of mounted units</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Dust collector</td>
<td>Type</td>
<td>Pneumatic type, Vacuum flow</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of mounted units</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Fluid</td>
<td>Air (Dry air)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating pressure range</td>
<td>0.2 to 0.8 MPa</td>
<td>0.2 to 0.8 MPa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>85 to 264 VAC</td>
<td>50/60 Hz (when using the exclusive AC adaptor)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating time setting</td>
<td>Continuous/Timer [25/10 s]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional air blow setting</td>
<td>Continuous blow/Pulse blow [50/100 ms intervals]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>0 to 55°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air consumption</td>
<td>420 L/min (ANR)</td>
<td>800 L/min (ANR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>5.1 kg</td>
<td>9.9 kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1: No freezing
Note 2: When supply pressure to the dust collector is set to 0.3 MPa (ZVB20)/0.4 MPa (ZVB40) and additional air blow supply pressure to 0.2 MPa. Based on SMC’s measuring conditions.
Note 3: Overall weight excluding optional parts.
Air Circuit Diagram

ZVB20

Compressed air supply port
Exhaust port
Ionizer
Compressed air supply port
Exhaust port
Ionizer
Dust collector (Vacuum flow)
Work area
Regulator
Solenoid valve
Additional air blow adjustment needle (Option)

ZVB40

Compressed air supply port
Exhaust port
Ionizer
Compressed air supply port
Exhaust port
Ionizer
Dust collector (Vacuum flow)
Work area
Regulator
Solenoid valve
Additional air blow adjustment needle (Option)

Construction

(Photo shows the ZVB20.)

Component Parts*  

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ionizer</td>
<td>ZVB20: 1 unit, ZVB40: 2 units, With diffusion nozzle</td>
</tr>
<tr>
<td>2</td>
<td>Additional air blow nozzle</td>
<td>ZVB20: 2 pcs., ZVB40: 4 pcs., Nozzle diameter: ø1.0</td>
</tr>
<tr>
<td>3</td>
<td>Regulator for adjusting supply pressure to the dust collector</td>
<td>With pressure gauge</td>
</tr>
<tr>
<td>4</td>
<td>Regulator for adjusting supply pressure for additional air blow</td>
<td>With pressure gauge</td>
</tr>
<tr>
<td>5</td>
<td>Top cover assembly</td>
<td>Static electricity restriction grade (PET)</td>
</tr>
<tr>
<td>6</td>
<td>Side cover</td>
<td>Static electricity restriction grade (PET)</td>
</tr>
<tr>
<td>7</td>
<td>Photoelectric sensor</td>
<td>ZVB20: 1 pc., ZVB40: 2 pcs., Reflection type (built into the body)</td>
</tr>
<tr>
<td>8</td>
<td>Mesh</td>
<td>Detachable</td>
</tr>
<tr>
<td>9</td>
<td>Power supply switch</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Operation time set switch</td>
<td>Continuous/2 s/5 s/10 s</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Additional air blow pulse operation time set switch</td>
<td>Continuous (no pulse)/50 ms/100 ms</td>
</tr>
<tr>
<td>12</td>
<td>Cover for valve maintenance</td>
<td>Used when replacing the built-in valve</td>
</tr>
<tr>
<td>13</td>
<td>Terminal block</td>
<td>Signal output/External input/COM+/COM-</td>
</tr>
<tr>
<td>14</td>
<td>AC adapter (DC plug) entry</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>ON/OFF switch for dust collector</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Exhaust port of the dust collector</td>
<td>ZVB20: 1 port, ZVB40: 2 ports, Exhaust dust hose connection port (O.D.: ø32)</td>
</tr>
<tr>
<td>17</td>
<td>Compressed air supply port</td>
<td>ZVB20: ø8, ZVB40: ø10</td>
</tr>
<tr>
<td>18</td>
<td>Grounding screw</td>
<td></td>
</tr>
</tbody>
</table>

*Although the components are common to the ZVB20 and ZVB40, the number of attached parts differs. (Refer to the note column.)
Operation Flow

The following shows the operating sequence during continuous operation and timer operation with the photoelectric sensor.

1. **Main unit operation**
   The photoelectric sensor detects the workpiece.

2. **Start of dust collection**
   The dust collector (vacuum flow) is activated, and starts the dust collection.

3. **Start of static neutralization and dust removal**
   The dust collector (vacuum flow) is activated, and starts the ionizer (static neutralization) and the additional air blow (dust removal) after 0.5 seconds.
   - The additional air blow can be set to continuous or pulse (50/100 ms intervals).

4. **Stop of static neutralization and dust removal**
   The operation of the ionizer (static neutralization) and the additional air blow (dust removal) stops by the progression of the set time (2/5/10 seconds), or the OFF detection of the photoelectric sensor after a workpiece is removed.
   (However, the dust collector continues to operate for 0.5 seconds.)

5. **Stop of dust collection**
   Stops the operation of the dust collector (vacuum flow).

6. **Remove the workpiece.**
### Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>D' Note 1</th>
<th>E</th>
<th>F</th>
<th>F' Note 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZVB20</td>
<td>211</td>
<td>202</td>
<td>212</td>
<td>310</td>
<td>351</td>
<td>210</td>
<td>297</td>
<td>341</td>
</tr>
<tr>
<td>ZVB40</td>
<td>248</td>
<td>392</td>
<td>298</td>
<td>349</td>
<td>390</td>
<td>400</td>
<td>384</td>
<td>428</td>
</tr>
</tbody>
</table>

Note 1) Dimension D' is the overall height including the knob of the regulator.

Note 2) Dimension F' is the overall depth including the switch lever on the front and the exhaust port on the back.

Refer to the operation manual for detailed dimensions.
ZVB Series
Specific Product Precautions
Be sure to read this before handling the products.

**Installation/Mounting**

⚠️ Warning

1. Avoid using in a place where noise (electromagnetic wave and surge) is generated. It may cause failure or damage to the product. Take measures to prevent noise at source and avoid power and signal lines from coming into close contact.

2. Do not allow foreign matter, workpiece or tool to enter the ionizer nozzle. There is an emitter inside the nozzle. If the emitter gets in contact with metallic workpieces or tools, electrical shock may cause injury. If emitter is damaged, it may interfere with the specified function and performance, and may also cause operation failure and accident.

3. When the dust collector is operating, air is discharged vigorously from the exhaust port. Prevent exhausted air from contacting people or objects. Piping (I.D. 32 mm) or dust collecting bag must be connected to the exhaust port.

**Operating Environment**

⚠️ Warning

1. Operate in an environment in the specified ambient temperature and fluid temperature ranges (0 to 55°C). Avoid sudden temperature changes even within specified temperature range, as it may cause condensation.

2. Do not use this product in an enclosed space. This product utilizes the corona discharge phenomenon. Although the amount is very small, Ozone and NOx are generated. Ozone condensation can increase if used in an enclosed space, which can affect the human body, so ventilation is necessary.

3. Effects on implantable medical devices

   The electromagnetic waves emitted from this product may interfere with implantable medical devices such as cardiac pacemakers and cardioverter defibrillators, resulting in the malfunction of the medical device or other adverse effects. Please use extreme caution when operating equipment which may have an adverse effect on your implantable medical device. Be sure to thoroughly read the precautions stated in the catalog, operation manual, etc., of your implantable medical device, or contact the manufacturer directly for further details on what types of equipment need to be avoided.

**Wiring/Piping**

⚠️ Warning

1. Power supply required to the product is 24 VDC and 1 A. When power is supplied to the product without using the exclusive AC adapter, make sure to use a stabilization power supply and connect wiring to the DC plug that is provided with the product as an accessory.

2. D-class ground connection must be used to the product. Without grounding, the product will not provide the designed performance.

3. For air piping, use SMC or equivalent tubing of diameter 8 mm (for ZVB20) or 10 mm (for ZVB40). It is strongly recommended to use clean dry air (with a dew point at approximately -20°C).

4. Air connections should only be made with the pressure supply turned off. Flush the system before piping to prevent foreign matter from entering inside the product.

**Maintenance**

⚠️ Warning

1. Perform maintenance regularly and clean the emitters. (every 2 weeks suggested.). The maintenance must be performed by an operator who has sufficient knowledge and experience. If the ionizer is used for a long time and there is dust on the emitters, performance of the product will be reduced. When the NDL LED (maintenance signal LED) is ON, the emitter will need to be cleaned. If the emitter gets worn and static neutralization ability does not recover even after cleaning, replace the emitter. (Emitter part no.: IZN10-NT-X325)

2. Before starting inspection, cleaning or replacing the emitter, or replacing the valves, be sure to turn OFF the power and air supply to the main body to prevent electric shocks or accidents.

**Handling**

⚠️ Caution

1. Do not drop, hit or apply excessive shock to the product. Even if the body is not damaged, the internal components may be damaged, leading to a malfunction.