

# CDC-1 Reverse Pulse Dust Collectors

## Models 300, 600, and 900 CFM

O. M. 28225

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### **NOTICE TO PURCHASERS AND USERS OF OUR PRODUCTS AND THIS INFORMATIONAL MATERIAL**

Clemco proudly provides products for the abrasive blast industry and is confident that industry professionals will use their knowledge and expertise for the safe and efficient use of these products.

The products described in this material and the information relating to these products are intended for knowledgeable, experienced users. It is the responsibility of the user to insure that proper training of operators has been performed and a safe work environment is provided.

No representation is intended or made as to: the suitability of the products described here for any purpose or application, or to the efficiency, production rate, or useful life of these products. All estimates regarding production rates or finishes are the responsibility of the user and must be derived solely from the user's experience and expertise, not from information contained in this material.

It is possible that the products described in this material may be combined with other products by the user for purposes determined solely by the user. No representations are intended or made as to the suitability of or engineering balance of or compliance with regulations or standard practice of any such combination of products or components the user may employ.

This equipment is only one component of a cabinet blasting operation. Other products, such as air compressors, air filters and receivers, abrasives, equipment for ventilating, dehumidifying, or other equipment, even if offered by Clemco, may have been manufactured or supplied by others. The information Clemco provides is intended to support the products Clemco manufactures. Users must contact each manufacturer and supplier of products used in the blast operation for warnings, information, training, and instruction relating to the proper and safe use of their equipment.

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**1.0 INTRODUCTION**

**1.1 Scope of Manual**

1.1.1 This manual covers the installation, operation, and maintenance of all models of the CDC-1 Reverse-Pulse Dust Collector. The dust collector is used with blast cabinets, reclaimers, and small recovery systems. These instructions also contain important information required for safe operation of the collector. Before operating the dust collector and other equipment used with the collector, all personnel involved with the operation must read this entire manual. Refer to the appropriate manual for operation of equipment used in conjunction with the dust collector.

**1.2 Safety Alerts**

1.2.1 Clemco uses safety alert signal words, based on ANSI Z535.4-2011, to alert the user of a potentially hazardous situation that may be encountered while operating this equipment. ANSI's definitions of the signal words are as follows:



This is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

**NOTICE**

Notice indicates information that is considered important, but not hazard-related, if not avoided, could result in property damage.

**CAUTION**

Caution indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

**WARNING**

Warning indicates a hazardous situation that, if not avoided, could result in death or serious injury.

**DANGER**

Danger indicates a hazardous situation that, if not avoided, will result in death or serious injury.

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**1.4 General Description**

**1.4.1** CDC-1 dust collectors are dry, reverse-pulse single-cartridge collectors, primarily used to ventilate abrasive blast cabinets and remove dust from exhausting air. Industrial models (same as cabinet models but provided with longer inlet hose) are used with sweep-in pneumatic recovery systems, also provides the air-wash for AWAC abrasive cleaners. CDC-1 dust collectors are available in three sizes:

- **300 cfm with 5" inlet** - used with a small-to-medium-size cabinet with a 300 cfm reclaimer.
- **600 cfm with 6" inlet** - used with a cabinet utilizing a 600 cfm reclaimer and with the AWAC abrasive cleaner.
- **900 cfm with 7" inlet** - used with a cabinet or sweep-in pneumatic recovery system utilizing a 900 cfm reclaimer.

Figure 1 shows callouts of the dust collector components. Figure 4 shows typical arrangements when collector is used to ventilate a blast cabinet, and Figure 5 shows the connection to an abrasive cleaner.

**1.4.2** CDC-1 dust collectors are available with and without an exhauster assembly. CDC collectors without exhauster are for systems being converted from a dry filter or dust bag, and the user wishes to remove the exhauster from their reclaimer and install it on the CDC collector. The conversion is covered in Section 2.3; review that section before beginning the conversion, as some additional parts may be required.

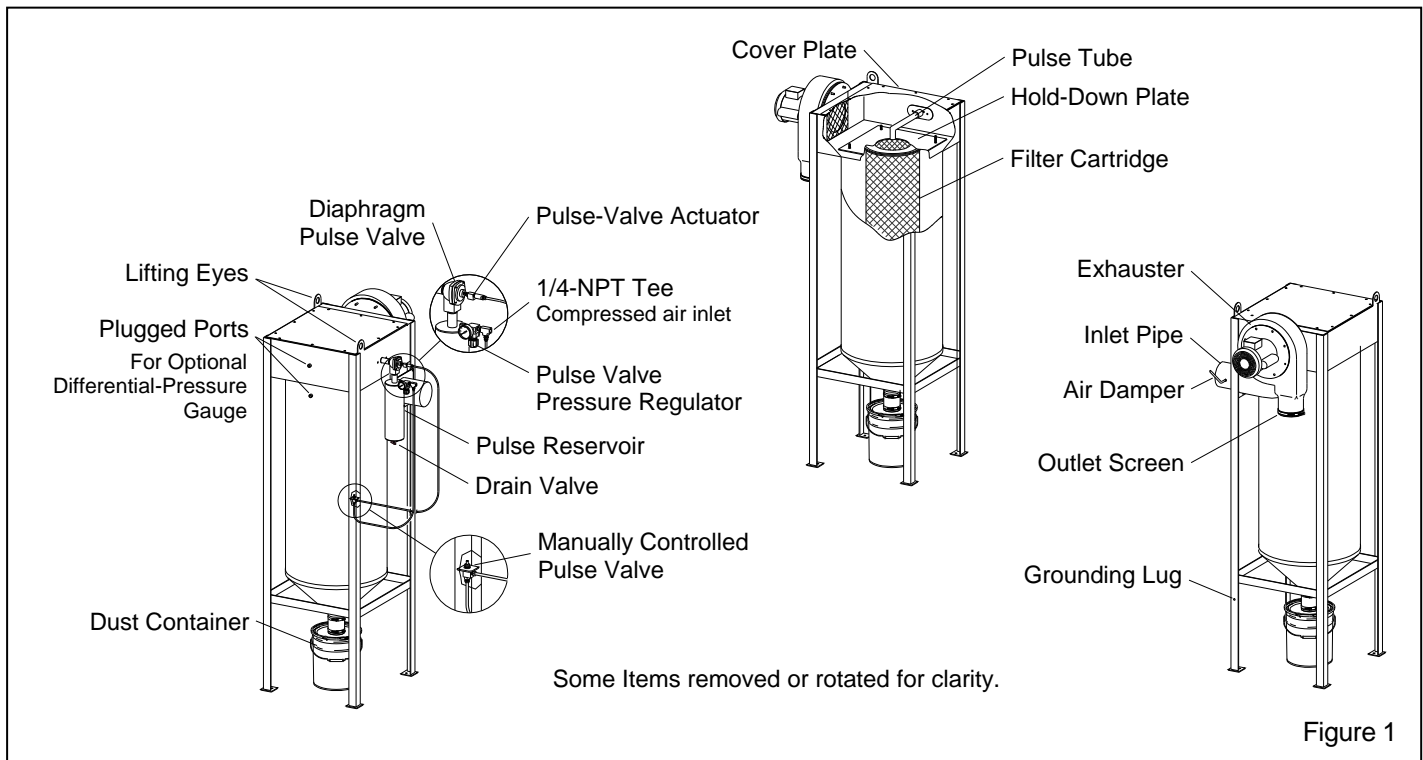
**1.5 Theory of Operation**

**1.5.1** The exhauster is mounted on the clean-air side of the filter cartridge, and provides "pull-thru" (pulls air through the filter cartridge) air flow, rated at 300, 600, or 900 cfm depending on the dust collector model. The exhauster draws dust-laden air through a flexible duct hose from the reclaimer into the lower side of the collector and through the filter cartridge. As air passes through the cartridge, dust accumulates on the outer surface. Cleaned air flows up through the center of the cartridge and out the exhauster.

**1.5.2** Accumulated dust is released from the cartridge when a periodic pulse of high-velocity compressed air expands against the inner surface of the cartridge. The pulse occurs each time the operator presses the manually controlled pulse valve. The dust particles fall away from the cartridge into the dust container for disposal.

**NOTICE**

**Do not pulse new dust collectors or replacement cartridge until the cartridge is properly seasoned per Section 7.2. Pulsing unseasoned cartridges can cause premature cartridge failure and decrease efficiency of the dust collector.**



**2.0 SETUP AND INSTALLATION**

**2.1 General Installation Notes**

**2.1.1** Select a location where compressed air and electrical service are available. The location must comply with OSHA and local safety codes. Ample space is required **above** the collector to install and change the filter cartridge. Refer to the following table for the collector height and the height required to change the filter cartridge.

Model	Collector Height Rounded to Next .5"	Overall Height Needed to Change Cartridge
300 CFM	93.5 inches	130.5 inches
600 CFM	94 inches	131 inches
900 CFM	95.5 inches	148.5 inches

The height shown to change the cartridge does not include space needed to position lift equipment that may be required to handle a heavily loaded cartridge.

**2.1.2** Refer to Figure 4 and place the collector so the inlet flex hose has as few bends as possible. Determine the best location and position all units before making the final assembly. Doing so will make sure there are no placement issues during maintenance.

**2.2 Setup**

**2.2.1** The dust collector is shipped lying down on its side; place the skid close to the collector's final position and remove all shipping restraints.

**⚠ WARNING**

**Weight of an assembled dust collector varies slightly among models. A 900 cfm dust collector weighs approximately 500 lbs. Uprighting the collector and moving it into position should be performed by experienced personnel who are familiar with safety hazards associated with handling steel material of this sort, using only approved tools and hoists that are required for safe erection of this product.**

**2.2.2** Fasten a chain or sling through both lifting eyes; secure it to the lift equipment and lift the collector upright. Make sure the sling and lifting equipment are rated for the weight of the collector and that the operator is trained in handling the equipment. The collector weighs approximately 500 lbs.

**2.3 Converting from Dry Filters and Dust Bags or Installing Reclaimer Exhauster on a CDC Dust Collector Ordered Without Exhauster**

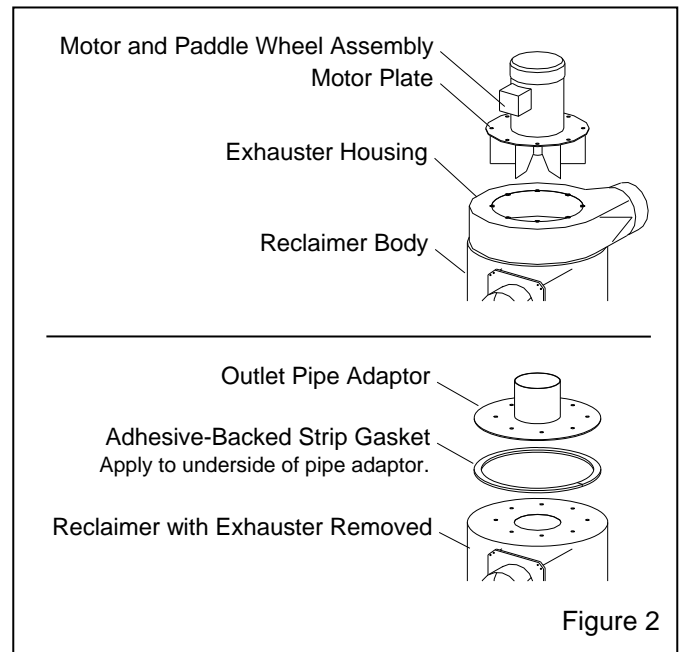
**NOTE: If the CDC-1 collector is not replacing an existing dry filter or dust bag, or an exhauster is not being moved from an existing reclaimer to the CDC-1 collector, skip to Section 2.4.**

**2.3.1** When the CDC-1 collector is replacing a dry filter or dust bag, one of the following conversion kits is required to convert the reclaimer for use with the CDC dust collector. If the kit is not present, order from a Clemco distributor.

- for 300 cfm reclaimer ..... 28962
- for 600 cfm reclaimer ..... 28963
- for 900 cfm reclaimer ..... 28964

**2.3.2 Converting a Reclaimer to Use a CDC Dust Collector**

**2.3.2.1** Refer to Figure 2 and remove the cap screws and washers, securing the motor plate to the exhauster housing, and remove existing motor plate, motor, and paddle wheel as an assembly.



**2.3.2.2** Working through the opening in the exhauster top, remove the cap screws and washers securing the exhauster housing to the reclaimer; then remove the housing. Some prying may be needed to break the seal of the gasket.

**2.3.2.3** Remove all gasket material from the top of the reclaimer.

**2.3.2.4** Peel a short section of backing from the strip gasket and apply the gasket around the perimeter on the underside of the outlet-pipe adaptor plate, peeling away the backing as needed. Make sure the ends of the gasket fit tightly together.

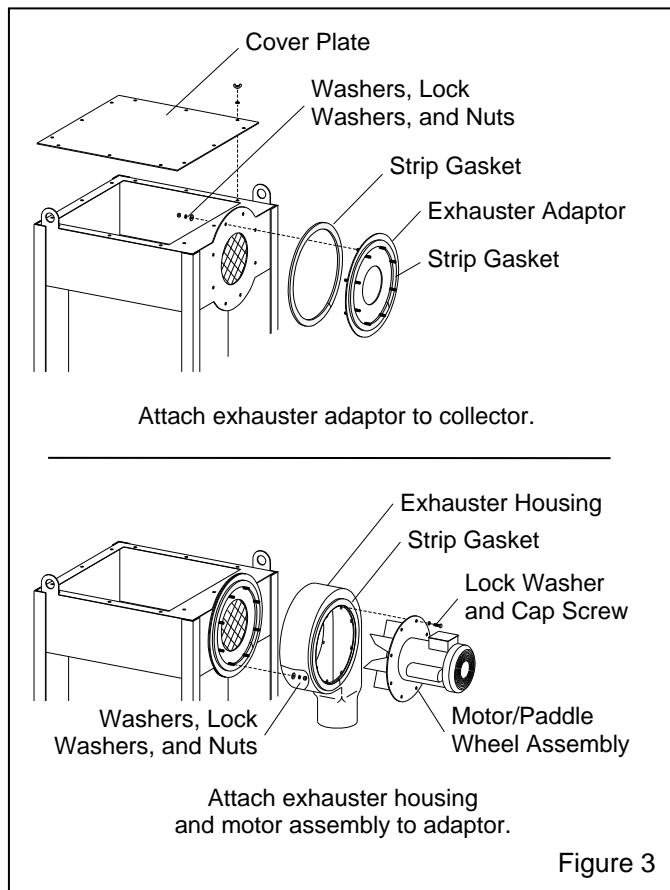
**2.3.2.5** The gasket may have blocked some of the bolt holes; remove the gasket at each blocked hole.

**2.3.2.6** The outlet adaptor pipe and mounting holes may not be concentric. Rotate the plate to make sure the outlet pipe, reclaimer outlet, and mounting holes are all aligned before bolting the plate to the reclaimer with fasteners provided.

**NOTE: If the exhauster assembly will be installed on the CDC-1 dust collector, continue with Section 2.3.3; if the collector has an exhauster installed, skip to Section 2.4.**

**2.3.3 Mounting Exhauster Assembly to CDC Dust Collector – Figure 3**

**2.3.3.1** This section explains how to install an exhauster assembly on a CDC dust collector shipped without an exhauster.



**2.3.3.2** The motor plate, motor, and paddle wheel assembly should be separated from the exhauster housing as noted in Section 2.3.2.

**2.3.3.3** Remove the cover-plate wing nuts and lock washers to remove the cover plate.

**2.3.3.4** Peel a short section of backing from the strip gasket and apply the gasket around the outside of the studs on both sides of the exhauster adaptor, as shown in the upper section of Figure 3, peeling away the backing as needed. Make sure the ends of the gasket fit tightly together. **NOTE: An adaptor is not used on 900 cfm dust collectors; the exhauster housing bolts directly to the dust collector.**

**2.3.3.5** The side of the adaptor with the larger bolt pattern faces the collector. Insert the studs into the mating holes in the collector and secure with washers, lock washers, and nuts. **NOTE: There is a notch on the edge of the adaptor; it is for manufacturing purposes, and it does not matter which direction the adaptor is rotated.**

**2.3.3.6** Rotate the exhauster housing so the outlet faces down, then slide the housing onto the adaptor. Secure with washers, lock washers, and nuts.

**2.3.3.7** Insert the paddle wheel and motor assembly into the exhauster housing, align the motor-plate bolt holes with those on the housing, then secure with lock washers and cap screws.

**NOTICE**

**Turn the motor fan housing to make sure the paddle wheel does not rub on any mounting fasteners or housing. If rubbing does occur, remove the motor assembly and determine what caused the interference. Loosen the paddle-wheel set screws and slide the paddle wheel up or down on the motor shaft as needed to eliminate the rubbing.**

**2.4 Positioning Dust Collector**

**2.4.1** Figure 4 shows typical arrangements and callouts when the dust collector is connected to a blast cabinet reclaimer. **NOTE: The collector may also connect to a 900 cfm reclaimer mounted on a blast machine used with a small pneumatic recovery system, as shown in the M-Section® Sweep-In Recovery Owner’s Manual, stock no. 23647.**

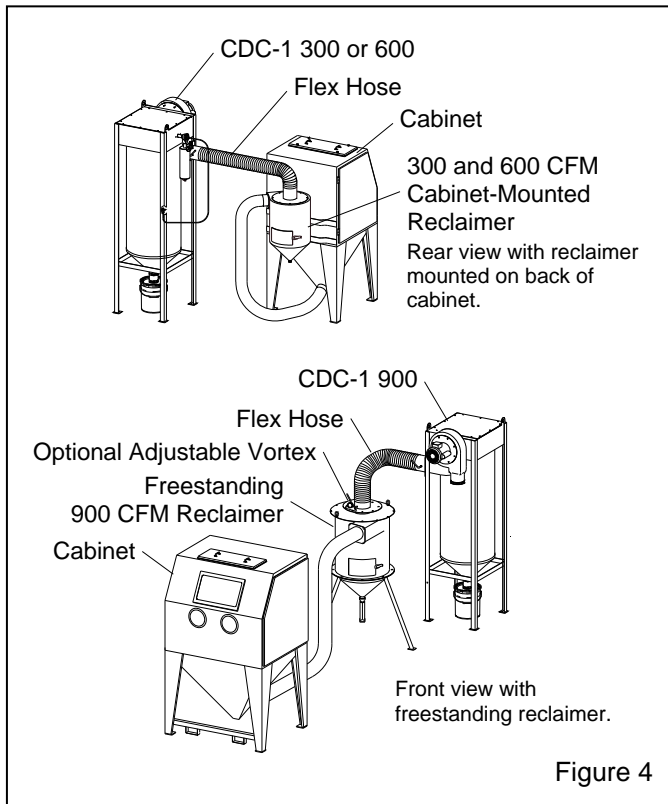


Figure 4

**2.4.2** Figure 5 is a typical arrangement with a CDC-1 600 connected to an AWAC abrasive cleaner used with mechanical recovery systems. The dust collector provides air movement for the AWAC air wash to remove fines (abrasive worn too fine for blasting purposes) from recyclable abrasive.

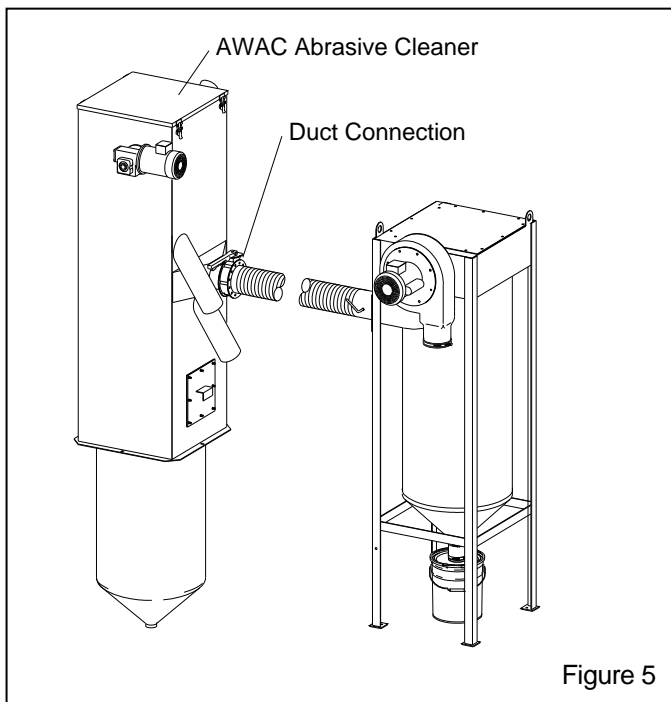


Figure 5

**2.4.3** Position the collector in a convenient location that complies with OSHA and local safety codes. Provide ample space at the top to open the cover to access and replace the cartridge, and at the front or sides to remove the dust container.

**2.4.4** Recheck orientation of the dust collector, blast cabinet and reclaimer, or other equipment the collector is servicing. When satisfied that all are correctly positioned, anchor the collector to the floor. **NOTE: If there is any doubt about the final positioning of the dust collector, do not remove the lifting equipment until the collector is fully assembled, connected to the mating equipment, and ready to be anchored.**

**2.4.5** After the collector is firmly anchored, remove the lifting chain/sling.

**2.5. Exhauster Outlet Screen – Figure 6**

**2.5.1** Place the formed outlet screen over the exhauster outlet and secure with the worm clamp provided.

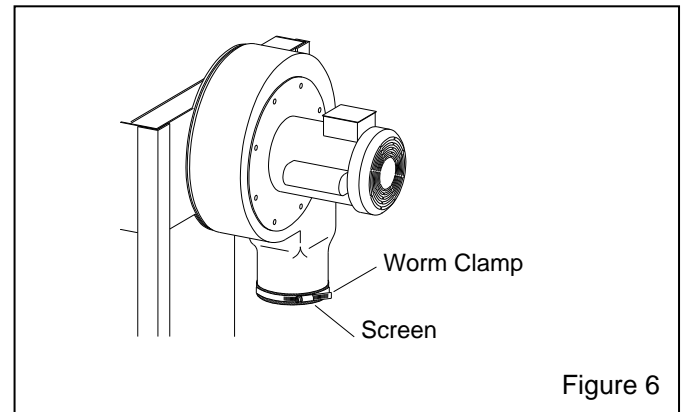


Figure 6

After the exhauster outlet screen is installed the remaining connections, compressed air service, and electrical service may be done in any sequence.

**2.6 Flex Hose Connections**

Removing the wire from the first two or three inches of hose eases installation and creates a tighter seal. Use care not to damage the hose. Secure the hose with worm clamps. The hose wire helps dissipate static in the conveying hose and helps ground each segment. In order for the hose wire to dissipate static electricity, the wire must touch the metal of each segment.

**2.6.1** Refer to Figure 4 when connecting flex hose to a reclaimer or Figure 5 and when connecting to an AWAC abrasive cleaner, and connect the hose between the reclaimer or AWAC outlet and dust collector inlet pipe.

**2.6.2** Cut the hose to length to provide a connection loose enough to avoid stretching the hose, but taut enough to prevent excessive sagging. Support the hose if needed.

**2.7 Ground Dust Collector**

**2.7.1** To prevent static electricity build up, attach an external grounded wire from an earth ground to the grounding lug located on the dust collector leg.

**2.8 Connect Compressed-Air Supply – Figure 7**

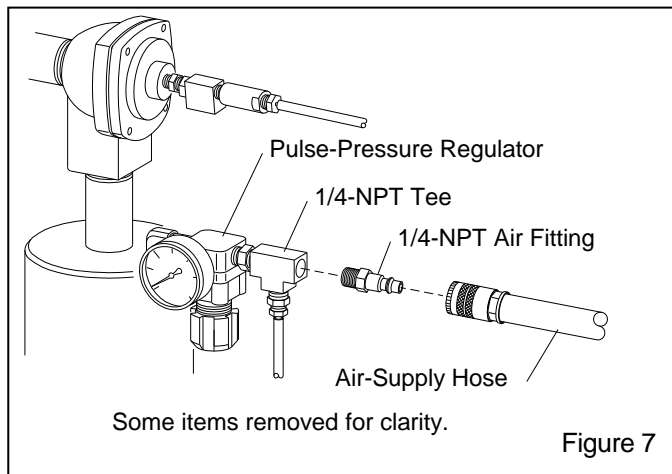
For maximum filter life and efficiency, the pulse air source should be 30% relative humidity or less, and be free of any oil contaminants. If line air does not meet this requirement, an air dryer is recommended.

**⚠ WARNING**

**Failure to observe the following before connecting the equipment to the compressed-air source can cause serious injury or death from the sudden release of compressed air.**

- **Lockout and tagout the compressed-air supply.**
- **Bleed the compressed-air-supply line.**

**2.8.1** Connect a 1/4-NPT air fitting, that is compatible with the air-supply hose (refer to Paragraph 2.8.2), to the inlet tee on the pulse-pressure regulator. Note that the style of connections shown in Figure 7 is for reference only.



**2.8.2** Install an isolation valve at the compressed-air source to enable depressurization for service. Connect a 1/4" ID or larger air line from the air source to the tee mounted on the pressure regulator. A smaller diameter hose may delay full pressure recovery time when doing multiple pulses.

**2.9 Electrical Service**

**2.9.1 Electrical Installation Notes**

**⚠ WARNING**

**Shorting electrical components can result in serious electrical shocks or equipment damage. Electrical power must be locked out and tagged out before performing any electrical work. All electrical work or any work done inside a control panel or junction box must be performed by a qualified electrician, and comply with applicable codes.**

All wiring is to be provided by the user, and it is to comply with applicable electrical codes.

Electrical requirements depend on the size and phase of the motor. Standard dust collectors are supplied as follows:

- 300 cfm, 1/2 HP, 115/208-230 V, 1 PH, 60 HZ  
FLA 115/7, 208/3.4, 230/3.5.
- 600 cfm, 1 HP, 115/208-230 V, 1 PH, 60 HZ  
FLA 115/12, 208/6.6, 230/6.2.
- 900 cfm, 2 HP, 208-230/460 V, 3 PH, 60 HZ  
FLA 208/5.2, 230/4.8, 460/2.4.

**2.9.2 Single-Phase Wiring for Blast Cabinets**

**2.9.2.1** Refer to the wiring schematic in Figure 8. Wire the dust collector motor per instruction on the motor data plate to the junction box mounted on the cabinet. When wired as noted in Figure 8, the exhauster motor will start when the cabinet light switch is turned ON and stop when the switch is turned OFF.

**2.9.3 Three-Phase Wiring for Blast Cabinet**

**2.9.3.1** Refer to the wiring schematic stowed inside the control panel mounted on the cabinet. Wire from the users disconnect to the panel and from the panel to the dust collector motor per instruction on the motor data plate.

**2.9.4 Three-Phase Wiring for Recovery System**

**2.9.4.1** When the dust collector comes with a recovery system that includes a control panel (panels are generally not included unless ordered as a separate item), a wiring schematic is stowed inside the panel. Wire from the user's disconnect to the panel and from the panel to the dust collector motor per instruction on the motor data plate.

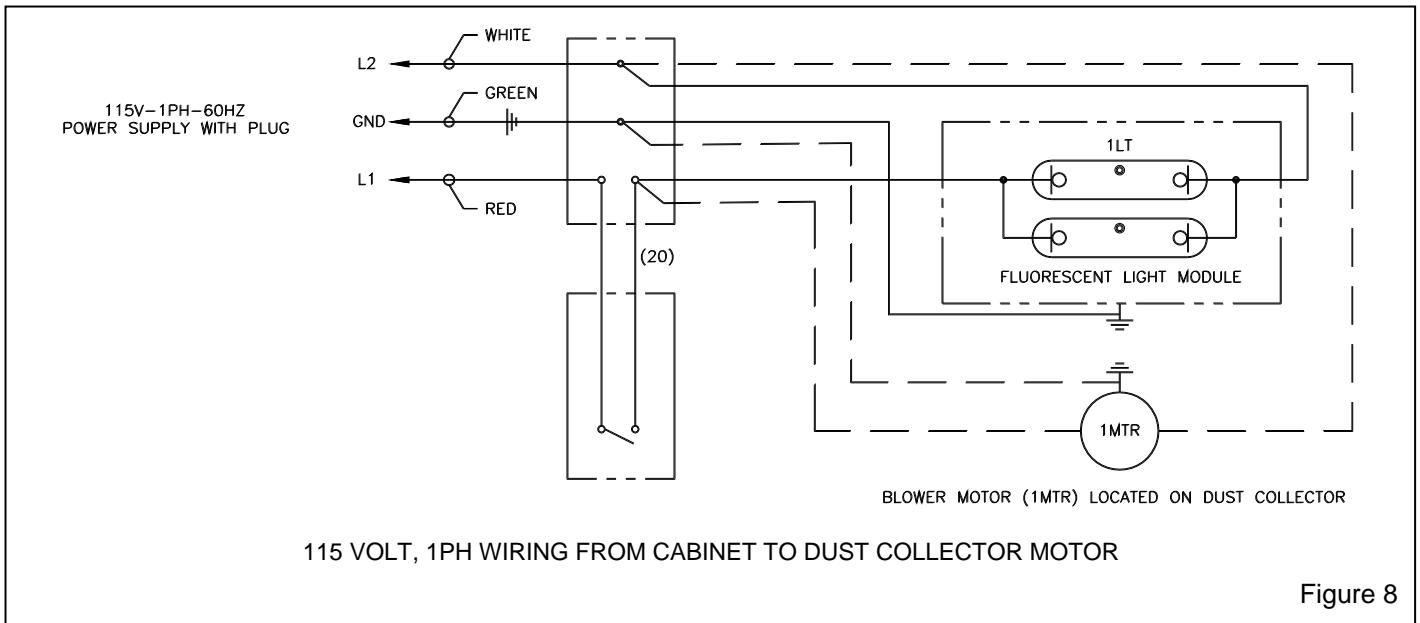


Figure 8

**2.9.4.2** If a panel is not included, wire the motor as noted on the motor data plate using a user-supplied control panel. The collector motor should be wired to start in series with other system motors. Generally, the dust collector should start before other system components.

**2.10 Check Motor Rotation**

**2.10.1** After wiring is completed, observe the following warning and check the motor rotation. To check rotation, jog the starter (momentarily turn switch ON and OFF). This causes the motor to rotate slowly. Look through the slots in the motor fan housing, where rotation of the fan can easily be observed. Proper rotation is indicated by the arrow on the exhaustor housing; the fan should rotate toward the exhaustor outlet as shown in Figure 9.

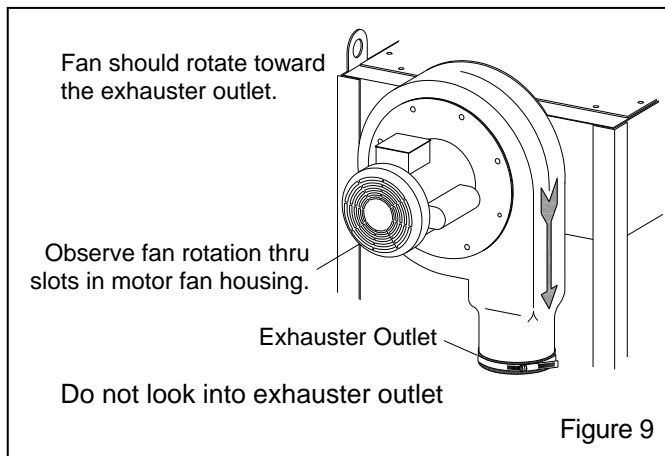


Figure 9

**⚠ WARNING**

**Do not look into the exhaustor outlet while the paddle wheel is turning. Injury to the eye or face can occur from objects being ejected from the exhaustor.**

**2.11 Dust Container**

**2.11.1** Refer to Figure 10 and set the drum liner into the dust container. Drape the liner over the top edge of the container. Place the lid onto the container and latch the lock ring, making sure the lid and clamp are secure.

**2.11.2** Place the dust container under the hopper and attach the flex hose between the collar on the bottom of the hopper and the collar on the container lid.

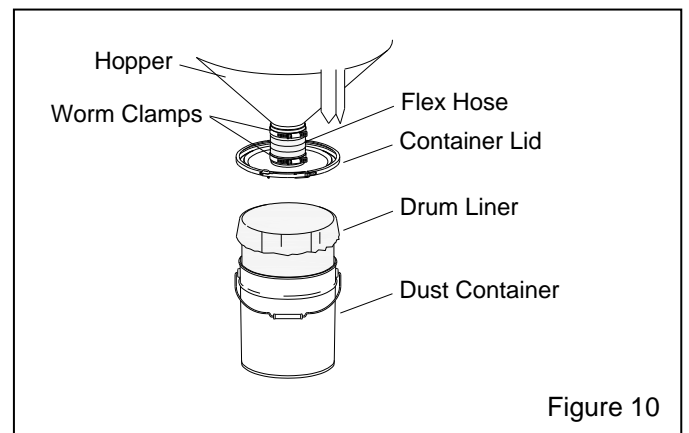


Figure 10



2.11.3 Secure both ends of the flex hose with worm clamps provided.

**NOTICE**

To prevent dust leaks, all flex hose connections made at the bottom of the hopper and the lid must be air tight to prevent dust leaks.

2.12 Install Filter Cartridge – Figures 11 and 12

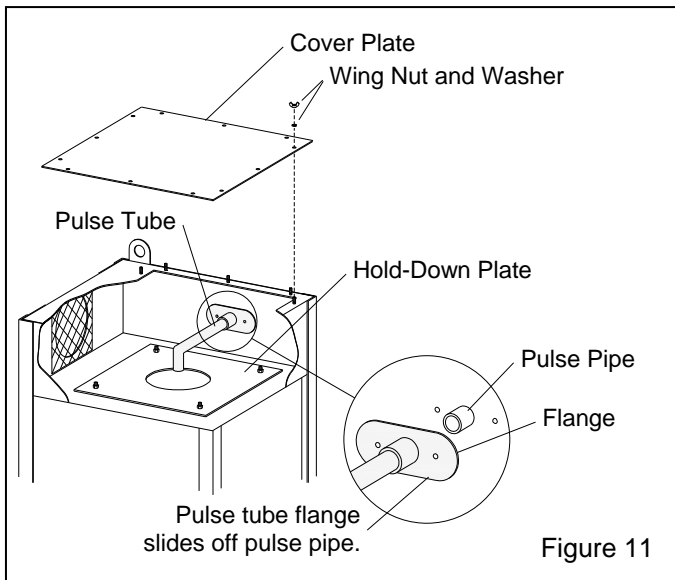
NOTE: The filter cartridge is shipped loose to avoid damage during transportation.

**WARNING**

Fall Hazard: Follow OSHA Regulations in 29CFR1910 Subpart D and F for fall protection when working above 4 feet.

2.12.1 Remove the cover-plate wing nuts and lock washers to remove the cover plate.

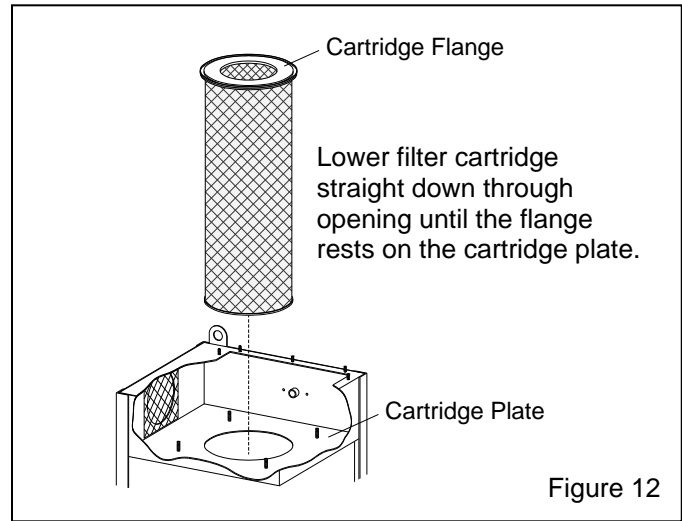
2.12.2 Remove the two nuts, washers, and cap screws securing the pulse tube flange to the collector and slide the pulse tube off the pulse pipe as shown in the insert in Figure 11.



2.12.3 Remove the four hold-down plate nuts and washers and remove the hold-down plate.

2.12.4 Remove the filter cartridge from the shipping carton. Do not remove the straps from around the 900 cfm cartridge; they help hold the pleats in place. There is no expanded metal on a 900 cfm cartridge.

2.12.5 Make sure the top of the cartridge plate is clean, then lower the cartridge into the opening as shown in Figure 12 until the cartridge flange rests on the cartridge plate.



2.12.6 Reassemble the hold-down plate, pulse tube, and cover plate in reverse order.

3.0 OPERATION

**WARNING**

Everyone operating and servicing this equipment must be made aware of the hazards associated with abrasive blasting and handling toxic materials, including lead and dust. Toxicity and health risks vary with the type of media used and dust generated by blasting. Identify all material being removed by blasting, and obtain a Safety Data Sheet (SDS) for the blast media.

**NOTICE**

The dust collector access cover, dust container cover, and flex hose must be secure when the dust collector is in operation.

3.1 Initial Startup

3.1.1 Pressurize the air-supply line to the pulse regulator and check all pneumatic connections for leaks.

**3.1.2** Turn pulse pressure to 20 psi (refer to Section 5.1 to adjust pressure), then refer to Figure 13 and press and release the manual pulse-valve plunger; (press and release foot pedal with foot-pedal pulse option) the collector should pulse every time the plunger is momentarily pressed. **NOTE: Do not hold the plunger in;** holding the plunger in for more than a moment will **not** increase cleaning efficiency. Prolonged pressure on the plunger could cause dust leaks and needlessly consume compressed air.

**3.1.3** After the operation is checked, adjust pulse pressure to 0 psi until the cartridge is seasoned per Section 7.2.

### 3.2 Operational Startup

## NOTICE

**Do not pulse a new dust collector or replacement cartridge until the cartridge is properly seasoned per Section 7.2. Pulsing unseasoned cartridges can cause premature cartridge failure and decrease the efficiency of dust collector.**

**3.2.1** Make sure the dust container lid is secure.

**3.2.2** Pressurize the pulse reservoir and check reservoir pressure. Refer to Section 5.1 to adjust pressure.

**3.2.3** Switch ON the lights and exhauster. If wired according to the cabinet schematic, the ON/OFF switch located on the cabinet performs both functions.

### 3.3 Pulsing (Cleaning) Dust Collector Cartridge Refer to Section 4.3 for optional foot-pedal pulsing

**3.3.1** The filter cartridge pulses each time the manual pulse-valve plunger is pressed; refer to Figure 13. With the exhauster running, quickly press and release the plunger on the pulse valve. Several pulses may be needed to clean the cartridge; wait about 5 seconds between pulses. Rapid repetitive pulsing may cause dust leakage.

**3.3.2** If the collector is used with a blast cabinet, begin pulsing the cartridge at least every half hour of blasting. If the collector is used with an AWAC, pulse every 4 hours and before turning OFF the exhauster. Dusty blasting conditions will require more frequent pulsing. As the dust cake on the cartridge increase, more frequent pulsing is required.

The optional differential-pressure gauge continually monitors pressure drop across the cartridge. It tells at a

glance the degree of dust accumulation on the cartridge. Refer to Field-Installed Accessories in Section 9.2.

The foot-pedal pulse option pulses the cartridge each time the pedal is pressed and when released. The optional auto-pulse kit automatically pulses the cartridge at timed intervals. Refer to Section 9.2, Field-Installed Accessories

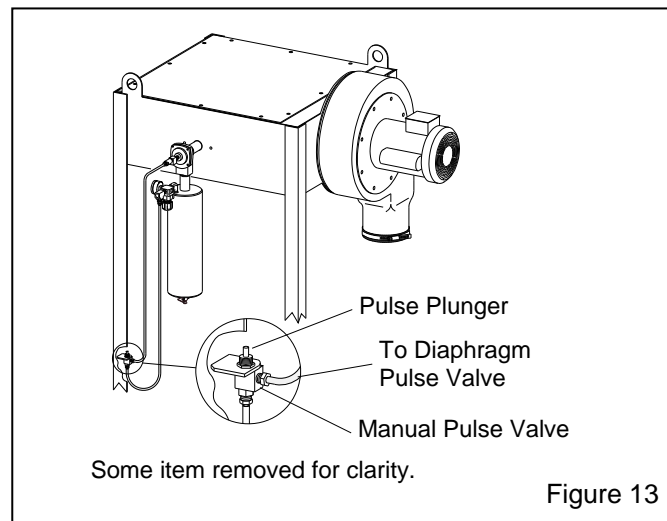


Figure 13

### 3.4 Shutdown

**3.4.1** Allow the collector exhauster to run until all system components are cleared or empty (refer to the accessory components manual) and all ventilated areas are free of airborne dust.

**3.4.2** Turn off the exhauster.

**3.4.3** Shut off the pulse-regulator air supply.

**3.4.4** Drain the pulse reservoir. The drain valve is mounted at the bottom of the reservoir, as shown in Figure 14. Drain whenever the air supply to the pulse regulator is turned off.

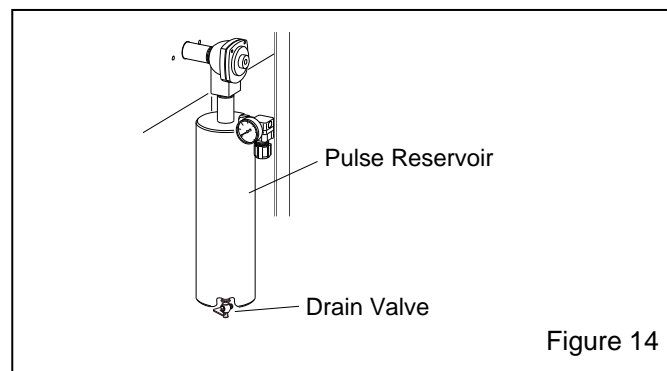


Figure 14

**3.4.5** Empty dust container when it is no more than half-full. Refer to Section 6.1.

**4.0 FIELD-INSTALLED OPTIONS**

**4.1 Floor Standing HEPA Filter – Figure 15**

**4.1.1** Place the HEPA enclosure at a convenient location next to the collector. Make sure there is room to remove the enclosure top, access the HEPA filter element, and to remove the dust-collector dust container.

**4.1.2** Remove the screen from the exhauster outlet.

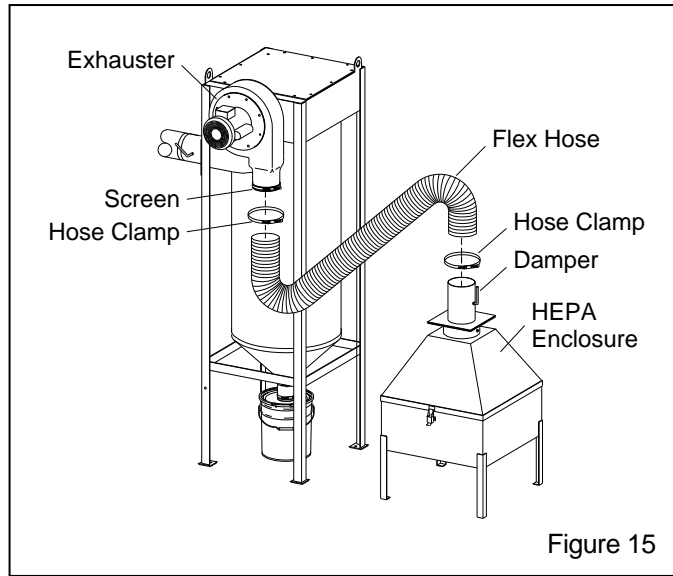


Figure 15

**4.1.3** Slide one end of the flex hose over the exhauster outlet and secure it with one of the provided hose clamps.

**4.1.4** Slide the other end of the flex hose over the pipe on the HEPA enclosure (shorten the flex hose as needed) and secure with a clamp.

**4.1.5** Fully open the HEPA damper (handle facing straight up or straight down); use the collector inlet damper to make adjustments as noted in Section 5.2.

**4.2 Differential-Pressure Gauge Kit – Figure 16**

The differential-pressure gauge measures pressure drop across the filter cartridge. The gauge is the best way to monitor cleaning efficiency and dust buildup on the cartridge.

**4.2.1** The gauge panel, gauge, filter, and panel fittings come fully assembled; the bushings, snubber fittings, and tubing are loose. Mount the panel on the cabinet, dust collector, or at a location where it can be easily monitored. The kit includes 20 feet of tubing, allowing the panel to be mounted within 10 feet of the dust collector connections, as shown in Figure 16.

**4.2.2** Mounting holes are located on left side and at the bottom of the gauge panel. After selecting the location, match drill holes, and use nuts and cap screws to secure the panel. Make sure the panel is close enough to the dust collector for ten feet of tubing to reach.

**4.2.3** Remove 1/4" pipe plugs from the dust collector body and install 1/4" x 1/8" bushings and snubber fittings as shown in Figure 16.

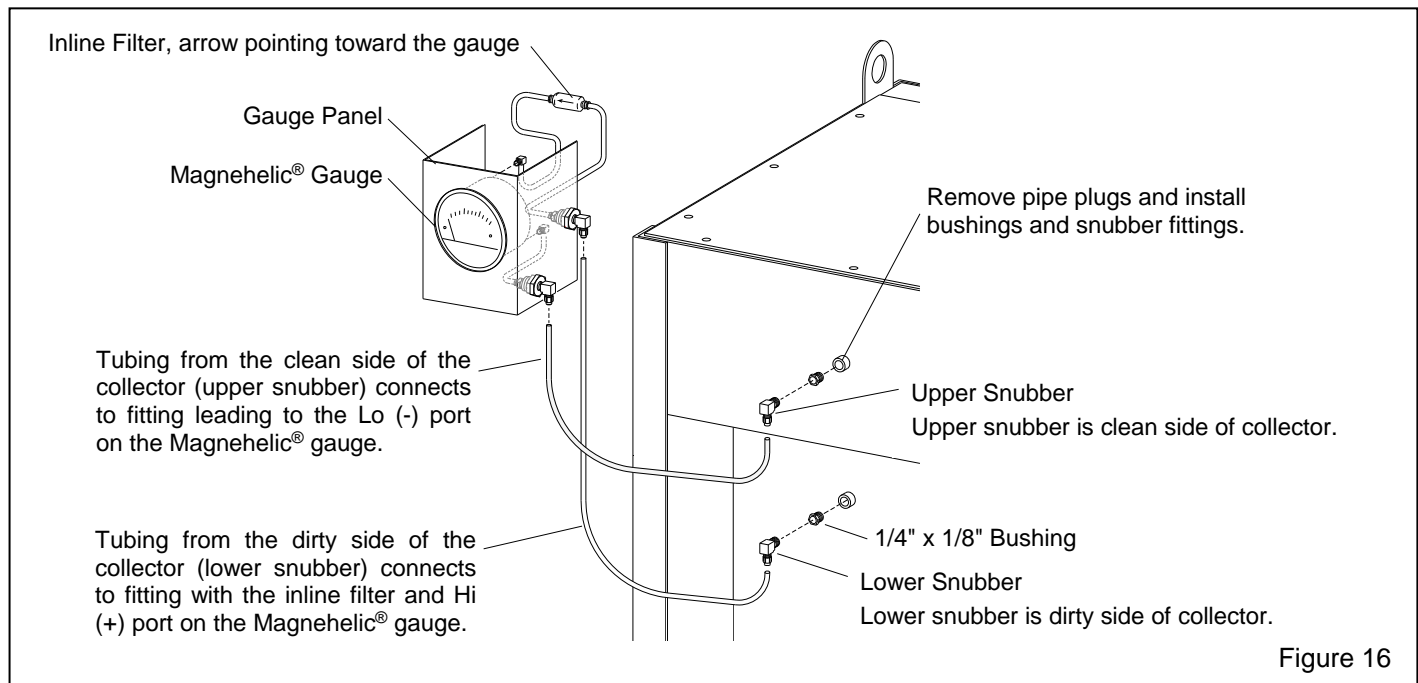


Figure 16

**4.2.4** Remove the snubber-fitting compression nut, slide it over the one end of the 1/4" tubing, insert the tubing into the fitting, and tighten the compression nut to secure.

**4.2.5** Cut the tubing to length and connect the other end to the fittings and gauge panel as shown in Figure 16; make sure the tubing ends are connected to the correct fitting, as shown in the illustration.

**4.2.6** Refer to the Magnehelic® differential-pressure gauge manual provided for operation of the gauge. Magnehelic® is a registered trademark of Dwyer Instruments, Inc.

**4.3 CDC Foot-Pedal Pulse Kit**

**NOTE: If the foot-pedal pulse option was factory installed, proceed to Paragraph 4.3.8 to connect the foot-pedal tubing to the dust collector.**

**4.3.1** With the installation of the foot-pedal pulse kit to a user's existing BNP foot pedal, the filter cartridge is automatically pulse cleaned each time the foot pedal is pressed and again when it is released.

**4.3.2** Components of the assembled kit are shown in Figure 17.

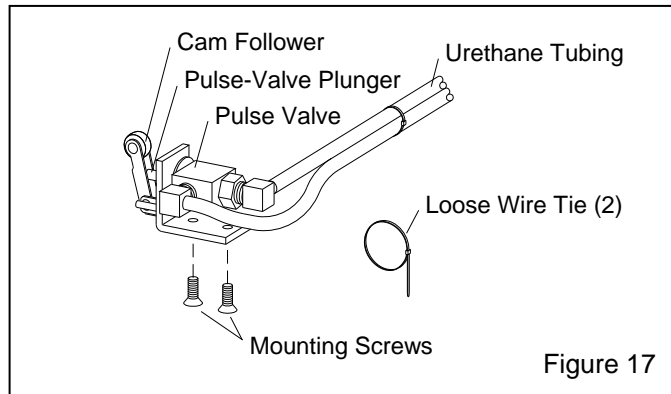


Figure 17

**4.3.3** Refer to Figure 18 and feed the urethane tubing through the foot pedal from the front toward the back and above the top hinge pin.

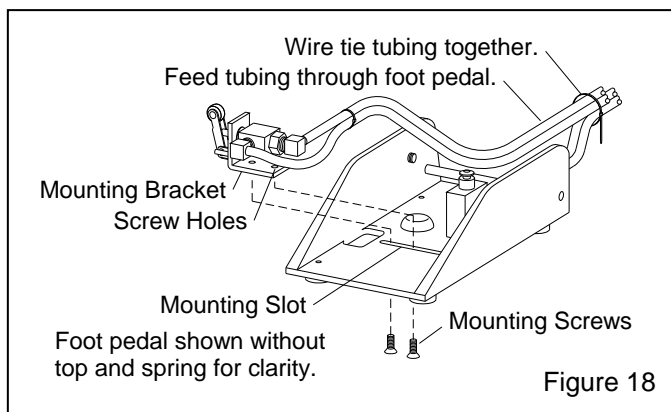


Figure 18

**4.3.4** Place the mount bracket over the slot in the foot-pedal base and loosely install the screws through the slot and into the threaded holes in the bracket.

**4.3.5** Refer to the illustrations in Figure 19 and slide the pulse assembly as needed so the cam follower is off the lobe when the pedal is up, on the lobe when the pedal is partially pressed, and off the lobe when the pedal is fully pressed. Tighten the screws to prevent movement.

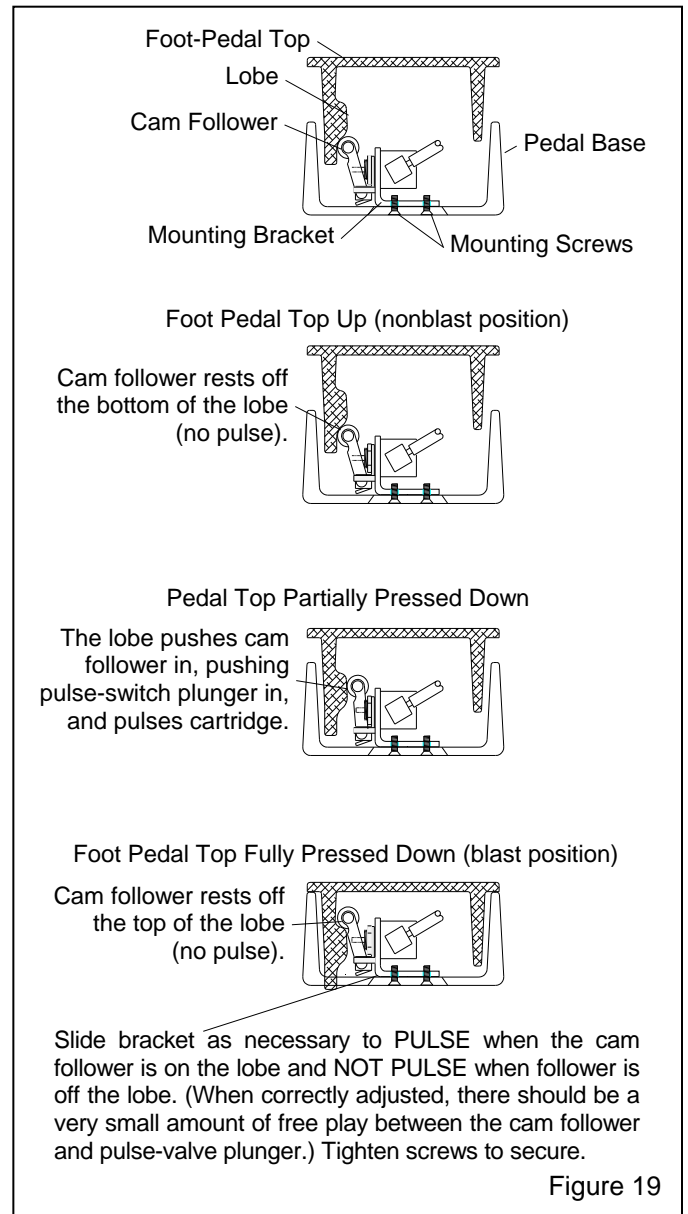


Figure 19

**4.3.6** Use one of the loose wire ties to strap the pulse-valve tubing and foot-pedal tubing together.

**4.3.7** Refer to Figure 20 and pull or pry the manual pulse-valve tubing from the barb fittings on the pulse-valve actuator and inlet tee.

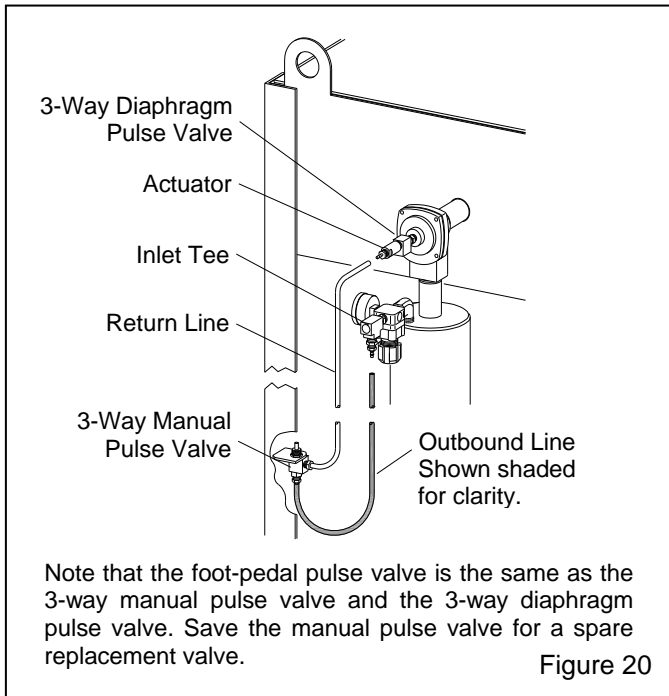


Figure 20

**4.3.8** Refer to Figure 21 and connect the foot-pedal pulse tubing.

1. Separate a few inches of the twinline tubing and push the outbound line (shown shaded for clarity) from the pulse valve IN port onto the barb fitting on the inlet tee.
2. Push the return line (shown unshaded) from the pulse valve OUT port onto the barb fitting on the actuator.
3. Use remaining wire tie to prevent further separation of the twinline tubing.

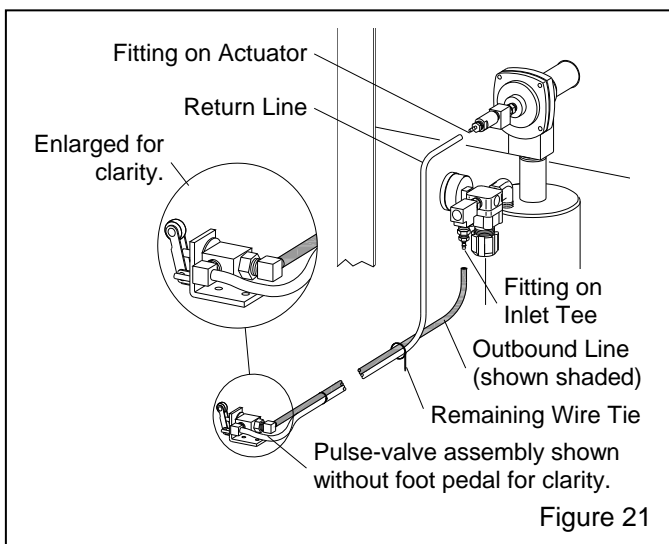


Figure 21

**4.3.3** Test the operation by pressing and releasing the foot pedal; the cartridge should pulse each time the foot pedal is pressed and again when it is released.

If it does not operate accordingly, review the adjustment process in Section 4.3.5.

**4.4 Auto-Pulse Kit**

**4.4.1** Refer to instructions provided with the pulse kit.

**5.0 ADJUSTMENTS**

**5.1 Pulse Pressure**

**NOTICE**

**Do not pulse a new dust collector or replacement cartridge until the cartridge is properly seasoned per Section 7.2. Pulsing unseasoned cartridges can cause premature cartridge failure and decrease the efficiency of dust collector.**

**5.1.1** The pressure regulator is located on the pulse reservoir inlet, as shown in Figure 22. After the cartridge is seasoned per Section 7.2, adjust pressure to 60 psi.

**5.1.2** To adjust pressure, pull the regulator knob out to unlock. Turn it clockwise to increase pressure or counterclockwise to decrease pressure. Once pressure is set, push the knob in to lock it and maintain the setting.

**5.1.3** As dust accumulates on the filter cartridge the dust cake thickens and reduces air flow, making it necessary to do additional pulsing, per Section 3.3, to remove excess dust.

**5.1.4** When pulsing alone does not adequately clean the cartridge, increase pulse pressure by 5-psi increments until the maximum of 90 psi is reached.

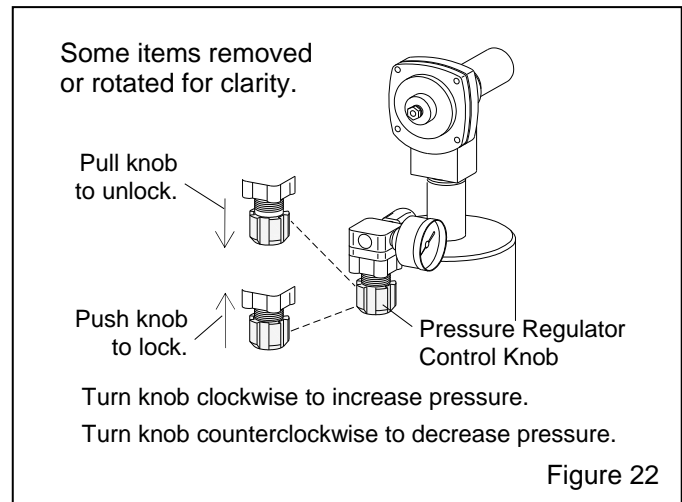


Figure 22

**5.1.5** When the maximum pulse pressure of 90 psi is attained and pulsing as described in Section 3.3 does not increase visibility or lower differential pressure below 4" water column (W.C.), replace the cartridge per Section 7.1.

**5.2 Inlet Damper**

**5.2.1** Refer to Figure 23 and adjust the inlet damper by rotating the handle. The damper plate lines up with the handle; when the handle is horizontal, the damper is fully open; when the handle is vertical, the damper is fully closed.

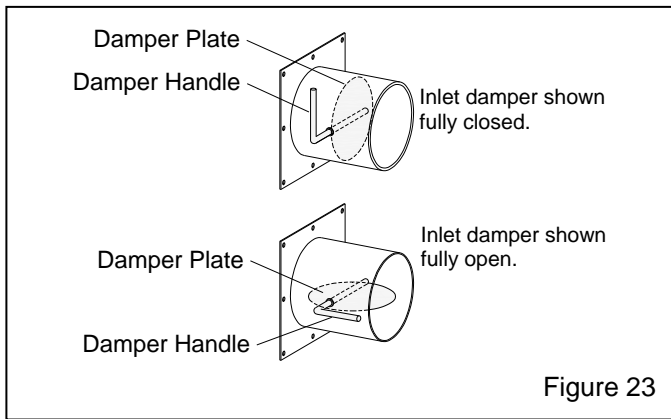


Figure 23

**5.2.2** When used with cabinet and reclaimer: Adjust damper to attain static pressure as noted in the cabinet or reclaimer manual.

**5.2.3** When used with AWAC abrasive cleaner: Set the damper to fully open and use the AWAC damper to make adjustments as noted in the AWAC Abrasive Cleaner manual.

**6.0 DAILY PREVENTIVE MAINTENANCE**

**⚠ WARNING**

**Prior to doing any maintenance or opening the dust collector, the employer must meet OSHA standards required but not limited to 29CFR 1910 for:**

- **Appropriate Respirator**
- **Protective Clothing**
- **Toxic and Hazardous Substances**
- **Fall Protection**

**Toxicity and health risk vary with type of dust generated by blasting. Identify all material that is being removed by blasting and obtain a Safety Data Sheet (SDS) for the blast media. Waste dust in the collector can cause serious**

**injury or death through inhalation, absorption, or consumption. The employer shall meet all OSHA requirements including those for: confined space, combustible dust, fall protection, and hazard communication.**

**⚠ WARNING**

**Make sure the following conditions are met before performing any maintenance on the collector:**

- **Turn off compressed-air supply and drain air from pulse reservoir.**

**Failure to observe the above warnings can result in serious injury from the sudden release of trapped compressed air.**

**6.1 Inspect and Empty Dust Container**

**NOTICE**

**Inspect dust level in the dust container each time the collector is shut off and when adding new media to the cabinet. Empty the dust container when it is no more than half-full. Failure to monitor the dust level will overflow the collector, requiring extensive cleaning.**

**6.1.1** Empty the dust containers regularly. Start by checking the containers at least daily and when adding media, then adjust frequency based on usage, contamination, and friability of the media.

**6.1.2** Turn off the exhauster and release the lid lock ring from the dust container as shown in Figure 24.

**6.1.3** Pry off the lid from the container (the lid's flexible inlet hose allows easy removal) and remove the container.

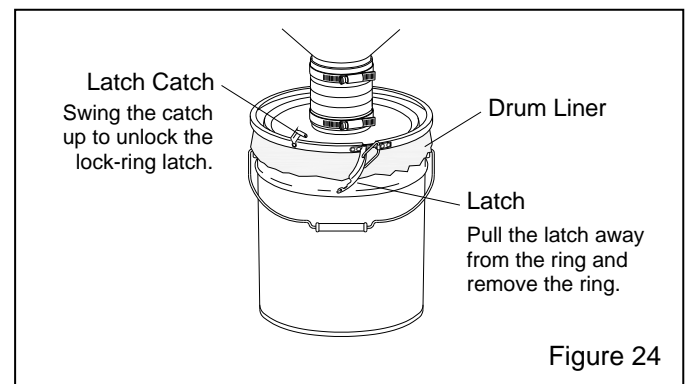


Figure 24

**6.1.4** Tie off or otherwise seal the top of the liner and remove it from the container. Dispose of the sealed liner into a suitable disposal receptacle.

**NOTE: Blasting media is usually nontoxic; however, some materials being removed by the blast process may be toxic. Obtain SDS sheets for the media and identify all material removed by the blast process. Check with proper authorities for disposal restrictions.**

**6.1.5** Place a new liner inside the container and drape it over the top edge. Reattach the container to the lid and latch the lock ring, making sure the lid and clamp are secure. Replacement liners are shown in Section 9.4, Figure 28.

## 6.2 Check Exhaust Air for Dust

**6.2.1** Dust discharge at the exhauster indicates a leaking or damaged filter cartridge. Check immediately. Note that a small amount of dust egress is normal for a short time when the cartridge is new before it is seasoned.

## 6.3 Cartridge Pulsing

**6.3.1** Pulse the cartridge at least every half hour of cabinet blasting and before turning OFF the exhauster as noted in Section 3.3. Dusty blasting conditions and dust loading on the cartridge will require more frequent pulsing.

## 7.0 SERVICE MAINTENANCE

### WARNING

**Prior to doing any maintenance or opening the dust collector, the employer must meet OSHA standards required but not limited to 29CFR 1910 for:**

- **Appropriate Respirator**
- **Protective Clothing**
- **Toxic and Hazardous Substances**
- **Fall Protection**

**Toxicity and health risk vary with type of dust generated by blasting. Identify all material that is being removed by blasting and obtain a Safety Data Sheet (SDS) for the blast media. Waste dust in the collector can cause serious injury or death through inhalation, absorption, or consumption. The employer shall meet all OSHA requirements including those for: confined space, combustible dust, fall protection, and hazard communication.**

### WARNING

**Make sure the following conditions are met before performing any maintenance on the collector:**

- **Turn off compressed-air supply and drain air from pulse reservoir.**

**Failure to observe the above warnings can result in serious injury from the sudden release of trapped compressed air.**

## 7.1 Replacing Filter Cartridge Refer to Section 2.12 for Reference

### WARNING

**NO DUST IS SAFE TO BREATHE.**

**The inhalation of airborne dust can cause injury and lead to serious respiratory illness and death. Always wear approved respiratory protection when servicing the dust collector, while handling filter bags and cartridges, and when emptying the dust container.**

**7.1.1** Lockout and tagout the compressed-air supply and electrical power.

**7.1.2** Close the air-supply valve and bleed all air from the pulse reservoir.

**7.1.3** Empty the dust container.

### WARNING

**Fall Hazard: Follow OSHA regulations in 29CFR1910 Subpart D and F for fall protection when working above 4 feet.**

**Lifting Hazard: Dust cartridges may exceed 50 pounds when dirty. Follow good material and lifting practices when changing filters.**

**7.1.4** Remove cover nuts and remove the top access cover.

**7.1.5** Remove the two nuts and bolts securing the pulse tube and remove the tube from the top of the collector.

**7.1.6** Remove the four nuts and washers securing the cartridge hold-down plate and then remove the plate.

**7.1.7** Remove filter cartridge. A small amount of force may be necessary to loosen the seal of the filter gasket.

**7.1.8** After the filter is removed, clean the top side of the cartridge plate to remove loose dust or hardened dust clods, particularly from the cartridge-sealing surface.

**7.1.9** Lower the cartridge into the opening, until the cartridge flange rests on the cartridge plate.

**7.1.10** Reassemble the hold-down plate and pulse tube.

**7.1.11** Inspect the gasket on the cover plate. Replace the gasket if it is worn or damaged. Replace the cover plate and secure.

**7.1.12** Season new cartridge per Section 7.2.

## 7.2 Seasoning Cartridge

**7.2.1** New cartridges must be seasoned before starting pulsing. Cartridge is seasoned by letting a layer of dust (dust cake) develop on the outer surface of the filter media. The dust cake protects the filter cartridge and enhances the filtering efficiency; it is the dust cake that actually does the filtering.

**7.2.2** Operate the cabinet without pulsing for about two hours or until visibility decreases, whichever comes first. At that time, turn the pulse regulator to 60 psi and begin pulsing as noted in Section 3.3. **NOTE: For AWAC applications, operate the AWAC for about two days before pulsing.**

## 8.0 TROUBLESHOOTING

### WARNING

**Shut down the collector immediately if dust discharges from the exhaustor. Check the cartridge to make sure it is seated and not worn or damaged. Prolonged breathing of abrasive dust and blasting by-product dust can result in serious lung disease or death. Short term ingestion of toxic dust such as lead, poses an immediate danger to health. Identify all materials to be removed by blasting, and obtain a safety data sheet (SDS) for the blast media.**

#### 8.1 Collector Not Pulsing

**8.1.1** Check the pulse-pressure gauge. If pressure is low, check the compressed-air supply; look for leaks or a closed supply valve.

**8.1.2** Check function of the pulse-pressure regulator located on the pulse-reservoir inlet; make sure it has not been turned down or turned off.

**8.1.3** The 3-way manual pulse valve (also applies to foot-pedal pulse valve) may be faulty. No air should escape from the valve when the plunger is not pressed; a short burst of air should escape from the plunger when it is pressed. If it does not function accordingly, replace the valve.

**8.1.4** Refer to Figure 25 and check the diaphragm pulse valve and actuator assembly as follows.

**8.1.4.1** Remove the pilot actuator from the 3-way pulse valve. Press in on the 3-way valve plunger; the cartridge should pulse when the plunger is pressed and stop when it is released.

- If the cartridge does pulse, the diaphragm pulse valve and 3-way valve are functioning; proceed to Section 8.1.4.2.
- If it does not pulse, listen for a short spurt of air coming from the exhaust port when the plunger is pressed.
  - If it does spurt air, the problem is likely in the diaphragm pulse valve. Inspect the diaphragm for wear or damage.
  - If it does not spurt air, the 3-way valve is not functioning. Replace the 3-way valve.

The 3-way pulse valve on the diaphragm valve, the pulse valve on the collector leg, and the 3-way valve in the optional foot-pedal pulse assembly are identical. If there is doubt as to whether either 3-way valve is functional, the valves may be tested by swapping one with the other.



**8.1.4.2** Hold the pilot actuator and press and release the plunger on the manual pulse valve (or press and release the foot pedal when the foot-pedal option is used). Observe the piston through the open end of the actuator; the piston should snap toward the disc at the end of the actuator each time the plunger is pressed and return each time the plunger is released.

- If the actuator piston operates as noted, the problem is **not** the manual pulse valve (or foot-pedal pulse valve) or actuator. Inspect the 3-way and diaphragm valve per Section 8.1.4.1.
- If the actuator does not operate as noted, remove the urethane tubing from the actuator and press and release the manual pulse valve.
  - If air escapes from the tubing when the manual valve is pressed, the problem is in the actuator. Replace the actuator.
  - If no air escapes from the tubing when the manual valve is pressed, there is a blockage in the tubing or the problem is with the manual pulse valve. Inspect the tubing for a blockage and inspect the manual pulse valve per Section 8.1.3.

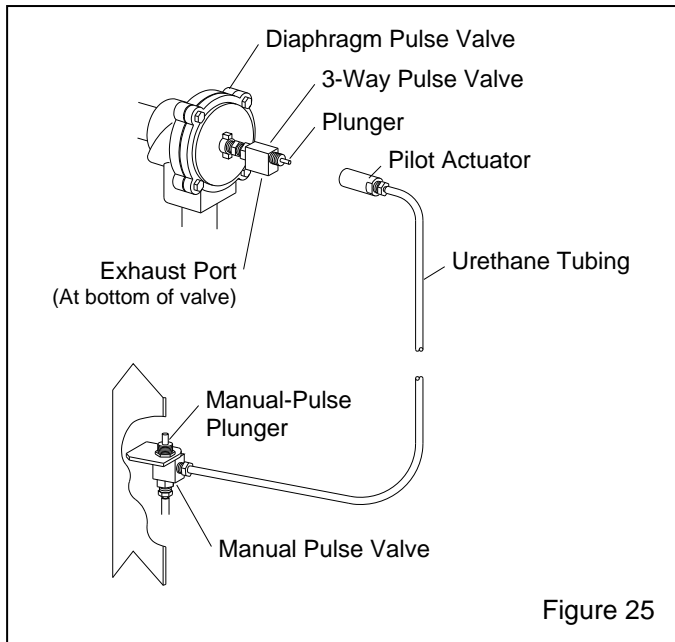


Figure 25

**8.2 Pulse is Steady Stream of Air Instead of Quick Pulse.**

**8.2.1** The pulse valve diaphragm may be damaged. Continuous air flow into the dust collector typically means the diaphragm is leaking; remove the four cap screws on the diaphragm pulse valve and inspect the diaphragm. If damaged, replace it.

**8.2.2** The 3-way pulse valve may be stuck in pulse (plunger in) position: inspect 3-way pulse valve per Paragraph 8.1.3. Refer to the adjustment of the foot-pedal pulse assembly per Section 4.3.5.

**8.3 Exhauster Not Running**

**8.3.1** Exhauster overload could be tripped. Have a qualified electrician reset and check for overload.

**8.3.2** Make sure that the main disconnect is in the ON position.

**8.3.3** Make sure there is electrical power to the motor. Have a qualified electrician check for electrical malfunction.

**8.3.4** Motor faulty. Have a qualified electrician check for electrical malfunction.

**8.4 Dust Discharges from Exhauster**

**8.4.1** Check for loose or damaged filter cartridge.

**8.4.2** Filter cartridge not seasoned. Refer to Section 7.2.

**9.0 REPLACEMENT PARTS**

**9.1 Replacement Dust Collectors**

**9.1.1 Dust collectors for cabinet use**  
(5-ft. flex hose included)

300 cfm dust collector	
with 1/2 HP, 115-v/1/60 exhauster .....	28254
without exhauster .....	28251
600 cfm dust collector	
with 1 HP, 115-v, 1 PH, standard exhauster .....	28255
without exhauster .....	28252
with 1 HP, 230/460-v/3/60 exhauster option .....	28240
900 cfm dust collector	
with 2 HP, 230/460-v/3/60 standard exhauster ..	28256
without exhauster .....	28253
with 2 HP, 115/230-v/1/60 exhauster option .....	28453

**9.1.2 Dust collectors for industrial use**

**For Sweep-In M-Sections®**  
(7" ID x 8-ft 4-in flex hose included)

900 cfm dust collector with 2 HP, 230/460-v/3/60 exhauster .....	29055
---	-------

**For AWAC abrasive cleaner**  
(6" ID x 10-ft flex hose included)

600 cfm dust collector	
with 1 HP, 115-v, 1 PH exhauster .....	29056
600 cfm dust collector	
with 1 HP, 230/460-v/3/60 exhauster .....	29057

**9.2 Field-Installed Accessories**

Conversion kit to convert push-thru reclaimer to pull-thru (needed to convert from dry filter to CDC-1). Remove exhauster from reclaimer and install conversion kit.

- Kit without externally adjustable vortex  
Includes pull-thru outlet adaptor pipe, gasket, and fasteners.  
for 300 cfm reclaimer ..... 28962  
for 600 cfm reclaimer ..... 28963  
for 900 cfm reclaimer ..... 28964
- Kit with externally adjustable vortex  
Includes pull-thru adjustable vortex, gasket, and fasteners.  
for 600 cfm reclaimer ..... 28629  
for 900 cfm reclaimer ..... 28630

HEPA Filter assembly, floor-standing  
Includes HEPA, flex hose, and clamps  
300 cfm ..... 28974  
600 cfm ..... 23625  
900 cfm ..... 23626

Differential-pressure gauge kit ..... 23356

Sound suppressor assembly, with sound foam  
300 cfm ..... special order  
600 cfm, 6" ..... 28458  
900 cfm, 7" ..... 28459

Sound foam, adhesive-backed, per sq. ft.  
4 sq. ft. required, trim to fit ..... 12484

Auto-pulse kit, pulses at timed intervals ..... 28936

**CDC Foot-Pedal Pulse Kit**

Pulses the cartridge each time the foot pedal is pressed and again when the pedal is released

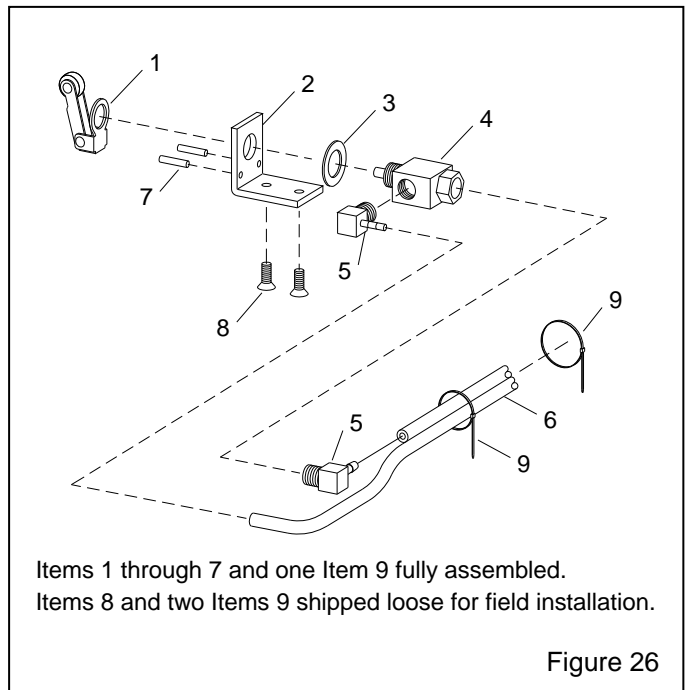
Field installed pulse kit,  
Includes fully assembled items shown in Figure 26, except as noted ..... 29480

Factory installed pulse kit,  
includes items shown in Figure 26  
fully assembly in BNP foot pedal ..... 29481

Refer to Section 4.3 for installation instructions

**Foot-Pedal Pulse Kit Replacement Parts – Figure 26**

Item	Description	Stock No.
(-)	Foot-pedal pulse kit, field installed	29480
1.	Cam follower	19576
2.	Bracket, valve mount	22858
3.	Spacer	19258
4.	Valve, 3-way (pulse valve)	12202
5.	Fitting, 1/8" NPT elbow x 1/8" barb	11733
6.	Tubing, 1/8" ID twin urethane, per foot, 20 ft. standard length	19577
7.	Roll pin, 1/8"	20479
8.	Screw, 10-32 x 1/2" flat head	19571
9.	Tie, nylon wire	12139



**9.3 Exhauster Assembly – Figure 27**

Item	Description	Stock No.
1.	Motor, 3450 RPM	
	300 cfm, 1/2 HP, 115-V, 1 PH .....	12308
	600 cfm, 1 HP, 115-V, 1 PH .....	12314
	600 cfm, 1 HP, 230-V, 3 PH .....	12310
	900 cfm, 2 HP, 230-V, 3 PH .....	12309
2.	Plate, motor mount	
	900 cfm .....	02979
3.	Housing, exhauster	
	300 cfm .....	12003
	600 cfm .....	12004
4.	Gasket, 5/16" x 1" adhesive-backed, specify feet required .....	12005
	300 cfm .....	12273
	600 cfm .....	12272
5.	Paddle wheel	
	300 cfm .....	12271
	600 cfm .....	12272
6.	Adaptor plate, exhauster	
	300 cfm .....	12333
	600 cfm .....	12334
7.	Screen, exhauster outlet	
	300 cfm .....	12335
	600 cfm .....	12334
8.	Clamp, 8-1/2" .....	12335
	300 cfm .....	28245
	600 cfm .....	28246
9.	Clamp, 5-1/2" for 300 cfm .....	11578
	6-1/2" for 600 cfm .....	00750
	8-1/2" for 900 cfm .....	11576
10.	Inlet adaptor w/damper	
	5" OD for 300 cfm .....	28247
	6" OD for 600 cfm .....	28248
11.	Gasket, inlet adaptor .....	14273
	5" ID for 300 cfm .....	11763
	6" ID for 600 cfm .....	12466
12.	Clamp, 4" .....	11577
	Lid and lock ring, dust container .....	23419
	Drum, 5-gallon dust .....	28250
13.	Liners, drum, package of 5 .....	28621
	Gasket, 5/16" x 1" adhesive-backed, per ft., 8 feet required .....	00187

**9.4 Enclosure and Dust Container Assembly – Figure 28**

Item	Description	Stock No.
1.	Hose, unlined flex, per foot, standard lengths are: 5-ft. with cabinet collectors 8-ft 4-in (9-ft) with Sweep-In M-Section 10-ft. w/AWAC (2 x 2 and 3 x 3 recovery system)	
	5" ID for 300 cfm .....	12449
	6" ID for 600 cfm .....	12452
	7" ID for 900 cfm .....	12448
	Clamp, hose	
2.	5-1/2" for 300 cfm .....	11578
	6-1/2" for 600 cfm .....	00750
	8-1/2" for 900 cfm .....	11576
3.	Inlet adaptor w/damper	
	5" OD for 300 cfm .....	28247
	6" OD for 600 cfm .....	28248
4.	Gasket, inlet adaptor .....	14273
	5" ID for 300 cfm .....	11763
	6" ID for 600 cfm .....	12466
5.	Clamp, 4" .....	11577
	Lid and lock ring, dust container .....	23419
	Drum, 5-gallon dust .....	28250
6.	Liners, drum, package of 5 .....	28621
	Gasket, 5/16" x 1" adhesive-backed, per ft., 8 feet required .....	00187

