PULSAR® IX
Suction Blast Cabinet
O. M. 23425

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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 ensure 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.

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ZERO Blast Cabinets®

1.0 INTRODUCTION

1.1 Scope of Manual

1.1.1 These instructions cover set-up, operation, adjustments, maintenance, troubleshooting, and replacement parts for Pulsar IX Suction Blast Cabinet.

1.1.2 These instructions also contain important information required for safe operation of the cabinet. Before using this equipment, all personnel associated with the blast cabinet operation must read this entire manual, and all accessory manuals to become familiar with the operation, parts, and terminology.

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.

1.3 Table of Contents

1.4 General Description

1.4.1 Refer to Figure 1 for the general arrangement of the cabinet and power module. Components of the cabinet assembly are shown in Figure 2 and components of the power module are in Figure 3. The Pulsar cabinet encloses the blasting environment to provide efficient blasting while maintaining a clean surrounding work area. Production rates are influenced by size of air jet and nozzle, compressor output, working pressure, type and size of media, and angle and distance of the nozzle from the blast surface. The Pulsar IX suction cabinet consists of two major components.

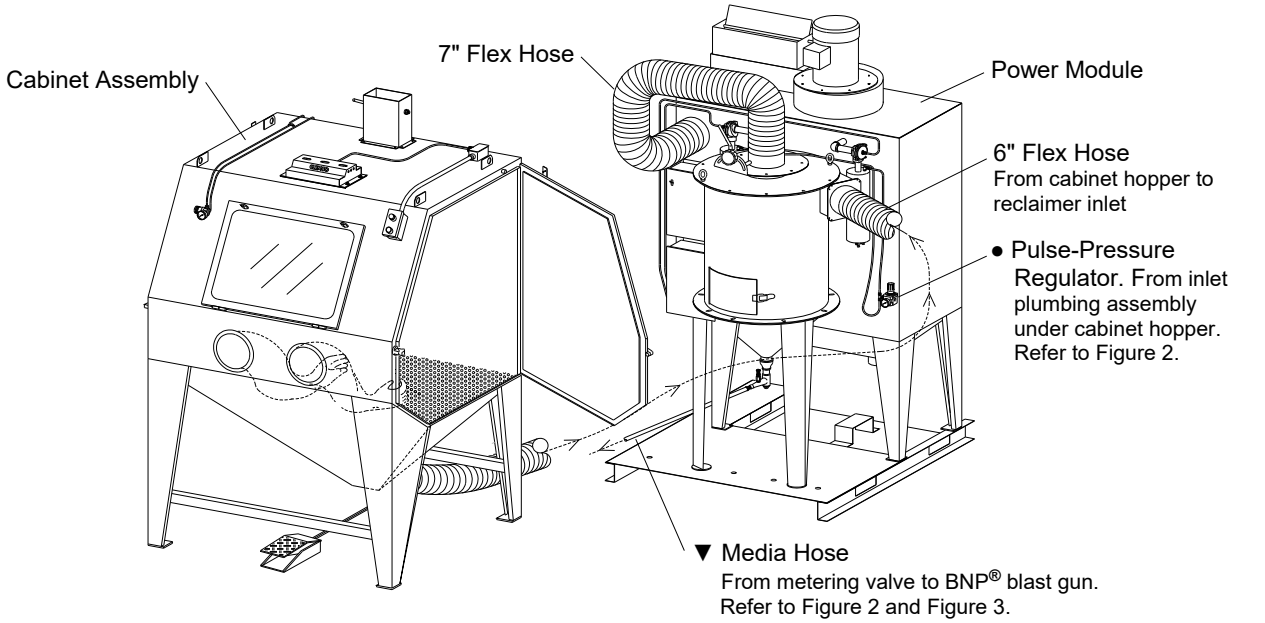
1. Cabinet Enclosure
2. 900 cfm Power Module

1.4.2 Cabinet Enclosure: Approximate work chamber dimensions at the grate are:
54" wide x 39.5" deep x 45" high.
The extended front provides approximately 10 inches of additional depth at the arm port.

1.4.3 Power Module: The freestanding Pulsar IX power module houses a 900 cfm reclaimer and dual-cartridge reverse-pulse dust collector.

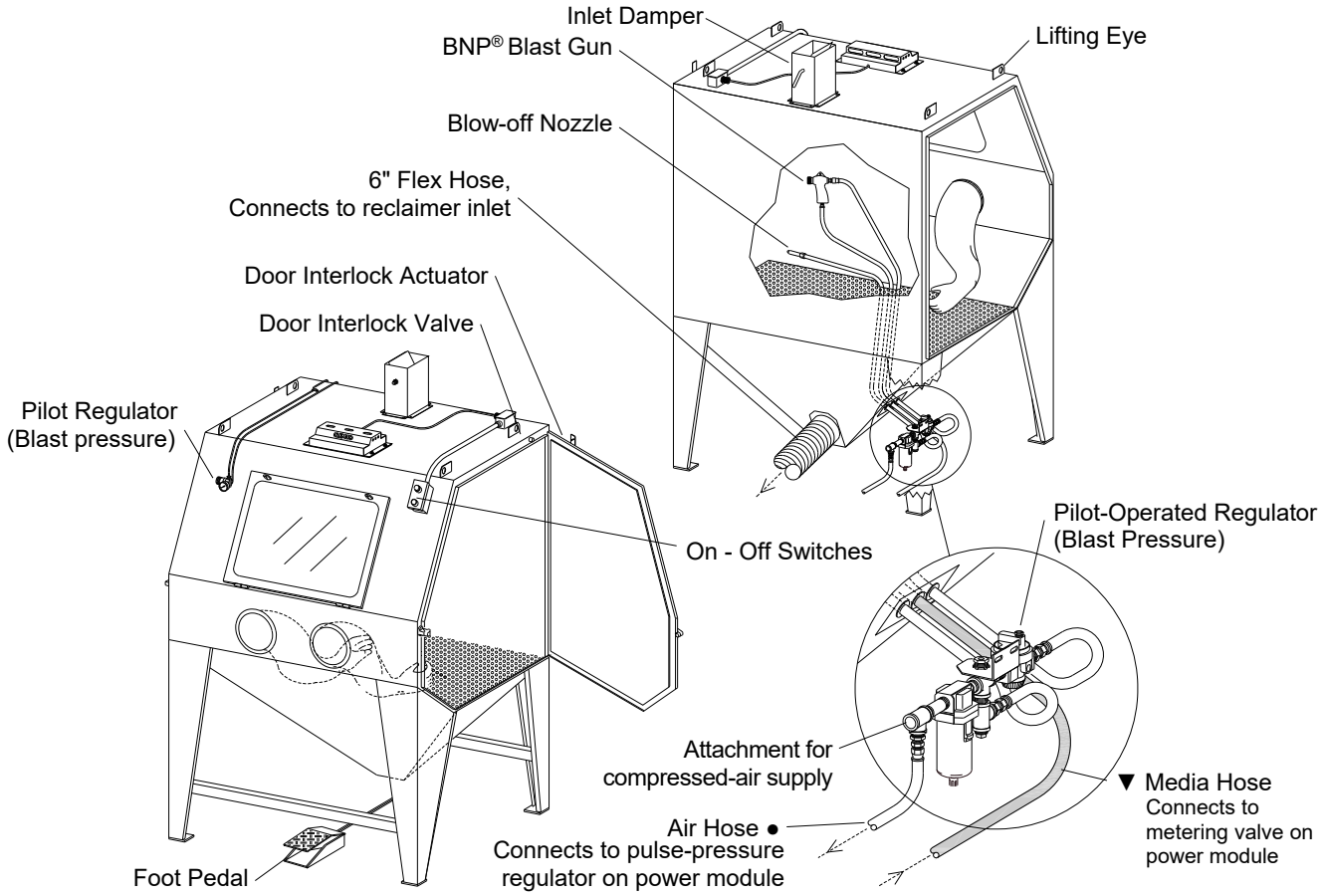
1.5 Theory of Operation

1.5.1 Abrasive blasting takes place in the cabinet enclosure. Once the cabinet and power module are correctly setup and turned on, the cabinet is ready for operation by actuation of the foot pedal. Fully depressing the foot pedal causes air to flow through the blast gun. The vacuum created by air moving through the gun draws media through the media hose, from the metering valve located on the bottom of the reclaimer, and into the blast gun mixing-chamber. Media mixes with the air



GENERAL ARRANGEMENT of CABINET and POWER MODULE

Figure 1



CABINET ASSEMBLY

Figure 2

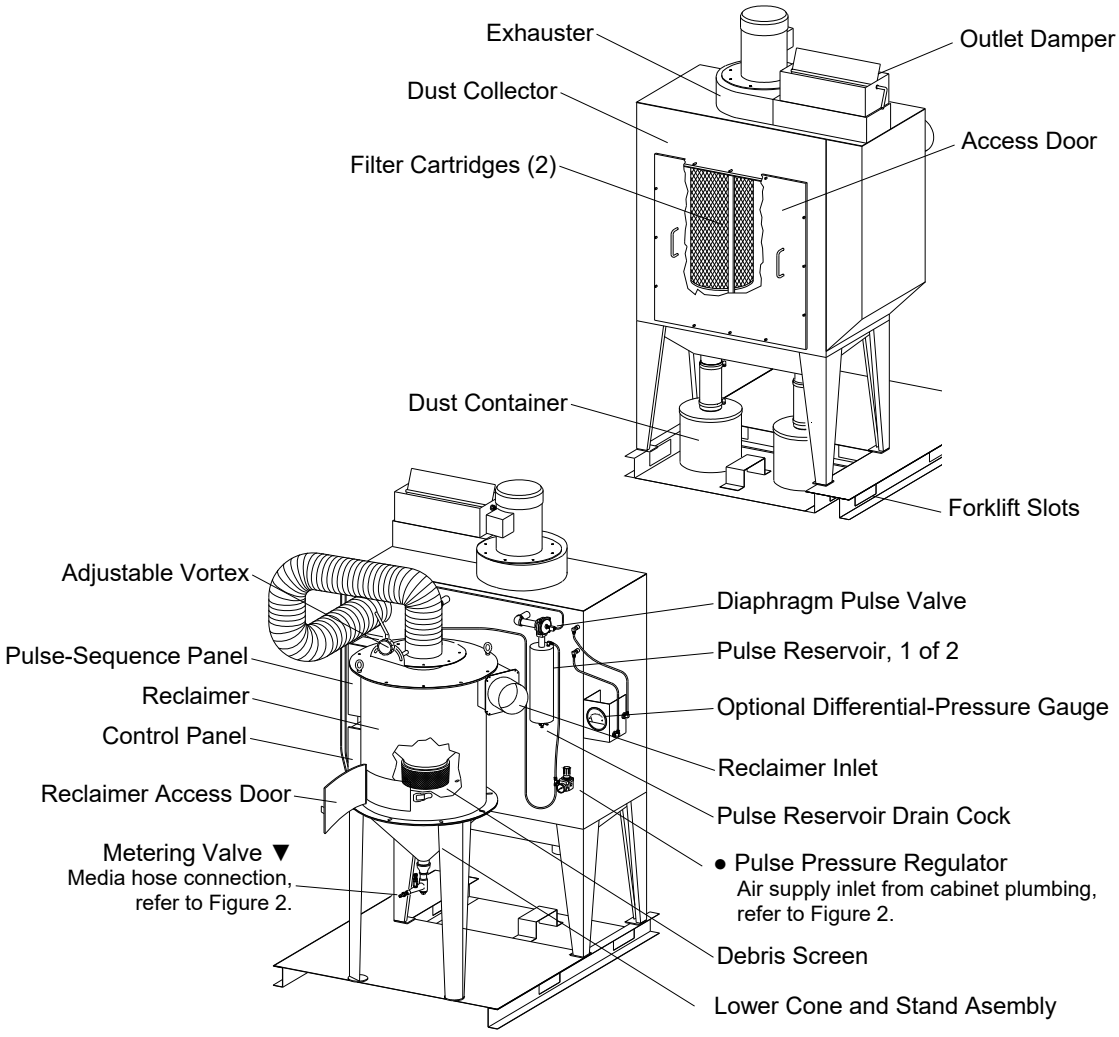
stream within the mixing chamber, and is propelled out the nozzle. After striking the object being blasted, the blast media, fines, dust, and by-products generated by blasting, fall through the mesh grate and into the cabinet hopper. These particles are conveyed from the cabinet hopper by way of the flex hose and into the reclaimer for separation. Dust and fines are first separated from reusable media and pulled into the dust collector. Next, the media is screened for oversize particles, and returned to the reclaimer hopper for reuse.

1.5.2 Dust Collector

1.5.2.1 The final stage of the recovery, reclaiming process takes place in the dust collector. Dust and fines drawn through the reclaimer are trapped on the outer surface of the filter cartridges, discharging clean air through the exhauster.

1.5.2.2 At regular, timed intervals, the dust-collector filter cartridges are cleaned by a pulse of high velocity compressed air expanding against the inner surface of the cartridges. The expanding air momentarily reverses air flow through the cartridges releasing trapped dust. The dust particles fall away from the cartridges into the hopper for removal.

1.5.2.3 The pulse interval is controlled by a timer located inside the sequence panel. The timer controls the ON time (the length of time for each pulse) and OFF time (the length of time between each pulse). The ON time should never be adjusted. The lower the setting for the OFF time, the shorter the length of time between pulses.



POWER MODULE

Figure 3

1.5.2.4 A toggle switch (sequence switch) located on the sequence panel cover, enables or disables the timing sequence. If the sequence switch is kept ON, the timing sequence energizes when the exhauster is turned ON, and the cartridges are automatically pulsed when the exhauster is running. If the switch is OFF, the timer does not energize, and the cartridges are not pulsed.

NOTICE

Do not pulse new dust collectors or replacement cartridges until the cartridges are properly seasoned. See Section 7.9. Pulsing unseasoned cartridges can decrease the efficiency of dust collectors and cause premature cartridge failure.

1.6 Nozzle Options

1.6.1 Unless otherwise specified at the time of order, cabinets are shipped with a No.5 (5/16" orifice) ceramic nozzle and No. 5 (5/32" orifice) air jet. Optional, more durable tungsten carbide and boron carbide nozzles are available as shown in Section 9.2. Use boron carbide nozzles when blasting with aggressive media, as noted in Section 1.9.4. Refer to the air consumption table in Figure 5 for air consumption of nozzles.

1.7 HEPA (high efficiency particulate air) Filter

1.7.1 Optional HEPA afterfilter provides additional filtration. A HEPA filter must be used when removing lead coatings, Heavy metals, or any other toxic materials. HEPA filter is listed in *Section 9.1*: *Optional Accessories*.

⚠ WARNING

All dust is hazardous to breath. Emissions can occur from the dust collection system. Identify all materials that are to be removed by blasting; if any toxic materials such as lead dust or dust from other heavy metals and corrosives, or <u>any</u> other toxic materials are being removed, use a HEPA afterfilter to assist in maintaining inhalation hazards below the permissible exposure limits (PELs). Prolonged exposure to <u>any</u> dust can result in serious lung disease and death. Short-term ingestion of toxic materials can cause serious respiratory injury or death. Filtration may not be adequate in reducing all inhalation hazards. It remains the employer or user's responsibility to ensure all emissions are safe to breath.

1.8 Optional Reclaimer Liners

1.8.1 Replaceable rubber reclaimer-liners prolong service life of the reclaimer. They should be installed when using silicon carbide, aluminum oxide, or other aggressive media, as noted in Section 1.9.4. Rubber reclaimer liners are shown in *Section 9.1*: *Optional Accessories, Figure 40*.

1.9 Blasting Media

Always use media specifically manufactured for blasting, and those which are compatible with the surface being blasted. Abrasive produced for other applications may be inconsistent in size and shape, contain particles that could jam the abrasive metering valve, or cause irregular wear. Always obtain safety data sheet (SDS) for the blasting abrasive prior to blasting and identify material being removed by blasting, paying particular attention to worker health risks and presence of any hazardous/toxic substances.

1.9.1 Most common reusable media specifically manufactured for blasting can be used in ZERO Pulsar® cabinets. The listing of media sizes shown in this section and in Figure 4 are provided as a guideline only. The guideline is based on standard 5/32" orifice air jet with 5/16" nozzle and average conditions, such as blast pressure, media/air mixture, visibility inside the cabinet, humidity, and reclaimer cleaning-rate.

Several variables that affect the reclaimer cleaning rate include reclaimer size (cfm), contamination of parts being blasted, media friability, damper setting (static pressure), and dust-collector filter loading (differential pressure across the dust filters).

As a rule, larger orifice air jets and nozzles deliver more media, requiring higher performance from the reclaimer. When using larger nozzles, the maximum mesh size of media will be smaller than normally recommended. Using media finer than those recommended may decrease visibility and, at some point, carry over to the dust collector. Media coarser than those recommended may be too dense for the reclaimer to recover from the cabinet hopper.

1.9.2 Steel Shot and Steel Grit: Steel shot S-270 to S70 or steel grit 40-mesh to 120-mesh may be used in Pulsar® IX cabinets configured for using steel media.

Switching to steel media requires a smaller diameter conveying hose (usually reduced one size from standard. Rubber curtains should be used to protect the cabinet walls from peening and rapid wear. Metallic media kits are listed in Miscellaneous Accessories in Section 9.1.1.

1.9.3 Sand and Slag: Sand and slag media are not suitable for cabinet use. Sand should NEVER be used for abrasive blasting because of the respiratory hazards associated with media containing free silica. Slags are not recommended because they rapidly break down and are not recyclable.

1.9.4 Silicon Carbide, Aluminum Oxide, and Garnet: These are the most aggressive of the commonly-used media. Aggressive media may be used, but the service life of any components exposed to the media will be reduced. To avoid unscheduled down time and maximize cabinet life, periodically inspect the reclaimer wear plate, media hose, and nozzle for wear and replace parts as needed.

When using aggressive media only occasionally, install an optional aluminum oxide kit, which includes rubber curtains for the cabinet interior and a boron carbide-lined nozzle. When using aggressive media on a regular basis, install the aluminum oxide kit and a fully-rubber-lined reclaimer. NOTE Rubber-lined reclaimers are available as factory-installed items or field-installed liners can be installed later on reclaimers if they have removable tops and designed to accept liners. Refer to Section 9.1.5. Nozzles lined with boron carbide extend nozzle wear life. Refer to *Section 9.2: BNP Gun and Feed Assembly*.

1.9.5 Glass Bead: Most beads are treated to ensure free-flow operation even in environments of moderately high humidity. Glass beads subjected to excessive moisture may be reused only after thoroughly drying and breaking up any clumps.

1.9.6 Lightweight and Fine-mesh Media: When using lightweight (such as agricultural) media or fine mesh (180-mesh and finer) media, the reclaimer inlet baffle may need to be removed to retain media and avoid carry over. On reclaimer models with bolt-on removable topes, baffle removal and replacement is easily accomplished. Reclaimers with welded-on tops require grinding to remove the baffle and once it is removed it cannot be replaced.

1.9.7 Plastic Media: Plastic and similar lightweight and/or nonaggressive media are generally not recommended for suction-style cabinets because the lower blast velocity of suction blasting combined with the softer and lighter weight media, do not provide the media impact for productive blasting. Best performance from plastic media is achieved with pressure blasting, requiring a pressure vessel with a 60-degree conical bottom. Refer to Clemco's AEROLYTE cabinet line.

1.9.8 Bicarbonate of Soda: Bicarbonate of soda is not recommended for use in standard cabinets. Bicarb is a one-use media, which will quickly saturate the filter cartridge(s). Best performance from bicarb media is achieved with pressure blasting, requiring a pressure vessel. Refer to Clemco's AEROLYTE cabinet line for cabinets that are specifically designed for use with bicarbonate of soda.

1.10 Compressed Air Requirements

1.10.1 The size of the compressor required to operate the cabinet depends on the size of the air jet and blasting pressure. Unless otherwise specified, cabinets are supplied with a No. 5 (5/32" orifice) jet. Refer to the table in Figure 5 to determine cfm requirements for the cabinet. Add an additional six cfm for the dust collector pulse. Consult with a compressor supplier for a suggested compressor size based on the air consumption.

This table offers a guideline to media type and selection based on standard 5/32" orifice air jet with 5/16" nozzle and average conditions, such as air pressure, media/air mixture, visibility, contamination of parts being cleaned, humidity, media friability, reclaimer cleaning rate, etc. As a rule, larger nozzles deliver more media, requiring higher performance from the reclaimer. Larger air jets and nozzles decrease the maximum mesh size of media from those recommended. Media that is finer than those recommended may decrease visibility, and increase carry over to the dust collector. Media coarser than those recommended may be too dense for the reclaimer to recover from the cabinet hopper.

	MEDIA TYPE					
RECLAIMER SIZE	*STEEL GRIT*	*STEEL SHOT*	*GLASS BEAD*	*ALUM. OXIDE*	*FINE MESH*	*LIGHT WT.*
900 cfm w/5" inlet	40 to 120	S230 to S70	No. 4 to No. 8	24 to 100 mesh	Do not use	Do not use
*900 cfm w/6" inlet	Do not use	Do not use	No. 5 to No. 12	30 to 180 mesh	See 1.9.6	See 1.9.7

* Standard reclaimer inlets

Figure 4

BNP® Gun	Jet	Nozzle	CFM	PSI
No. 4	1/8"	5/16"	21	80
No. 5	5/32"	5/16"	32	80
No. 6	3/16"	3/8"	47	80
* No. 7	7/32"	7/16"	62	80
* No. 8	1/4"	1/2"	86	80

Air Consumption in cfm

* Using this combination could affect usable media size, refer to Section 1.9.

Figure 5

1.10.2 The air filter at the air inlet connection removes condensed water from the compressed air. Its use is especially important in areas of high humidity, or when fine-mesh media are used. Moisture causes media to clump and inhibits free flow through the feed assembly. If the filter does not remove enough moisture to keep media dry and flowing, it may be necessary to install an air dryer or aftercooler in the air-supply line.

1.11 Electrical Requirements

1.11.1 Standard motor voltage is 230/460V, 3-PH. A 230-volt control panel is provided unless 460-volt is specified at the time the order is placed. All wiring external to the cabinet and power module is provided by the user and must comply with local electrical codes. A control panel is mounted on the power module; power from the user's disconnect has to be wired to it. A 3-PH control panel schematic and 115-V operator control schematic is included and stowed in the control panel. Additional wiring information is in Section 2.4.

1.11.2 NOTE: Full load amps (FLA) shown below are for the motor only; the lights draw less than one amp. Standard cabinets are supplied as follows:

900 cfm: 2 HP, 208/230/460V, 3-PH, 60 HZ
Supplied with 230-volt control panel unless 460-volt is specified at the time the order is placed.
FLA 208/5.5, 230/5.6, 460/2.8.

2.0 INSTALLATION

2.1 General Installation Notes

2.1.1 Select a location where compressed air and electrical service are available. The cabinet location must comply with OSHA and local safety codes. Position the cabinet and power module to allow for full access around the operator station, all doors, service areas, and for efficient handling of large parts. Ideally, the cabinet and power module are positioned so the flex (conveying) hose and blast hose are arranged with as few beds as possible. Determine the best location for both modules, and position them before final assembly.

2.2 Connect Compressed-Air Supply Line

⚠ WARNING

Failure to observe the following before connecting the equipment to the compressed air source could 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.**

2.2.1 Refer to the table in Figure 6 to determine the minimum ID of air-supply line to the cabinet. A smaller diameter hose may reduce blasting efficiency.

	Jet Size		
Air Line Length	1/8" No. 4	5/32" No. 5	3/16" No. 6
25 feet	3/4"	3/4"	1"
50 feet	3/4"	3/4"	1"
75 feet	3/4"	1"	1"
100 feet	3/4"	1"	1"

Minimum ID Compressed Air Line

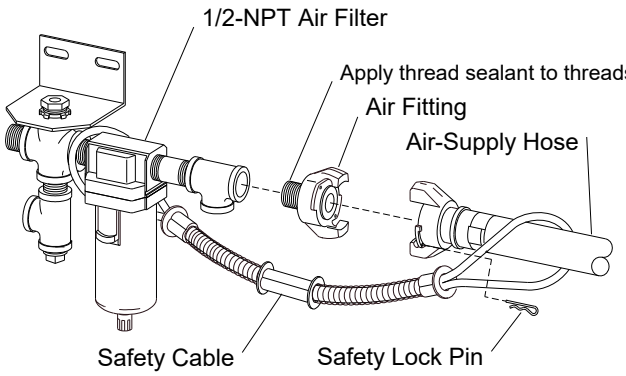
Figure 6

2.2.2 Apply thread sealant to the male threads of an air fitting that is compatible with the air-supply hose fitting, as noted in Section 2.2.1, and install it onto the compressed-air filter located under the cabinet hopper and shown in Figure 7.

⚠ WARNING

To avoid the risk of injury from compressed air, install an isolation valve and bleed-off valve where the air supply is tapped into the compressed air system. Doing so enables depressurization of the compressed-air line before performing maintenance.

2.2.3 Install an isolation valve at the air source to enable depressurization for service, and connect an air line from the air source to the fitting installed on the air filter.



- Use safety lock pins and safety cables to secure twist-on (claw-type) couplings.
- Once installed, all slack must be removed from the safety cable.
- Lock pins and safety cables are listed in Section 9.1.1.

Some items removed for clarity.

Figure 7

⚠ WARNING

Hose disconnection while under pressure could cause serious injury or death. Use safety lock pins or safety wire to lock twist-on claw type couplings together and prevent accidental separation, and safety cables to prevent hose from whipping should separation occur.

2.3 Ground the Cabinet and Dust Collector

2.3.1 To prevent static electricity build up, attach an external grounded wire from an earth ground to the grounding lug on the rear leg of the cabinet and a bolt on the power module.

2.4 Connect Electrical Service

⚠ WARNING

Lockout and tagout the electrical supply before performing any electrical service. Shorting electrical components could cause death, serious injury from electrical shock, or equipment damage. All electrical work, or any work done inside an electrical panel, must be performed by qualified electricians, and comply with applicable codes.

NOTE: Wiring schematics are stored in the electrical panel. Refer to the schematic when making electrical connections. After wiring is completed, keep the schematic with the manual for future reference and for electrical replacement parts.

2.4.1 Where possible, all wiring has been completed at the factory. An electrician needs to provide service from the user-provided disconnect to the motor starter in the electrical panel mounted on the side of the dust collector, and to connect the conduit and wiring from the junction box on the cabinet to the electrical panel.

2.4.2 The choice of 230 or 460 voltage must be made at time of order, so that the control panel and wiring is supplied accordingly. Unless specified otherwise, the motor and control panel are wired for 230 volts. A wiring schematic for the cabinet and accessories is stowed in the panel.

2.5 Check Motor Rotation

2.5.1 After the wiring is completed, observe the subsequent warning, and check the motor rotation. To check rotation, jog the starter (momentarily turn switch ON and OFF). This will cause the motor to rotate slowly. Look through the slots in the fan housing on the motor where rotation of the fan can be easily observed. Proper rotation is indicated by the arrow on the exhauster housing. The fan should rotate toward the exhauster outlet.

⚠ WARNING

Do not look into the reclaimer exhauster outlet while the paddle wheel is turning. Injury to the eye or face could occur from objects ejected from the exhauster.

2.6 Check Amperage

2.6.1 Check the amperage on initial startup. If the motor draws excessive amperage, gradually close the outlet damper until the amperage is within the specifications shown on the motor plate.

2.7 Connect Conveying (Flex) Hose

Installation Notes:

To prevent excessive hose wear, avoid sharp bends.

It is easier to slip the hose over the connectors and to create a tighter seal if the first two or three inches of wire is removed from the inside of the hose. Use care not to damage the hose. The hose wire helps dissipate static electricity in the conveying hose, and helps ground each segment. For the hose wire to dissipate static electricity, the wire must touch the metal of each segment.

2.7.1 Connect the 6" diameter flex hose between the cabinet hopper and reclaimer inlet, as shown in Figure 1

2.7.2 Connect the 7" diameter flex hose between the reclaimer outlet and the dust-collector inlet, as shown in Figure 2. This hose is sometimes removed for shipping.

2.7.3 Clamp the flex hoses securely in position with worm clamps provided.

2.8 Connect Media Hose to Metering Valve

2.8.1 Refer to Figure 8 and attach the clear media hose from under the cabinet hopper to the metering valve at the bottom of the reclaimer hopper, by pushing the hose onto the barded fitting.

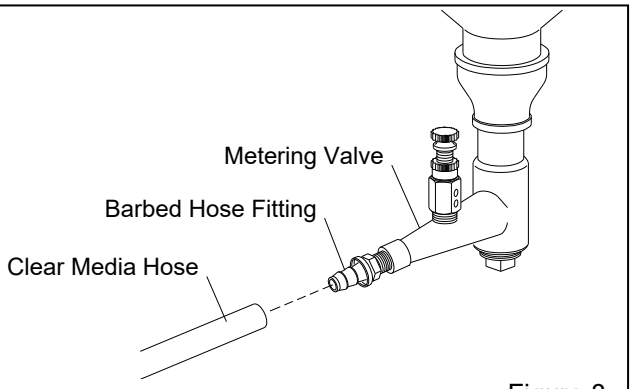


Figure 8

2.9 Set Inlet Damper – Figure 9

2.9.1 The inlet damper is located on the top of the cabinet and must be set to match the cabinet dimensions and reclaimer size. The label on the damper shows the settings in degrees. For the initial setting on a Pulsar IX, align the handle to 0 degrees (full open). The air damper was preset prior to shipment; confirm the initial setting, as noted below.

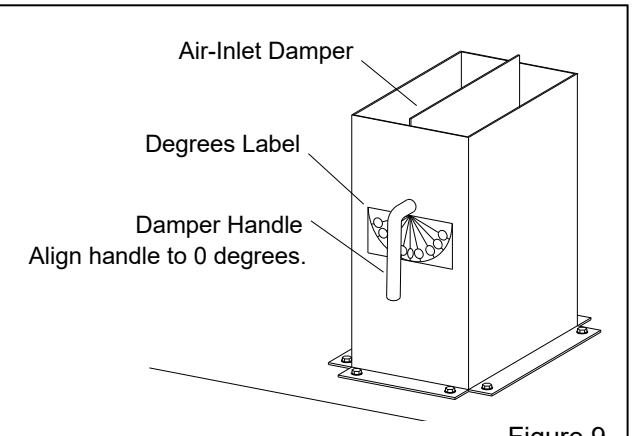


Figure 9

2.10 Air Connection to Power Module

2.10.1 Connect the air hose from the piping assembly under the cabinet to the dust-collector pulse-pressure regulator on the dust collector. Refer to Figures 2 and 3.

2.11 Final Assembly

2.11.1 Position the foot pedal on the floor at the front of the cabinet.

2.11.2 A package of five view-window cover lenses is supplied with the cabinet. Install a cover lens, per Section 7.3. When the cover lens becomes pitted or frosted, replace it.

3.0 FIELD INSTALLED ACCESSORIES

3.1 Aluminum Oxide (aggressive media) Kit

3.1.1 An optional aluminum oxide kit is available factory installed or may be field installed later.

Factory installed Alox kit consists of rubber curtains for doors, front and walls rear walls, curtain hardware, and boron carbide nozzle. Refer to Section 3.2 for curtain installation.

Field-installed (or replacement factory-installed) kits consist of black rubber cabinet curtains (refer to Section 3.2 for curtain installation), a boron carbide nozzle, and light-lined flex hose. If existing hose is in good condition, reserve the new hose for future replacement.

3.2 Cabinet Curtain Installation – Figure 10

3.2.1 Match curtains to corresponding walls and doors. When overlapping curtains, make sure the overlaps are on the correct end of the curtains.

3.2.2 Front and rear walls: Position the curtain on the wall to be protected. Using the curtains as templates, mark each mounting point through the grommet holes, along the upper edge of the curtain. NOTE: When laying out the attachment points, the upper edges of the curtains should be aligned with the top of the cabinet, and the front curtain should be aligned around the view window. Remove the curtains, and drill a .187" (3/16") diameter hole at each point marked. Install the curtains using the fasteners provided (machine screw, flat washer, lock washer and nut) at each grommet. The flat washer is used between the screw head and curtain grommet.

3.2.3 Doors: Using protectors against the curtains and outer doors, clamp the door curtains in place. NOTE:

When laying out the attachment points, the upper edges of the door curtains should be even with the edges of the door's soundproofing panel. Insert a #10 self-drilling screw with an 11/16″ OD flat washer through each grommet hole. Use a screw gun with a 5/16" socket to drill and thread the screws through the door's inner wall at each grommet.

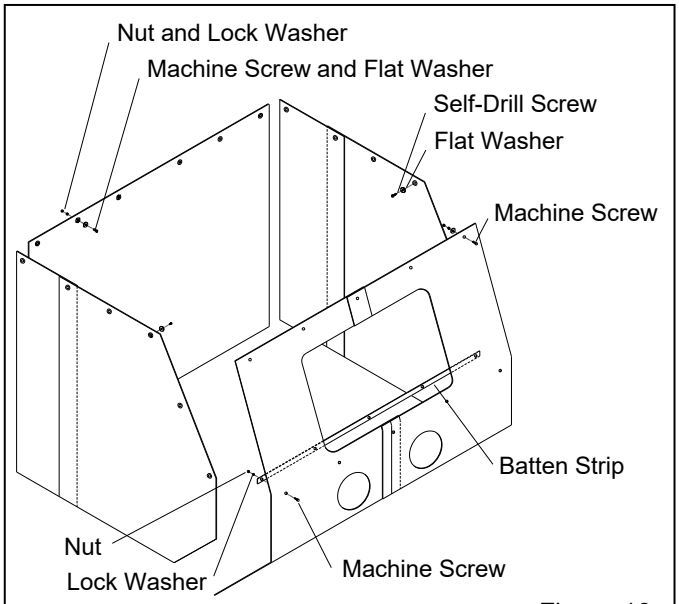


Figure 10

3.3 Manometer

The optional manometer kit is listed in Section 9.1.

3.3.1 The manometer measures static pressure. Consistent static pressure is necessary for precise media separation, as the reclaimer's efficiency is achieved by a centrifugal balance of air flow, particle weight, and size. Reclaimer static pressure is set by adjusting the outlet damper; refer to Section 5.4 to adjust static pressure. Refer to Section 5.10 for instruction on using the manometer operation.

3.4 Armrest

3.4.1 Assemble the armrest and mounting brackets, as shown in Figure 11.

3.4.2 Position the assembly so the armrest is about even with the bottom of the arm port opening. Mark one hole location on the front of the cabinet at each mounting bracket.

3.4.3 Drill a 3/8" hole at both locations and mount the armrest using 5/16 cap screw, washers, and nuts. Install the bolts from inside the cabinet to protect the threads from abrasion, should the armrest need to be removed later.

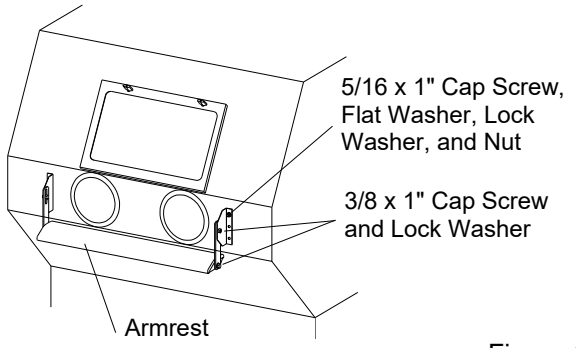


Figure 11

3.4.4 Match drill the remaining four bracket holes and install the remaining fasteners.

3.4.5 Loosen the fasteners on the slotted bracket and raise or lower the armrest to a comfortable position.

3.5 Turntable with Workcar and Track

Installation note: The track may be placed on either side of the cabinet, allowing entry through either the right side or left side door; the right side is shown in the illustrations. When installing the inside track, place it so the stops are opposite the entry door, as shown in Figure 13.

These instructions cover field installation of the 500 lb capacity track and workcar with turntable. If the track was ordered with the cabinet, it is partially assembled at the factory, Disregard the instructions that do not apply. Refer to Figure 12 for arrangement of the major components.

3.5.1 Components of the turntable and track assembly are shown in Figure 12. The assembly consists of:

1. The inside track assembly, which is placed inside the cabinet.
2. The hinged track extension attaches to the support table and swings up to clear the door.
3. The track support table.
4. Turntable and workcar assembly.

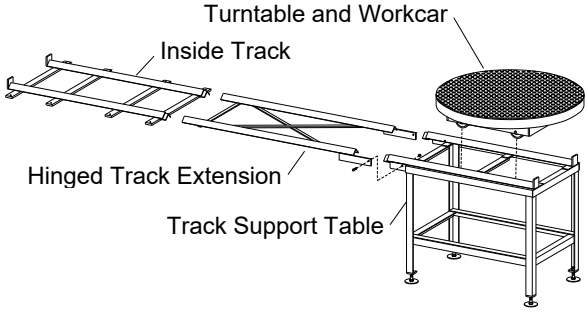


Figure 12

3.5.2 Place the inside track in the cabinet over the existing grate as shown in Figure 13.

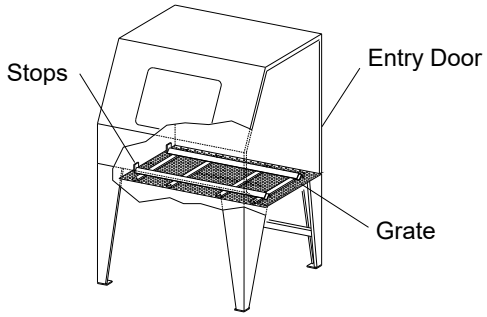


Figure 13

3.5.3 With the door open, position the track support table and extension as shown in Figure 14. When the hinged extension is lowered, the extension tracks must rest on the angled locating supports welded to the bottom of the inside tracks, and butt against the inside tracks.

3.5.4 Loosen the leveling-pad lock nuts and raise or lower the pads, as needed to adjust the height of the table, to make sure that the inside and outside tracks are aligned, that the hinged extension rest evenly on the support angles when the extension is lowered, and that the table is level.

3.5.5 Raise the track extension, and then open and close the door to make sure they function correctly. When certain the table and tracks are aligned and level, and that the workcar moves smoothly on all tracks, tighten the leveling-pad lock nuts and anchor the support table to the floor through the holes in the leveling pads.

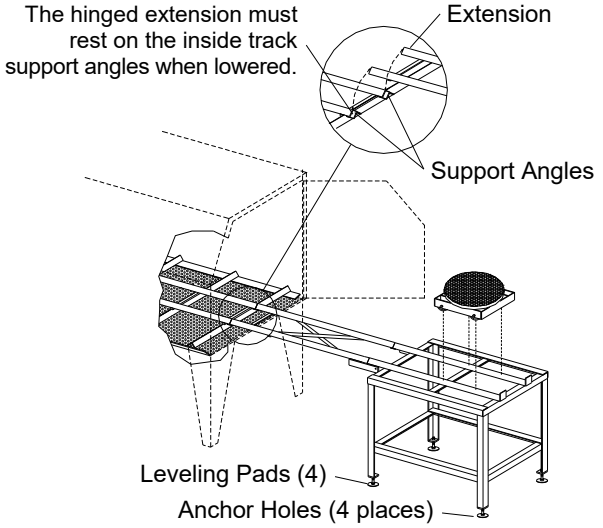


Figure 14

3.6 Dust-Collector Differential-Pressure Gauge

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

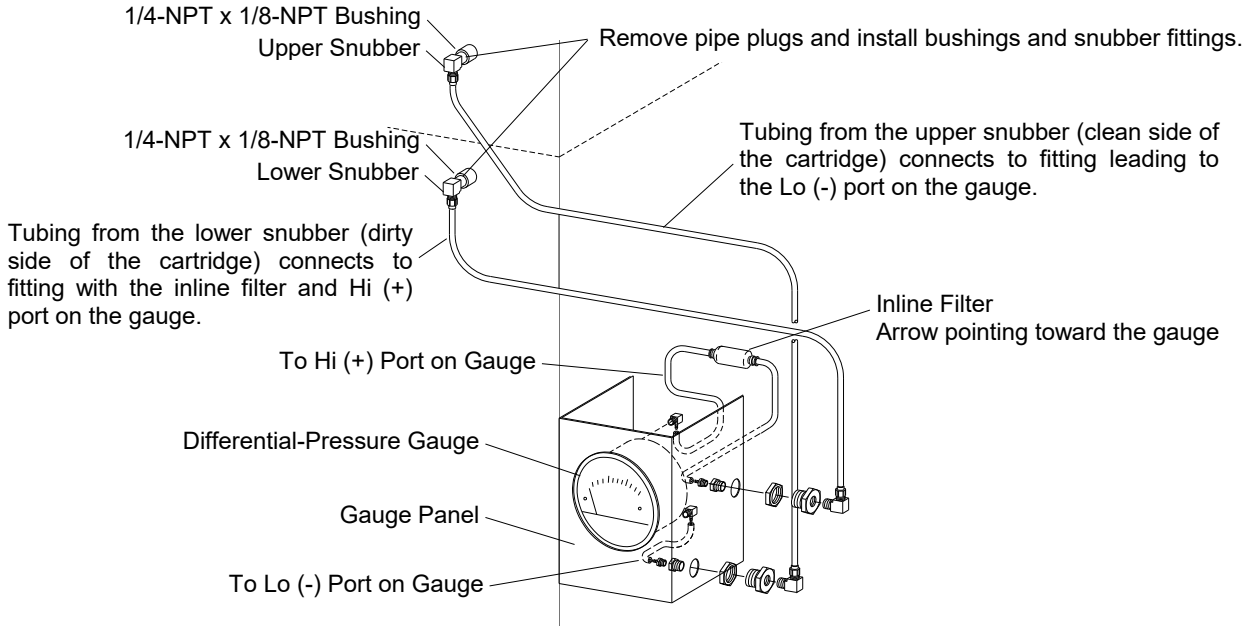


Figure 15

3.6.2 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 or power module at a location where it can be easily monitored. One suggestion is to mount it on top of the cabinet to either side of the light assembly. NOTE: A 20-foot length of tubing is included with the kit, allowing the panel to be mounted within ten feet of the dust-collector connections, as shown in Figure 15.

3.6.3 Mounting holes are 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. NOTE: Make sure the panel is close enough to the dust collector for ten feet of tubing to reach.

3.6.4 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 15.

3.6.5 Connect the 1/4" tubing to the snubber fittings and gauge, as shown, by removing the fitting's compression nut, sliding it over the end of the tubing, inserting the tubing into the fitting, and tightening the nut onto the fitting.

3.6.6 Refer to the differential-pressure gauge manual provided for operation of the gauge.

4.0 OPERATION

4.1 Season Filter Cartridges Per Section 7.9

NOTICE

Do not pulse a new dust collector or replacement filter cartridges until the cartridges are seasoned, per Section 7.9. Pulsing unseasoned cartridges decreases the efficiency of collector and life of the cartridge.

4.2 Media Loading

4.2.1 Media Capacity: The minimum amount of media to charge the system is approximately 40 lbs. Do not fill above the cone on the reclaimer. Overfilling will result in media carry over to the dust collector and possible blockage in the conveying hose.

4.2.2 Media Loading: With the exhauster OFF, add clean, dry media by pouring it into the reclaimer hopper through the reclaimer door. Do not fill above the reclaimer hopper. **Do not pour media directly into the cabinet hopper, as overfilling may occur.** Overfilling will result in media carry over to the dust collector and possible blockage in the conveying hose. Refill only after all media has been recovered from the cabinet.

4.3 Media Unloading – Figure 16

4.3.1 To empty the cabinet of media, turn ON the exhauster and blow off the cabinet interior until all media is recovered from the cabinet. Turn OFF the exhauster and place an empty bucket or other suitable container under the metering valve. Unscrew the plastic drain plug from the metering valve, permitting media to flow into the bucket. If media do not flow, it has caked; open the fill door and stir media until it starts to flow. Before the container becomes too heavy to easily manage, replace the plug and empty the container. Replace the plug when the reclaimer is empty or, if changing media type, purge the media hose, as noted below.

4.3.2 To purge the media hose, before replacing the plug turn ON the exhauster, grasp the gun, and press the foot pedal using the gun to blow off the cabinet interior until the air from the gun and the cabinet are clear. Turn OFF the exhauster and replace the plug.

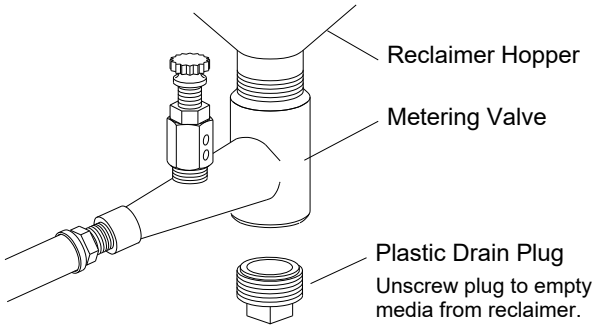


Figure 16

4.4 Loading and Unloading Parts

⚠ WARNING

Use solid fixturing to hold heavy parts in place. Do not remove lift equipment until the part is adequately supported to prevent movement. Moving heavy, unsupported parts can cause them to shift or topple, and cause severe injury. Supporting parts is especially important when using turntables and turntables with tracks.

4.4.1 Parts must be free of oil, water, grease, or other contaminants that will cause media to clump or clog filters. If parts are oily or greasy, degrease and dry them prior to blasting.

4.4.2 Load and unload parts through either door.

4.4.3 When blasting small parts or objects having small pieces that could become dislodged and fall off, place an appropriately sized screen over the grate (or under the grate when frequently blasting small parts) to prevent parts from falling into the hopper. If an object should fall through the grate, stop blasting immediately and retrieve it.

4.4.4 Close door; the door interlock system will prevent blasting if either door is open.

4.5 Blasting Operation

⚠ WARNING

To avoid the inhalation of dust, which can cause respiratory illness from short-term ingestion or death from long-term ingestion:

- **Use the blow-off nozzle to blow media off parts before opening doors.**
- **After blasting, keep doors closed and exhauster running until the cabinet is clear of all airborne dust.**
- **Always close cabinet, reclaimer, and dust-collector doors before blasting. Keep all doors closed during blasting.**
- **Always wear blast gloves.**
- **Stop blasting immediately if dust leaks are detected. Refer to troubleshooting Sections 8.15 and 8.16 and identify source of leak.**

4.5.1 Slowly open the air-supply to the cabinet. Check for air leaks on the initial startup and periodically thereafter.

4.5.2 After the filter cartridges are seasoned, per Section 7.9, adjust the pulse pressure regulator to 60 psi. Refer to Section 5.7 for adjustment procedure.

4.5.3 Turn ON lights and exhauster. The push-button switches, located on the cabinet front, performs both functions.

4.5.4 Load parts. If parts are oily or greasy, degrease and dry them prior to blasting.

4.5.5 Close door; the door interlock system will prevent blasting if either door is open.

4.5.6 Adjust the pilot pressure regulator to the required blast pressure, per Section 5.1. The regulator is located on the top, left side of the cabinet.

4.5.7 Insert hands into blast gloves.

4.5.8 To blast, hold the gun firmly, point the gun toward the object to be blasted, and apply foot pressure to the top of the foot pedal; blasting will begin immediately.

⚠ WARNING

Shut down the cabinet immediately if dust leaks are detected from the dust collector or cabinet. Make sure the dust-collector filter(s) are correctly seated and not worn or damaged. Prolonged breathing of any dust can result in serious lung disease or death. Short-term ingestion of toxic dust, such as lead, poses an immediate danger to health. Toxicity and health risks vary with type of media and dust generated by blasting. Identify all material being removed by blasting and obtain a safety data sheet (SDS) for the blast media.

NOTICE

To prevent rapid frosting of the view window, avoid pointing the blast nozzle toward the window and install a view-window cover lens, per Section 7.3.

4.5.9 When holding parts off the grate, use a solid conductive backrest to support the part. Without this assist, especially with longer blasting operations, the operator will tire easily from resisting blast pressure, and static electricity could build up in the ungrounded part and cause static shocks. Whenever possible, avoid holding small parts that require blasting into the glove.

4.5.10 If an object should fall through the grate, stop blasting immediately and retrieve it.

4.6 Blasting Technique

4.6.1 Blasting technique is similar to spray painting technique. Smooth continuous strokes are usually most effective. The distance from the part affects size of blast pattern. Under normal conditions, hold the gun approximately 3" to 6" from the surface of the part.

4.7 Stop Blasting

4.7.1 To stop blasting, remove foot pressure from the top of the foot pedal.

4.7.2 Use the blow-off nozzle to blow media off cleaned parts.

4.7.3 Keep doors closed and exhauster running until the cabinet is clear of all airborne dust.

4.7.4 Unload parts.

4.8 Shut Down

4.8.1 Shut off the air-supply valve, bleed the air-supply line, and drain the compressed-air filter and pulse reservoirs.

4.8.2 Switch OFF the lights and exhauster.

5.0 ADJUSTMENTS

5.1 Blasting Pressure (Pilot Regulator)

5.1.1 The pilot regulator, located left of the view window, enables the user to adjust blasting pressure while blasting, to suit the application. The suitable pressure for most purposes is about 80 psi. Lower pressures may be required on delicate substrates and will reduce media breakdown. Higher pressure may be required for difficult blasting jobs on durable substrates, but will increase media breakdown. If pressure is too high, suction in media hose will decrease, and if high enough, cause blowback in the hose. Optimal production can only be achieved when pressure is carefully monitored.

5.1.2 To adjust pressure, unlock the knob by pulling it out, as shown in Figure 17, and turn it clockwise to increase pressure or counterclockwise to decrease pressure. Pressure may drop slightly from closed-line pressure when blasting starts. Once operating pressure is set, push the knob in to lock it to maintain the setting.

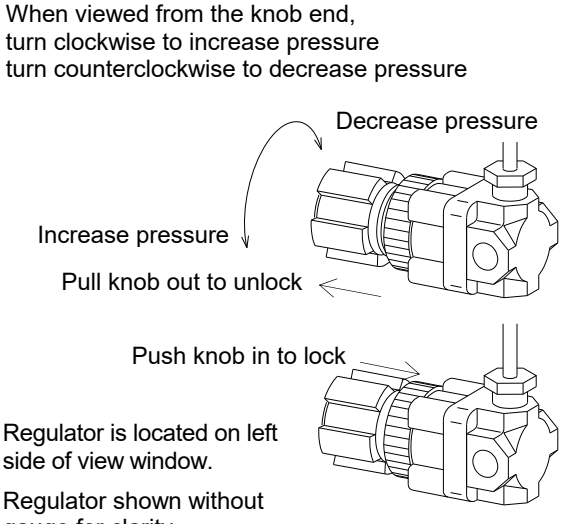


Figure 17

5.2 Air Jet Adjustment – Figure 18

5.2.1 The air jet should be screwed 4-1/2 to 5 full turns into the gun body. Doing so will leave 3-1/2 to 4 threads exposed past the lock nut. Tighten the lock nut to maintain the setting. Refer to Section 9.2, Item 16, for optional air jet adjusting tool, which correctly positions the jet.

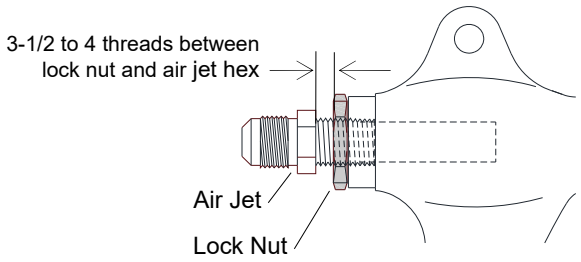


Figure 18

5.3 Media/Air Mixture (media flow) – Figure 19

5.3.1 Check the media stream for correct media/air mixture; media flow should be smooth and appear as a light mist coming from the nozzle.

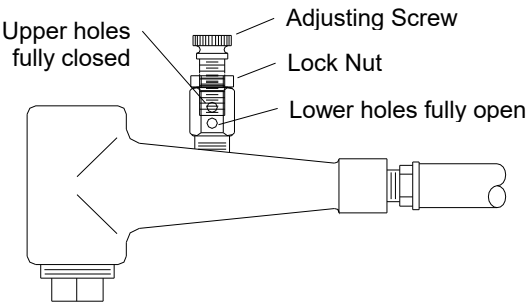


Figure 19

5.3.2 If media does not flow smoothly, loosen the lock nut, and adjust the metering screw until the upper holes in the metering stem are closed-off, and the lower holes are fully open, as shown in Figure 19. This adjustment is a starting point.

5.3.3 If pulsation occurs in the media hose, either media is damp and caked, or not enough air is entering the media stream. While blasting, loosen the lock nut and slowly turn the adjusting screw out (counterclockwise when viewed from the top) until the media flows smoothly. Tighten the lock nut finger-tight to maintain the setting.

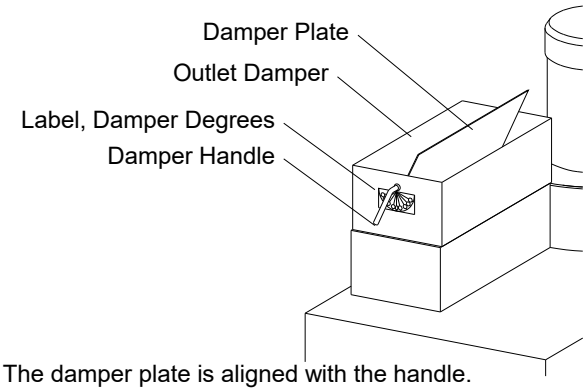
5.3.4 If media flow is too light, decrease air in the mixture by turning the metering screw in (clockwise when viewed from the top) covering more of the holes

so less air enters the media hose. Tighten the lock nut finger-tight to maintain the setting.

5.4 Reclaimer Static Pressure (Dust-Collector Outlet Damper)

5.4.1 Static pressure requirements vary with the size, weight, and type of media.

5.4.2 Adjust static pressure by opening or closing the outlet damper located above the dust collector, refer to Figure 20. If the damper is not opened far enough, the reclaimer will not remove fines, resulting in dusty media, poor visibility; or will not convey media, causing media build-up in the hose between the cabinet hopper and reclaimer. If the damper is opened too far, it may cause carry-over (usable media carried into the dust collector) and result in excessive media consumption. Run the media through several cycles and inspect media in the reclaimer and dust in the dust containers. Open the damper only as far as necessary to obtain a balance of maximum dust removal without good-media carry over.



The damper plate is aligned with the handle. Loosen nuts on opposite end of handle. Turn damper handle to adjust damper. Tighten nuts to maintain the setting.

Figure 20

5.4.3 A manometer is useful for adjusting and monitoring static pressure. The manometer kit is listed under Miscellaneous Accessories in Section 9.1.1. Refer to Section 5.10 for manometer operation. The following are static pressure starting points for given media. Static pressure may need to be lower with finer media or higher with coarser media. If a manometer is not available, begin with the damper about half open (handle pointing toward 45° on the label). Run the media through several blast cycles allowing the reclaimer to function with these settings. Inspect media in the reclaimer and fines in the dust collector, as noted in Paragraph 5.4.2. Continue adjusting static pressure until optimum media cleaning without carry over is attained.

Glass Bead No. 6 and 7 .....3-1/2" to 4"
Glass Bead No. 8 to 12 .....3" to 3-1/2"
Alox. 60 to 80 mesh..... 4" to 5"
Alox. 80 to 180 mesh ..... 3" to 4"

5.4.4 After adjusting the damper, and carry over or excessive dust in the media continues, adjust the vortex cylinder, per Section 5.5. Vortex cylinder adjustment is usually required only when using 180-mesh and finer media, or lightweight media.

5.4.5 As dust accumulates on the outer surface of the cartridges, static pressure drops, requiring additional pulsing of the cartridges as described in Section 5.8, or an increase in pulse pressure, per Section 5.7. When pulsing no longer maintains the necessary static pressure, readjust the damper.

5.5 Externally-Adjustable Vortex Cylinder

The vortex cylinder fine-tunes media separation. Before adjusting the cylinder, adjust the damper on the dust collector to increase or decrease static pressure, per Section 5.4. Once the damper is adjusted, adjust the cylinder.

5.5.1 The vortex cylinder is located atop the reclaimer where the flex hose connects. Adjustments are made by loosening the handle's tensioning knob and moving the handle to achieve the correct setting. When the correct setting is established, tighten the locking knob to prevent movement. Start with the lever slightly to the right (about 1 o'clock, as shown in Figure 21) of the vertical position.

Begin with handle at the 1 o'clock position, as shown.

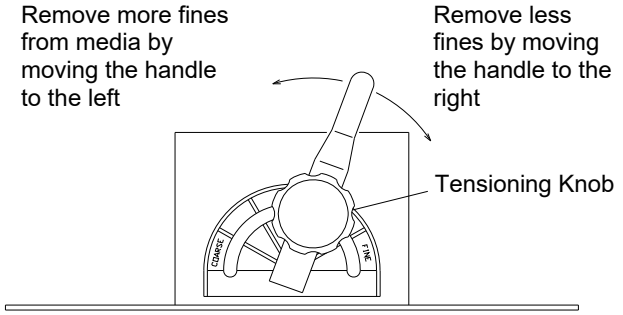


Figure 21

5.5.2 To remove More Fines: (Too much dust in media) Raise the cylinder by moving the lever left toward "COARSE", in 1/4" increments at the indicator plate. Allow the media to go through several blast cycles before determining if further adjustment is needed.

5.5.3 To remove fewer Fines: (Excessive usable media is carried to the dust collector) Lower the vortex cylinder by moving the lever right toward "FINE", in 1/4"

increments at the indicator plate. NOTE: If the cylinder is lowered too far, the reclaimer will again begin to allow usable media to be carried over, and cause abnormally high static pressure.

5.5.4 When using media finer than 180-mesh, the inlet baffle of the reclaimer may need to be removed. Refer to Section 1.9.6.

5.6 Door Interlocks – Figure 22

⚠ WARNING

Never attempt to override the interlock system. Doing so could result in injury from unexpected blasting.

5.6.1 The door interlocks disable the blasting control circuit when the doors are open. To enable blasting, the door interlock switch must be engaged when the doors are closed. The interlocks are set at the factory and do not usually require field adjustment unless parts are replaced. When adjustment is required, proceed as follows.

5.6.2 Close cabinet doors.

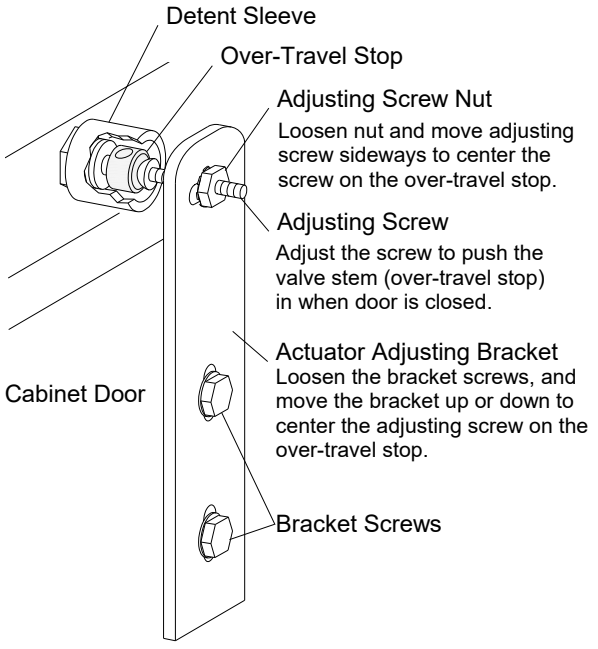


Figure 22

5.6.3 Loosen the actuator bracket screws and adjusting screw nut. Move the actuator bracket up or down, and the adjusting screw sideways, as needed to center the adjusting screw on the over-travel stop (in center of detent sleeve). Tighten the bracket screws.

5.6.4 Turn the adjusting screw in or out as required to engage the switch without applying excessive pressure on it. Tighten the adjusting screw nuts.

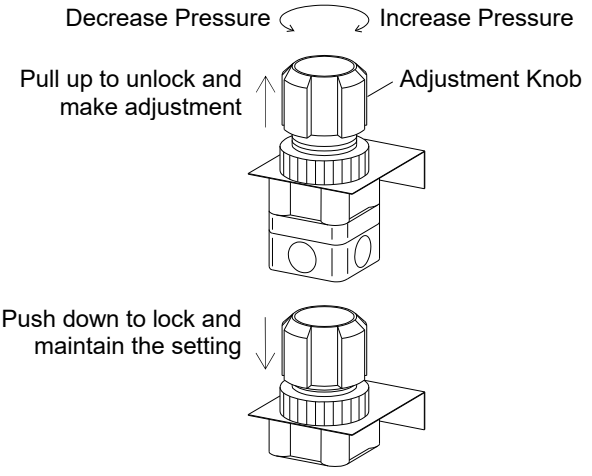
5.6.5 Test the operation with the doors open and then closed. Negative pressure inside the cabinet may cause the doors to flex inward. Tests should be performed with the exhauster running. Point the nozzle away from the door during the tests and open the door only enough to disengage the interlock switch. The interlocks should stop the blasting when either door is open and permit blasting when the doors are closed.

5.7 Dust-Collector Pulse Pressure – Figure 23

NOTICE

Do not pulse a new dust collector or replacement cartridges until the cartridges are properly seasoned. Refer to Section 7.9. Pulsing unseasoned cartridges could cause premature cartridge failure or decrease the efficiency of dust collector.

5.7.1 Adjust pulse pressure using the regulator mounted on the dust-collector body. Begin pulsing at 60 psi. To adjust pressure, pull the knob to unlock it, as shown in Figure 23, turn clockwise to increase pressure or counterclockwise to decrease pressure. Once operating pressure is set, push the knob to lock it and maintain the setting.



When viewed from the top of the knob,
- turn clockwise to increase pressure
- turn counterclockwise to decrease pressure

Figure 23

5.7.2 When pulsing does not adequately clean the cartridges, increase pulse pressure in increments of 5 psi to 10 psi until the maximum of 90 psi is reached. As dust cakes on the cartridges, differential pressure increases. Using a gauge to measure the differential pressure is a good way to tell if the cartridges are heavily caked.

5.7.3 When the maximum pulse pressure of 90 psi is attained, and additional pulsing as described in Section 5.8 does not decrease differential pressure or increase visibility, replace the cartridges, per Section 7.8.

5.8 Pulse-Sequence Control Panel and Timer

5.8.1 The toggle switch (sequence switch) mounted on the sequence control-panel cover, enables or disables the timing sequence. When the switch is ON, the pulse sequence automatically starts when the dust-collector exhauster is started. If the switch is OFF, the pulse sequence will not occur. The switch should be left OFF (no pulse) until cartridges are seasoned, per Section 7.9.

5.8.2 The timer is factory set at 40 seconds OFF and 15/100 of a second ON. Every 40 seconds the cartridges are pulsed.

5.8.3 As the cartridges cake with dust, the pulse may not clean them well enough to bring the differential-pressure gauge below the recommended changeover of 4" WC (4 inches of water column). A constant reading higher than 4" is an indication that more frequent pulse cycles or higher pressure are needed. When differential pressure remains greater than 4", adjust the OFF time setting by half and lower pulse pressure to 70 psi. DO NOT ADJUST ON TIME. Increasing on time will consume more air, but will NOT increase cleaning efficiency.

5.8.4 When the frequency of the pulse cycle does not lower the differential pressure to less than 4", or a decrease in visibility or recovery is noted, increase pulse pressure in increments of 5 psi until the maximum of 90 psi is reached.

5.8.5 When the frequency of the pulse cycles and higher pulse pressure does not lower the differential pressure below the changeover pressure of 4", the filter cartridges should be replaced, per Section 7.8.

5.9 Cabinet Air-Inlet Damper

5.9.1 Once the inlet damper is initially set, per Section 2.9, it seldom requires readjustment. The initial setting produces approximately .5″ to .75″ of static pressure in the cabinet enclosure. **Do not confuse cabinet static pressure with reclaimer static pressure, which is controlled by the outlet damper, per Section 5.4. Reclaimer pressure must be set before cabinet pressure.** In rare circumstances, cabinet pressure may need to be slightly higher or lower.

5.9.2 A manometer (as noted in Section 5.10 and listed in Section 9.1.1) is the most accurate method of monitoring and adjusting cabinet pressure. Following the instructions packed with the manometer, start the exhauster and insert the needle into a glove, and adjust pressure using the inlet damper. Open the damper further to decrease static pressure or close it further to increase pressure.

5.9.3 If a manometer is not available, use the gloves as an indicator. With the exhauster ON, the gloves should be inflated, but not elevated off the grate.

5.10 Optional Manometer

NOTE: These instructions show several methods of taking static pressure readings (negative pressure) on Pulsar reclaimers, by using a flexible tube manometer. Use the method best suited for the application. The instruction explains the processes for taking periodic readings and shows how to permanently install the manometer for taking frequent readings. A fitting should be installed when the manometer installation is permanent, refer to Paragraph 5.10.6.3. Use silicone or other sealant around the fitting to prevent leaks. The fitting should be capable of being capped when the manometer tube is removed. Capping the fitting prevents leaks that alter the reclaimer's separation efficiency. Taking readings at different locations could produce different readings. Static pressure readings at the door are generally .5" to 1" lower than readings taken above the reclaimer. The readings are reference points, so readings should be taken using the same method each time the reading is taken.

5.10.1 Refer to directions packed with the manometer for preparation and operating instructions for the manometer.

5.10.2 Connect one end of the 3/16" ID tubing to one of the tubing connectors (elbow) at the top of the manometer by pushing it over the barbed adaptor.

5.10.3 Leave the needle protector on the needle and insert the needle into the other end of the tubing. The ends of the tubing must fit tight on the manometer and needle; leaks will cause inaccurate readings.

5.10.4 Open both manometer valves (elbows) per manometer instructions.

5.10.5 Magnets on the manometer hold it in position on the reclaimer or dust-collector body. The manometer must be vertical so the fluid is level on both sides.

5.10.6 Needle placement: The illustration in Figure 24 shows the manometer set-up for taking both periodic and frequent static pressure readings.

5.10.6.1 Taking readings in the flex hose: Remove the needle protector, and insert the needle into the flex hose approximately 8" above the top of the reclaimer.

5.10.6.2 Taking readings at the reclaimer door: Open the reclaimer fill door, remove the needle protector and place the needle so the tip is inside the door opening. Carefully close the door on the needle. The side of the needle will embed into the rubber, creating an airtight seal.

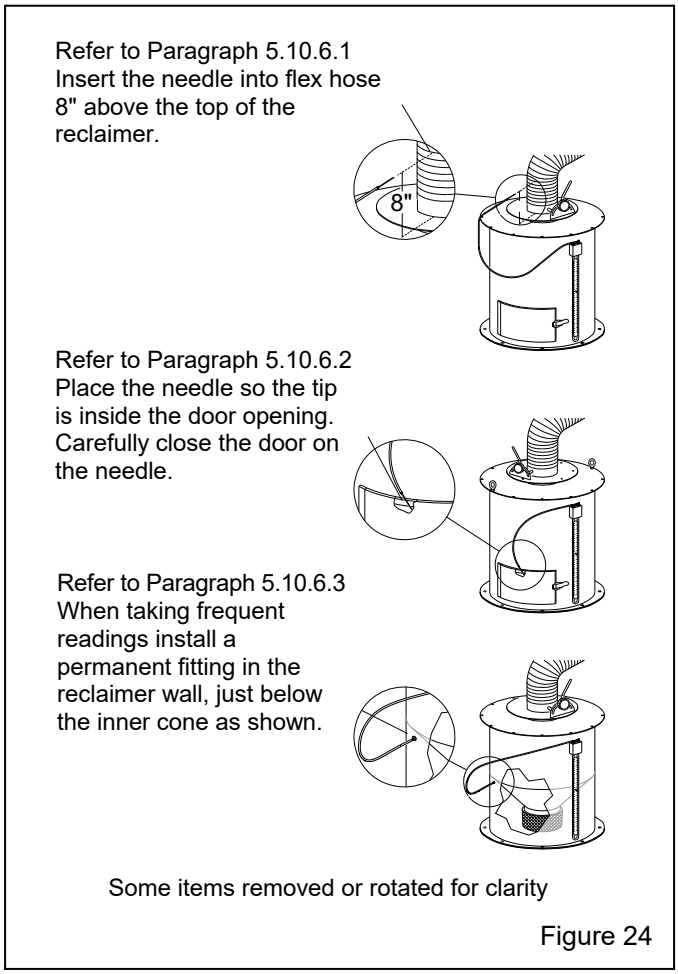


Figure 24

5.10.6.3 Taking frequent readings using a permanent fitting: A permanent fitting may be installed in the reclaimer wall, as shown in Figure 24 for taking frequent static pressure readings. Permanent fittings must have a barb to accommodate the 3/16" ID tubing and have a means of sealing the fitting when the manometer is not in use. Use silicone sealer or other sealant to seal around the fitting to prevent leaks. The fitting should be capable of being capped when the manometer tube is removed. Sealing the fitting will prevent leaks that alter the reclaimer's separation efficiency. Air drawn into the reclaimer will cause carry over of good media to the dust collector.

5.10.7 Adjust the slide rule to align the zero with the fluid level. Refer to the upper part of Figure 25.

5.10.8 Open cabinet doors and turn the exhauster ON. The negative (static) pressure will move fluid in the tube.

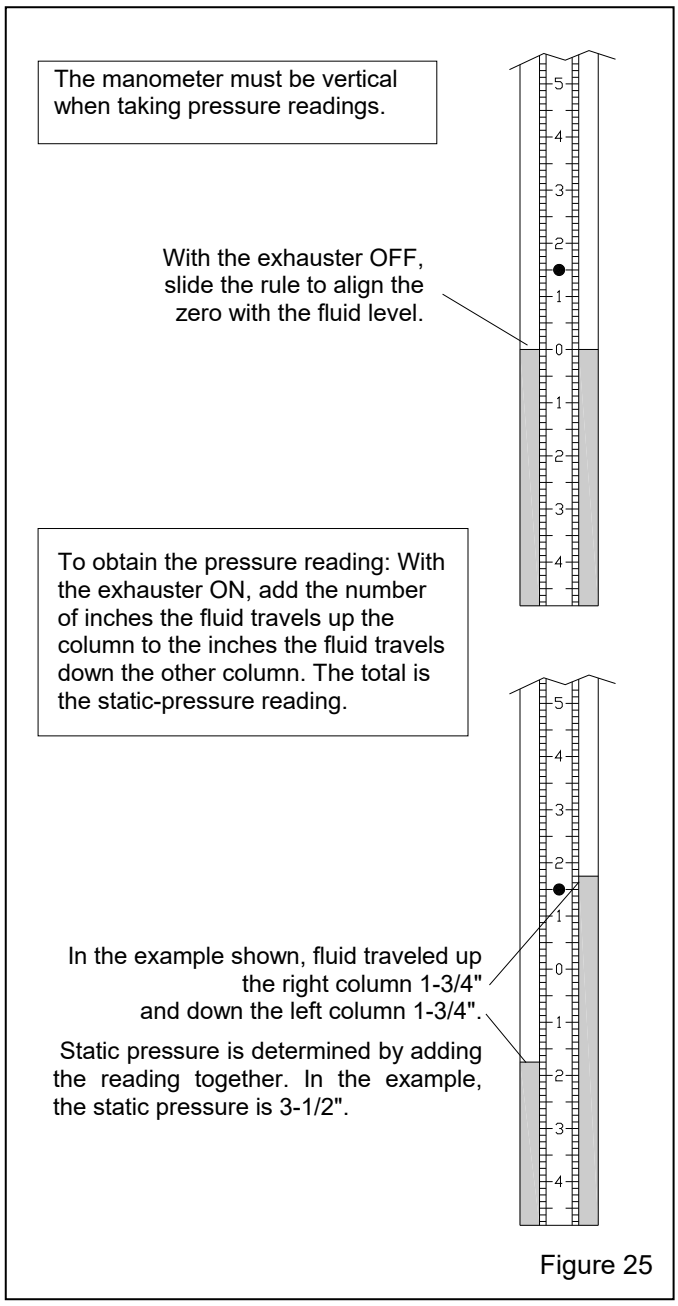


Figure 25

5.10.9 To find the static pressure, add the number of inches the fluid travels up one column to the inches the fluid travels down the other column. Refer to the example in Figure 25.

5.10.10 After taking the readings, replace the needle protector. Close the manometer valves and store the manometer in the original container in a clean area. NOTE: If the manometer installation is permanent, the manometer may remain on the reclaimer body after the valves are closed.

6.0 PREVENTIVE MAINTENANCE

⚠ WARNING

Failure to wear an approved respirator and personal protection when servicing dust-laden areas of the cabinet and dust collector, as well as when emptying the container, can result in lung disease, serious skin or eye irritation, or other health issues. Toxicity and health risk vary with type of media and dust generated by blasting. The respirator must be approved for the type of dust generated. Identify all material being removed by blasting and obtain a safety data sheet (SDS) for the blast media.

To avoid unscheduled downtime, establish an inspection schedule. Inspect all parts subjected to media contact, including the gun and nozzle, media hose, flex hose, wear plate, and all items covered in this section. Adjust frequency of inspections as needed, based on the following:

- **Usage:** Frequently used cabinets require more maintenance and inspections than those occasionally used.
- **Type of media:** Aggressive media wears parts faster than nonaggressive media.
- **Condition of parts being blasted:** Heavily contaminated parts require more maintenance to the cabinet's media recovery system.
- **Friability of media:** Media that rapidly breaks down require more maintenance to the cabinet's media recovery system and dust collector.

6.1 Daily Inspection and Maintenance Before Blasting with the Air OFF

6.1.1 Check media level: Check media level in reclaimer and refill as necessary.

6.1.2 Inspect reclaimer debris screen and door gasket: Check reclaimer debris screen for debris. The screen is accessible through the reclaimer door. With the exhauster OFF, remove the screen and empty it daily or when loading media. Empty the screen more often if part blasted causes excessive debris. Do not operate the machine without the screen in place; oversized byproduct from blasting could plug the nozzle. While the door is open, inspect the door gasket for wear or damage. Replace the gasket at the first sign of wear.

6.1.3 Drain compressed-air filter: The cabinet is equipped with a manual-drain air filter. Drain the filter at least once a day and more often if water is present. Moist air inhibits the flow of media. Drain the air line and receiver tank regularly. If the filter does not remove enough moisture to keep media dry and flowing, it may be necessary to install an air dryer or aftercooler in the compressed-air-supply line.

6.1.4 Inspect and empty the dust-collector dust containers

NOTICE

Inspect dust level in the dust containers daily. Empty the dust containers when no more than half-full and when adding new media. Failure to monitor the dust level will overfill the collector, requiring extensive cleaning.

6.1.4.1 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.

6.1.4.2 Turn off the exhauster and release the lid lock ring from the dust container, as shown in Figure 26.

6.1.4.3 Pry the lid off the container (the lid's flexible inlet hose allows easy removal), and remove the container.

6.1.4.4 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. Replacement liners are shown in *Section 9.10, Figure 51, Item 25*.

NOTE: Blasting media is usually non-toxic; 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.

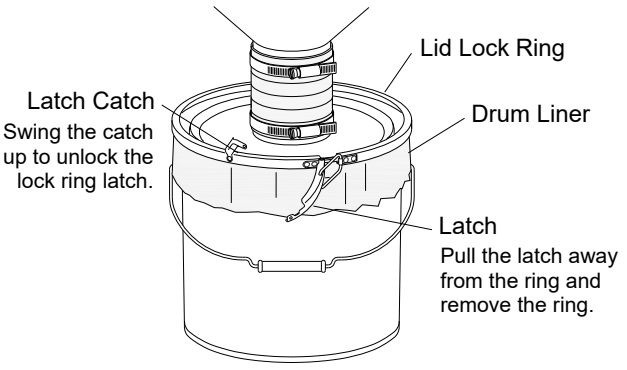


Figure 26

6.1.4.5 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.

6.2 Daily Inspection During Blasting – Have Someone Do the Following:

6.2.1 Inspect cabinet for dust leaks: During operation, inspect cabinet door seals for media leaks. Dust leaking from the inlet damper or other places on the cabinet indicates saturated filter cartridge. Refer to troubleshooting Section 8.15.

6.2.2 Check exhaust air for dust: Dust discharge at the dust-collector outlet indicates a leaking or damaged filter cartridge. Immediately shut off the dust collector and inspect the cartridges. Note that a small amount of dust egress is normal for a short time before new cartridges are seasoned.

6.2.3 Drain pulse reservoirs: Open the petcock to drain both pulse reservoirs at the end of each shift. Refer to Figure 27.

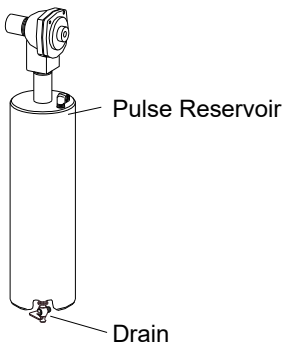


Figure 27

6.3 Weekly Inspection and Maintenance Before Blasting with Air OFF

6.3.1 Inspect view-window cover lens: Inspect the window cover lens. Replace as needed, per Section 7.3.

6.3.2 Inspect gloves: Inspect gloves for wear. The first sign of deterioration may be excessive static shocks. Replace as needed, per Section 7.1.

6.3.3 Inspect BNP® gun assembly: Inspect internal parts of the BNP Gun for wear. Inspection and replacement of the air jet cover before it wears through will prolong the life of the jet. Replace parts as needed, per Section 7.2.

6.3.4 Inspect media hose: Inspect media hose for thin spots by pinching it every 6 to 12 inches. Replace the hose when it becomes soft.

6.3.5 Optional differential-pressure-gauge inline-filter: With the exhauster turned OFF, check the inline dust filer for dust accumulation.

6.4 Weekly Inspection During Blasting – Have Someone Do the Following:

6.4.1 Inspect flex hoses for leaks: Inspect flex hoses for wear and negative pressure leaks.

6.5 Monthly Inspection and Maintenance Before Blasting with Air and Exhauster OFF

6.5.1 Reclaimer wear plate and liners: Remove the flex hose from the reclaimer inlet and use a light to inspect the reclaimer wear plate or optional rubber reclaimer liners for wear. If the rubber is worn through to the backing metal, replace the wear plate, per Section 7.10 or rubber liners, per Section 7.11, as necessary.

7.0 SERVICE MAINTENANCE

⚠ WARNING

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

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

All dust is hazardous to breath; toxicity and health risk vary with type of dust generated by blasting. Prolonged exposure to any dust can result in serious lung disease and death. Short-term exposure to toxic materials, such as lead dust or dust from other heavy metals and corrosives, can cause serious injury or death. 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 ingestion. The employer shall meet all OSHA requirements, including but not limited to those for confined space, combustible dust, fall protection, hazard communication, and lockout and tagout procedure for electrical and pneumatic supply.

7.1 Gloves

7.1.1 Special static-dissipating gloves have been provided for operator comfort. It will be necessary to change gloves periodically as they wear. The first sign of deterioration may be excessive static shocks.

7.1.2 Band-clamp type: Band-clamp type gloves are held in place by metal band-clamps on the inside of the cabinet. To replace, loosen the clamps with a screwdriver, replace the gloves, and tighten the clamps.

7.1.3 Quick-Change type, clampless installation: Quick-change gloves are held in place using spring rings sewn into the attachment end of the glove. To install, insert the glove into the arm port, so one spring is on the inside of the port and the other is on the outside, sandwiching the arm port between both spring rings.

7.2 BNP® Gun and Hose Assembly – Figure 28

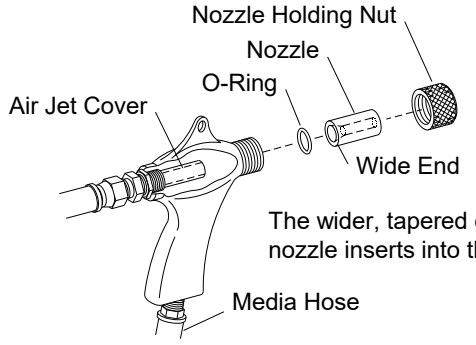


Figure 28

7.2.1 Replace the nozzle when its orifice diameter has worn 1/16" larger than its original size or when suction diminishes noticeably. To change the nozzle, unscrew the holding nut from the gun end, and pull the nozzle from the gun. Inspect the nozzle and O-ring and replace if worn or damaged. Inspect the air jet cover; replacing it before it wears through will prolong the life of the jet. Insert a new O-ring and nozzle, placing the tapered end of the nozzle toward the jet. Screw the holding nut onto the gun.

7.3 View-Window Cover Lens

7.3.1 Rapid frosting of the view window can be avoided by directing ricocheting media away from the window and by installing a cover lens on the inside surface of the window. Using cover lenses prolongs the life of the view window.

7.3.2 The best way to install a cover lens is to remove the window from the cabinet, per Section 7.4. If, for some reason, it is not practical to remove the window, the lens may be applied with the window glass in place.

7.3.3 To install a cover lens, carefully remove the adhesive backing making sure the adhesive remains on the lens and apply the lens to the clean, dry, inner surface of the view window. When the cover lens becomes pitted or frosted, replace it.

7.4 View-Window Replacement

⚠ WARNING

Do not use plate glass for replacement view windows. Plate glass shatters on impact and could cause severe injury. Use only genuine ZERO® laminated replacement glass.

7.4.1 Remove the two window-frame nuts located on the upper edge of the window frame, and swing the window frame open. If the frame is to remain open, for cleaning or other reasons, remove it per Section 7.5.

7.4.2 Remove the old window.

7.4.3 Inspect the window-frame gaskets, on both the window frame and on the cabinet. If either gasket is damaged, replace it per section 7.6.

7.4.4 Install a view-window cover lens, per Section 7.3.

7.4.5 Set the new window (cover lens down) squarely over the window opening, making sure that all edges of the window are centered and overlapping the window gasket, and that the window is resting on the window support tabs.

7.4.6 Swing the window frame into place and tighten the frame nuts.

7.5 Window-Frame Removal – Figure 29

7.5.1 Remove the two window-frame nuts located on the upper edge of the window frame, and swing the window frame open.

7.5.2 Remove the window to prevent breakage.

7.5.3 Pivot the window frame up or down until tension is off the frame hinges.

7.5.4 To remove, slide the frame to the right. The hinges separate, as shown in Figure 29.

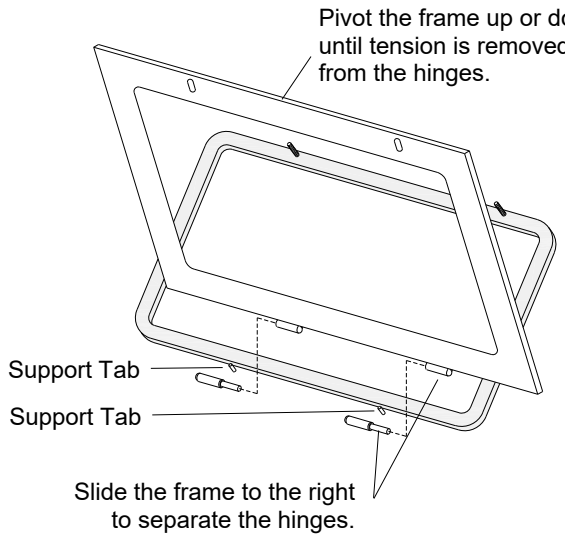


Figure 29

7.5.5 Replace the frame in reverse order. Slide the frame as necessary to align the top bolt holes with the bolts.

7.5.6 Set the window squarely over the window opening, making sure that all edges of the window are centered and overlapping the window gasket, and that the window is resting on the window support tabs.

7.5.7 Swing the window frame into place and tighten the frame nuts.

7.6 Window-Gasket Replacement – Figure 30

7.6.1 Inspect the gaskets when changing the view window. Replace the window-frame gasket and cabinet window opening gasket at the first sign of media leakage around the view window, or if gaskets are worn or otherwise damaged.

7.6.2 Remove the window and window frame, per Section 7.5.

7.6.3 Remove all the old gasket material and clean the surfaces of the cabinet and window frame.

7.6.4 Peel a short section of adhesive backing from the 5/16″-thick strip gasket, and adhere the gasket to the center of the top edge of the window opening, as shown in Figure 30. Peel additional backing as needed, and work the strip around the radius of each corner, pressing it firmly to bond. Trim the gasket to fit and compress the ends to seal.

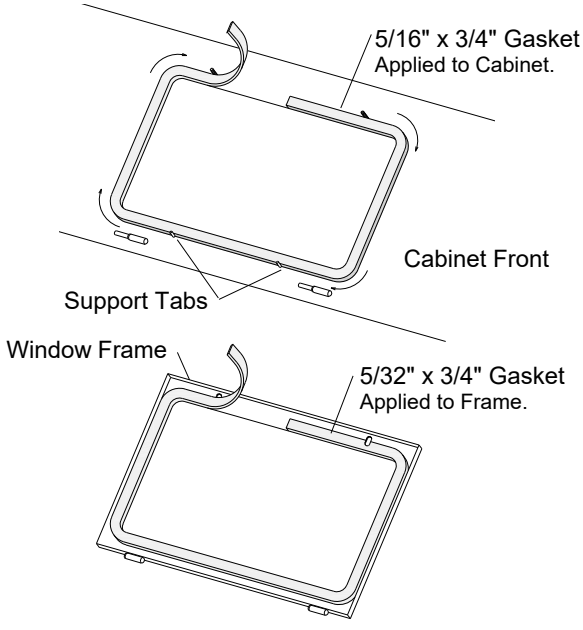


Figure 30

7.6.5 Using 5/32″-thick strip gasket, repeat the process on the underside of the window frame.

7.6.6 Trim around the window-frame bolt-slots, as needed.

7.7 Light Assembly – Figure 31

⚠ WARNING

Use an approved stepladder when servicing the light assembly. Do not climb on top of the cabinet. The cabinet top will not support the weight of a person. Failure can result in injury and property damage.

7.7.1 Remove light-mount cover

7.7.1.1 Turn OFF electrical power.

7.7.1.2 Remove the four nuts and washers that attach the light-mount cover to the cabinet and remove the cover, as shown in Figure 31.

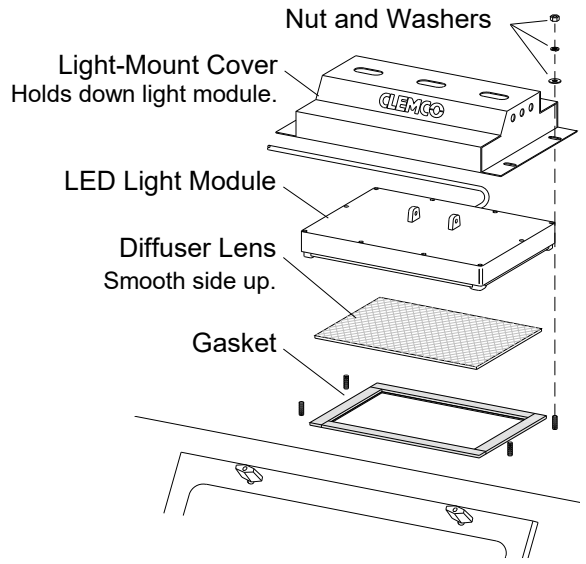


Figure 31

7.7.2 Gasket replacement

7.7.2.1 Remove the four nuts and washers that attach the light-mount cover to the cabinet and remove the cover, as noted in Section 7.7.1. Move the light module off the diffuser lens and remove the lens.

7.7.2.2 Remove all the old gasket material and clean the surface of the cabinet.

7.7.2.3 Lay a section of strip gasket along the edge of the opening and cut to length, allowing 3/4″ overlap on each end. Peel a short section of adhesive backing and adhere the strip gasket to the top edge of the light opening, as shown in Figure 31. Press the gasket to bond. Repeat the process for each side, compressing the ends to seal.

7.7.3 Diffuser lens replacement

7.7.3.1 Remove the four nuts and washers that attach the light-mount cover to the cabinet and remove the cover, as noted in Section 7.7.1. Move the light module off the diffuser lens and remove the lens. Inspect the gasket and replace it, per Section 7.7.2, if it is compressed or otherwise damaged, before centering the new diffuser (smooth side up) over the gasket.

7.7.3.2 Set the light module on the diffuser and reattach the cover.

7.7.4 LED light module replacement

7.7.4.1 Turn OFF electrical power and perform lockout and tagout procedure to power supply.

7.7.4.2 Remove the light-mount cover, per Section 7.7.1.

7.7.4.3 Remove the junction-box cover and note the wire connections. Current connections are as follows:

- Brown wire .....Hot
- Blue wire .....Neutral
- Yellow w/green stripe .....Ground

If color coding is different from that shown above, make note of the color code before disconnecting the wires.

7.7.4.4 Loosen the strain-relief compression nut and remove the cord from the junction box.

7.7.4.5 Place the new module in position on the cabinet and route the cord through the strain relief and into the junction box.

7.7.4.6 Cut the cord to length and wire as follows:

- Brown wire .....Hot
- Blue wire .....Neutral
- Yellow w/green stripe .....Ground

7.7.4.7 Apply power to test the light.

7.7.4.8 Tighten the strain-relief compression nut, set the light module on the diffuser, and reattach the cover.

7.8 Replacing Filter Cartridges –Figures 32 and 33

⚠ WARNING

NO DUST IS SAFE TO BREATHE.
The inhalation of airborne dust can lead to serious respiratory illness and death, serious skin or eye irritation, or other health issues. Always wear approved respiratory protection when servicing the dust collector, while handling filter bags and cartridges, and when emptying the dust container. Toxicity and health risk vary with type of media and dust generated by blasting. The respirator must be approved for the type of dust generated. Identify all material being removed by blasting and obtain a safety data sheet (SDS) for the blast media.

7.8.1 Shut the sequence switch, located on the sequence-panel cover, OFF.

7.8.2 Close the air-supply valve and bleed all air from the pulse reservoirs.

7.8.3 Refer to Figure 32 and unlatch the dust container lid, pry off the lid from the container (the lid's flexible inlet hose allows easy removal), and remove the container.

7.8.4 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.

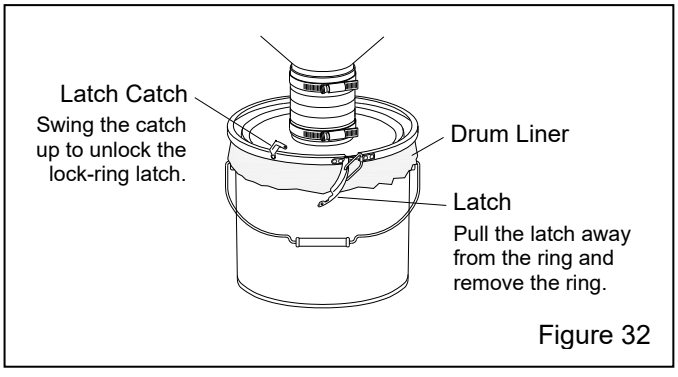


Figure 32

7.8.5 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 9.10.

7.8.6 Remove the dust-collector access door.

7.8.7 Loosen the cartridge retaining-nut at the bottom of the hanger rod, as shown in Figure 33, and rock the cartridge to loosen it from the cartridge plate.

7.8.8 Swing the bottom of the cartridge out through the access door, and remove the retaining nut, lock washer, and flat washer.

7.8.9 Slide the cartridge off the hanger rod.

7.8.10 Clean all parts that will be reused, especially on the bottom side of the cartridge plate around the cartridge sealing area. Scrape off any residual gasket material from the sealing surface.

7.8.11 Slide new cartridge onto the hanger rod and install the washers and retaining nut.

7.8.12 Swing each cartridge into the collector and tighten the retaining nuts until the cartridges cannot be moved by hand. Tighten each nut one additional full turn.

7.8.13 Check the access door gasket for any condition that will prevent the gasket from sealing. Replace the gasket if necessary.

7.8.14 Attach the access door and tighten the nuts to secure.

7.8.15 Reset pulse pressure to 60 psi, per Section 5.7 and reset the timer OFF time to 40 seconds, per Section 5.8.

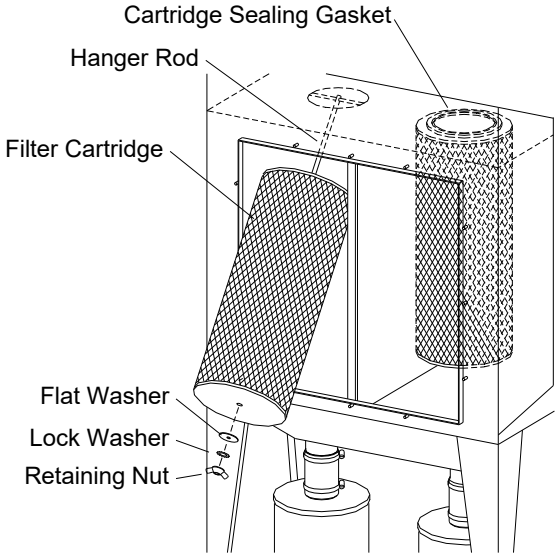


Figure 33

7.8.16 Season cartridges per Section 7.9.

7.9 Seasoning Filter Cartridges

NOTICE

Do not pulse a new dust collector or replacement filter cartridges until cartridges are seasoned. Pulsing unseasoned cartridges can decrease the efficiency of dust collectors and cause premature cartridge failure.

7.9.1 New cartridges must be seasoned before starting pulsing. Cartridges are 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; the dust cake actually does the filtering.

7.9.2 To prevent cartridge pulsing, shut the sequence switch, located on the sequence-panel cover, OFF.

7.9.3 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 turn ON the sequence switch to start the pulsing cycle.

7.10 Replacing Reclaimer Wear Plate – Figure 34

Depending on conditions such as accessibility to mounting screws and tools available to install self-drilling screws, it may be easier to replace the wear plate if the reclaimer body is removed from stand. **Do not remove the stand from the power module, as the stand has only two legs and will not stand on its own.**

Make sure enough 13089 - 2" adhesive-backed gasket is available to replace compressed or damaged gaskets on the reclaimer upper flange (and lower, flange if the reclaimer is removed from the leg stand). The Pulsar IX reclaimer requires 7 ft for each flange.

⚠ WARNING

Pulsar 900 reclaimer weighs approximately 150 lbs. When installing or removing the reclaimer, it must be adequately supported and secured to appropriate lift equipment. Failure to secure and use proper lift device can result in injury or death. When using a ladder to service the reclaimer, make sure it is approved for the application and that appropriate fall protection is used. Failure to use appropriate ladder and fall protection can result in injury.

7.10.1 Remove the flex hoses from the reclaimer inlet and outlet pipes.

7.10.2 Place a chain, sling, or other appropriate rigging, through the lifting eyes and remove the bolts, nuts and washers securing the reclaimer body to cone and stand.

7.10.3 Raise the reclaimer off the stand.

⚠ WARNING

Do not be under the reclaimer while it is hanging from the lifting device. Severe injury can occur if the reclaimer is released from the rigging before it is securely on the ground.

7.10.4 Set the reclaimer top-side-up on a clean, flat, and level surface.

7.10.5 Remove the bolts and nuts securing the reclaimer top and the remove the top, the inlet-pipe adaptor, adaptor gasket, and old wear plate. The wear plate is held in place by screws attached from the outside of the reclaimer. Remove the screws and pull out the wear plate through the reclaimer inlet.

7.10.6 Remove remnants of old caulk that will prevent the new wear plate from seating against the reclaimer wall or top.

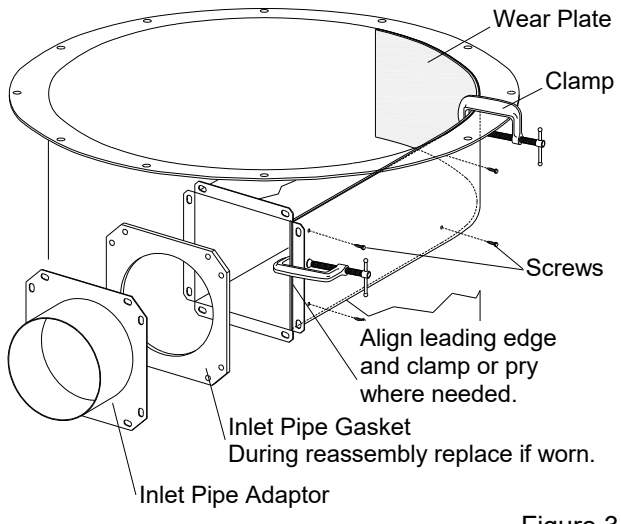


Figure 34

7.10.7 Angle the new wear plate into the reclaimer inlet and position it so the straight end is flush with the inlet. Use locking pliers, clamps, or other means where needed to pry the wear plate against the side of the inlet and inner wall, as shown in Figure 34. Make sure the leading edge of the wear plate is aligned with the

reclaimer inlet and that the top edge is even with the top of the reclaimer.

7.10.8 New self-drilling sheet-metal screws are provided with the wear plate; match drill the screws through the front two old screw holes into the wear plate.

7.10.9 Rearrange the clamp(s) as needed to press the wear plate against the reclaimer wall, and then match drill through each of the remaining old screw hole into the wear plate to secure.

7.10.10 To avoid rapid wear, apply RTV caulk to fill gaps between the bottom edge of the wear plate and reclaimer.

7.10.11 Replace the upper flange gasket, as needed, and reattach the reclaimer top.

7.10.12 Work through the reclaimer inlet and apply RTV caulk to fill gaps between the top of the wear plate and reclaimer inlet and top plate.

7.10.13 Reattach the inlet-pipe adaptor, replacing the gasket if worn, compressed, or otherwise damaged.

7.10.14 Replace the cone flange gasket, as needed (usually installed on the cone flange), and reattach the reclaimer to the cone and stand assembly.

7.10.15 Reconnect the flex hoses.

7.10.16 Allow time for the caulking to cure before putting the reclaimer into service.

7.11 Replacing Rubber Reclaimer Liners – Figure 35

The reclaimer must have been designed to accept liners (has a removable top).

⚠ WARNING

Pulsar 900 reclaimer weighs approximately 150 lbs. When installing or removing the reclaimer, it must be adequately supported and secured to appropriate lift equipment. Failure to secure and use proper lift device can result in injury or death. When using a ladder to service the reclaimer make sure it is approved for the application and that appropriate fall protection is used. Failure to use appropriate ladder and fall protection can result in injury.

Installation Notes

Make sure enough 2" adhesive-backed gasket (stock no. 13089) is available to replace the compressed or damaged gasket on the reclaimer upper flange. The Pulsar IX reclaimer requires 7 feet

The inner cone and cone ring are glued in place. Make sure a multi-purpose contact adhesive, such as 3M® no. 10 neoprene contact adhesive or equal, is available.

It is easier to replace or install liners if the reclaimer is removed from the cone and stand assembly.

7.11.1 Remove the flex hoses from the reclaimer inlet and outlet.

7.11.2 Place a chain, sling, or other appropriate rigging, through the lifting eyes and remove the bolts, nuts and washers securing the reclaimer body to the cone and leg assembly and rear bracket.

7.11.3 Raise the reclaimer from the cone and stand assembly.

⚠ WARNING

Do not be under the reclaimer while it is hanging from the lifting device. Severe injury can occur if the reclaimer is released from the rigging before it is securely on the ground.

7.11.4 Set the reclaimer top-side-up on a clean, flat, and level surface.

7.11.5 Remove the reclaimer inlet-pipe adaptor.

7.11.6 Remove the bolts and nuts securing the reclaimer top, and then remove the top (and top liner if the reclaimer is currently lined).

7.11.7 If the reclaimer is currently unlined, proceed to the installation note preceding Paragraph 7.11.14.

7.11.8 Remove the top liner and cylinder liner: Grind the tack welds from the bottom of the cylinder liner that secure the liner to the tube, and then slide the cylinder liner and top liner off the inner tube.

7.11.9 Remove the nuts and washers located along the right side of the inlet and remove the inlet baffle through the top of the reclaimer.

7.11.10 Remove the screws holding the inlet-side liner and inlet-top liner and remove both liners from the reclaimer inlet.

7.11.11 The wall liner is held in place with self-drilling screws; from the outside of the reclaimer, remove the screws and lift the wall liner from the top of the reclaimer.

7.11.12 Inner cone liners and cone-ring liners are glued onto the inner cone. Pull off the liners to remove them.

7.11.13 Remove old caulking and adhesive from the weldment.

Installation Notes: The numbers in parentheses (-) shown in Figure 35 and in the following applicable paragraphs show the recommended order of installation. When installing the liners, make sure that seams are aligned. The final assembly must be smooth and free of protrusions, edges, and gaps. Any edges will disrupt the air flow, causing wear and affecting the reclaimer's media cleaning efficiency.

7.11.14 (1st) Place the cone-ring liner on the inside of the cone ring, check fit and trim if needed. Refer to the instructions provided with the adhesive; some adhesives require it to be applied to both contact surfaces. Apply a multi-purpose contact adhesive, such as 3M® no. 10 neoprene contact adhesive or equal, to the fabric side of the liner and install the liner. Smooth out the liner to eliminate air pockets.

7.11.15 (2nd) Place the cone liner in the cone with the fabric side down, and check fit and trim if necessary. Apply medium-set contact cement to the fabric side, and install the cone liner. Smooth out the liner to eliminate air pockets.

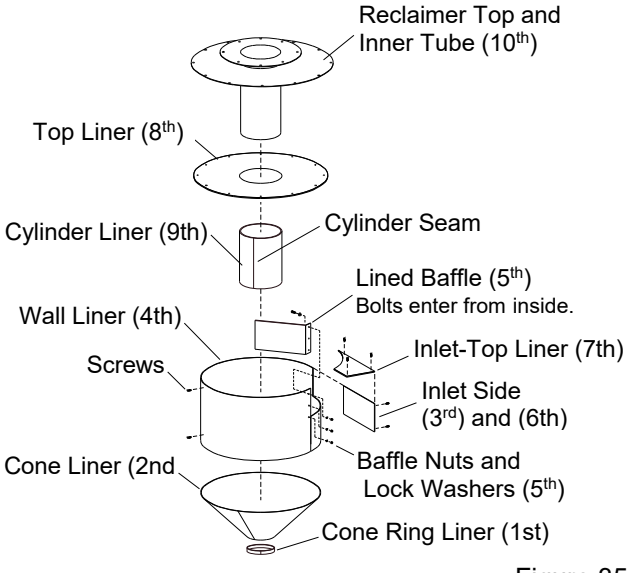


Figure 35

7.11.16 (3rd) Place the inlet-side liner (rubber side out) against the side of the inlet housing; center the side liner and align the front edge of the liner with the front of the housing. Temporarily clamp the side liner in place.

7.11.17 (4th) Align the wall-liner cutout with the reclaimer inlet housing and lower the liner into the reclaimer. Temporarily insert the baffle bolts though the liner and reclaimer holes to position that side of the wall liner. Clamp the wall liner in place, making adjustments to make sure it is flush with the top of the reclaimer body and that the inlet-side liner is aligned with the side-liner cutout. Reposition the inlet-side liner as needed.

While pushing or clamping the liner against the weldment, secure the wall liner with self-drilling screws at each existing hole location. **NOTE: To field install a new, first-time wall liner, use self-drilling screws to secure it at the seam and an inch or two from the top and bottom at each quadrant.** Remove the clamps after the liner is secured.

7.11.18 (5th) Remove the temporary baffle bolts and install the inlet baffle by inserting bolts and flat washers from the inside of the reclaimer and attach lock washers and nuts from the outside, leaving the baffle slightly loose.

7.11.19 Apply silicone caulking on seams between the cone ring and cone liner, to the seams on the cone ring and cone, between the cone liner and wall liner, and the seam on the wall liner. Wipe caulking to even with the liners. Voids will cause premature wear.

NOTICE

All seams between each liner must be sealed, and all seams between the liners and reclaimer weldment must be sealed. Voids will cause premature wear.

7.11.20 (6th) Use self-drilling screws to secure the inlet-side liner to the side of the inlet housing. NOTE: To field install new, first-time inlet-side liners, use self-drilling screws at each liner corner to secure. Remove the clamps after the liner is secured.

7.11.21 (7th) Align the front edge of the inlet-top liner to the front of the inlet housing and use self-drilling screws to secure. NOTE: To field install new, first-time inlet-top liners, after clamping the liners, use self-drilling screws at each liner corner to secure. Remove the clamps after the liner is secured.

7.11.22 (8th) Slide the top liner onto the top's inner-tube and align the holes in the liner with those in the top. Note that the holes around the inlet are spaced differently from the others. Temporarily install a couple of bolts to keep it in alignment.

7.13.23 (9th) Place the cylinder liner over the inner tube. Make sure the liner is tight against the top liner and use worm clamps to temporarily clamp the liner to the

tube. Tack weld the bottom of the cylinder liner to the inner tube in three or four places. Remove the clamps when the cylinder liner is secured.

7.11.24 Apply caulking to the seam on the cylinder liner and between the cylinder liner and top liner.

7.11.25 Apply caulking around the top edge of the wall liner and top-inner edge on the inlet housing.

7.11.26 (10th) Align the reclaimer top assembly over the top of the reclaimer and lower it into place to match the mating holes in the flange, being careful not to smear the caulking. Secure the top bolts and inlet baffle bolts.

7.11.27 Working through the reclaimer inlet, wipe the caulking seal smooth. Re-caulk any voids.

7.11.28 Working through the reclaimer inlet, apply silicone caulking to seal seams around the inlet-side liner, inlet-top liner, and reclaimer weldment. Wipe the caulking smooth.

7.11.29 Attach the inlet-pipe adaptor, replacing the gasket if worn, compressed, or otherwise damaged.

7.11.30 If the lower flange gasket (usually installed on the cone flange) is worn, compressed, or otherwise damaged, clean old gasket material from the flange and install new 2" strip.

7.11.31 Reattach the reclaimer to the cone and stand assembly.

7.11.32 Install flex hoses.

7.11.33 Allow time for the caulking to cure before putting the reclaimer in service.

7.12 Removing or Replacing Reclaimer Inlet Baffle – Figure 36

When using lightweight media such as agricultural media or very fine media (180 and finer), as noted in Paragraph 1.9.6, good media may be carried over to the dust collector. To prevent lightweight-media carry over, the reclaimer inlet baffle can be removed. Review the following process before beginning to make sure all parts are available

Installation Notes

Depending on conditions such as height and accessibility, it may be easier to replace the inlet baffle if the reclaimer is removed from the cone and stand assembly, as noted in Sections 7.10 and 7.11.

Make sure enough 13089 - 2" adhesive-backed gasket is available to replace compressed or damaged gaskets on the reclaimer upper flange (and lower flange if the reclaimer is removed from the cone).

- 900 cfm requires 7 ft for each flange.

7.12.1 Remove the reclaimer top.

7.12.2 Remove the three bolts securing the baffle to the side of the reclaimer inlet and remove the baffle.

7.12.3 Remove all caulking residue.

7.12.4 Inspect the strip gasket on the reclaimer upper flange; replace it if damaged or compressed.

7.12.5 If removing (not replacing) the baffle, remove the strip gasket from the inner tube and reinstall the baffle bolts in the reclaimer holes. If replacing the baffle, skip to Paragraph 7.12.6.

7.12.6 When replacing the baffle, make sure the strip gasket on the inner tube and the U-channel are in good condition and install the new baffle in reverse order. Apply silicone caulk to the seam (opposite side of the mounting bolts) between the baffle and reclaimer body. Wipe the caulk smooth.

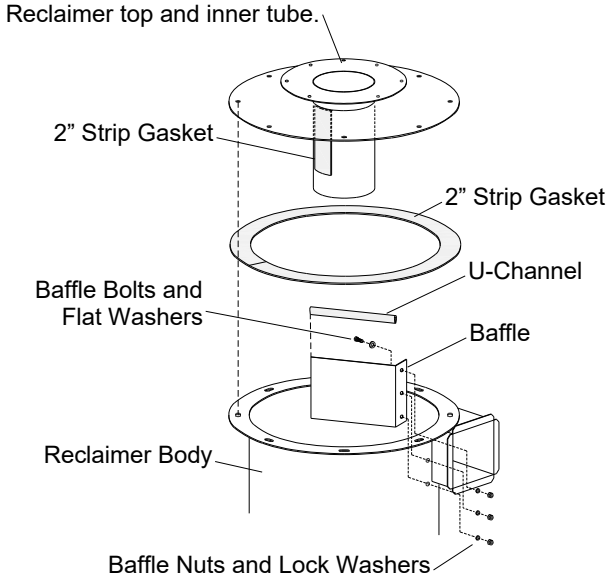


Figure 36

7.12.7 Install the reclaimer top.

7.12.8 If the reclaimer was removed from the cone and stand, inspect the 2" flange gasket (usually mounted on the cone flange) if worn, compressed or otherwise

damaged, clean old gasket material from the flange and install new 2" strip gasket.

7.12.9 Reattach the reclaimer to the cone and stand.

7.12.10 If the baffle was replaced, allow the caulking to cure before putting the reclaimer into service.

8.0 TROUBLESHOOTING

⚠ WARNING

To avoid serious injury, observe the following when troubleshooting.

- **Turn OFF the compressed-air supply, bleed the supply line, and lockout and tagout the air supply.**
- **If checking the controls requires air, always enlist the aid of another person to:**
  - **Hold the nozzle holder securely.**
  - **Operate the foot pedal.**
- **Never bypass the foot pedal or wedge it in the operating position.**
- **Never bypass the door interlock system.**
- **Follow all OSHA regulations, including lockout and tagout procedures**.

8.1 Poor visibility

8.1.1 Dirty filter cartridges. Empty the dust containers. Run the exhauster and pulse cycle for several minutes. Adjust pulse pressure and/or pulse sequence, per Sections 5.7 and 5.8. When pulse pressure and pulse duration are at maximum, replace cartridges.

8.1.2 Exhauster motor not operating. Check voltage to motor and motor wiring.

8.1.3 Check rotation of exhauster motor; the motor should rotate as indicated by the arrow on the housing. If it does not rotate in the proper direction, **lockout and tagout electrical power** and switch motor leads, as shown on the motor plate. See Section 2.5.

8.1.4 Using friable media that rapidly breaks down, or using media that is too fine or worn out can cause poor visibility.

8.1.5 Dust-collector outlet damper closed too far restricting air movement through the cabinet. Adjust static pressure, per Section 5.4.

8.1.6 Cabinet air-inlet damper closed too far restricting air movement into the cabinet. Adjust damper, per Sections 2.9 and 5.9.

8.1.7 Reclaimer door open.

8.1.8 Hole worn in flex hose between cabinet hopper and reclaimer inlet, or reclaimer outlet and dust-collector inlet. Replace hose and route it with as few bends as possible to prevent wear.

8.1.9 Obstruction in flex hose between the cabinet hopper and reclaimer inlet. Inspect hoses for wear.

8.1.10 Paddle wheel worn. Check exhauster's wheel for wear.

8.2 Abnormally high media consumption

8.2.1 Door on reclaimer is open or door gasket is worn. Air entering the reclaimer around the door will cause media carry over to the dust collector. Inspect door gasket. DO NOT operate unless all doors are closed.

8.2.2 Dust-collector outlet damper open too far. Adjust static pressure, per Section 5.4.

8.2.3 Media may be too fine or worn-out. Check condition of media.

8.2.4 Using friable media that rapidly breaks down. Check condition of media.

8.2.5 Blast pressure too high for the media, causing media to rapidly break down. Check blast pressure and adjust as needed or change media.

8.2.6 Hole worn in reclaimer or leak in reclaimer seams. Check entire reclaimer for negative-pressure leaks.

8.2.7 Externally adjustable vortex needs adjustment, refer to Section 5.5.

8.2.8 When using media finer than 180-mesh, the inlet baffle of the reclaimer (600 and 900 cfm only) may need to be removed. Refer to Section 7.12.

8.3 Reduction in blast cleaning rate

8.3.1 Low media level reducing media flow. Check media level in reclaimer; add media or replace media as needed, per Section 4.2.

8.3.2 Media/air mixture out of adjustment. Adjust metering valve, per Section 5.3.

8.3.3 Reduced air pressure. This may be caused by the pressure regulator set too low, a malfunctioning regulator, a dirty filter element in the air filter, partially closed air valve, leaking air line, or other air tools in use. Inspect all items.

8.3.4 Blockage in media hose or gun. Blockage may occur as a result of:

- A damaged or missing reclaimer screen. Inspect screen.
- Heavy media flow. Adjust media flow, per Section 5.3.

8.3.5 Worn gun parts such as nozzle or air jet. Inspect and replace all worn parts.

8.3.6 Worn media hose. Check hose for leaks and soft spots. Replace if worn or damaged.

8.3.7 Air jet in gun out of adjustment. Check adjustment, per Section 5.2.

8.3.8 Moist media. Frequent bridging or blockage in the area of the metering valve can be caused by moisture. See Section 8.5.

8.4 Plugged nozzle

8.4.1 A damaged or missing reclaimer screen will allow large particles to pass and block the nozzle. Replace or re-install as necessary.

8.4.2 Media mixture too rich. Adjust media/air mixture, per Section 5.3.

8.5 Media bridging

8.5.1 Frequent bridging or blockage in the media metering valve can be caused by damp media. Media becomes damp by blasting parts that are slightly oily, from moist compressed-air, or from absorption from ambient air.

8.5.2 To avoid contaminating media from the work-piece, all parts put into the cabinet should be clean and dry. If parts are oily or greasy, degrease and dry them prior to blasting.

8.5.3 Moist compressed air may be due to a faulty compressor that overheats, or pumps oil or moisture into the air line, too long an air line permitting moisture to condense on the inside, and from high humidity. Drain the air filter and receiver tank regularly. Ongoing problems with moist air may require the installation of an air dryer or aftercooler in the air-supply line.

8.5.4 Absorption. Some media tends to absorb moisture from the air, especially fine-mesh media in areas of high humidity. Store media in an airtight container when cabinet is not in use.

8.5.5 A vibrator mounted on a reclaimer mounting bolt may help to prevent bridging of fine-mesh media. NOTE: To avoid the possibility of compressing media, a vibrator should be setup to start when the foot pedal is pressed and stop when the pedal is released.

8.6 Media surge

8.6.1 Heavy media flow. Adjust media/air mixture, per Section 5.3.

8.7 Blockage in media hose

8.7.1 Media obstructions. Usually caused when the media mixture is too rich; adjust media/air mixture, per Section 5.3.

8.7.2 Wet or damp media. See Section 8.5.

8.8 Poor suction in media hose

8.8.1 Inadequate air supply. Refer to the tables in Figures 5 and 6 and make sure cfm and air hose requirements are met.

8.8.2 Air jet needs adjustment. Check adjustment, per Section 5.2.

8.8.3 Nozzle worn. . Replace if orifice diameter is worn 1/16" or more from original size.

8.8.4 Blockage in media hose or nozzle. Refer to Sections 8.4 and 8.7.

8.8.5 Air jet and nozzle combination may be wrong. Refer to the table in Figure 5.

8.8.6 Air jet sleeve extends past end of air jet. Cut the sleeve to align with the air jet.

8.8.7 Blast pressure too high, Adjust pressure, per Section 5.1.

8.8.8 Nozzle inserted backward; the tapered end of the nozzle should face toward the air jet, as shown in Section 7.2, Figure 28.

8.9 Air only (no abrasive) from nozzle

8.9.1 Low media level in reclaimer. Check media level and replenish as needed.

8.9.2 Blockage in media hose; refer to Section 8.7.

8.9.3 Poor suction in media hose; refer to Section 8.8.

8.9.4 Make sure the air hose and media hose are not reversed; the green air hose attaches to the back of the gun and the clear media hose attaches to the bottom of the gun's grip. Refer to Figure 43.

8.10 Blow-back through media hose

8.10.1 Blockage in nozzle. Remove the nozzle and check for blockage.

8.10.2 Air jet may be too large for nozzle. Refer to the table in Figure 5.

8.10.3 Blast pressure too high. Adjust blast pressure, per Section 5.1.

8.11 Blasting does not begin when the foot pedal is pressed.

8.11.1 Door interlocks not engaging. Check adjustment, per Section 5.6.

8.11.2 Blocked or leaking control lines. Check all urethane tubing for blockage or leaks.

8.11.3 Foot pedal valve malfunction. Check foot pedal alignment, and inlet and outlet lines for pressure.

8.11.4 Make sure lines are not reversed on the foot pedal or pilot regulator. Refer to the plumbing and control schematic in Figure 44.

8.11.5 Pressure regulator may be set to low or OFF. Adjust blast pressure, per Section 5.1.

8.11.6 Make sure the air compressor is operating and air-supply valves are open.

8.11.7 Nozzle plugged. See Section 8.4.

8.12 Blasting continues after foot pedal is released

8.12.1 Make sure the 3-way valve in the foot pedal exhausts air when the pedal is released. If it does not exhaust, check the inbound air line for blockage, if no blockage; replace the valve.

8.13 Media buildup in cabinet hopper

NOTE: Do not pour media directly into the cabinet hopper, as overfilling may occur. Overfilling will result in media carry over to the dust collector and possible blockage in the conveying hose.

8.13.1 Exhauster motor rotating backwards. The motor should rotate as indicated by the arrow on the exhauster housing. If it does not rotate in the proper direction, **lockout** and **tagout** electrical power, and switch the motor leads, as shown on the motor plate.

8.13.2 Filter cartridges heavily caked with dust. Decrease pulse OFF time, per Section 5.8 or increase pulse pressure, per Section 5.7.

9.13.3 Hole worn in flex hose between cabinet hopper and reclaimer inlet or between the reclaimer outlet and dust-collector inlet. Inspect hoses and replace them as needed and route them with as few bends as possible to prevent early wear.

9.13.4 Obstruction in flex hose. Remove hose and check for blockage.

9.13.5 Outlet damper closed too far restricting air movement through the cabinet. Adjust static pressure, per Section 5.4.

9.13.6 Inlet damper closed too far restricting air movement into the cabinet. Adjust damper, per Section 2.9 and 5.9.

9.13.7 Reclaimer door open.

8.14 Static shocks

8.14.1 Cabinet and/or operator not grounded. Abrasive blasting generates static electricity. The cabinet must be earth-grounded to prevent static buildup. See Section 2.3. If shocks persist, the operator may be building up static. Attach a small ground wire, such as a wrist strap, from the operator to the cabinet.

8.14.2 Gloves wearing thin. Inspect gloves and replace them as needed.

8.14.3 Avoid holding parts and blasting off the grate. Static will buildup in the part if not dissipated through the metal cabinet. If blasting parts off the grate cannot be avoided, attach a ground wire between the cabinet and the part.

8.15 Dust leaking from cabinet

8.15.1 Damaged door gaskets. Inspect and replace damaged gaskets.

8.15.2 Refer to Section 8.13.

8.16 Dust leaking from dust collector

8.16.1 Cartridges not seasoned; season cartridges, per Section 7.9.

8.16.2 Damaged or loose cartridge. Inspect cartridges and tighten or replace them as needed.

8.16.3 Faulty seal on collector access door, dust container seal, or dust container hose. Inspect seals during pulsing. Replace if leak is noted.

8.17 Dust collector does not pulse

8.17.1 Check the pulse-pressure gauge. If the reading is low, adjust pulse pressure, per Section 5.7. If pressure does not increase after adjusting the regulator, check the compressed-air supply; look for a closed supply valve.

8.17.2 Make sure the sequence toggle switch is ON.

8.17.3 Have a qualified electrician check for electrical malfunction: check the supply voltage to the pulse sequence board. Check outlet voltage to solenoids.

8.18 One cartridge not pulsing

8.18.1 Faulty solenoid. Check for electrical malfunction.

8.18.2 Check the diaphragm pulse valve. With compressed air turned OFF, remove the four cover screws, inspect the diaphragm, and clean the bleed port.

8.18.3 Check for blockage in the tubing between the diaphragm valve and solenoid.

8.19 Steady stream of air is heard within collector

8.19.1 Check for a leak in the tubing between the diaphragm valves and solenoids.

8.19.2 Solenoid remaining in open position. Have qualified electrician check power to the solenoid. Solenoid should open only for a fraction of a second when the solenoid ON time is activated.

8.19.3 Diaphragm in the diaphragm pulse valve may be ruptured. Inspect the diaphragm.

8.20 Exhauster motor not running

8.20.1 Exhauster overload could be tripped. Reset and check for overload.

8.20.2 Make sure that the main disconnect is ON.

8.20.3 Motor faulty. Check motor.

8.21 Excessive differential pressure (as shown on optional gauge)

8.21.1 Valves may not be pulsing properly. Refer to 8.17 and 8.18.

8.21.2 Differential-pressure gauge lines may be plugged with dust. Check and clean.

8.21.3 In-line dust filter blocked. Clean or replace.

8.21.4 Snubber fittings blocked with dust. Clean or replace. Refer to Figure 15.

8.21.5 Pulse pressure or sequence OFF time may need adjusting. Refer to Sections 5.7 and 5.8.

8.21.6 Filter cartridges may need to be replaced. Refer to Section 7.8.

9.0 ACCESSORIES and REPLACEMENT PARTS

9.1 Optional Accessories

9.1.1 Miscellaneous accessories

Item	Description	Stock No.
	Time-delay door locks	24163
	Aluminum oxide kits. Use with aggressive media. The kit does not include a rubber-lined reclaimer; order the lined reclaimer separately.	
	Factory-installed, includes: No. 5, boron carbide nozzle, and black rubber curtains	28897
	Field-installed, includes the following plus mounting hardware	22996
	No. 5, 5/16" orifice boron carbide nozzle	11935
	Rubber curtains, black set	22998
	Hose, 6" light-lined flex, 8.3 ft.	12468
	Metallic media kit, required when using steel grit and steel shot.	
	Factory-installed, includes 5" ID light-lined flex hose, adaptors, and black rubber curtains	25160
	Field-installed, Includes the following plus mounting hardware	25252
	Adaptor pipe, cabinet hopper, 5"	23220
	Gasket, 5" adaptor pipe	23242
	Inlet pipe adaptor, reclaimer, 5"	14411
	Gasket, 5" inlet adaptor	11759
	Hose, 5" light-lined, 8.3 ft.	12467
	Clamp, 5" hose (Qty 2)	11578
	Curtains, black set	22998
	Rubber curtains, set	
	black curtains	22998
	white curtains	22999
	HEPA filter assembly	22807
	Lock-pins (pkg. of 25) for twist-on hose couplings	11203
	Safety cable, 1/2" OD to 1-1/4" OD hose	15012
	Manometer kit	12528
	Noise-reduction arm port covers, pair	29456
	Anti-fatigue floor-mat, for front of cabinet	24744
	Boron carbide nozzle	
	No. 5	11935
	No. 6	11936
	No. 7	11937
	No. 8	12894
	Wide-spray nozzle	
	Tungsten carbide, No. 6	11947
	Boron carbide	
	No. 6	11934
	No. 8	11944
	Wide-spray nozzles require the following accessories:	
	Nozzle nut, wide-spray	11916
	Retaining ring, wide-spray	12038
	Nozzle guard, wide-spray	12295

9.1.2 Turntables and Turntables with Tracks

⚠ WARNING

Turntable capacities are based on concentric loading. Use solid fixturing to hold heavy parts in place. Do not remove lift equipment until the part is adequately supported to prevent movement. Moving or rotating heavy, unsupported or off-centered parts may cause them to shift or topple, and cause severe injury.

Fixed-Base Turntable with Bearing, 500 lb. Capacity
Figure 37

Item	Description	Stock No.
(-)	30" dia., assembly 500 lb. capacity	14138
(-)	40" dia., assembly 500 lb. capacity	24042
1.	Turntable replacement	
	30" diameter	21390
	40" diameter	23879
2.	Bearing, 1-1/2" bore	11517
3.	Protector, bearing	13479
4.	Screw, 1/2-NC x 2" cap	03456
5.	Lock-washer, 1/2"	03516
6.	Nut, 1/2-NC hex	03511

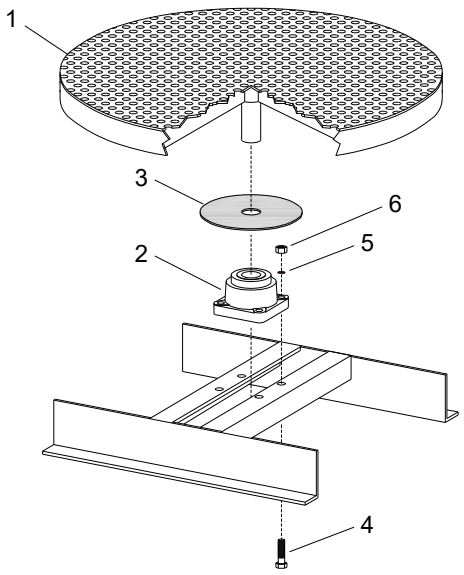


Figure 37

Turntable with Workcar and Track, 500 lb. Capacity Figure 38

Item	Description	Stock No.
(-)	40" dia. turntable and track assembly	23885
1.	Turntable replacement, 40" diameter	23879
2.	Bearing, 1-1/2" bore	11517
3.	Protector, bearing	13479
4.	Screw, 1/2-NC x 1-3/4" cap	03455
5.	Lock-washer, 1/2"	03516
6.	Nut, 1/2-NC hex	03511
7.	Caster, 4" V groove	11594
8.	Screw, 3/8-NC x 3-1/2" cap	03261
9.	Lock-washer, 3/8"	03318
10.	Nut, 3/8-NC hex	03311
11.	Pin, quick release	25540

All other track items are special order. Contact distributor for price and availability.

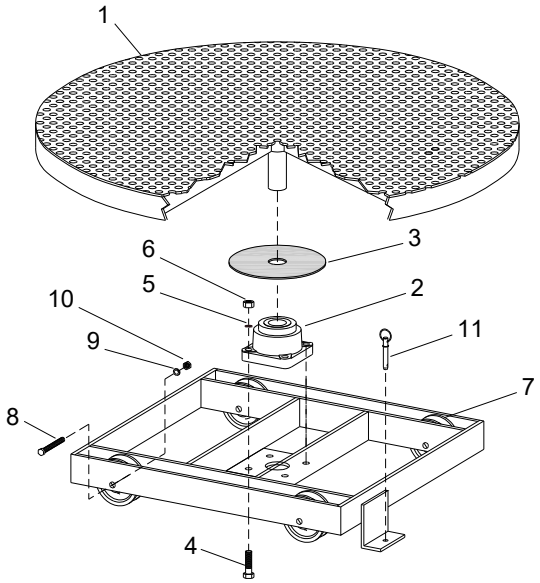


Figure 38

9.1.3 Armrest – Figure 39

Item	Description	Stock No.
(-)	Armrest assembly	24900
1.	Armrest, replacement	24899
2.	Bracket, armrest cabinet, each	24896
3.	Support bar, adjustable, each	24895
4.	Cap screw, 3/8-NC x 1"	03252
5.	Washer, 3/8 lock	03318
6.	Cap screw, 5/16-NC x 1"	03152
7.	Nut, 5/16-NC hex	03211
8.	Washer, 5/16 flat	03216
9.	Washer, 5/16 lock	03217

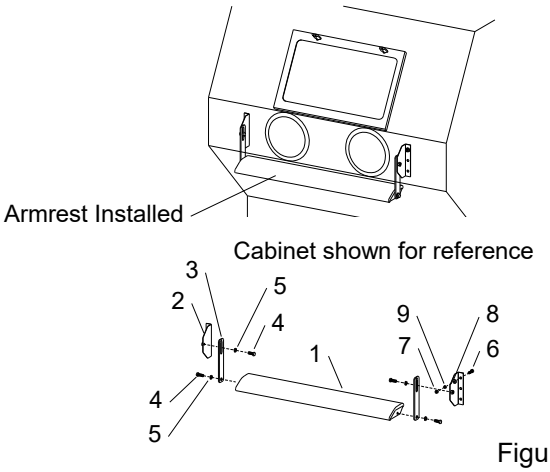


Figure 39

9.1.4 Rubber Reclaimer Liners – Figure 40

The reclaimer must be designed to accept liners (has a removable top).

Item	Description	Stock No.
(-)	Rubber liner set, for 900 reclaimer	23151
1.	Top liner, 900 cfm	23059
2.	Baffle, lined, 900 cfm	13694
3.	Inner cylinder liner, 900 cfm	24203
4.	Body (wall) liner, 900 cfm	17008
5.	Inlet side liner, 900 cfm	12830
6.	Cone liner, inner cone, (2-piece)	16070
7.	Inlet top, 900 cfm	22827
8.	Screw, self-drilling, 10-16 x 3/4"	12722

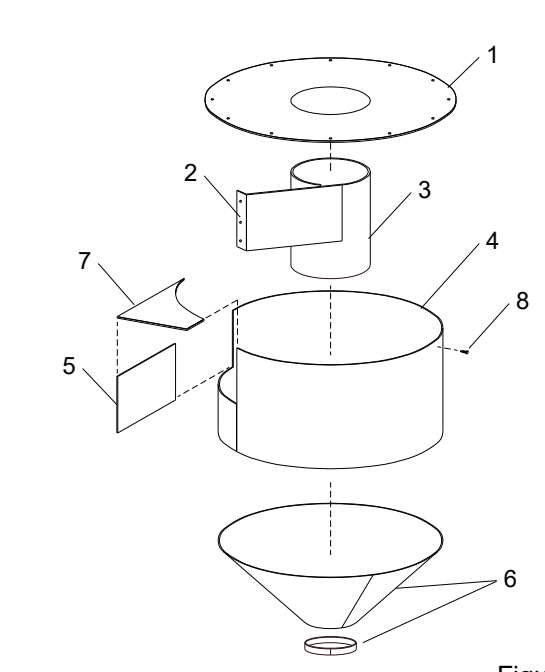


Figure 40

9.1.5 Optional Extension Nozzles – Figure 41

Item	Description	Stock No.
1.	3" Straight extension nozzle	
	No. 5, 5/16" orifice	11921
	No. 6, 3/8" orifice	11922
	No. 7, 7/16" orifice	11923
2.	6" Straight extension nozzle	
	No. 5, 5/16" orifice	11927
	No. 6, 3/8" orifice	11928
	No. 7, 7/16" orifice	11929
3.	9" Straight extension nozzle	
	No. 5, 5/16" orifice	11924
	No. 6, 3/8" orifice	11925
	No. 7, 7/16" orifice	11926
4.	Side-angle extension nozzle assemblies with No. 5 orifice, includes 5, 6, 7, and 8	
	4″ long assembly	21311
	6" long assembly	12374
	9" long assembly	12373
5.	Casing, side-angle extension nozzle	
	4″ long casing	11943
	6" long casing	11940
	9" long casing	11939
6.	Tip, side-angle extension	12173
7.	Snap ring, side-angle extension	12040
8.	O-ring, side-angle extension	08977

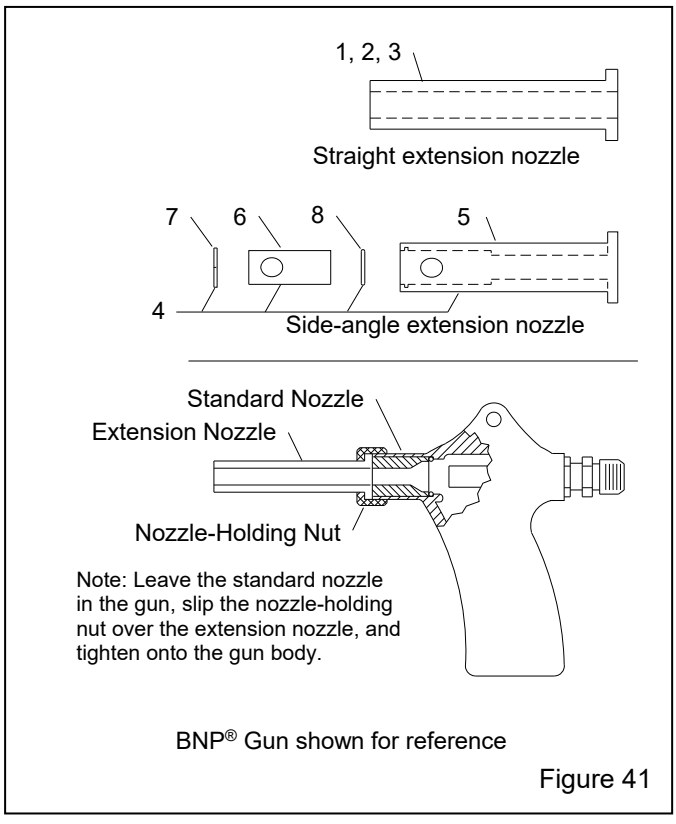


Figure 41

9.1.6 Differential-Pressure Gauge Assembly Figure 42

Item	Description	Stock No.
(-)	Differential-pressure gauge assembly	23356
1.	Gauge, differential-pressure	10188
2.	Snubber fitting	15786
3.	Tubing, 1/4" OD, specify feet required	15892
4.	Filter, in-line dust	23415
5.	Bushing, 1/4" x 1/8" NPT, brass	02010
6.	Elbow, 1/4 NPT x 1/4" tube	03428
7.	Fitting, 1/4 NPT bulkhead	05605
8.	Fitting, straight 1/8" NPT x 1/8" barb	11732
9.	Fitting, elbow 1/8" NPT x 1/8" barb	11733
10.	Tubing, 1/8" urethane, 1 foot minimum	12475

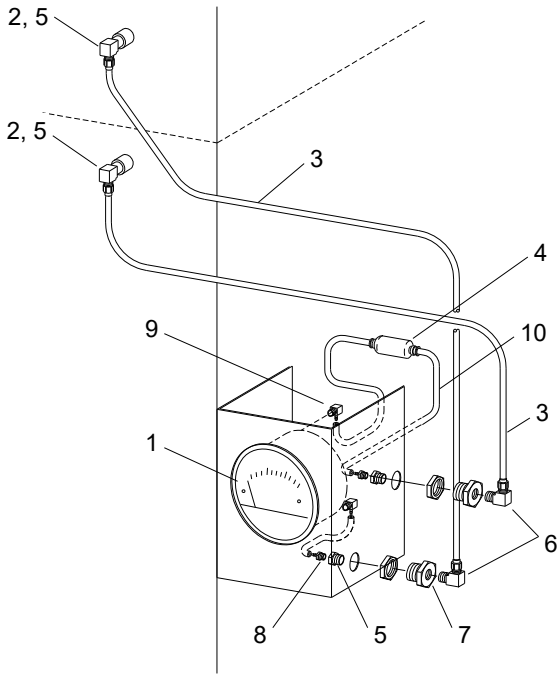


Figure 42

9.2 BNP® Gun and Feed Assembly – Figure 43

Item	Description	Stock No.
(-)	BNP® Gun assemblies less nozzle, includes items 1 (brass) through 7	
	No. 4 Gun	12301
	No. 5 Gun	12302
	No. 6 Gun	12303
	No. 7 Gun	12304
	No. 8 Gun	12305
1.	Nut, nozzle holding	
	Standard, knurled brass	11914
	Urethane covered,	11574
2.	O-ring	08975
3.	Gun body	11802
4.	Lock nut, air jet	11913
5.	Rubber sleeve	12097
6.	Air jet assembly w/Item 5	
	No. 4	12342
	No. 5	12343
	No. 6	12344
	No. 7	12345
	No. 8	12346
7.	Fitting, hose, 3/8" NPT x 1/2" barb	06369
8.	Hose end, 1/2" barb x 1/2" fem. swivel	15002
9.	Nozzle, ceramic	
	No. 5	11930
	No. 6	11931
	No. 7	11932
	Nozzle, boron carbide	
	No. 5	11935
	No. 6	11936
	No. 7	11937
	No. 8	12894
	Nozzle, tungsten carbide	
	No. 5	13118
	No. 7	12882
	No. 8	11942
10.	Hose, 1/2" air, specify ft. required	12472
11.	Hose, media, clear, specify ft. required	12476
12.	Wide-spray nozzle	
	Tungsten carbide, No. 6	11947
	Boron carbide	
	No. 6	11934
	No. 8	11944
13.	Wide-spray nozzle nut	
	Knurled brass	11916
	Urethane covered,	12906
14.	Wide-spray retaining ring	12038
15.	Wide-spray nozzle guard	12295
16.	Adjusting tool, air jet	19041

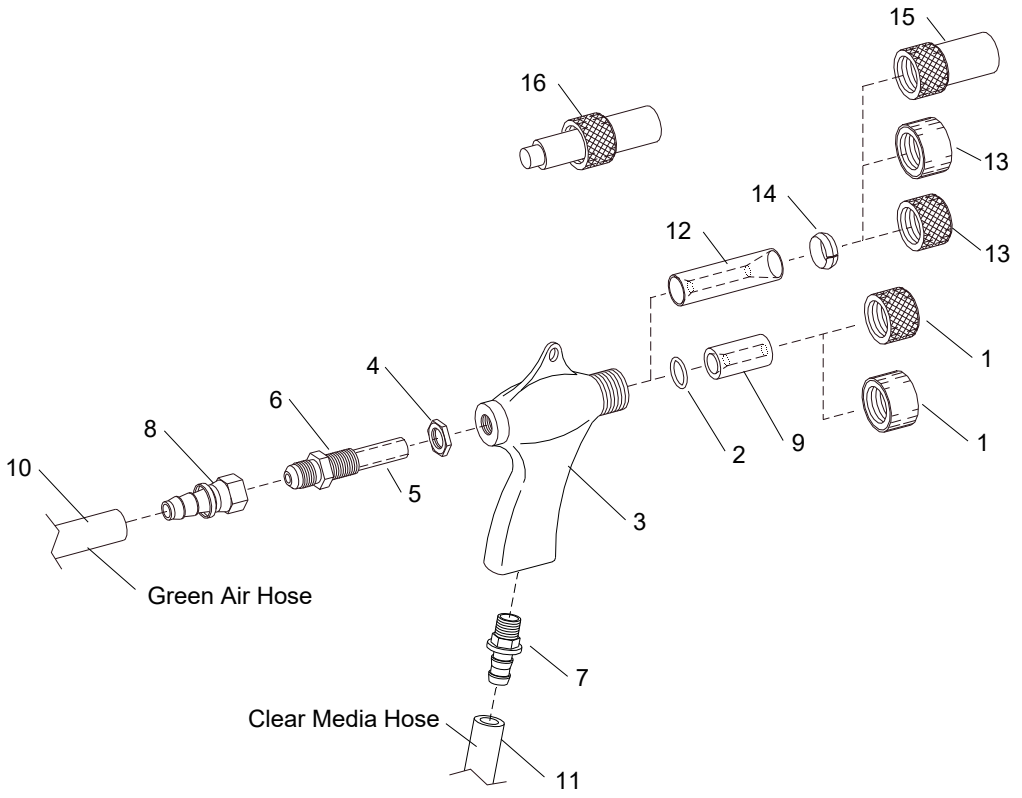


Figure 43

9.3 Plumbing and Cabinet Controls – Figure 44

Item	Description	Stock No.
1.	Valve, 3-way	12202
2.	Fitting, straight, 1/8" NPT x 1/8" barb	11732
3.	Tubing, 1/8" urethane, specify ft. required	12475
4.	Tubing, twin urethane, specify ft. required	19577
5.	Foot pedal assembly, less tubing	20483
	with tubing, 14 feet, item 4	20195
6.	Fitting, elbow, 1/8" NPT x 1/8" barb	11733
7.	Bushing, 1/2" NPT x 1/4" pipe	01801
8.	Bushing 1/4"x 1/8" NPT	02010
9.	Metering valve assembly	12417
10.	Hose assembly, 3/8" x 10 ft coupled	04926
11.	Adaptor, 1/2" NPT x 1/2" flare	11351
12.	Hose end, 1/2" barb x 1/2" female swivel	15002
13.	Hose end, 1/2" barb x 3/8" male NPT.	06369
14.	Blow-off nozzle	06368
15.	Air hose, 1/2", specify ft. required	12472
16.	Gun assembly, BNP No. 5 (standard) Refer to Section 9.2 for other sizes	12302
17.	Hose, media, clear, specify ft. required	12476
18.	Regulator, 1/2" pilot-operated pressure	11345
19.	Regulator, 1/8" pilot pressure	12715
20.	Gauge, 1/8" NPT cbm pressure	01908
21.	Adaptor, 1/4-NPT x 3/8 hose	01019

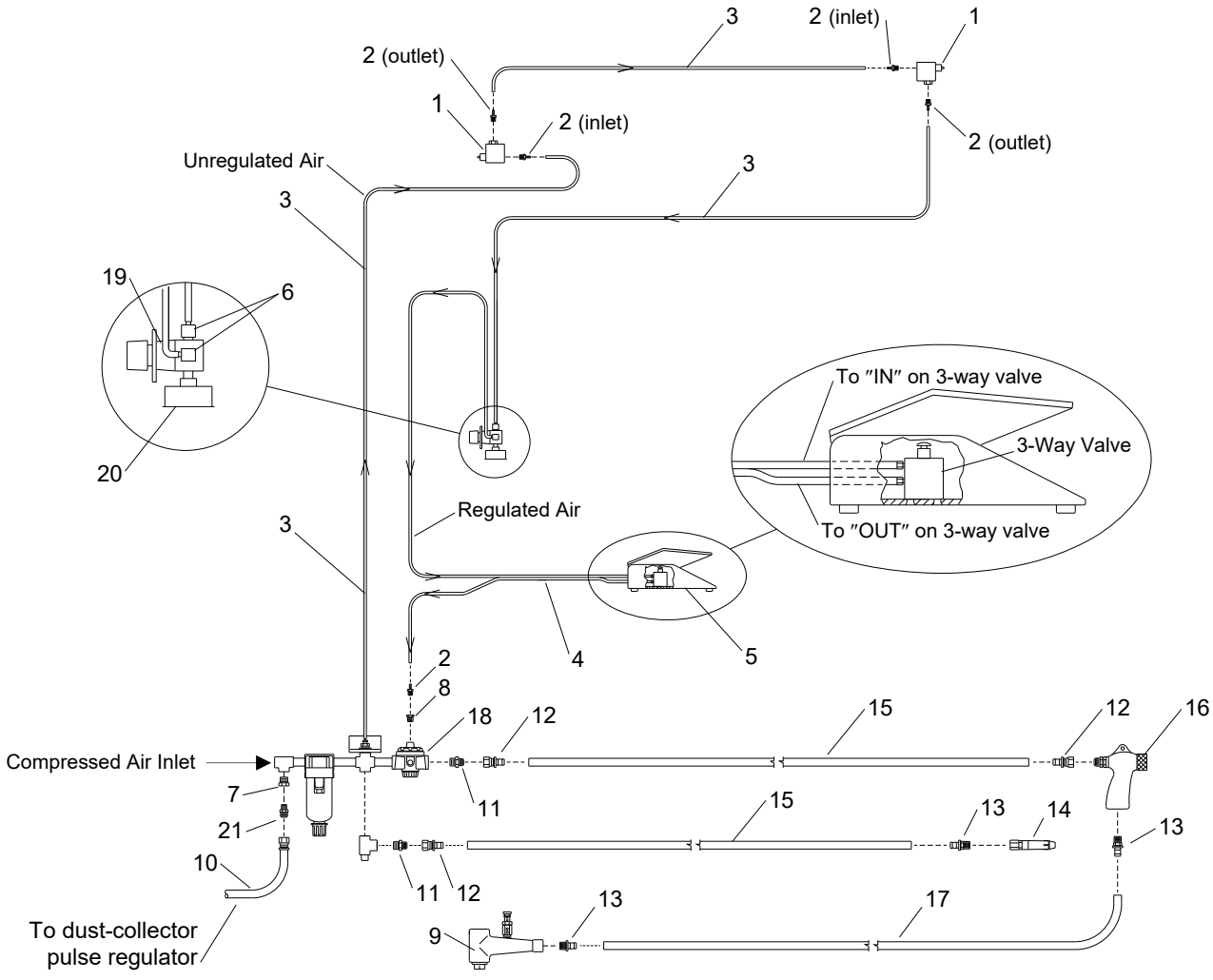
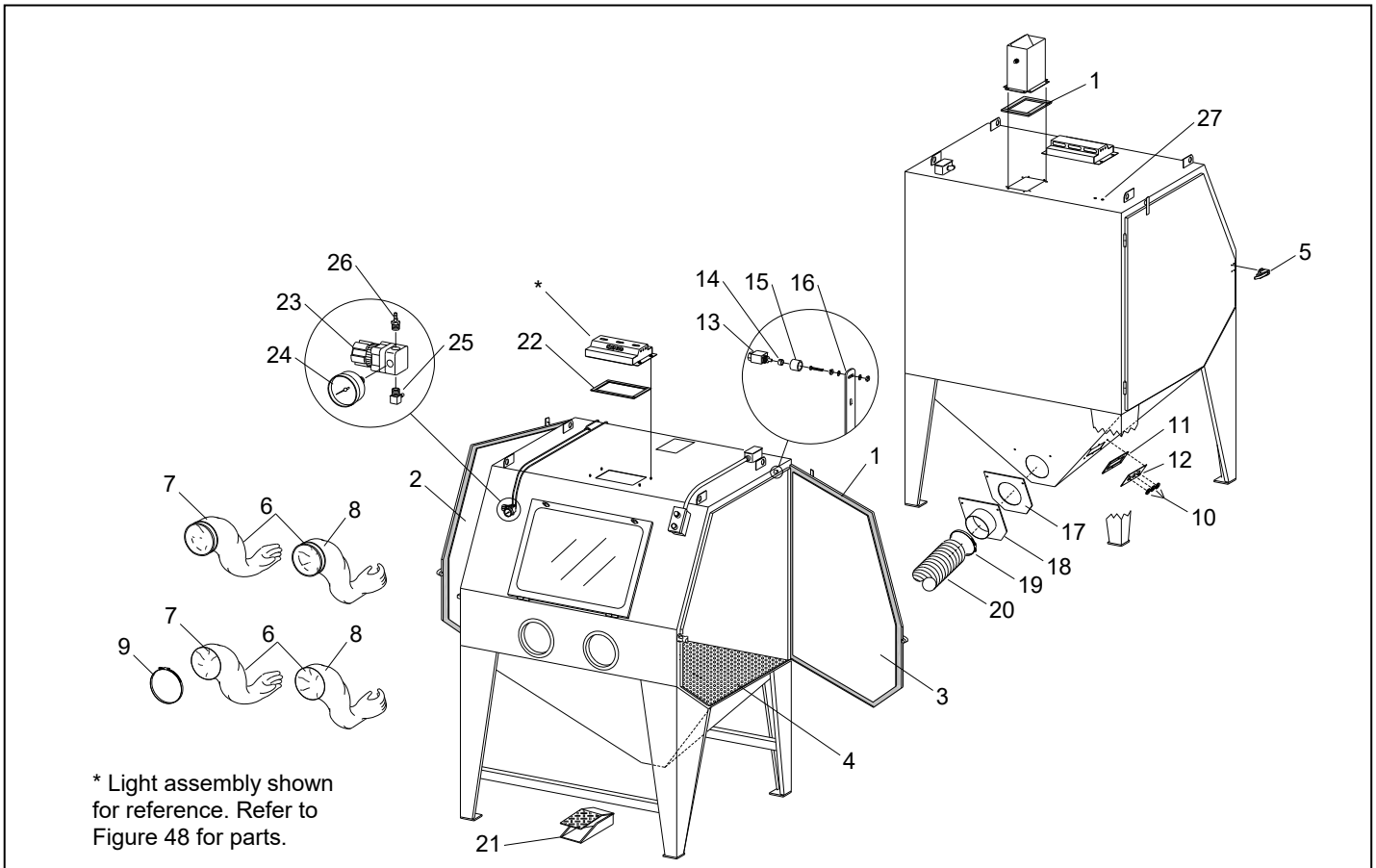


Figure 44

9.4 Cabinet Assembly – Figure 45

Item	Description	Stock No.
1.	Gasket, 5/16" x 1" adhesive-backed, per foot, specify feet required	
	Door, 15 ft. per door	00187
	Air-inlet damper, 3 ft. required	00187
2.	Door, left (w/o gasket and latch)	23204
3.	Door, right (w/o gasket and latch)	23203
4.	Grating, 3 required	23218
5.	Latch kit, door	20064
6.	Glove set	
	Band-clamp attachment	11215
	Quick-change (clampless) attachment	28820
7.	Glove, left hand only	
	Band-clamp attachment	12710
	Quick-change (clampless) attachment	28638
8.	Glove, right hand only	
	Band-clamp attachment	12711
	Quick-change (clampless) attachment	28639
9.	Clamp, 8.5", for clamp-attached glove	11576
10.	Grommet, rubber for media/air hose	11798
11.	Gasket, hopper plate adaptor	20247
12.	Plate, hopper hose	21656
13.	Air valve, 3-way, door interlock	12202
14.	Over-travel stop, door interlock	20004
15.	Detent sleeve, door interlock	15042
16.	Bracket, door interlock actuator	19152
17.	Gasket, universal adaptor pipe	
	6" for 6" adaptor for standard use	23233
	5" for 5" adaptor for use steel media	23242
18.	Adaptor pipe, universal flex	
	6", for standard use	23219
	5", for use with steel media	23220
19.	Clamp, flex hose	
	8.5", for standard use 6" hose	11576
	5", for 5" hose for use w/steel media	11578
20.	Hose, light-lined flex per foot, 9 ft. required	
	6" ID for standard use	12468
	5" for use with steel media	12467
21.	Foot pedal assembly	
	less tubing	20483
	with tubing, 14 feet	20195
22.	Gasket, 5/32" x 3/4", 3 ft required	00192
23.	Regulator, 1/8" NPT pilot	12715
24.	Gauge, pressure, 1/8-NPT	01908
25.	Fitting, elbow, 1/8" NPT x 1/8" barb	11733
26.	Fitting, straight, 1/8" NPT x 1/8" barb	11732
27.	Grommet, 1/4 ID	12762



* Light assembly shown for reference. Refer to Figure 48 for parts.

Figure 45

9.5 View Window Assembly – Figure 46

Item	Description	Stock No.
1.	Window glass, 20" x 30" laminated	12213
2.	Gasket, 5/16" x 3/4", applied to cabinet per foot, 9 feet required	00189
3.	Gasket, 5/32" x 3/4", applied to window Frame, per foot, 9 feet required	00192
4.	Cover lens, 20" x 30", pkg. of five	23232
5.	Nut, plastic, window frame, 2 required	23035

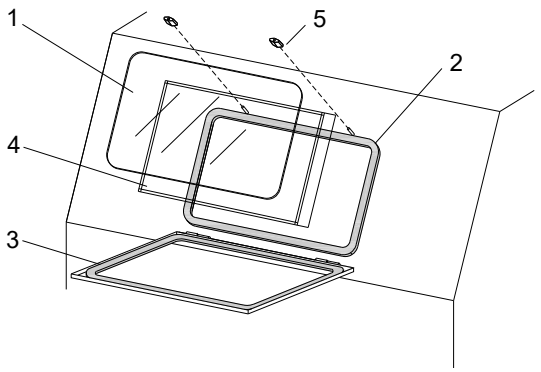


Figure 46

9.6 Metering Valve Assembly – Figure 47

Item	Description	Stock No.
(-)	Metering valve, complete	12417
(-)	Metering stem assembly includes items 1, 2, & 3	23889
1.	Stem, metering adjusting	23097
2.	Screw, adjusting	23098
3.	Nut, adjusting stem lock	23099
4.	Body, metering valve	11532
5.	Fitting, hose, 3/8" NPT x 1/2" barb	06369
6.	Plug, metering valve	12011

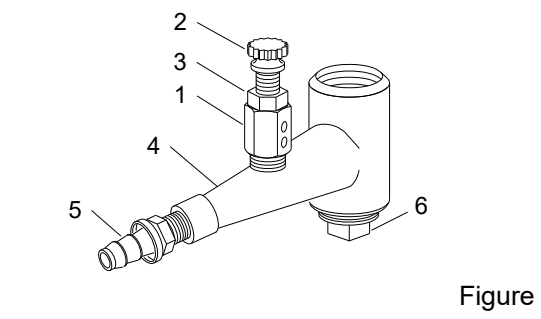


Figure 47

9.7 Light Assembly – Figure 48

Item	Description	Stock No.
1.	Cover, LED light mount	29712
2.	LED light module, 50w	29711
3.	Diffuser lens	29713
4.	Gasket, 5/32" x 3/4", 3 ft required	00192
5.	Strain relief connector	11631
6.	Locknut, 1/2" conduit	12713
7.	Nut, 1/4-20 hex	03111
8.	Washer, 1/4 lock	03117
9	Washer, 1/4 flat	03116

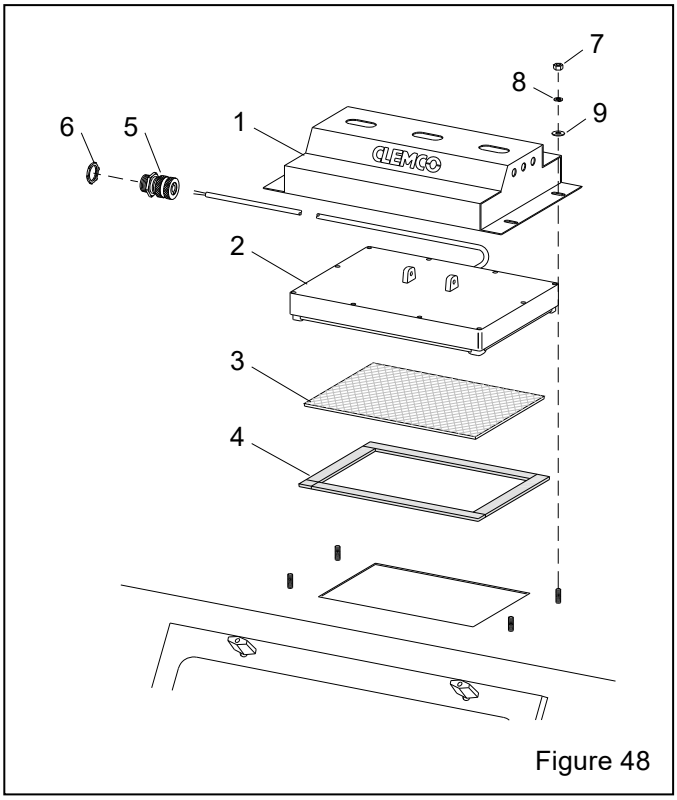


Figure 48

9.8 Foot Pedal – Figure 49

Item	Description	Stock No.
(-)	Foot pedal assembly, less tubing, includes items 1 thru 9	20483
	with tubing, 14 feet, item 10	20195
1.	Foot pedal casting set, top and base	28379
2.	Valve, 10-32, 3-way n/c	20026
3.	Drive pin, grooved	20109
4.	Screw, sh 1/4 NF x 3/4"	03086
5.	Screw, 10-32 x 1/2" fh	19571
6.	Adaptor, 10-32 thrd. x 1/8 barb	11731
7.	Spring, 1-1/4" x 3-1/2"	20121
8.	Screw, 8-32 x 3/8″ thread cutting	11389
9.	Bumper, rubber (feet)	21522
10.	Tubing, 1/8" ID twin, specify ft. required	19577
11.	Tie, nylon wire	12139

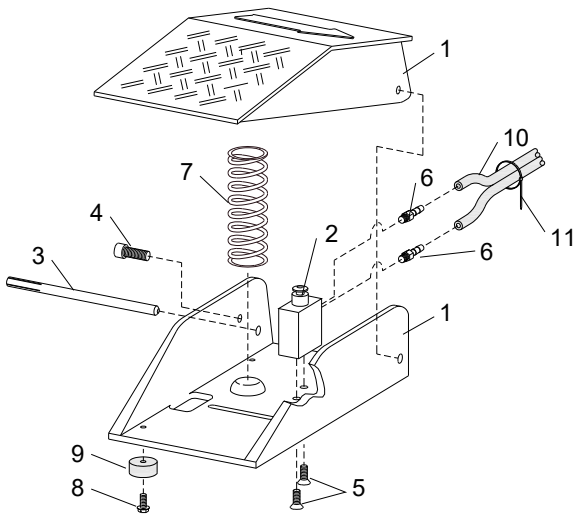


Figure 49

9.9 Filter-Regulator Inlet Piping Assembly Figure 50

Item	Description	Stock No.
1.	Filter, 1/2" manual drain air	01308
2.	Regulator, 1/2" pilot-operated pressure	11345
3.	Bracket, 1/2" regulator assembly	19231
4.	Nipple, 1/2" x 2	01734
5.	Cross, 1/2" NPT	10254
6.	Lock nut, 1/2"	12713
7.	Bushing, 1/2" NPT x 1/8"	11350
8.	Adaptor, 1/2" NPT x 1/2" flare	11351
9.	Fitting, straight, 1/8" NPT x 1/8" barb	11732
10.	Bushing, 1/4" NPT x 1/8" brass	02010
11.	Hose end, 1/2" barb x 1/2" female swivel	15002
12.	Tee, 1/2" NPT	01787
13.	Nipple, 1/2" x close	01733
14.	Plug 1/2" NPT	01759
15.	Nipple, 1/2" x 3	01735
16.	Screw, 1/2-NC x 1/2 set	03471

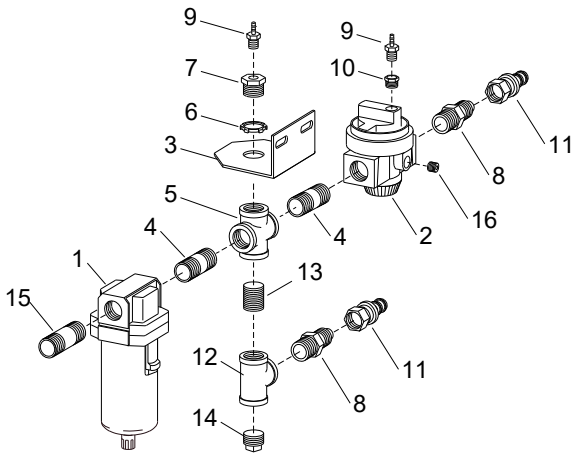
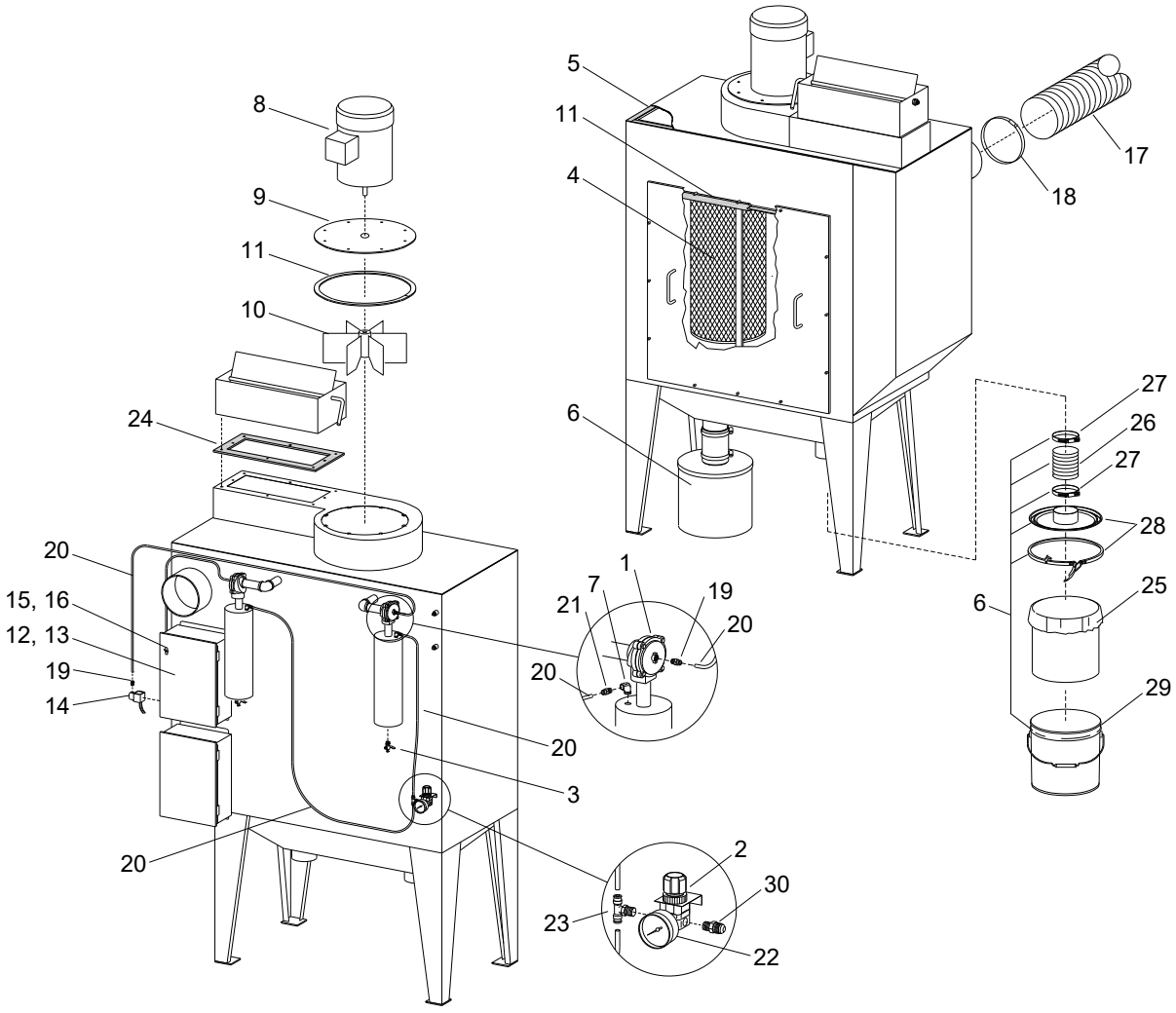


Figure 50

9.10 Dust Collector – Figure 51

Item	Description	Stock No.
(-)	Repair kit, diaphragm pulse valve	21600
1.	Valve, 1" diaphragm pulse	19578
2.	Pressure regulator, 1/4-NPT with gauge	12050
3.	Petcock	01993
4.	Filter cartridge, 13" x 30", 2 required	19121
5.	Gasket, 5/16" x 1" adhesive-backed, per foot, specify feet required	00187
6.	Dust container assembly Includes items 26 through 29	23411
7.	Elbow, 1/4" brass st.	02027
8.	Motor, exhauster, 2 HP, 3-PH	12309
9.	Plate, motor mount 900 cfm	12005
10.	Paddle wheel, 900 cfm	12335
11.	Gasket, 3/16" x 1" adhesive-backed, per foot, specify feet required	00186
12.	Sequence control panel assembly	15788
13.	Sequence control board	10261
14.	Solenoid	23869
15.	Switch, toggle	12127
16.	Boot, toggle switch	14228
17.	Hose, 7" flex, light-lined per foot, 5-ft. required	12469
18.	Clamp, 8.5"	11576
19.	Fitting, straight, 1/8" NPT x 1/4" tube	11214
20.	Tubing, 1/4" OD, specify feet required	15892
21.	Fitting, straight, 1/4" NPT x 1/4" tube	11737
22.	Gauge, pressure, 1/4" NPT	11830
23.	Tee, 1/4" NPT x (2) 1/4" tube	11739
24.	Gasket, outlet damper	22808
25.	Liners, dust container, pack of five	28621
26.	Hose, 4" ID flex, per foot, 1-ft minimum	12447
27.	Clamp, 4"	11577
28.	Lid and lock ring, dust container	23419
29.	Drum, 3.5-gallon dust	23417
30.	Adaptor, 1/4-NPT x 3/8 hose	01019



Some item are not shown or rotated for clarity

Figure 51

9.11 Reclaimer – Figure 52

Item	Description	Stock No.
1.	Gasket, 3/16" x 1" adhesive-backed, per foot, 4-feet required	00187
2.	Inlet pipe adaptor,	
	900 cfm, 6" standard	12363
	900 cfm, 5" for steel media	14411
3.	Gasket, inlet adaptor, 900 cfm	11759
4.	Wear plate, 900 cfm w/mounting screws	14055
5.	Screen assembly	21265
6.	Door assembly with gasket and latch	14271
7.	Gasket, door	11745
8.	Latch assembly, door	12263
9.	Gasket, 2" adhesive-backed, per foot, specify feet required	13089
10.	Vortex cylinder assembly, adjustable, 900 cfm	23046
11.	Top assembly	23040
12.	Eye bolt, 3/8-NC	00430
13.	Hopper cone w/bell reducer	23073
14.	Bell reducer, 2" x 1"	13395
15.	Nipple, 1" x 2"	01702
16.	Metering valve	12417
17.	Hose support inlet, optional	
	6", for standard use with 6" hose	16887
	5", for use with steel media, w/5" hose	22324
18.	Hose, light-lined flex, specify feet required	
	6" ID for standard use	12468
	5" ID for use with steel media	12467
19.	Clamp, hose 6-1/2"	00750

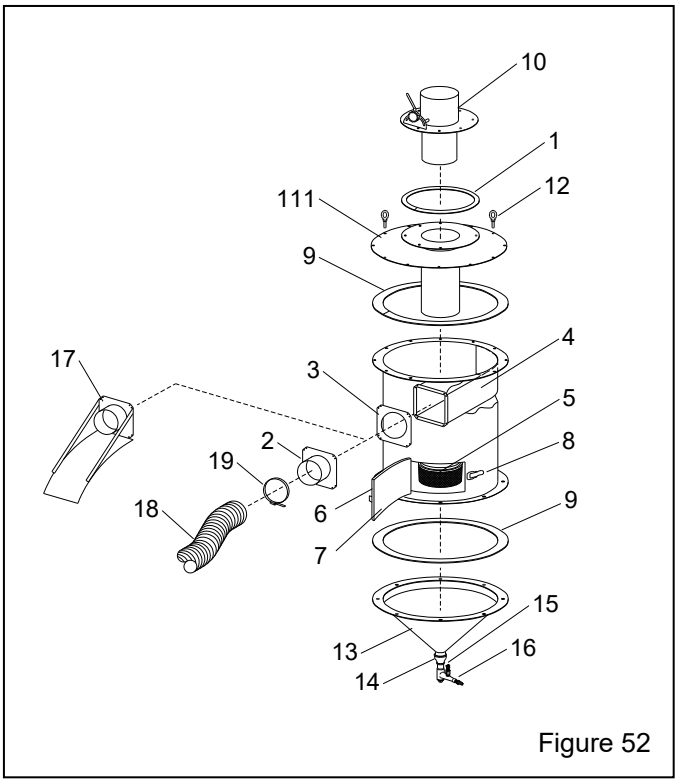


Figure 52