

## Dust-Master portable dust collector

Models 33S - 50S - 75S - 100S - 150S - 200S - 300S

INSTALLATION - OPERATION - MAINTENANCE

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READ AND UNDERSTAND THIS MANUAL PRIOR TO OPERATING OR SERVICING THIS PRODUCT



33S - 50S - 75S



100S - 150S - 200S

## overview

### Note

*The following defined terms are used throughout this manual to bring attention to the presence of hazards of various risk levels, or to important information concerning the life of the product.*

### ⚠ Warning

*Indicates presence of a hazard which can cause severe personal injury, death or substantial property damage if ignored.*

### ⚠ Caution

*Indicates presence of a hazard which will or can cause personal injury or property damage if ignored.*

### Note

*Indicates special instructions on installation, operation or maintenance which are important but not related to personal injury hazards.*

*Read this complete manual before attempting to assemble, install, operate, move, inspect or service this Dust Collector.*

## Specifications

Model	Motor hp	Maximum CFM note 1	Maximum SP note 2	dBA @ 5'	Standard Dust Bag			Blower Wheel Diameter	Hose Size	Inlet Nozzle Size	Maximum Drum Diameter note 3	Full Load Amps note 5		Approximate Shipping Weight lb note 2
					Fabric	Area sq ft	Micron note 3					115V 1 Ph	230/460 3 Ph	
33S	1/3	335	3"	76	Cotton Sateen	12.5	10	8"	3" x 60"	4" x 4"	20 1/2"	5.8	1.8	32
50S	1/2	450	7"	78		12.5	10	9 3/4"	4" x 60"	5" x 5"	20 1/2"	8.8	1.9	50
75S	3/4	580	7"	78		12.5	10	10 5/8"	4" x 60"	5" x 5"	20 1/2"	8.8	2.4	53
100S	1	700	4 1/2"	83	Knit Polyester	18	5	10 5/8"	5" x 60"	6" x 6"	24"	11.2	3.2	72
150S	1 1/2	875	6 1/2"	76		18	5	11"	6" x 60"	7" x 7"	24"	16	4.4	85
200S	2	1100	8 1/2"	85		18	5	12 1/4"	6" x 60"	7" x 7"	24"	20	5.6	97
300S	3	1300	10"	84		Select Oversize Bag pages 5 and 6			13"	6" x 60"	7" x 7"	24"	7.6	113

1 Maximum CFM at 0" SP (clean drum, dust bag and with 5 feet of inlet hose and inlet nozzle).

2 Maximum additional static pressure at which point there will be no air flow.

3 Minimum micron size that standard dust bag will capture 99%.

4 See Installation Section.

5 Starting amps are approximately 6-7 times the full load amps. High voltage amps are half of low voltage amps. Amp loads shown above are approximate and vary with different motors.

### Note

***All Cincinnati Fan products are packaged to minimize any damage during shipment. The freight carrier is responsible for delivering all items in their original condition as received from Cincinnati Fan. The individual receiving this equipment is responsible for inspecting this unit for any obvious or concealed damage. If any damage is found, it should be noted on the bill of lading before the freight is accepted and the receiver must file a claim with the freight carrier.***

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### Note

***Be sure to read all warning and caution notices before proceeding with any installation or operation of this dust collector. Make sure you are in compliance with all local, state, federal and safety guidelines, regulations and standards..***

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### Long Term Storage Notice

If this dust collector will not be installed and put into service within 30 days, refer to the **Long Term Storage** Instructions on page 4. Failure to follow all applicable long term storage instructions will void your warranty. This dust collector must be stored indoors in a clean, dry location..

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## general

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### Long Term Storage Instructions

***Failure to adhere to these instructions voids all warranties in their entirety.***

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#### Note

- Storage site selection:
  - Level, well-drained, firm surface, in clean, dry and warm location. Minimum temperature of 50°F (10°C) to 90°F (32°)
  - Isolated from possibility of physical damage from construction vehicles, erection equipment, etc.
  - Accessible for periodical inspection and maintenance.
- Carton should be supported under the entire bottom and open at the top allowing it to breathe.
- If the dust collector is to be stored for more than three (3) months, the entire blower assembly must be loosely covered with plastic.
- Storage Maintenance:

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#### Note

***A periodic inspection and maintenance log, by date and action taken, must be developed and maintained for each blower. See example below. Each item must be checked monthly.***

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Storage/Maintenance Schedule Log Example	
Action	Date Checked
Reinspect units to insure any protective devices used are functioning properly. Check for scratches in the finish which will allow corrosion or rust to form	
Rotate blower wheel a minimum of 10 full revolutions to keep the moor bearing grease from separating and drying. <b>This is a critical step.</b>	

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### Safety Instructions

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#### Warning

The National Fire Protection Association (NFPA) has defined the following materials as reactive metals: Aluminum, Magnesium, Tantalum, Titanium and Zirconium.

***Cincinnati Fan Dust Collectors ARE NOT designed to collect any "reactive metal" material. They Do Not meet NFPA Standard 484.***

Improper handling, machining, collection and disposal of these materials can result in a severe explosion and/or fire resulting in death, severe personal

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## general

injury and extensive, immediate and surrounding property damage. Consult the NFPA for current standards. Review of your application and future type of installation must be completed by your local Fire Marshal or an Authorized Fire Department Official prior to the installation of any equipment for this purpose.

This Standard combines the following previous Standards into one Standard: NFPA 480, NFPA 481, NFPA 482, NFPA 485 and NFPA 651. NFPA 484 was approved as an American National Standard on July 19, 2002.

We have reviewed the latest NFPA Standard 484 for

“Combustible Metals, Metal Powders, and Metal Dusts, 2002 Edition” and we have determined:

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### ⚠ Warning

***According to the National Fire Protection Agency (NFPA), this dust collector Cannot be used to collect any wood dust or chips And metal dust or chips. It can be used for either type of material, but not both.***

Hot metal dust or chips from grinders can start a fire or cause an explosion if mixed with wood dust or chips. Also, this dust collector CANNOT be used with sanders or abrasive planners that have mechanical material feeds. For clarification, see *NFPA standard 664, NFPA Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities 2007 Edition* for the proper design, installation, operation and maintenance of dust collectors and dust collection systems.

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### ⚠ Caution

***Plastic drums should not be used as they will not support the weight of the dust collector. Do Not use any PVC pipe or hose in any part of the duct system.***

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### ⚠ Caution

***There is a high speed blower wheel inside the blower housing and another one on top of the motor. Both can amputate fingers or grab loose clothing or neckties. Always wear safety glasses when operating this dust collector.***

***Keep dust bag clean. A clogged dust filter bag may prevent collection of harmful dust. Read this manual for proper cleaning procedure. Replace worn or damaged dust bag immediately. Never operate this dust collector without a dust bag in place.***

This dust collector is **not** designed to be used outdoors where it will be subjected to the elements. Keep indoors or in a covered area not subject to rain or snow.

This dust collector is not designed to collect fumes or powders less than 1 micron in size. This dust collector should **never** be used to collect liquids.



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## general

The motor has a cooling fan and fan cover on top of the motor. **Do not** place anything on top of the cooling fan cover at any time. Doing so will cause the motor to overheat and fail.

**Do not** use this dust collector to collect **any** type of yard waste, i.e. leaves, paper, mulch, berries, etc.

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### Caution

***This dust collector, when fully assembled, will be top heavy. It can be overturned if bumped or not placed on a clean, flat, level surface.***

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### Description

This dust collector is designed to help maintain clean, safe conditions around dust creating machines in workshops and factories. The flexible hose, included with each unit can be connected directly onto the dust creating machine.

Refer to page 7 for exhaust volumes required for different applications.

This dust collector is not designed to be used in a system that requires high static pressures. Avoid using any hose or duct less than 3" in diameter. It will require much higher static pressure and will restrict air flow.

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### Caution

***Do Not collect any material that could ignite any plastic or cloth parts of this dust collector.***

**Unpacking** Carton must be in upright position before opening. Inspect for any shipping damage and advise freight carrier immediately if any damage is found. Check Parts List for any missing or damaged parts.

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### General Safety Information

- Follow all local, state and federal safety codes including the National Electrical Code (NEC), the National Fire Protection Agency (NFPA) standards, the Occupational Safety and Health Act (OSHA) and the Environmental Protection Act (EPA).
- All electrical wiring should be performed only by qualified personnel or a licensed electrician.
- Make sure the power source conforms to the requirements of the dust collector motor.
- Exercise caution when the unit is in operation. There is a high speed blower wheel inside the blower housing and another one on the top of the motor. Both can amputate fingers or grab loose clothing or neckties. Always wear safety glasses when operating this dust collector.

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# installation

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## Assembly

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### Note

*Assembly instructions are based on standard units as catalogued. With all of the available accessories or options, every combination is not included.*

### Model 33S, 50S and 75S – Figure 1

Assembly includes the installation of the air baffle, lid gasket, discharge elbow, dust bag, hose and nozzle.

- 1 To install the air baffle and lid gasket, gently place unit upside down on a cardboard covered flat area.
  - a - Attach the air baffle (17) as shown using the bolts included.
  - b - Remove the paper protection from the sticky side of the lid gasket (18). Install the gasket on the underside of the drum lid/inlet guard assembly (11) so that the side of the gasket is against the lip of the lid.
- 2 Carefully turn over the assembly so the motor is on top and place it on top of a 30-35 gallon can or drum.

**Note**—If installing the standard dust bag, continue with Step 3. If installing an oversized dust bag, (available on Models 50S and 75S only) proceed to **Installing Oversized Dust Bag Installation** Section.

- 3
  - a - The discharge elbow (8) has two 1/8" holes at one end of the elbow. Slide the end with the two holes over the discharge guard (5) on the blower housing. Line up the two holes in the elbow with the two holes in the guard. Install and tighten the 2 self tapping screws included in the plastic bag of hardware.
  - b - Slide the dust bag clamp (9) over the inlet collar of the dust bag (10). Slide the dust bag collar over the end of the discharge elbow (8). The dust bag inlet collar should overlap the end of the bag elbow by about 2". The clamp should be centered in between the two ends. Tighten the clamp with a screw driver or nut driver.
  - c - Model 33S only. (for models 50S and 75S, go to Step e) Mount 4" to 3" sheet metal inlet reducer (15) onto inlet collar of drum lid (11). Tighten draw lug nut and screw.
  - d - Slide hose clamp (13) over one end of hose (14) and slide hose over inlet reducer (15). Tighten clamp.
  - e - Model 50S and 75S: Slide hose clamp (13) over one end of hose (14) and slide hose over inlet collar of lid (11). Tighten clamp.
  - f - Models 33S, 50S and 75S. Slide hose clamp (13) over opposite end of hose (14) and slide hose onto inlet nozzle (12). Tighten clamp.

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## installation

### **Model 100S, 150S, 200S and 300S – Figure 2**

Assembly includes the installation of the inlet deflector, intake cylinder, lid gasket, discharge bag elbow, dust bag, hose and nozzle.

1. To install the intake cylinder, deflector elbow and lid gasket, gently place the unit upside down on a cardboard covered flat area. Two people should perform this function.
  - a - To attach the inlet deflector (16B), remove the two 1/4-20 nuts and washers that hold the inlet elbow (16A) onto the drum lid (11). Install the inlet deflector (16B) over the same bolts that hold the inlet elbow (16A). Reinstall the 1/4-20 nuts and washers and tighten.

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### **Note**

***The intake cylinder/guard (19) in Step 1b below, Must be installed. Failure to install this part will Greatly reduce the airflow (CFM) of the dust collector.***

- b - Attach the intake cylinder (19) with the four 1/4-20 bolts and lock washers that were supplied in the hardware packet. The four bolts go through the four mounting lugs on the intake cylinder and are screwed into the 4 threaded inserts in the drum lid (11).
  - c - Remove the paper protection from the sticky side of the lid gasket (18). Install the gasket on the underside of the drum lid (11) so that the side of the gasket is against the lip of the lid.
2. Two people should turn the assembly over so the motor is on top and place it on top of a 55-gallon can or drum.
3. Attach inlet hose and nozzle.

**Step 3 is for Model 100S Only. For Models 150S, 200S and 300S, proceed to Step.**

- a - Mount the 6" to 5" metal reducer (15) onto the inlet elbow (16A). Tighten the draw lug nut on the reducer.
  - b - Slide hose clamp (13) over one end of hose (14) and slide hose over inlet reducer (15). Tighten clamp.
4. Slide hose clamp (13) over opposite end of hose (14) and slide hose over inlet nozzle (12). Tighten clamp.

**Note—If installing the standard dust bag, (Models 100S, 150S and 200S) continue with Step 6. If installing an oversized dust bag, (available on Models 100S, 150S and 200S) proceed to Oversized Dust Bag Installation section. All 300S models require an oversized dust bag.**

- 6
  - a - The discharge elbow (8) has two 1/8" holes at one end of the elbow. Slide the end with the two holes over the discharge guard (5). Line up the two holes in the elbow with the two holes in the guard. Install,



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## installation

and tighten, the 2 self tapping screws included in the plastic bag of hardware.

- b - Slide the dust bag clamp (9) over the inlet collar of the dust bag (10). Slide the dust bag collar over the end of the bag elbow (8). The dust bag inlet collar should overlap the end of the bag elbow by about 2". The clamp should be centered in between the two ends and above the rib of the bag elbow. Tighten the clamp.

### **Oversized Dust Bag Installation – Figure 3 or Figure 4**

Steps 1a through 1d are for all Models 50S, 75S, 100S, 150S, 200S and 300S.

- 1 a - The discharge bag elbow (8) is not used. The discharge bag elbow is never used on 300S model.
- b - Slide a hose clamp (4 or 9) onto both ends of the dust bag connector hose (6 or 10).
- c - Slide one end of the hose over the guard (5) on the blower housing discharge. Tighten the hose clamp.
- d - Slide the hose connector (5 or 8) into the other end of the hose so that half of the connector length is inside the hose. Tighten the hose clamp around the hose and connector.

**For HB Hanging Bags (Figure 3), proceed with Step 2.** Do Not use HB bags on Models 50S and 75S. **For DB Drum Bags (Figure 4) proceed to Step 5.**

- 2. HB type hanging bags are only recommended when there is not enough floor space for a second 55 gallon drum next to the dust collector. However, they are more cumbersome to empty and require emptying much more often. A DB type bag will be much easier to empty and will not require being emptied as often.
  - a - Assembly of the J hooks (2) onto the angle iron ring (1). Thread a 1/4-20 nut all the way onto a J hook. Install a 1/4" flat washer. Put threaded end of the J hook nut and washer assembly through a hole in the angle iron ring. Install a second washer on top of the ring hole. Install a second 1/4-20 nut on top of the flat washer and tighten. Repeat these steps for each J hook.
- 3. a - Slide a hose clamp (4) over the inlet collar in the side of the HB dust bag (3).
- b - Slide the inlet collar of the dust bag over the exposed end of the hose/ bag connector (5) connected in Step 1.
- c - Secure the dust bag collar to the hose connector with the hose clamp.



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## installation

**4. This step will be performed much more safely with two people on separate ladders.**

- a - Put one bag grommet over each J hook in the ring/hook assembly.
- b - Carefully start climbing the ladders while holding onto the ring/bag/hose assembly.
- c - Raise the ring/bag/hose assembly high enough above the ground without putting too much tension on the bag or the hose entering the side of the bag. Also make sure the hose (6) is not kinked at the discharge of the dust collector. This is the proper height for the ring to hang off of the ground.
- d - Measure the distance from the ring to the ceiling joist, rafter or truss.
- e - Securely hang the ring from a ceiling joist, rafter or truss with approved cable or chains.
- f - The bag should be hanging so it doesn't touch the floor **and** it doesn't pull on the dust collector discharge hose. See Figure 3.

**Note**—Never let an HB type hanging bag collect over 12" of dust or chips in the bottom of the bag. When dust or chips reach a depth of 12", the bag must be emptied. If not, the weight of the material inside the bag may cause the bag to tear from the grommet straps at the top or at the zipper in the bottom. See **Dust Bag Cleaning** Instructions.

**For DB Drum Bags (Figure 4) proceed with Step 5.**

**5. The DB type drum mount dust bags come in three sizes. Approximate dimensions are: 24x40-DB is 24" diameter x 36" high for models 50S and 75S. Available in two fabric types.**

24x80-DB is 24" diameter x 72" high for models 100S, 150S, 200S and 300S. Available in three fabric types.

48x80-DB is 48" diameter x 72" high for models 100S, 150S, 200S and 300S. Available in three fabric types.

- a - You should have completed Steps 1a through 1d.
- b - Slide a hose clamp (9) over the inlet collar in the side of the dust bag.
- c - Slide the inlet collar of the dust bag (7) over the exposed end of the hose connector (8) that you installed in 1d. Secure the dust bag collar to the hose connector by tightening the hose clamp.

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## installation

d - The DB type drum mount dust bag has an outer and an inner sleeve in the bottom opening of the bag. There is also a belt on the outside of the bag. Loosen the belt as far as possible.

e - Roll back the outer sleeve and slide the inner sleeve inside an open top 55 gallon drum. Now, unroll the outer sleeve down over the outside of the drum so that the bottom of the bag overlaps the top of the drum by 4-6". Tighten the belt as tight as possible.

**Note—If collecting dust smaller than 10 microns, we recommend you remove the belt from the bag and install a 55 gallon drum lid clamp around the top of the drum. This will provide a better seal between the drum and the dust bag.**

f - There is a single grommet in the top, center of the bag. Connect one end of a rope or cable through the eye of the grommet and connect the other end to a rafter or truss in the ceiling. This is only needed to hold the bag up when the dust collector is turned off. **Leave about 12" of slack in the rope or cable.**

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## Installation

### Proper Size Cans, Drums and Unit Location

Models 33S, 50S and 75S should be mounted on top of a 25-30 gallon refuse can or a 30-35 gallon drum. The refuse can or drum should have a diameter no less than 18" and not more than 20". Do not use plastic cans or drums. A fiber can or drum may be used if it has a fire resistant foil liner and it can support the weight of the dust collector.

Models 100S, 150S, 200S and 300S should be mounted on top of a 55 gallon, roll-top, steel drum only. The drum should have a diameter no less than 22" and not more than 24". Do not use plastic or fiber drums. Place the assembled dust collector as near as possible to the dust generating source.



# installation

## Exhaust Volumes Required for Different Applications note 1

Woodworking			
Equipment	Size		Min CFM Required note 2
Jointer	Knife Length	Up to 6"	350
		6" to 12"	440
		12" to 20"	550
		over 20"	800
Sander, Belt (horizontal)	Belt Width	Up to 6"	790 note 3
		6" to 9"	900 note 3
		9" to 14"	1240 note 3
Sander, Disc	Belt Diameter	Up to 12"	350
		12" to 18"	440
		18" to 26"	550
Sander, Drum	Drum Surface sq in	Up to 200	350
		201 to 400	550
		401 to 700	785
		701 to 1400	1100
Saw, Band	Blade Width	Up to 2"	700 note 3
		2" to 3"	900 note 3
		3" to 4"	1350 note 3
Saw, Radial	Hood behind blade =		430
	From port on blade guard =		70
	Total =		500
Saw, Swing	Blade Diameter	Up to 20"	350
		over 20"	440
Saw, Table	Blade Diameter	Up to 16"	350
		16" to 24"	440
		over 24"	550
		Variety with dado =	800
Planer, Single	Knife Length	Up to 20"	785
		20" to 26"	1100

1 The exhaust volume (CFM) requirements shown are "From American Conference of Governmental Industrial Hygienists (ACGIH), Industrial Ventilation: A Manual of Recommended Practice, 19th Edition. Copyright 1986. Reprinted with permission." Consult manual for more detailed recommendations. Contact them at [www.acgih.org](http://www.acgih.org).

## Selecting the Correct Dust-Master Model

**Dust-Master** dust collectors will give you excellent results in collecting wood chips, fine dust and metal shavings, they are not designed to work in large central system applications. These are portable units that can be moved from machine to machine. To select the proper size **Dust-Master**, use the following steps.

1. Add the CFM required for each machine per the above table. This is your total CFM required.
2. Select the **Dust-Master** model from page 2 with a maximum CFM greater than your total CFM required in step 1. If none of the models on page 2 have a maximum CFM greater than your total CFM required, you will need more than one unit.
3. If the unit will be in a fixed-installation, all duct Work should be sheet metal instead of flexible hose. The pressure drop through flexible hose is 2-3 times that of smooth wall pipe. **Do Not use PVC or plastic pipe. It can deliver a severe static electric shock caused by high velocity dust passing through it.**

Metal Working (except reactive metals)					
Equipment	Size		Min CFM Required note 4		
Buffing, Belt	Belt Width	Up to 3"	220		
		3" to 5"	300		
		5" to 7"	390		
		7" to 9"	500		
		9" to 11"	610		
Buffing, Wheel	Wheel Width note 5	11" to 13"	740		
		2"	300		
		3"	500		
		4"	610		
		5"	740		
		6"	1040		
		Grinding Wheel below 6500 sf/m (surface ft/min)	Wheel Width note 5	1"	220
				1.5"	220
2"	390				
3"	500				
4"	610				
		5"	880		
		6"	1200		
		Grinding Wheel above 6500 sf/m (surface ft/min)	Wheel Width note 5	1"	220
				1.5"	390
2"	610				
3"	740				
4"	880				
		5"	1200		

- 2 CFMs required are minimums per each equipment type. Duct velocity should not be less than 3500 fpm to prevent wood dust from settling in duct work.
- Requires 2 nozzles or hoods. CFMs shown are total CFM for both nozzles or hoods.
- For all metalworking applications, duct velocity should be at least 3500 fpm for light grinding or buffing and at least 4500 fpm for heavy grinding or buffing to prevent dust from settling in duct work.
- The wheel hood should cover at least 75% of the wheel to be considered a good enclosure.

4. The **Dust-Master** should be located as close to the machine as possible and preferably no more than 10 feet.
5. Use as few elbows as possible in your duct Work. The loss through one 90° elbow is equal to approximately 10 feet of straight, smooth wall pipe.
6. If the **Dust-Master** will be used for more than one machine, you should install slide-gate dampers in the duct at each machine to close-off that section of duct when using another machine. This will allow the **Dust-Master** to pull from only one machine at a time and thus increase the dust collector efficiency.
7. **Typically**, a 150S model will work with up to 20 total feet of duct, a 200S model will work with up to 30 total feet of duct and a 300S model will work with up to 75 total feet of duct. These values are based on dampers installed at each machine connection (note 6) and all ducting smooth wall, sheet metal.

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# installation

## Duct work Recommendations

The maximum CFM rating for each model dust collector should be greater than the minimum required CFM as listed in the Exhaust Volumes Required for Different Applications chart.

If connecting the dust collector into a piping system for more than one machine, the dust collectors maximum CFM should be greater than the minimum CFM required for each machine in the system. If the piping system will have slide gate dampers at each machine, with only one machine operating at a time, then the dust collector can handle more machines as long as the CFM required does not exceed the maximum CFM of the dust collector. As a rule of thumb, one dust collector can handle multiple machines as follows:

Model 33S and 50S – One machine only

Model 75S –Two machines if within 5 feet of each other

Model 100S –Two machines if within 10 feet of each other

Model 150S –Two machines if within 20 feet of each other

Model 200S –Up to 30 feet of 5 inch duct and three machines

Model 300S –Up to 75 feet of 5 inch duct and three to four machines

**Note**—The number of machines you can collect from will depend on the CFM required per machine.

## General Recommendations for Duct Work Systems:

1. The National Fire Protection Agency (NFPA) will no longer permit a single dust collector to be used to collect **both** wood dust or chips **and** metal dust or chips because of the possibility of a fire and/or explosion.
2. **Do not use PVC pipe or flexible hose for duct work.** This is no longer permitted by the National Fire Protection Agency (NFPA). Dust traveling through PVC pipe or hose can build up a static electric charge.
3. Limit the use of flexible hose in any duct work to as little as possible. The pressure drop (resistance) through flex hose can be 2-3 times greater than smooth wall sheet metal pipe.
4. If connecting a dust collector to more than one machine, you should install slide gate dampers at each machine so the dust collector is only pulling from one machine at a time.
5. Keep the number of duct elbows to a minimum. A 90° elbow has the same pressure drop (resistance) as 10 feet of straight pipe.
6. Estimate 2 CFM reduction in air flow for each foot of straight pipe and 20 CFM reduction for each 90°elbow.



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## operation

7. Pneumatic conveying of wood dust requires a minimum air velocity of 3500 feet per minute (FPM) in the duct or hose. For metal dust, the velocity can be from 3500 FPM to 4500 FPM. Velocities less than these will allow the dust to settle in the duct work or hose. Therefore, the CFM must not be reduced below these velocities.
8. Connect the dust collector inlet hose to the connector port built into the dust producing machine. If there is no port on the machine, place the inlet hose and inlet nozzle as close as safely possible where it will collect the most dust.
9. **Do not** use any duct or hose smaller than 3".

### Electrical

All electrical connections and wiring must be performed by qualified personnel or a licensed electrician. Models 33S, 50S, 75S and 100S, with single phase, TEFC motors are pre-wired at the factory with a cord, plug and switch to operate on a 115 Volt, 1 Phase, 60 Hertz power supply. These motors are also connected for the proper blower wheel rotation.

All other motors must be wired by the user for the operating voltage as stated on the motor nameplate and wiring diagram. All wiring must be in accordance with Underwriters Laboratories (UL) and the National Electric Code (NEC). After all wiring is properly completed, apply power to the motor for 1-2 seconds and then turn it off. As the motor slows down, observe the rotation of the motor cooling fan on top of the motor. The proper rotation for all dust collector motors is Clockwise(CW) when looking down on top of the motor. If the motor is turning Counter-Clockwise (CCW), lock out the power to the motor and then make the wiring changes per the motor wiring diagram either on the motor nameplate or inside the motor conduit box.

### Operation

The only operation steps that need to be monitored are emptying the can or drum and the dust bag. The can or drum should never be allowed to become over 1/3 full. The bag should never be more than 1/4 full.

***High speed rotating equipment can cause severe personal injury.***

There is a high speed blower wheel inside the blower housing and another one inside the fan cover on top of the motor. **Always disconnect or lock out power to the motor and let the wheel come to a complete stop before attempting any inspection, service, maintenance or moving of this dust collector.**

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### Caution

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## maintenance

### **Motor**

The bearings in the motor are lubricated and sealed for life so they will not require any additional lubrication during the life of the motor. Keep the motor clean as excessive dirt may prevent proper cooling of the motor. Use no more than 40 PSI air to blow off excessive dirt.

### **Blower Wheel and Steel Components**

The cast aluminum wheel and steel components are generally maintenance free during the life of the unit. It is possible that very fine, sticky dust particles can build up on the blades and back plate of the blower wheel. When the unit is lifted off of the can or drum for emptying of the can or drum, you should also inspect the blower wheel for any material buildup. Using a flashlight, look into the blower inlet underneath the lid. Any material that has built up on the wheel must be removed to prevent the wheel from an imbalance situation that could cause a premature motor bearing failure and/or dangerous wheel failure. For proper cleaning instructions, see the following section.

### **Cleaning the Blower Wheel**

This operation is best performed with the dust collector sitting on top of the can or drum.

- 1 Lock out and disconnect power to the motor.
- 2 Disconnect the discharge bag elbow (8) from the blower housing discharge. On units with oversized dust bags, disconnect the flex hose from the blower discharge.
- 3 There are two pop rivets that connect the discharge guard (5) to the top section of the blower housing discharge (4). These pop rivets should be drilled out with a 3/16" drill bit.
- 4 Using a 7/16" socket, loosen and remove all the 1/4-20 nuts and bolts holding the two housing halves (4 and 7) together around the blower housing flange.
- 5 After removing all the nuts and bolts, use a pry bar to carefully break the sealant in between the two housing halves.
- 6 After the sealant is loosened, lift the motor side housing (4) and motor assembly off of the inlet side housing (7).
- 7 Set the blower housing/wheel/motor assembly on a work bench resting on the side of the motor.



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## maintenance

- 8 If possible, clean the blower wheel (6) with a wire brush while the wheel is still on the motor shaft. Use an air hose to blow off the wheel when finished. If it is not possible to clean the wheel while on the motor shaft, see **Replacing The Blower Wheel** section.

***Always wear eye protection when operating, servicing or cleaning this dust collector with a high pressure air hose.***

- 9 If cleaning the blower wheel while on the motor shaft was successful, use a putty knife to clean the excess sealant caulk off of the flanges of both blower housing halves (4 and 7).
- 10 Apply a fresh bead of silicone sealant to the housing flange on the blower housing inlet side (7).
- 11 Carefully reset the blower housing motor side (4) on top of the blower housing inlet side (7) so that the outside of the flanges and the discharges line up.
- 12 Reverse Steps 5 through 1, at left, to complete reassembly.

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### **⚠ Caution**

#### **Replacing the Blower Wheel**

This operation is best performed with the dust collector sitting on top of the can or drum.

- 1 First complete Steps 1 through 7 for Cleaning the Blower Wheel.
2. Now, follow the following steps to replace the blower wheel.
3. Measure and record the distance from the front of the wheel hub to the end of the motor shaft.
4. There are two set screws in the blower wheel. Using a 5/32" Allen wrench, remove the two set screws from the wheel hub.
- 5 Using two pry bars, place the pry bars behind the back plate of the wheel so that the pry bars are located behind two opposite wheel blades. This will give you the most leverage. Pry the wheel off of the motor shaft being careful not to damage or distort the blower housing.
- 6 After removing the wheel, clean it thoroughly with a wire brush if you will be reusing it.
- 7 If the wheel is eroded, **Do not** reuse it. It will be out of balance and will damage the motor bearings.
8. If reusing the wheel, you **must** replace the set screws in the wheel hub. **Set screws can never be used more than once.** Replace them with 5/16-18 set screws with a knurled head and a nylon locking patch on the side of the screw.



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## maintenance

- 9 File any burrs on the motor shaft from the previous set screws and dress up the keyway in the motor shaft with a file.
- 10 Using a rubber or raw-hide hammer, reinstall the wheel or install a new wheel onto the motor shaft. Locate the wheel hub on the motor shaft to the same dimension you recorded in Step 3. **Do not** use a steel hammer which can damage the wheel and/or the motor bearings.
- 11 Line up the keyway in the motor shaft with the keyway in the wheel hub.
- 12 Install a new 3/16" square shaft key into the keyway. The key should be no longer than 1-1/2". The key should be positioned so it is flush with the end of the wheel hub.
- 13 Spin the wheel by hand to make sure it is not rubbing against the motor side of the blower housing.
- 14 Tighten the set screw over the shaft key first. Then tighten the set screw onto the motor shaft. Both screws should be tightened to 165 in/lb.
- 15 Use a putty knife to clean the excess sealant caulk off of the flanges on both blower housing halves.
- 16 Apply a fresh bead of silicone sealant to the housing flange on the blower housing inlet side (7).
- 17 Carefully reset the blower housing motor side (4) on top of the blower housing inlet side (7) so that the outside of the flanges and the discharges line up.
- 18 Look into the discharge to make sure the blower wheel is not touching the inlet side of the blower housing.
- 19 Reverse Steps 5 through 1 to complete reassembly.

### Replacing the Motor

Before you attempt to replace the motor, make sure you have the correct replacement motor in your possession. All dust collector motors have the following characteristics:

- All Models 33S through 200S have a 56C frame with a C-Face mounting and a 5/8" shaft.
- Model 300S has a 145TC frame with a C-Face mounting and a 7/8" shaft.
- All motors used in the US and Canada are 3450 RPM.
- All motors are Totally Enclosed (TEFC) or Explosion Proof (EXP). **never** replace an EXP motor with a TEFC motor.
- The motor horsepower (hp) should match the horsepower of the motor you are replacing



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## maintenance

- Make sure the new motor matches the operating voltage, phase and hertz of the old motor.

To replace the motor, follow Steps 1 through 8.

This operation is best performed with the dust collector sitting on top of the can or drum.

- 1 First complete Steps 1 through 7 for **Cleaning the Blower Wheel**.
- 2 Now, complete Steps 3 through 8 for **Replacing the Blower Wheel**.
- 3 Before removing the motor, notice the location of the motor conduit box with relation to the blower housing.
- 4 With a 9/16" socket wrench, remove the four 3/8-16 bolts that hold the motor onto the motor side blower housing (4).
- 5 Remove the old motor.
- 6 Install the new motor onto the blower housing with the conduit box in the same orientation as noticed in Step 3 above.
- 7 Replace or reinstall the four motor bolts and lock washers through the blower housing and into the four holes in the motor C-Face. Thread all bolts by hand and then tighten them with the socket wrench.
- 8 Follow Steps 10 through 19 for **Replacing the Blower Wheel**, to complete the reassembly of the dust collector.

### Emptying the Can or Drum

***Never attempt to empty a can or drum while the unit is operating.***

Empty the dust collector can or drum when it becomes 1/3 full. If the can or drum becomes too full, it will reduce the suction of the dust collector.

### Emptying the Dust Bag

***Never attempt to empty a dust bag while the unit is operating.***

If you are collecting heavier chips, they will settle in the can or drum. Finer, lighter dust will go on into the dust bag. Therefore, the dust bag must also be emptied. The National Fire Protection Association (NFPA) states in their Standard 664, that wood dust in dust bags **MUST** be emptied "every day or less if warranted." They should then be checked for holes, rips or loose seams that could leak. Emptying of the dust bag should only be performed by trained personnel wearing the proper clothing and the proper respiration equipment. How often you should empty the dust bag is really a judgment call. It will vary with the weight of the material you are collecting. No matter what you are collecting, **never** let the bag get more than 1/4 full. The major

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#### Note

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#### Note

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## maintenance

cause of having to replace dust bags is due to ripping because of too much weight in the bottom of the bag.

### **Cleaning the Dust Bag**

Never attempt to operate a dust collector without the dust bag in place.

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### **⚠ Warning**

*If dust collector has been used to collect Any materials included in the following list, it should Not be cleaned. The dust bag must be disposed of using approved methods and procedures as adopted by the proper regulatory agency or agencies.*

- Any carcinogenic or biological materials.
- Any flammable materials.
- Any explosive materials.
- Any water reactive materials.
- Any nuclear materials.
- Any materials with cleaning instructions that are in contradiction with the following cleaning instructions.
- Any materials considered to be unsafe if they come in contact with the body.

### **Cleaning Instructions**

#### **Acrylic Coated Polyester Felt, Teflon® Coated Polyester Felt or Nomex® Felt Dust Bags:**

Because of the special coatings that have been applied to these materials, we do not recommend that these bag types be cleaned. They should be replaced when necessary or at least annually.

#### **Cotton Sateen & Knit Polyester Dust Bags:**

- Inspect dust bag for holes. If any holes are found the bag must be replaced.
- Unzip any zipper in the bag.
- Turn bag inside out.
- Shake bag well to dislodge any material sticking to the pores of the bag.
- Lay bag flat on table or floor.
- Vacuum bag on both sides.
- Put bag in washer.
- Set washer for Gentle cycle.
- Set water temperatures to cold for wash and rinse cycles.
- Add 1/4 cup of Woolite® detergent.



## maintenance

- After washing is completed, hang bag on line to dry. DO NOT put in dryer.
- After bag has dried, turn it right side in.
- Do not use dust bag until it has thoroughly dried.

### Note

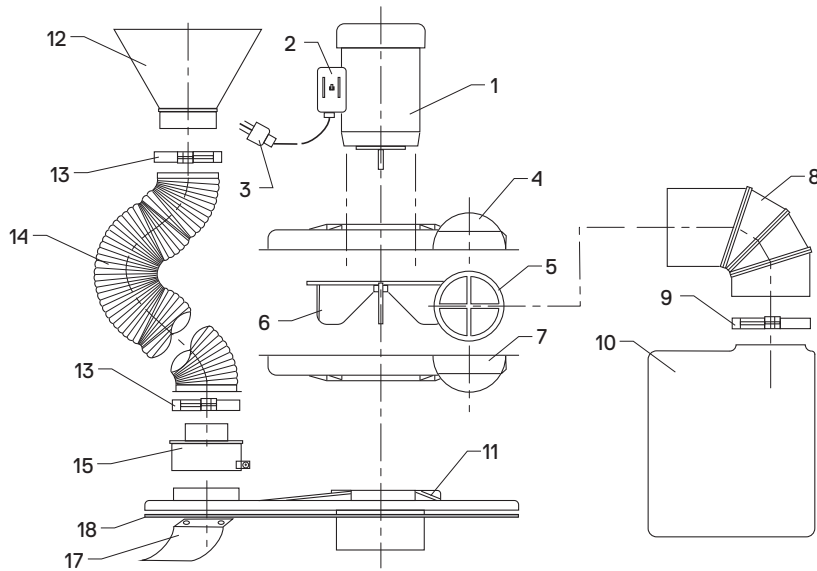
***Over washing, harsh detergents and/or drying too fast will cause bag to shrink and the inlet collar might become too small to fit back onto the unit. Shrinkage is a non-warranty claim. Dust bags can typically only be washed one time.***

## Troubleshooting

Trouble	Cause	Remedy
Unit will not operate	Improper electrical connection	Turn OFF and lock out power to the motor. Check wiring to make sure it conforms to wiring diagram for the motor for the operating voltage.
	Defective fuse or circuit breaker	Check and replace any defective or blown fuse or circuit breaker. Do not oversize for the circuit.
	Loose wiring connections	Check for loose wiring connections.
	Power turned of elsewhere	Check for other power control locations.
	Defective Motor	Have motor checked at authorized motor repair shop.
Motor overheating	Voltage supplied to motor too high or too low	Turn OFF and lock out power to the motor. Check actual incoming voltage to motor
<i>A normal motor will operate at 174°F</i>	Improper electrical connection	Turn OFF and lock out power to the motor. Check wiring to make sure it conforms to wiring diagram for the motor for the operating voltage.
	Dust bag and/or hose not in place	Must have dust bag and five foot hose minimum
Excessive Noise	Wheel rubbing inside of housing	Turn OFF and lock out power to the motor. Check wheel location inside housing. If rubbing, see <b>Replacing Blower Wheel</b> section.
	Worn or eroded blower wheel	Turn OFF and lock out power to the motor. Check wheel. Clean or replace if necessary.
	Accumulation of material on wheel	Turn OFF and lock out power to the motor. Check wheel. Clean or replace if necessary
	Worn motor bearings	Replace motor.
Low Suction	Incorrect blower rotation	Most common cause—Turn unit OFF and observe the rotation of the motor cooling fan on top of the motor. It must be turning Clockwise (CW). If it is turning Counter Clockwise (CCW), reconnect the motor wiring leads for CW rotation. See motor wiring diagram.
	Suction hose too long	Place unit closer to dust source and shorten hose.
	Dust bag dirty	Do not remove dust bag while unit is operating. Turn OFF power to the motor. Remove dust bag and clean or replace it per the instructions in <b>Cleaning Dust Bag</b> section

# parts list

**Figure 1 – Model 33S - 50S - 75S**



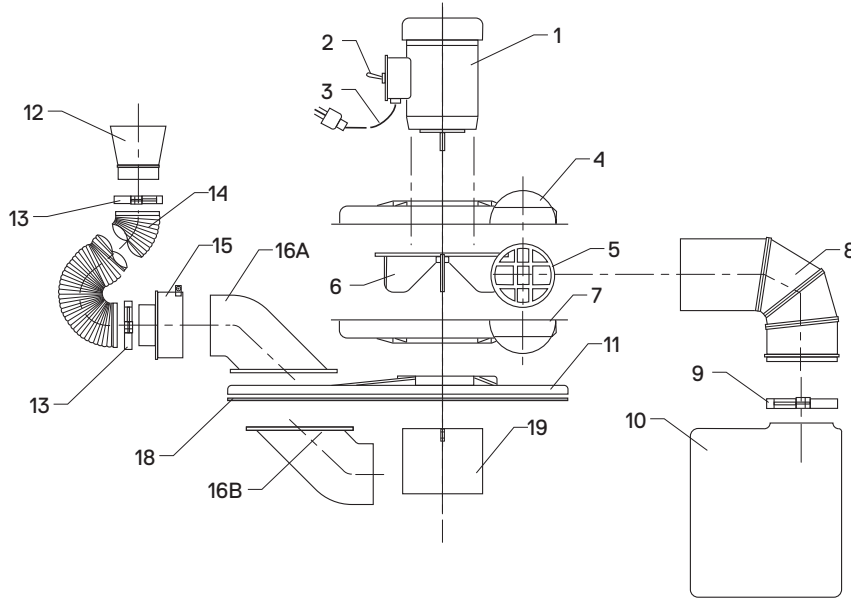
Item	Quantity	Description	Part Number		
			33S	50S	75S
1	1	Motor, 1 Phase, 115/230 Volt, 60 Hz, 56C, TEFC	37753 note 1	37754 note 1	372193 note 1
	1	Motor, 3 Phase, 230/460 Volt, 60 Hz, 56C, TEFC	371126	37154	37202
	1	Motor, 1 Phase, 115/230 Volt, 60 Hz, 56C, EXP		37152	372009
	1	Motor, 3 Phase, 230/460 Volt, 60 Hz, 56C, EXP		371679	372169
2	1	Switch, 115 Volt, TEFC only		note 3	
3	1	Cord and Plug only, 115 Volt, 60 Hz		note 3	
4 - 5 - 7	1	Blower Housing and Guard Assembly note 2	34025DC	34025DC	34025DC
5	1	Discharge Guard (only)	29330	29330	29330
6	1	Blower Wheel	5500102	5500402	5530602
8	1	Discharge Elbow	51269	51269	51269
9	1	Dust Bag Clamp	31379	31379	31379
10	1	Dust Bag	25035	25035	25035
11	1	Drum Lid and Inlet Guard Assembly	12062	12062	12062
12	1	Inlet Nozzle, Square	51014	51015	51015
13	2	Nozzle and Hose Clamp	31013	31379	31379
14	1	Hose, Inlet, 60" Long	31623PP	31624PP	31624PP
15	1	Inlet Reducer	51048		
17	1	Air Baffle	51078	51078	51078
18	1	Lid Gasket		note 4	

- 1 Includes 8 foot cord, switch and 3 prong grounded plug. 115Volt, 1 Phase, 60 Hertz power supply only.
- 2 Includes both sides of stamped steel blower housing with an ABS discharge guard sold only as an assembly. The discharge guard (5) can be purchased separately.

- 3 Source from local motor manufacturers repair shop for the motor brand on your unit.
- 4 Standard hardware store item. Source locally.

# parts list

**Figure 2 – Model 100S - 150S - 200S - 300S**



Item	Quantity	Description	Part Number			
			100S	150S	200S	300S <small>note 1</small>
1	1	Motor, 1 Phase, 115/230 Volt, 60 Hz, 56C, TEFC	37755 <small>note 2</small>	373175	373677	
	1	Motor, 3 Phase, 230/460 Volt, 60 Hz, 56C, TEFC	37254	37304	37353	374155 <small>note 3</small>
	1	Motor, 1 Phase, 115/230 Volt, 60 Hz, 56C, EXP	37252	373118		
	1	Motor, 3 Phase, 230/460 Volt, 60 Hz, 56C, EXP	3725462	37305	37354	
2	1	Switch only, 115 Volt, TEFC				<small>note 5</small>
3	1	Cord and Plug only, 115 Volt, 60 Hz				<small>note 5</small>
4 - 5 - 7	1	Blower Housing and Guard Assembly <small>note 4</small>	34029DC	34029DC	34029DC	34029DC
5	1	Discharge Guard (only)	29318	29318	29318	29318
6	1	Blower Wheel	5530602	5500702	5501002	5510304
8	1	Discharge Elbow	51228	51228	51228	
9	1	Dust Bag Clamp	31244	31244	31244	<small>see page 22</small>
10	1	Dust Bag	25071	25071	25071	<small>see page 22</small>
11	1	Drum Lid	12060	12060	12060	12060
12	1	Inlet Nozzle, Square	51016	51017	51017	51017
13	2	Nozzle and Hose Clamp	31016	31244	31244	31244
14	1	Hose, Inlet, 60" Long	31625PP	31625PP	31625PP	31625PP
15	1	Inlet Reducer	51110			
16A	1	Inlet Elbow	12061	12061	12061	12061
16B	1	Inlet Deflector	12061	12061	12061	12061
18	1	Lid Gasket				<small>note 6</small>
19	1	Intake Cylinder/Guard	51074G	51074G	51074G	51074G

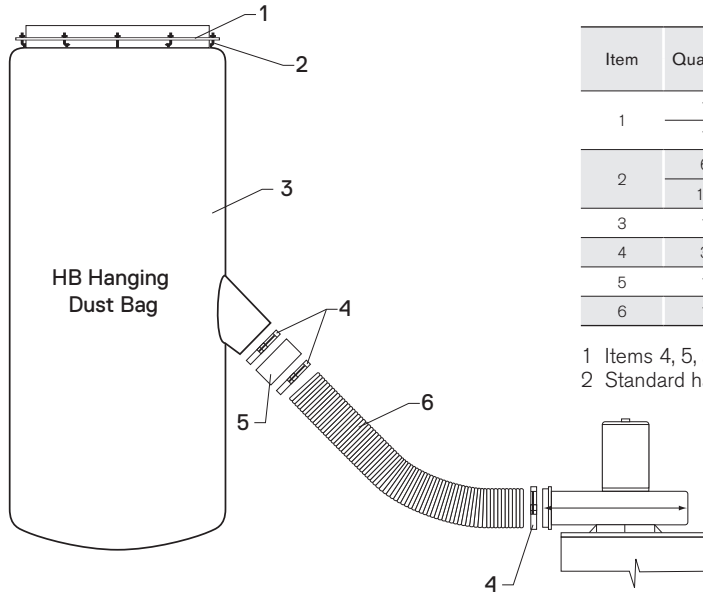
- 1 300S Model always requires an oversized dust bag. See page 22 for the oversized bags and bag connector parts.
- 2 Includes 8 foot cord, switch and 3 prong grounded plug. 115Volt, 1 Phase, 60 Hertz power supply only.
- 3 This motor is a 145TC frame All other motors are 56C frame.

- 4 Includes both sides of stamped steel blower housing with an ABS discharge guard sold only as an assembly. The discharge guard (5) can be purchased separately.
- 5 Source from local motor manufacturers repair shop for the motor brand on your unit.
- 6 Standard hardware store item. Source locally.

# parts list

## Figure 3 – HB Oversized Dust Bag for Model 300S

Optional for Models 100S -150S - 200S

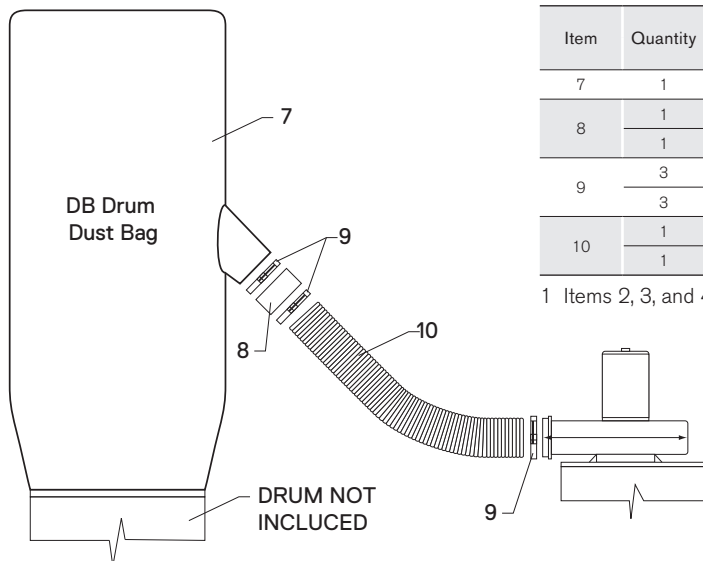


Item	Quantity	Description	100S - 150S - 200S - 300S	
			24X80-HB	48X80-HB
1	1	Ring, 24" Diameter, 6 holes	27131	
	1	Ring, 48" Diameter, 12 holes		27123
2	6	J Hook with 1/4-20 Nuts	note 2	
	12	J Hook with 1/4-20 Nuts		note 2
3	1	HB Dust Bag	Select materia from catalog	
4	3	Hose Clamp, 6"	31244	31244
5	1	Hose Connector, 6"	51088	51088
6	1	Hose, 6" Diameter x 60" Long	31626PP	31626PP

1 Items 4, 5, and 6 (for 6" hose) come as standard parts with 300S model,  
2 Standard hardware store item. Source locally.

## Figure 4 – DB Oversized Dust Bag for Model 300S

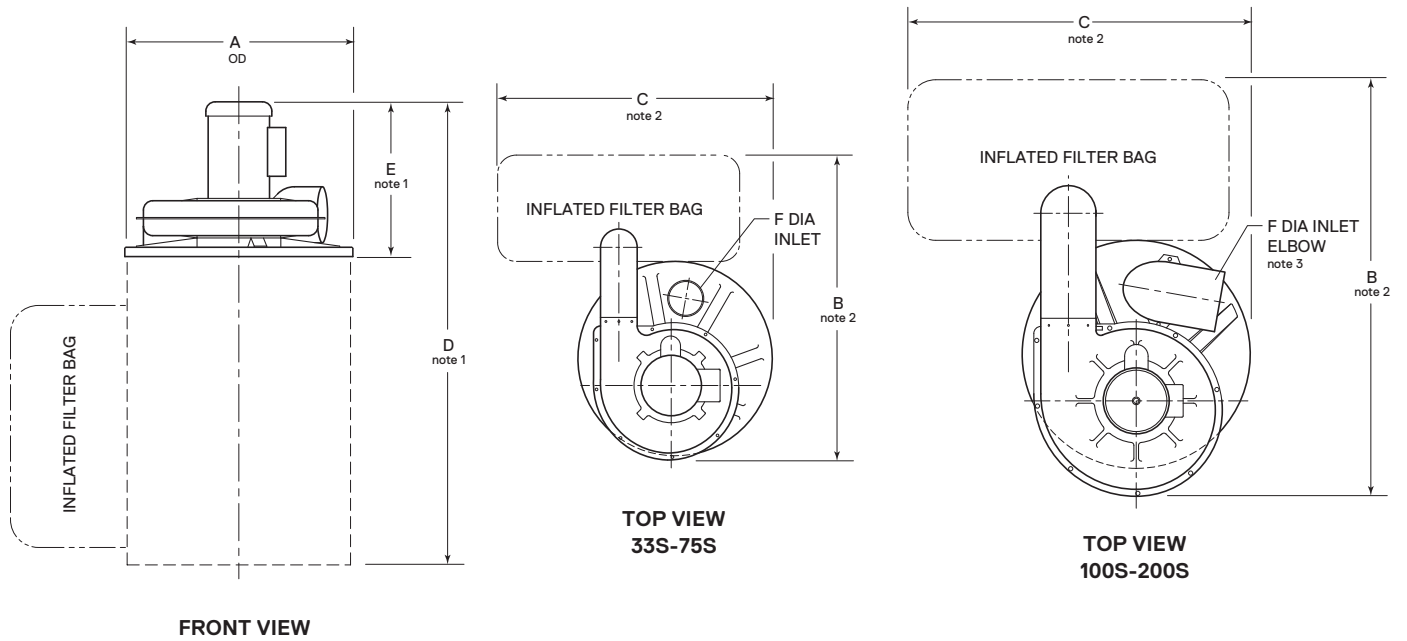
Optional for Models 50S - 75S - 100S -150S - 200S



Item	Quantity	Description	50S - 75S	100S - 150S - 200S - 300S	
			24X40-DB	24X80-DB	48X80-DB
7	1	DB Dust Bag	Select materia from catalog		
8	1	Hose Connector, 4"	51086		
	1	Hose Connector, 6"		51088	51088
9	3	Hose Clamp, 4"	31379		
	3	Hose Clamp, 6"		31244	31244
10	1	Hose, 4" Diameter x 60" Long	31623PP		
	1	Hose, 6" Diameter x 60" Long		31626PP	31626PP

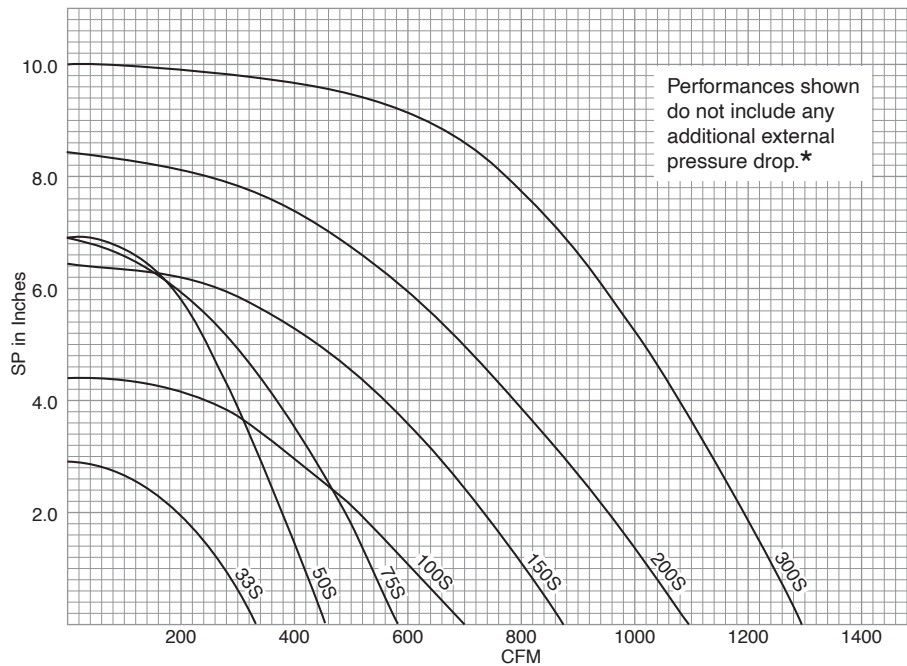
1 Items 2, 3, and 4 (for 6" hose) come as standard parts with 300S model,

# dimension and performance curves



Model	A	B note 2	C note 2	D note 1	E note 1	F
33S - 75S	20 7/8"	32 3/4"	29 1/2"	40 1/4"	15"	4"
100S - 200S	24 1/2"	44 3/4"	37"	52 3/4"	18 3/4"	6"

- 300S model dimensions similar to 200S except for dust bag.
- 1 Maximum normal dimensions shown, varies with motor
  - 2 Approximate dimensions with standard inflated dust bag.



\* 33S to 200S models tested with standard bags per page 6.

300S model tested with 48X80DB bag.

All models tested with 5 feet of hose and nozzle



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## information

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### **Limited Warranty**

Cincinnati Fan and Ventilator Company (Seller) warrants products of its own manufacture, against defects of material and workman-ship under normal use and service for a period of eighteen (18) months from date of shipment or twelve (12) months from date of installation, whichever occurs first. This warranty does not apply to any of Seller's products or any part thereof which has been subject to extraordinary wear and tear, improper installation, accident, abuse, misuse, overloading, negligence or alteration. This warranty does not cover systems or materials not of Seller's manufacture. On products furnished by Seller, but manufactured by others, such as motors, Seller extends the same warranty as Seller received from the manufacturer thereof. Expenses incurred by Purchaser's in repairing or replacing any defective product will not be allowed except where authorized in writing and signed by an officer of the Seller.

The obligation of the Seller under this warranty shall be limited to repairing or replacing F.O.B. the Seller's plant, or allowing credit at Seller's option.

**This warranty is expressly in lieu of all other warranties either expressed or implied including the warranties of merchantability and fitness for a particular purpose and of all other obligations and liabilities of the seller. The purchaser acknowledges that no other representations were made to purchaser or relied upon by purchaser with respect to the quality or function of the products herein sold.**

Removal of the Sellers nameplate or any generic fan nameplate containing the fan serial number voids all warranties, either writ-ten or implied. Failure to complete and document all the pre-startup and post startup checks and perform the suggested routine maintenance checks voids all warranties, either written or implied.

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information

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### **Limitation of Liability**

Notice of any claim, including a claim for defect in material or workmanship, must be given to Seller in writing within 30 days after receipt of the equipment or other products. Seller reserves the right to inspect any alleged defect at Purchaser's facility before any claim can be allowed and before adjustment, credit, allowance replacement or return will be authorized. See RETURNS below. Seller's liability with respect to such defects will be limited to the replacement, free of charge, of parts returned at Purchaser's expense F.O.B. Seller's plant and found to be defective by the Seller.

**In no event will seller be liable for special, indirect, incidental or consequential damages, whether in contract, tort, negligence, strict liability or otherwise, including without limitation damages for injury to persons or property, lost profits or revenue, lost sales or loss of use of any product sold hereunder. Purchaser's sole and exclusive remedy against seller will be the replacement of defective parts as provided herein or refund of the purchase price for defective products, at seller's sole option. Seller's liability on any claim, whether in contract, tort, negligence, strict liability or otherwise, for any loss or damage arising out of or in connection with purchaser's order or the products or equipment purchased hereunder, shall in no case exceed the purchase price of the equipment giving rise to the claim.**

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## information

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### **Responsibly**

It is the understanding of the Seller that Purchaser and/or User will use this equipment in conjunction with additional equipment or accessories to comply with all Federal, State and local regulations. The Seller assumes no responsibility for the Purchaser's and/or User's compliance with any Federal, State and local regulations.

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### **Returns**

Cincinnati Fan & Ventilator Company assumes no responsibility for any material returned to our plant without our permission. An RMA (Return Material Authorization) number must be obtained and clearly shown on the outside of the carton or crate and on a packing slip. Any items returned must be shipped freight prepaid. Failure to comply will result in refusal of the shipment at our receiving department.

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### **Disclaimer**

This manual, and all its content herein, is based on all applicable known material at the time this manual was created. **Any parts of this manual are subject to change at any time and without notice.**

If any statements, diagrams and/or instructions contained herein, for components not manufactured by the Seller, conflict with instructions in the manufacturer's manual (i.e.: motors, bearings, dampers, etc.), the instructions in the manufacturer's manual, for that component take precedent.

Should you want the latest version of this manual, please contact us or our sales office for your area. Or, you can print a current version by going to our website at [cincinnati.com](http://cincinnati.com).

# Dust-Master

USER MANUAL

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**SPX ENGINEERED AIR MOVEMENT**

7697 SNIDER ROAD

MASON, OH 45040 USA

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