

Auto-Shaking Dust Collection Unit

Instructions for Installation, Operation and Maintenance

Models I20 & I40

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Shipping and Receiving:

- 1) Inspect the shipment upon receipt and notify us immediately if there is any discrepancy in the order.
- 2) The shipment will consist of assembled modules and some standard loose parts for installation on site. The typical standard components include:

No	Standard Supplied Dust Collector Components	Qty
1	Fully assembled bag filter chamber, multi envelope bag, bag insert meshes, shaker motor, shaker motor cover	1 set
2	Fully assembled fan chamber	1 set
3	Weather cowl	1 pc
4	Hopper	1 pc
5	Hopper slide gate	1 pc
6	Dust bin	1 pc
8	Legs	4 pcs
9	Leg braces	6 pcs
10	Fastening Bolts, Nuts and Washers	1 pc
11	Control Panel	1 set
12	Explosion Relief Panel	1 pc

- 3) The optional components are usually not shipped with standard components. Once customers order any of them, they will be shipped together with standard components. The optional components are:

No	Optional Supplied Dust Collector Components	Qty
1	Maintenance platform	1 set
2	Inlet pre-separation chamber	1 pc
3	Dust bin lifting mechanism	1 pc

NOTE:

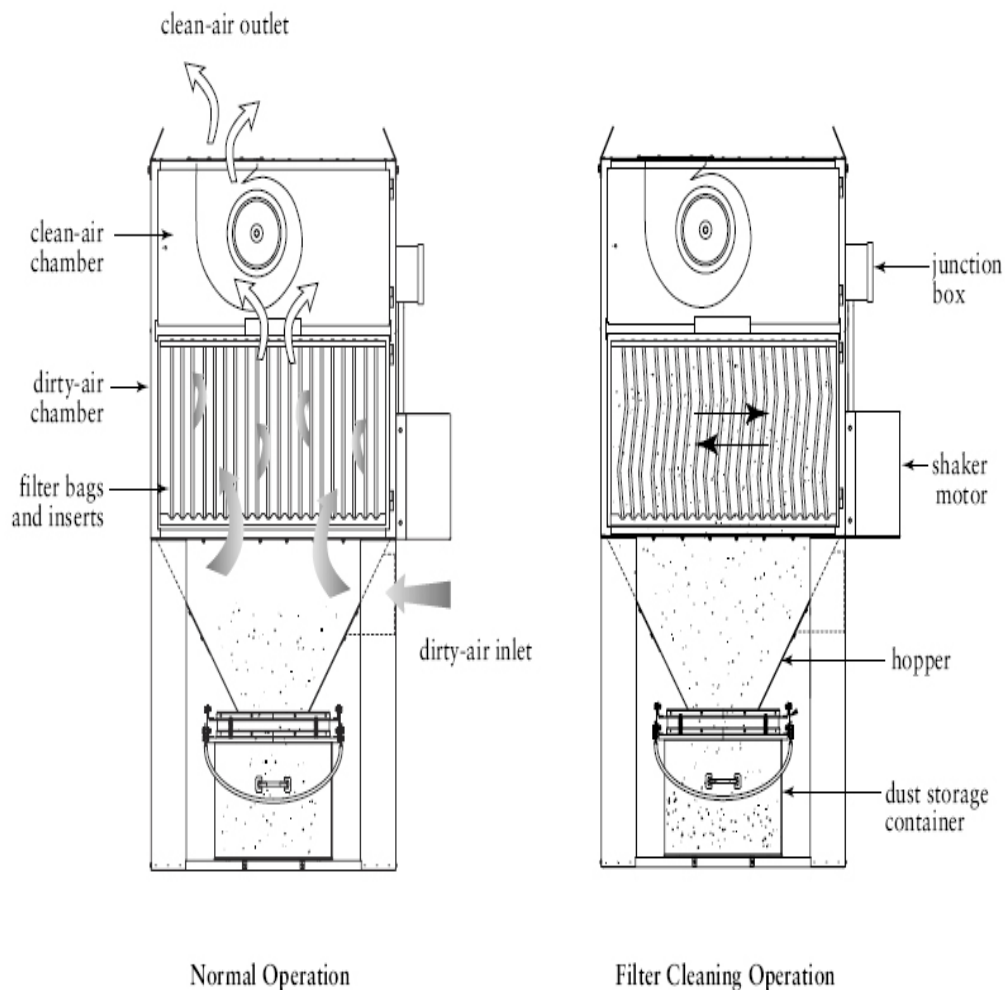
- 1) **To ensure the correct models, components and assemblies have been received, please check the components you received in the shipment with your purchase order. If there is any discrepancy, please contact us immediately.**
- 2) **Below parts are not included in the shipment and have to be supplied by others:**
 - 2.1. **Anchor bolts for bolting the equipment down.**
 - 2.2. **Hardware for connecting the inlet and outlet ducts.**
 - 2.3. **Electrical wiring materials and conduit.**

Operation Principles of Dust Collector

I series dust collectors are self-contained, intermittent-duty dust collectors with multi envelope style bag filters. They are used to separate solid particulate from an airstream generated by manufacturing operations. Some typical applications include blending, mixing, abrasive blasting, cleaning, cutting, drilling, grinding, milling, packing, polishing, sanding and wood working.

During the normal operation, dust-laden air enters the unit through the dirty air inlet. The velocity is reduced, and natural pre-separation takes place and heavier particulate falls directly into the collection bin or hopper. Fine particles collect on the outside surface of the filter bag and clean, filtered air passes to the center of the bag and discharges through the clean air outlet.

The dust collector is an intermittent-duty collector, which means that cleaning starts when the fan is turned OFF and the appropriate fan run-down time is complete. The solid-state timer automatically starts the cleaning after the fan is turned OFF. This is the fan run-down time. Power to controls must remain ON to operate the cleaning mechanism. The shaker motor starts, and filter cleaning begins for a preset time usually 30-45 seconds.



Installation Preparation

Site Selection

- 1) The unit can be used as a stand-alone collector or located in the top of storage silos and bins or integrated into hoods for material handling equipment such as belt conveyors and bucket elevators.
- 2) Wind, seismic zone, and other live-load conditions must be considered when designing the mounting flange and hood supports for the collector.
- 3) Provide appropriate clearance from heat sources and interference with utilities.

Unit Location

- 1) Undertake a risk assessment to determine the proper location and orientation of the unit.
- 2) Mounting flanges and hood supports must be capable of supporting the entire weight of the unit plus the weight of the collected material and the ductwork.
- 3) Locate the unit as close to the dust source as possible. Install anchor bolts to extend a minimum of 50mm above foundation.
- 4) Locate the unit to ensure easy access to electrical and connections, routine maintenance and filter inspection and replacement.

Electrical Wiring & Hoisting

All electrical wiring and connections (including electrical grounding) should be made by a qualified electrician and comply with all applicable national and local regulations.

Use all lifting points provided. Allow only qualified crane operators to lift the equipment.

A crane or forklift is recommended for unloading, assembly and installation of the collector.

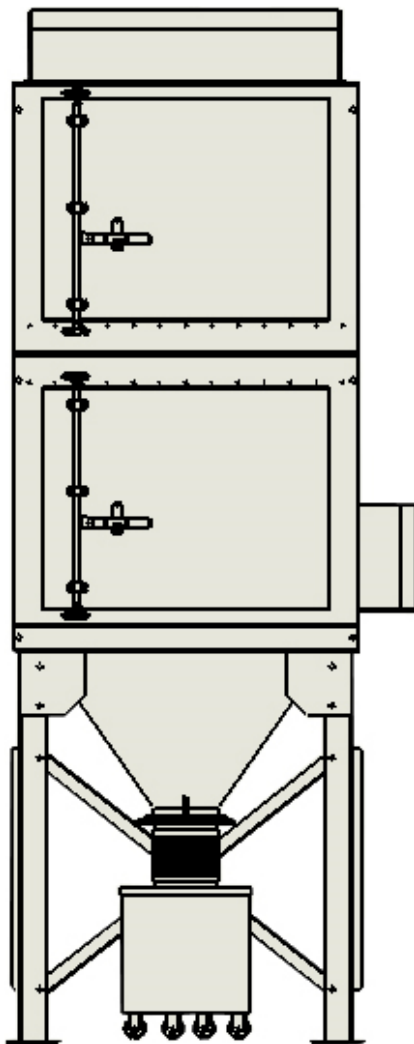
Suggested tools and Equipment

Crane or forklift
Slings, spreader bars
Drift pins
Sealant or caulking
Socket wrenches
Clamps
Screwdrivers

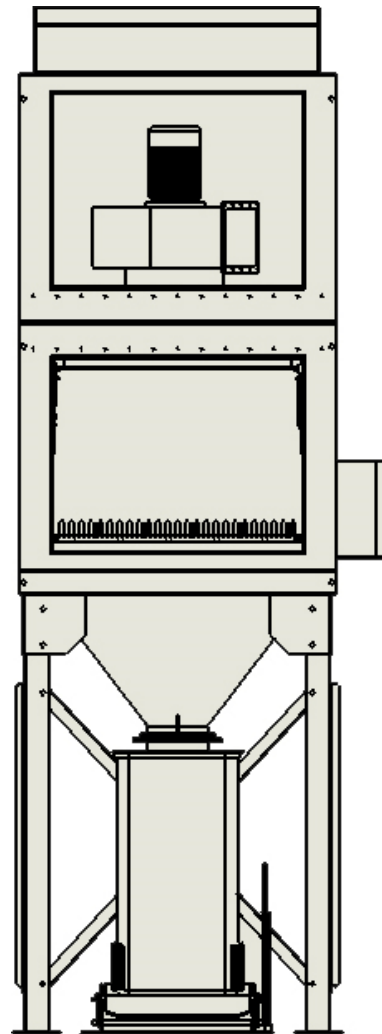
Typical Configurations

I series dust collectors have two standard configurations. One has a steel dust bin with castors; the other has a standard 240-litre plastic 'wheelie' bin with lifter.

Standard components usually include: Filter chamber assembly; Fan chamber assembly, Shake motor assembly; Weather cowl; Hopper; Slide gate; Dust bin; Legs and braces.



80-litre Steel Dust Bin with Castors



240litre Plastic Dust Bin with Lifter

Standard Dust Collector Assembly:

The dust collector is delivered partially assembled. Unit installation, optional equipment assembly, and electrical connections are completed at the job site.

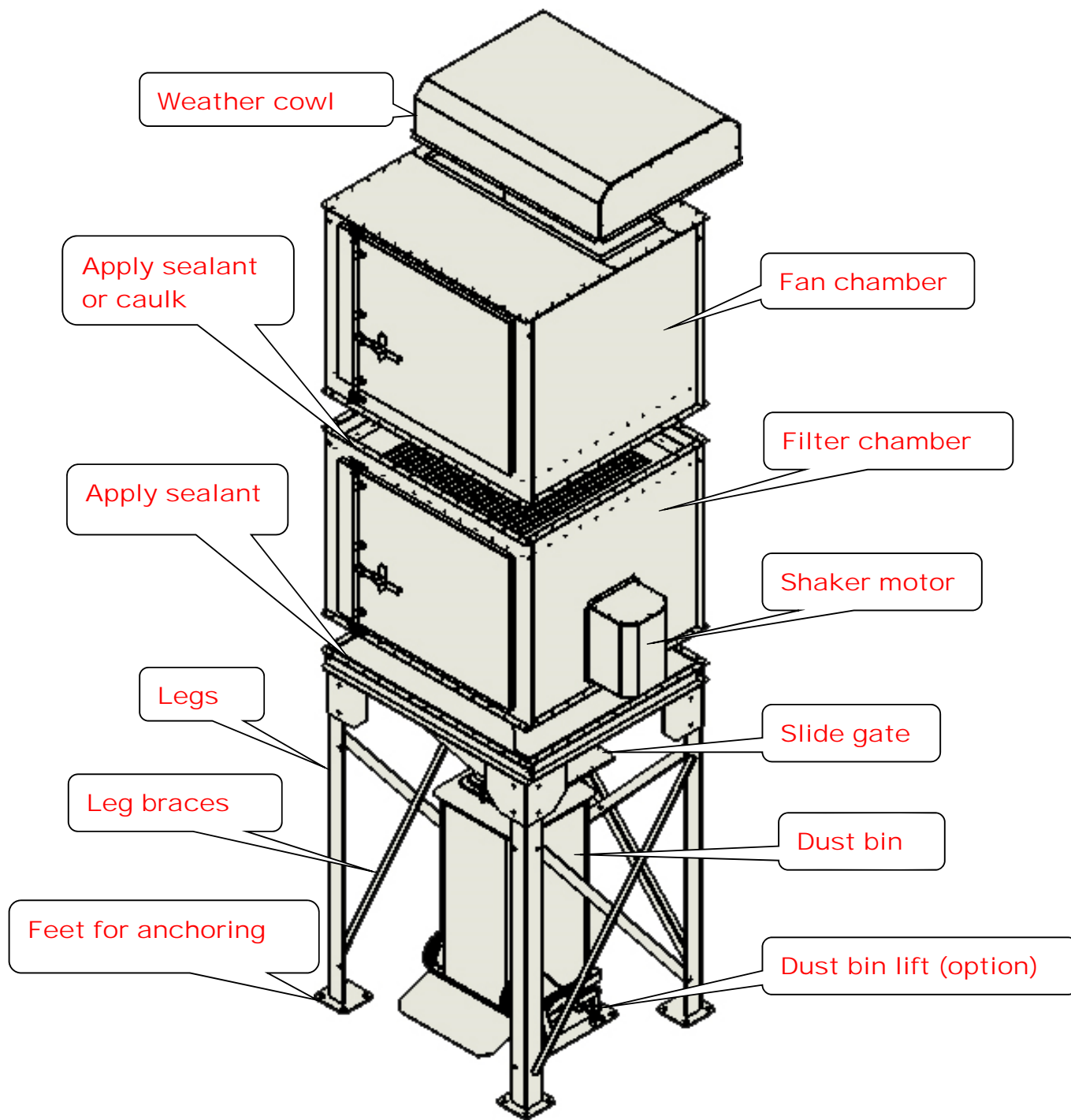
CAUTION:

The standard dust collector has a high center-of-gravity and may overturn if not secured properly. Secure the dust collector to the lifting devices. Use care when moving the units.

Unit Installation

- 1) Prepare the foundation in the selected location.
- 2) Assemble leg & bracing structure onto the hopper with bolts, washers, and hex nuts supplied.
- 3) Lift the leg and hopper assembly into position over the anchor bolts and lower slowly.
- 4) Apply two strips of sealant to the hopper's top flange: one toward the inside of the bolt pattern and one toward the outside of the bolt pattern.
- 5) Lift the bag chamber over the hopper assembly and lower into the position, use drift pins to align the holes.
- 6) Secure with bolts, washers, and hex nuts supplied. Tighten to form an airtight seal.
- 7) Apply two strips of sealant to the bag chamber's top flange: one toward the inside of the bolt pattern and one toward the outside of the bolt pattern.
- 8) Lift the fan chamber over the bag chamber top flange and lower into the position. Secure the flange with bolts, washers, and hex nuts supplied.
- 9) Install the weather cowl assembly onto the top of fan chamber with the bolts supplied.
- 10) Level unit horizontally and vertically, using steel shims under legs where required.
- 11) Secure the unit to anchor bolts using customer supplied hardware.
- 12) Install the slide gate onto hopper lower flange.
- 13) Complete wiring connections on the fan motor and shaker motor.
- 14) Make the electrical connections to the fan motor and shaker motor.

System Setup Overview



Filter Bag Installation

- 1) Inset the filter bag pack into the filter frame placing individual filter pockets between the locating bars and fold filter bag collar over the top flange.
- 2) Insert one filter insert into each pocket of the filter bag.
- 3) Slide the filter bag assembly on the frame guides until the bottom corners of the filter bag contact the shake bar.
- 4) Insert bag pockets into the shaker bar slots
- 5) Raise up the level until the filter frame seals tight against the rubber sealing gasket.
- 6) Secure the filter chamber doors.

Electrical Connections

All electrical wiring and connections (including electrical grounding) should be made by a qualified electrician and comply with all applicable national and local legislations.

The appropriate wiring schematic and electrical rating must be used. Refer to the unit's rating plate for the required voltage.

Ensure that there is an electrical supply complete with all required motor rated fuses.

Caution:

- 1) Potential shock hazard. Disconnect power before servicing. Only qualified electrical personnel should work on this system.
- 2) Do not install in classified hazardous atmospheres without an enclosure rated for the application.

Preliminary Start-up Instructions

- 1) Check all the electrical connections for tightness and contact
- 2) Check for and remove all loose items in or near the inlet and outlet of the unit
- 3) Check that all remote controls are wired into the control system, and all services switches are in the OFF position.
- 4) Check that all optional accessories are installed properly and secure.
- 5) Check that hopper discharge is open and the storage container is sealed, if equipped.
- 6) Turn power ON at source
- 7) Turn the fan motor ON then OFF to check for proper rotation by referencing the rotation arrow located on the motor's mounting plate
- 8) If the fan rotation is wrong isolate the system and get a suitably qualified electrician to change fan rotation.

CAUTION:

- 1) Don't look into fan outlet to determine rotation.
- 2) Stand clear of exhaust to avoid personal injury.

Start Up and Shut Down

Press the START button on the controller panel to start the unit.

Press the STOP button on the controller panel to stop the unit.

Operational Checklist

Monitor overall performance of the dust collector.

Monitor the exhaust.

Monitor pressure drop across filters.

Monitor dust disposal.

Maintenance Instructions

Check Weekly

Pressure drop across filters within range from 25mm-150mm WG. (250-1500pa)

Inspect explosion relief vent if equipped, for damage, snow or ice.

Check Monthly

Door seals for condition and contact, Replace or adjust as necessary

Check that the fan chamber is free of dust accumulation. If dust is present, check the surrounding filter bags for tears or loose seals.

Check rubber seals for tears and over compression.

Check that the shaker mechanism bolts are tight and secure. Check for broken locators on the shaker bar, or torn shaker-bar support chains. Replace as necessary.

Troubleshooting

Centrifugal fan does not work		
	Probable Cause	Remedy
a.	Improper motor cabling size	Rewire using the correct wire gauge as specified by national and local codes.
b.	Not wired correctly	Check and correct motor wiring for supply voltage, see motor manufacture's wiring diagram. Follow wiring diagram and the national electric code.
c.	Unit not wired for available voltage	Correct wiring for proper supply voltage.
d.	Input circuit down	Check power supply to motor circuit on all leads.
e.	Electrical supply circuit down	Check power circuit for proper voltage. Check for fuse or circuit breaker fault. Replace as necessary.

Partial loss of suction		
	Probable Cause	Remedy
a.	Filters blocked	Check the dust container is not full and that the equipment served is operating. Turn fan OFF and allow the controller to perform several complete clean cycles. Remove filter bag, vacuum outside surface, and reinstall. Replace the damaged or torn filter bags.
b.	Motor speed low	Check all supply voltage, phase, and motor connections.
c.	Fan rotation backward	Check and correct wire connection.

Total loss of suction		
	Probable Cause	Remedy
a.	Fan motor stopped	Check motor starter overloads, fuses, and interlocks. Check motor connections.
b.	Filter blocked	Check that the dust container is not full and that the equipment served is operating. Turn fan OFF and allow the controller to perform several complete clean cycles. Remove filter bag, vacuum outside surface, and reinstall. Replace the damaged or torn filter bags.
c.	Obstructed ductwork	Check and remove obstructions.

Clean air outlet discharging dusts		
	Probable Cause	Remedy
a.	Filter bags not installed correctly	Check filter bags and reinstall if necessary.
b.	Torn or damaged filter bags	Replace and install new filter bags.

Spare Parts

It is recommended that the following spare parts be stored at the installation for routine maintenance purposes.

No	Description	Qty	Note
1	Filter Bag	1	

Notes: