PULSAR® III-S/E & VI-S/E Suction Blast Cabinets

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

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

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

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

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

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

1.0   INTRODUCTION

1.1   Scope of Manual

1.1.1   These instructions cover set-up, operation, maintenance, troubleshooting, optional accessories, and replacement parts for the following Pulsar® series suction blast cabinets.

- Pulsar® III .... Conventional (stand-up model)
- Pulsar® III-E ....Ergonomic (sit-down model)
- Pulsar® VI .... Conventional (stand-up model)
- Pulsar® VI-E ....Ergonomic (sit-down model)

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   General Description

1.3.1   Refer to Figure 1 for arrangement of components. 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. All Pulsar suction cabinets consist of two major components.

1.   Cabinet Enclosure
2.   300 cfm or 600 cfm Power Module
     The power module is attached to the back of the cabinet and includes a 300 cfm or 600 cfm reclaimer and matching reverse-pulse dust collector.

1.3.2   Cabinet Enclosure: This manual covers two Pulsar® cabinet sizes. Each is available in a conventional stand stand-up style) and ergonomic (sit-down) style; representing four separate cabinet configurations.

Pulsar III   Approximate work chamber dimensions: 36" wide x 35" deep x 37" high.

Pulsar VI   Approximate work chamber dimensions: 50" wide x 39" deep x 43" high.

NOTE: The extended front on ergonomic models provides approximately 12-inches additional depth from the arm-port and above, and is approximately 3-inches narrower than the widths shown above.

1.3.3   Power Module: The Pulsar III has a 300 cfm power module. Pulsar VI has a model 600 reclaimer and dust collector. Pulsar VI suction cabinets are easily converted to pressure systems, using the conversion kit listed under Optional Accessories in Section 9.1.

1.4   Theory of Operation

1.4.1   Once the cabinet is correctly setup and turned on, the cabinet is ready for operation by actuation of the foot pedal. Fully pressing down on the foot pedal causes air to flow through the blast gun. The vacuum created by air moving through the gun draws media into the blast gun mixing chamber. The media mixes with the air stream 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 work table into the cabinet hoppers. These particles are then drawn into the reclaimer for separation. Dust and

fines are first separated from reusable media and pass into the dust collector. Next, the media is screened for oversize particles, and returned to the reclaimer hopper for reuse. Dust and fines entering the dust collector are removed from the air stream as they pass through the filters, discharging clean air. When the foot pedal is released, blasting stops.

1.4.2 The dust collector filter cartridge is cleaned by a pulse of high velocity compressed air expanding against the inner surface of the cartridge. The expanding air momentarily reverses air flow through the cartridge to release dust accumulated on the outer surface. The dust particles fall away from the cartridge and into the hopper for removal. The pulse occurs each time the foot pedal is pressed or released. An optional automatic pulse kit can be added to pulse the cartridge at timed intervals during blasting. (See Optional Accessories in Section 9.1).

Exhauster

Pulse Reservoir

Dust Collector

Dust Collector Inlet

Outlet Damper
Access from underneath

Reclaimer

115V/1Ph Supply Cord

Debris Screen

Hopper Bottom (access door)

Grounding Lug

Dust Container

Metering Valve

Pilot-Operated regulator

Pulse-Pressure Regulator
Mounted on pulse reservoir on Pulsar III models.

Compressed-Air Filter
Attachment for compressed air supply.

Cover Plate
For optional HEPA filter

Inlet Damper

Lifting Eye

Pilot Regulator
(blast pressure)

Door Interlock Valve

Door Interlock Actuator

Blow-off Nozzle

Adjustable
Foot Shelf
Ergo Models Only

BNP Blast Gun

On - Off Switch

Foot Pedal

Fork Lift Slots

Front view shown with Ergo Front.
Rear view shown with conventional front.

Figure 1

1.5   Nozzle Options

1.5.1   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 nozzle are available and are shown under Optional Accessories in Section 9.1. Use boron carbide nozzles when blasting with aggressive media, as noted in Section 1.7.4.

1.6   HEPA (high-efficiency particulate air) Filters

1.6.1   Optional HEPA after-filter provides additional filtration. A HEPA filter must be used when removing lead coatings or any other toxic materials. HEPA filter is listed under Optional Accessories in Section 9.1.

⚠ WARNING

Prolonged exposure to any dust could result in serious lung disease and death. Short term ingestion of toxic materials, such as lead dust or dust from other heavy metals and corrosives, could cause serious respiratory injury or death. Identify all materials that are to be removed by blasting. Use HEPA after-filters if lead coating or any other toxic materials are being removed by the blasting process.

1.7   Blasting Media

Media sizes shown are guidelines only, based on standard (5/16" orifice) nozzle (5/32" air jet) and average conditions such as blast pressure, media/air mixture visibility inside the cabinet, humidity, and reclaimer cleaning rate.

Several factors affecting the reclaimer cleaning rate include: reclaimer size (cfm), blast pressure, media/air mixture, media friability, contamination of parts being cleaned, damper setting (static pressure), type of dust collector, dust collector filter loading (differential pressure across the dust filters).

As a rule, larger air jets and nozzles deliver more media, thus requiring more performance from the reclaimer. Therefore, larger nozzles decrease the maximum mesh size of media from those normally recommended. On the other hand, leaner media flow and lighter or less dense media may increase the maximum usable media size. Media finer than those recommended may decrease visibility, and increase carryover to the dust collector. Media coarser than those recommended may be too dense for the reclaimer to recover from the cabinet hopper.

1.7.2   Steel: When the recovery hose diameter is suitably sized, as shown in Figure 2, steel grit sized between 80 and 120-mesh, and shot sized between S110 and S70 may be used with a 1/4" or smaller nozzle.

1.7.3   Sand and Slag: Sand should NEVER be used because of the respiratory hazards associated with media containing free silica. Slags are not recommended because they rapidly breakdown and are not recyclable, making them unsuitable for cabinet applications.

1.7.4   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 equipment components exposed to them will be reduced. To avoid unscheduled down time, periodically inspect the reclaimer wear plate, exhauster housing and paddle wheel, blast hose, and nozzle for wear.

When occasionally using aggressive media, use the optional aluminum oxide kit. The kit includes rubber curtains for the cabinet interior and a boron carbide lined nozzle. Nozzles lined with boron carbide extend nozzle wear life. When using these media on a regular basis use a fully rubber lined reclaimer (available with Pulsar VI only) in addition to the oxide kit. See Optional Accessories in Section 9.1.

This guideline to media selection is based on standard 5/16″ orifice nozzle (5/32″ air jet) and average conditions, (air pressure, media/air mixture, visibility, contamination of parts being cleaned, humidity, media breakdown, reclaimer cleaning rate, etc.)

RECLAIMER SIZE	MEDIA TYPE					
	STEEL GRIT	STEEL SHOT	GLASS BEAD	ALUM. OXIDE	FINE MESH	PLASTIC
300 cfm w/4" inlet	Do not use	Do not use	No. 6 to No. 12	54 to 180 mesh	See 1.7.6	See 1.7.8
600 cfm w/5" inlet	Do not use	Do not use	No. 8 to No. 12	54 to 180 mesh	See 1.7.6	See 1.7.8
600 cfm w/4" inlet	80 to 120	S110 to S70	Do not use	46 to 100 mesh	Do not use	Do not use

Figure 2

1.7.5 Glass Bead: Most beads are treated to ensure free-flow operation even under moderately high-humidity conditions. Glass beads subjected to excessive moisture may be reused after thorough drying and breaking up of any clumps.

1.7.6 Fine-mesh Media: When using media finer than 180-mesh, the reclaimer inlet baffle may need to be removed. Consult Clemco Customer Service before removing the baffle.

1.7.7 Plastic Media: Plastic and similar lightweight media are generally not recommended in suction style cabinets. Plastic media blasting usually requires a blast machine with a 60-degree conical bottom. Refer to Clemco's AEROLYTE brand.

1.8   Compressed Air Requirements

1.8.1 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 3 to determine cfm requirements. Consult with a compressor supplier for a suggested compressor size based on the air consumption.

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 1.7.

Figure 3

1.8.2 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.

1.9   Electrical Requirements

1.9.1 Electrical requirements depend on the size and phase of the exhauster motor. Standard cabinets are supplied as follows:

Pulsar III, 1/2 HP, 115/230V, 1-PH, 60 HZ (wired 115)

Pulsar VI, 1 HP, 115/230V, 1-PH, 60 HZ (wired 115)

1.9.2 If the motor is 115-volt, 1-phase, a power cord is supplied. If the motor is optional 230/460-volt, 3-phase, there will be a magnetic starter mounted in a control box. Power from the user's disconnect has to be wired to it. Additional wiring information is in Section 2.4.

2.0   INSTALLATION

2.1   General

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. Allow for full access to all doors and service areas and for efficient handling of large parts.

2.2   Connect Compressed Air Supply Line

2.2.1 Install an air fitting that is compatible with the air supply hose fitting, to the compressed-air filter located on the inside wall of the power module, shown in Figure 1. Refer to Paragraph 2.2.2.

2.2.2 Refer to the table in Figure 4 to determine the minimum ID of air supply line to the cabinet. A smaller diameter hose may reduce blasting efficiency.

	Jet Size		
	1/8"	5/32"	3/16"
Air Line Length	No. 4	No. 5	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 compressed air line ID

Figure 4

⚠ 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.**

⚠ 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. This 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 filter inlet located under the cabinet hopper.

⚠ WARNING

If twist-on type air hose couplings are used, they must be secured by safety lock pins or wires to prevent accidental disconnection while under pressure. Hose disconnection while under pressure could cause serious injury.

2.3   Ground Cabinet

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

2.4   Connect Electrical Service

⚠ WARNING

Lockout and tagout the electrical supply before performing any electrical service. Shorting electrical components could result in 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.

2.4.1   If the exhauster motor is 115-volt, 1-phase, a power cord is supplied. No additional wiring is required. **SEE FOLLOWING IMPORTANT WARNING.**

⚠ WARNING

Do not use electrical adaptors that eliminate the ground prong on 115-volt plugs. Doing so could cause electric shock and equipment damage.

NOTE: 115-volt 1-phase wiring schematics are packaged with this manual, 3-phase schematics are packed in the electrical panel. After wiring is completed, keep the schematic with the manual for future reference and for electrical replacement parts.

2.4.2   If the exhauster motor is optional 230-volt-3-phase, a magnetic starter is located in the electrical panel. User supplied wiring will need to be run from a disconnect to the panel. As much wiring as possible has been completed at the factory. The user needs only to provide power to the motor starter, mounted in the panel. A wiring diagram is supplied with the accessory.

2.4.3   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 top of the motor where rotation of the fan can easily be observed. Proper rotation is indicated by the arrow on the exhauster housing. The fan should rotate clockwise when viewed from the fan end of the motor.

⚠ 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.

2.5   Inlet Damper

2.5.1   The inlet damper must be set to match the cabinet dimensions and reclaimer size. The decal on the damper shows the settings in degrees. For the initial setting, align the handle as follows:
      Pulsar III ....align handle to 30 degrees
      Pulsar VI............. align handle to 0 degree (full open)
Refer to Section 5.7 for adjustment procedure.

2.5.2   Loosen the lock nuts and position the damper. When correctly positioned, tighten the lock nuts to maintain the setting.

2.6   Final Assembly

2.6.1   Position the foot pedal on the floor at the front of the cabinet or on the foot shelf on ergonomic models.

2.6.2   A package of 5 cover lenses is supplied with the cabinet. To install a cover lens, remove the adhesive backing and apply the lens to the clean, dry, inner surface of the view window per Section 6.6. When the cover lens becomes pitted or frosted, replace it.

3.0   FIELD INSTALLED ACCESSORIES

3.1   Alox (aggressive media) Kit

3.1.1   An optional aluminum oxide kit is available factory installed or may be field installed later. The factory installed Alox kit consist of four rubber curtains with grommets, curtain hardware, and boron carbide nozzle. Refer to Section 3.2 for curtain installation. Field installed kits also include light-lined flex hose, and reclaimer wear plate.

NOTE: Wear plates and lined flex hose are standard on current cabinets. If the cabinet has both items and they are in good condition, reserve the new wear plate and hose for future replacement.

3.2   Curtain Installation

3.2.1   Match curtains to corresponding wall and doors.

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 edge of the rear curtain should be below the bottom edge of the air duct partition. Remove the curtains, and drill a .187" (3/16") diameter hole at each point marked. Install the curtains using the fasteners provided (machine screw, 11/16″ OD flat washer, lock washer and nut) at each grommet. The flat washer is used between the screw head and the rubber curtain grommet on all curtains.

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 outer edges of the door's sound proofing panel. Insert a #10 self-drilling screw with an 11/16″ OD flat washer through the grommet holes. Use a screw gun with a 5/16" socket to drill and thread the screws through the door's inner wall at each grommet.

3.2.4   Ergo Side Extensions: Position the curtain on the wall to be protected. Use the curtain as a template and mark the top mounting point through the grommet. Remove the curtain, and drill a .187" (3/16") diameter hole at each point marked. Install the curtains using the fasteners provided (machine screw, 11/16″ OD flat washer, lock washer and nut) at each grommet. The flat washer is used between the screw head and the rubber curtain grommet on all curtains. After the curtain is hung, mark and drill the cabinet and attach the lower grommets in like manner.

3.3   Turntable with Work Cart and Track

3.3.1   Components of the turntable and track assembly are shown in Figure 5. 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 work cart assembly.

NOTE: The track may be placed on either side of the cabinet, allowing entry through either door. When installing the inside track, place it so the stops are opposite the entry door.
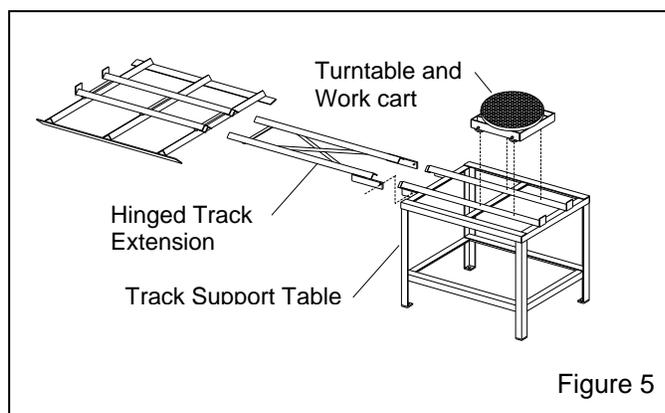

Figure 5

3.3.2   Place the inside track in the cabinet over the existing grate as shown in Figure 6.
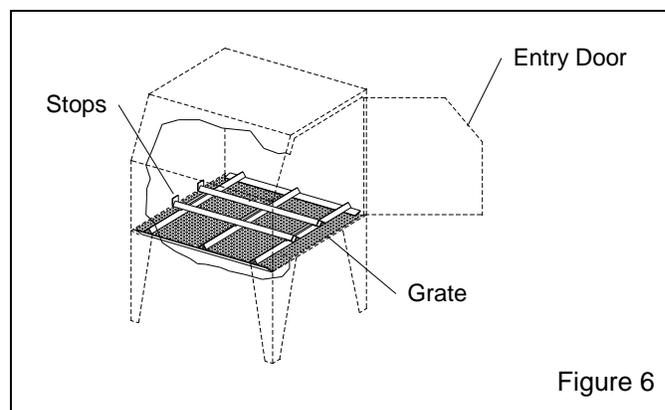

Figure 6

3.3.3   Position the track support table and extension as shown in Figure 7. 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.

The hinged extension must rest on the inside track support angles when lowered.

Extension

Support Angles
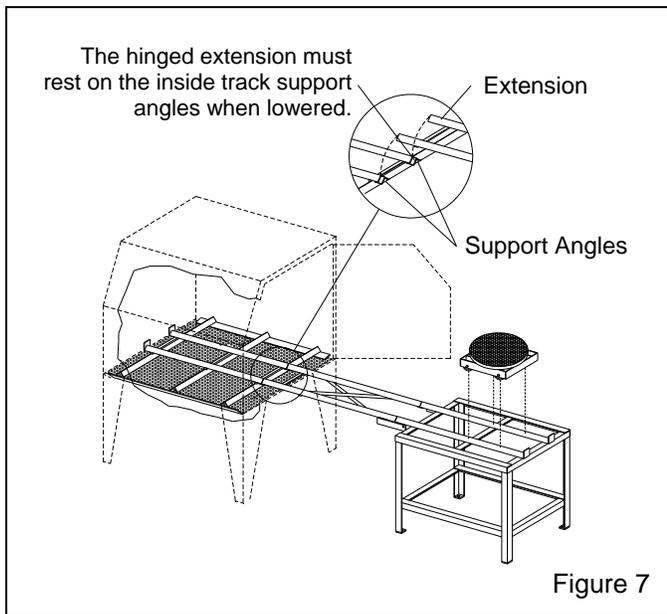
Figure 7

3.4   Manometer

The optional manometer kit is listed in Section 9.1.

3.4.1   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. The manometer measures static pressure.

Reclaimer static pressure is set by adjusting the outlet damper; refer to Section 5.4 to adjust static pressure. Refer to Section 5.8 for manometer instructions.

3.5   Differential Pressure (Magnehelic) Gauge

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

3.5.2   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 on the Pulsar VI is to mount it on top of the cabinet at either side of the light assembly. There is not enough room on a Pulsar III to mount it next to the light, choose another convenient location. 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 8.

3.5.3   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.

Inline Filter, arrow pointing toward the gauge

Gauge Panel

Magnehelic Gauge

To Hi (+) Port on Gauge

Remove pipe plugs and install bushings and snubber fittings.

1/4" x 1/8" Bushing

To Lo (-) Port on Gauge

Upper Snubber

Upper snubber is clean side of collector, to Lo (-) port.

Tubing from the clean side of the collector (upper snubber) connects to fitting leading to the Lo (-) port on the Magnehelic gauge.

Lower Snubber

Lower snubber is dirty side of collector, to filter and Hi (+) port.

Tubing from the dirty side of the collector (lower snubber) connects to fitting with the inline filter and Hi (+) port on the Magnehelic gauge.

Figure 8

3.5.4 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 8.

3.5.5 Connect the 1/4" tubing to the snubber fittings and gauge as shown, by removing the fitting's compression nut; slide it over the end of the tubing, insert the tubing into the fitting, and tighten the nut onto the fitting.

3.5.6 Refer to the Magnehelic differential pressure gauge manual provided for operation of the gauge.

4.0   OPERATION

4.1   Season Filter Cartridge

NOTICE

Do not pulse a new dust collector or replacement filter cartridge until the cartridge is seasoned per Section 7.8. Pulsing unseasoned cartridges decreases the efficiency of collector and life of the cartridge.

4.2   Media Loading and Unloading

4.2.1   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 cone on the reclaimer. **Do not pour media directly into the cabinet hopper, as overfilling may occur**. Overfilling will result in media carryover to the dust collector and possible blockage in the conveying hose. Refill only after all media has been recovered from the cabinet.

The minimum amount of media to charge the system is as follows:
Pulsar III .... 10 Lbs. Media
Pulsar VI .... 20 Lbs. Media

4.2.2   Media Unloading: To empty the cabinet and reclaimer of media, blow-off the cabinet interior and run the exhauster until all media is recovered from the cabinet. Turn OFF the exhauster, and place an empty container under the metering valve. Unscrew the plastic plug from the metering valve, permitting media to flow into the container. If media doesn't flow, it has caked. Open the fill door and stir media until it starts to flow. Replace the plug when the reclaimer is empty.

4.3   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 may cause them to shift or topple, and cause severe injury. This is especially important with the use of turntables and turntables with tracks.

4.3.1 Parts must be free of oil, water, grease, or other contaminants that will cause media or clump or clog filters.

4.3.2 Load and unload parts through either door.

4.3.3 When blasting small parts, place an appropriately-sized screen over the grate to prevent parts from falling into the hopper.

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

4.4   Blasting Operation

⚠ CAUTION

- **Always close cabinet, reclaimer and dust collector doors before blasting. Keep all doors closed during blasting.**
- **Always wear blast gloves.**
- **Avoid pointing the blast nozzle toward the view window.**
- **Use the blow-off nozzle to blow media off parts before opening doors.**
- **After blasting, keep doors closed and blower running until the cabinet is clear of all airborne dust.**
- **Stop blasting immediately if dust leaks are detected.**

4.4.1 Slowly open the air valve on the air supply hose to the cabinet. Check for air leaks on the initial start up and periodically thereafter.

4.4.2 After the filter cartridge is seasoned per Section 7.8, adjust the pulse pressure regulator to 60 psi. Refer to Section 5.6 for adjustment procedure.

4.4.3 Turn ON lights and exhauster. The on/off toggle switch performs both functions.

4.4.4 Load parts.

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

4.4.6 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.

4.4.7 Insert hands into rubber gloves.

4.4.8 To blast, hold the gun firmly and apply pressure to the foot pedal; blasting will begin almost immediately.

NOTE: When holding parts off the grate, use a solid conductive back rest 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.

4.4.9 When blasting small parts, place an appropriately-sized screen over the grate to prevent parts from falling into the hopper. If an object should fall through the grate, stop blasting immediately and retrieve it.

⚠ WARNING

Shut down the cabinet immediately if dust discharges from the dust collector or cabinet. Check to make sure the dust collector filter cartridge is correctly seated and that it is not worn or otherwise damaged. Prolonged breathing of any dust could result in serious lung disease. Short term ingestion of toxic dust such as lead, poses an immediate danger to health. Toxicity and health risk 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.

4.5 **Stop Blasting**

4.5.1 To stop blasting, remove pressure from the foot pedal.

4.5.2 Use the blow-off nozzle to blow media off cleaned parts. Allow the exhauster to clear the cabinet of airborne dust before opening the door.

4.5.3 Unload parts. Shut off the air supply valve, drain the air filter and pulse reservoir, and switch OFF the lights and exhauster.

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** **Pulsing (Cleaning) Dust Collector Cartridge**

4.7.1 The dust collector filter cartridge is pulsed each time the foot pedal is pressed or released. Prolonged periods of blasting or dusty conditions may require the cartridge to be pulsed during the blasting process per Section 6.4, or upgrade to an automatic pulse kit. See Section 9.1.

5.0 **ADJUSTMENTS**

5.1 **Blasting Pressure**

5.1.1 The pilot regulator, located on the top, left side of the cabinet, enables the user to adjust blasting pressure to suit the application. The suitable pressure for most purposes is 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 break down. If pressure is too high, suction in media hose will decrease, and if high enough cause blow-back in the hose. In all cases, optimal production can only be achieved when pressure is carefully monitored.

5.1.2 To adjust pressure, pull the knob to unlock it, as shown in Figure 9, 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.

Blast Pressure Regulator
Located on top left
side of cabinet

Adjustment Knob

Pull knob out to unlock

Push knob in to lock

When viewed from the knob end,
turn clockwise to increase pressure
turn counterclockwise to decrease pressure
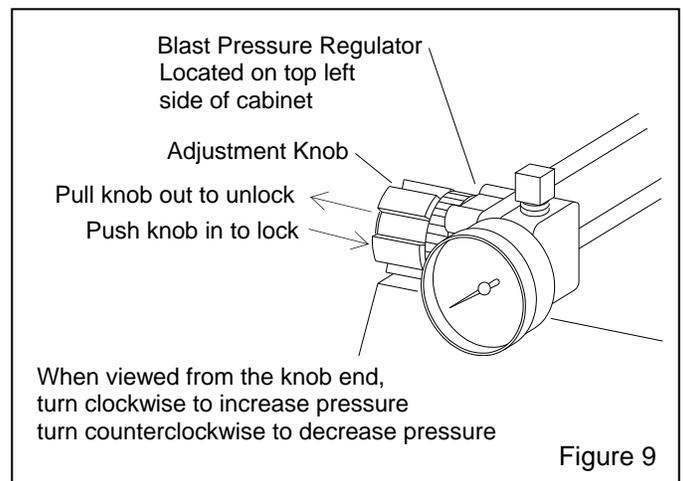
Figure 9

5.2 Air Jet Adjustment, Figure 10

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 9.3, Item 16, for optional air jet adjusting tool, which correctly positions the jet.


3-1/2 to 4 threads between lock nut and air jet hex

Air Jet
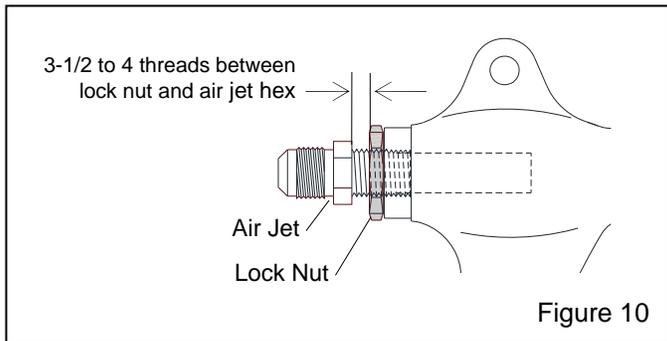
Lock Nut

Figure 10

5.3 Media/Air Mixture, Figure 11

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.

Upper holes fully closed

Adjusting Screw

Lock Nut

Lower holes fully open
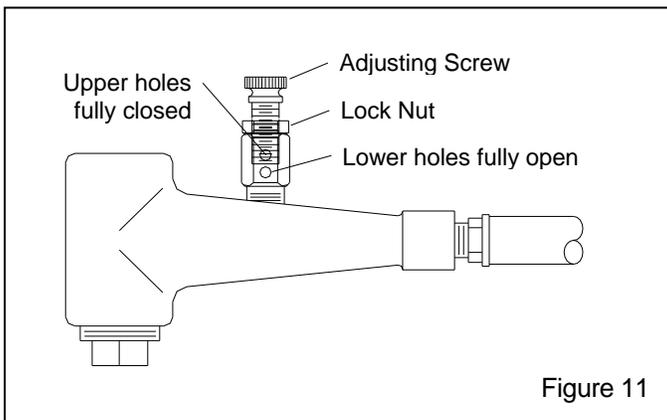
Figure 11

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 11. 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 Static pressure

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

5.4.2 Adjust static pressure by opening or closing the outlet damper located above the reclaimer on the underside of the underside of the power module, refer to Figure 12. 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. Open only as far as necessary to obtain a balance of maximum dust removal without media carryover.

Screen

Outlet Damper

Loosen nuts and slide damper to adjust opening. Tighten nuts to maintain the setting.
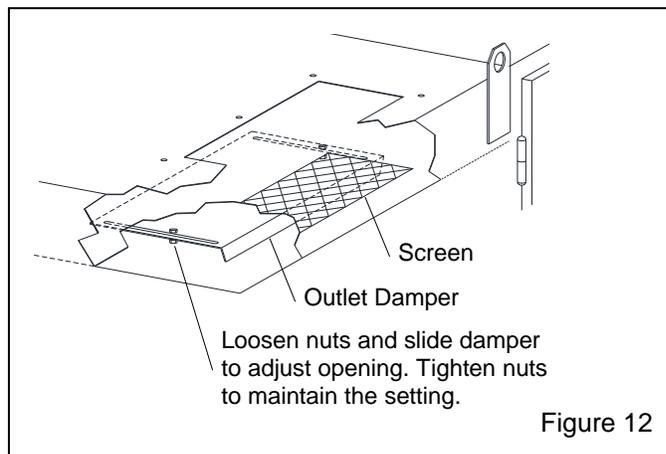
Figure 12

5.4.3 A manometer is useful for adjusting and monitoring static pressure. The manometer kit is listed under Optional Accessories in Section 9.1. Refer to Section 5.8 for manometer operations. The following are static pressure starting points for given media. Static pressure may need to be lower with finer media, higher with coarser media. 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 carryover 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 ....4" to 5"
Alox. 80 to 180 ....3" to 4"

5.4.4 As dust accumulates on the outer surface of the cartridge, static pressure drops, requiring additional

pulsing of the cartridge as described in Section 6.4, or an increase in pulse pressure per Section 5.6. When pulsing no longer maintains the necessary static pressure, readjust the damper.

5.5   Door Interlocks, Figure 13

⚠ WARNING

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

5.5.1   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.

5.5.2   Close cabinet doors.

Over-travel Stop

Adjusting Screw Nut
Loosen, and move sideways to center the adjusting screw on the over-travel stop.

Detent Sleeve

Adjusting Screw
Adjust the screw to push the valve stem in when door is closed.

Actuator Adjusting Bracket
Loosen the bracket screws, and move the bracket up or down to center the adjusting screw on the over-travel stop.

Bracket Screws

Cabinet Door

Figure 13

5.5.3   Loosen the actuator bracket screws and adjusting screw nut. Move the actuator adjusting bracket up or down, and the adjusting screw sideways, to center the adjusting screw on the over-travel stop. Tighten the bracket screws.

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

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

5.6   Pulse Pressure

NOTICE

Do not pulse new dust collectors or replacement cartridges until the cartridge is properly seasoned. Refer to Section 7.8. Pulsing unseasoned cartridges could cause premature cartridge failure or decrease the efficiency of dust collector.

5.6.1   Adjust pulse pressure using the regulator mounted on the pulse reservoir on Pulsar III models and on the pulse inlet plumbing on Pulsar VI models (refer to Figure 14). Begin pulse at 60 psi. To adjust pressure, pull the knob to unlock it, as shown in Figure 14, 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.

Pulsar III Pulse Regulator
Mounted on pulse reservoir

Adjustment Knob

Pull up to unlock

Push down to lock

Pulsar VI Pulse Regulator
Mounted on inlet plumbing

Viewed from back of power module

Some items removed for clarity
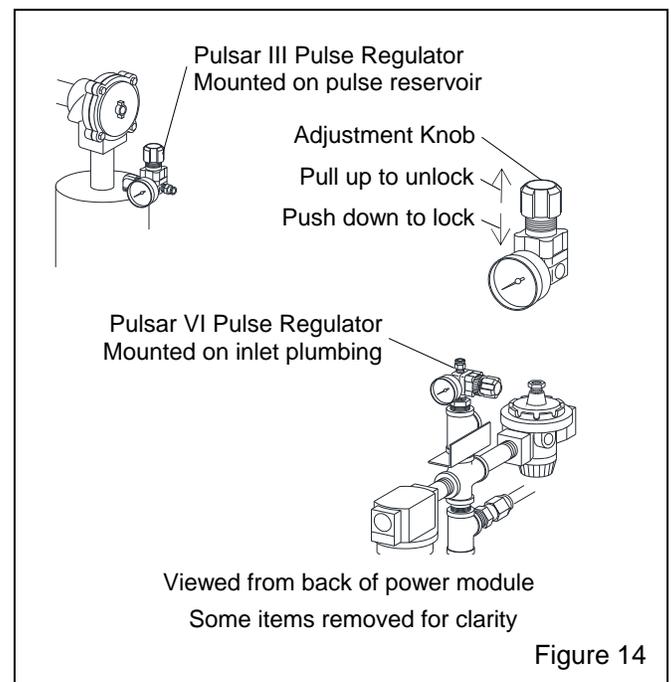
Figure 14

5.6.2   As the filter cartridge cakes with dust, it may be necessary to pulse between blasting per Section 6.4.

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

5.6.4   When the maximum pulse pressure of 90 psi is attained, and additional pulsing as described in Section 6.4 does not increase visibility or decrease differential pressure, replace the cartridge per Section 7.7.

5.7   **Inlet Damper**

5.7.1   Once the inlet is initially set per Section 2.5, 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. See Section 5.4. Reclaimer pressure must be set before cabinet pressure.** In rare circumstances, cabinet pressure may need to be slightly higher or lower.

5.7.2   A manometer (listed in Section 9.1) 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.

5.7.3   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.

5.8   **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. Permanent fittings should be installed when the manometer installation is permanent. 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. This will prevent 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 those taken above the reclaimer. The readings are reference points, so readings should be taken using the same method each time the reading is taken.

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

5.8.2   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.

5.8.3   Open both manometer valves (elbows) per the instructions with the manometer.

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

5.8.5   Adjust the slide rule to align the zero with the fluid level. Refer to Figure 16

5.8.6   Needle placement: Ref. Figure 15.

5.8.6.1 To take frequent readings: Permanently install the manometer for taking frequent readings. Remove the 1/4" NPT plug from the coupling on reclaimer body and install a fitting with a 1/8" hose barb. Use thread sealer to prevent leaks. The fitting should be capable of being capped when the manometer tube is removed. Capping the fitting will prevent leaks that alter the reclaimer's separation efficiency.

For taking frequent readings, remove plug and install a permanent fitting in the coupling, as shown.

Reclaimer Fill Door

When taking occasional readings, position the needle so the point is inside the door opening. Carefully close the door on the needle.

Reclaimers are for reference and may differ from those shown.

Figure 15
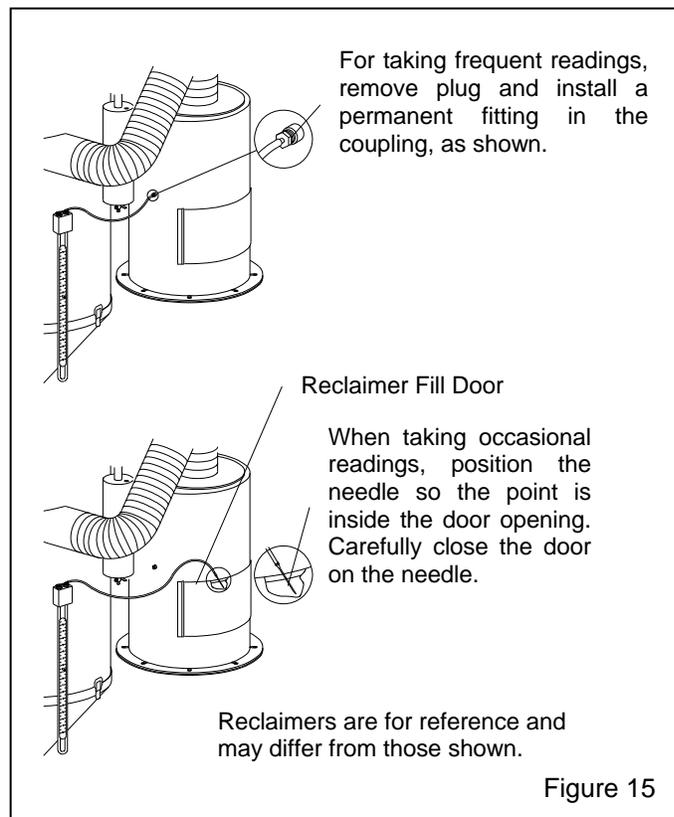
5.8.6.2 To take occasional readings: Leave the needle protector on the needle and insert the needle into the unused end of the tubing. The ends of the tubing must fit tight on the manometer and needle; leaks will give inaccurate readings. Open the reclaimer fill door, remove the needle protector and place the needle so the point is inside the door opening. Carefully close the door on the needle. The side of the needle will embed into the rubber door gasket, creating an airtight seal

5.8.7   Open cabinet doors and turn the exhauster ON. The negative (static) pressure will move fluid in the tube. **NOTE: Readings must be taken with the cabinet doors open, and with the exhauster running.**

The manometer must be vertical when taking pressure readings.

With the exhauster OFF, slide the rule to align the zero with the fluid level.

To obtain the pressure reading: With the exhauster ON, add the number of inches the fluid travels up the column, to the inches the fluid travels down the other column. The total is the static pressure reading.

In the example shown, fluid traveled up the right column 1-3/4 inch, and down the left column 1-3/4 inch. Static pressure is determined by adding the columns together. In the example, the static pressure is 3-1/2 inches.

Figure 16

5.8.8   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 16.

5.8.9   After the 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.

5.9   **Foot Shelf, Ergonomic models only**

5.9.1   Raise the shelf to remove pressure from the locating pins, and remove the pins. Adjust the shelf height and insert the pins.

6.0   **PREVENTIVE MAINTENANCE**

⚠ WARNING

Failure to wear approved respirators and eye protection when servicing dust-laden areas of the cabinet and dust collector, and when emptying the container could result in serious eye irritation and lung disease. 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.

NOTE: To avoid unscheduled downtime, establish a weekly inspection schedule. Inspect all parts subjected to media contact, including; nozzle, media hose, flex hose, and wear plate, plus all items covered in this section.

6.1   **BNP Gun Assembly**

6.1.1   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.

6.2   **Dust Collector Dust Container**

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

6.2.2   Turn OFF the exhauster and release the dust container from the lid. The lid's flexible inlet hose allows easy removal. Remove the liner and dump the contents or

the tied-off liner into a suitable disposal receptacle. Replace the liner and attach the container to the lid making sure the lid and clamp are secure. Replacement liners are shown in Section 9.11 and 9.12, Figures 38 and 39.

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

6.3   Pulse Reservoir, Figure 17

6.3.1   Open the petcock to drain water from the pulse reservoir before and after each use.

Pulse Reservoir

Drain   Figure 17
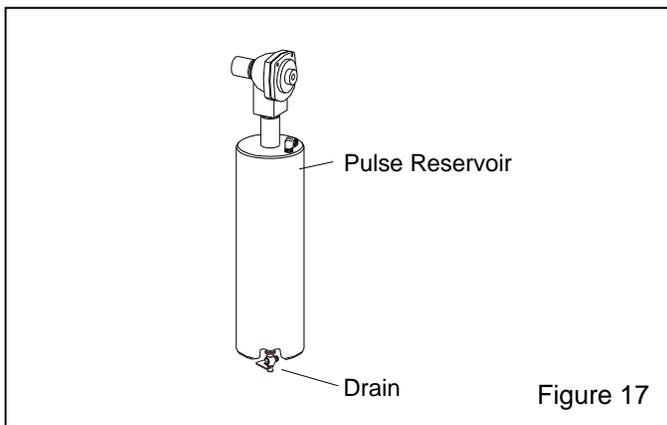
6.4   Cartridge Pulsing

6.4.1   The cartridge is pulsed each time the foot pedal is pressed or released. Additional pulsing should be performed per the following instructions every eight hours, or more often under dusty conditions, to prevent clogging of the cartridge.

6.4.2   Turn OFF exhauster.

6.4.3   Hold the blast gun and rapidly press and release the foot pedal three times. Activating the foot pedal more than three times may cause dust to escape from the enclosure.

6.4.4   Start the exhauster and let it run for 10 seconds or until all airborne dust is cleared from the cabinet.

6.4.5   Repeat the process several times.

6.5   Reclaimer Debris Screen

6.5.1   The screen is accessible through the reclaimer door. With the exhauster OFF, remove the screen and empty it daily or when loading abrasive. Empty the screen more often if the parts blasted causes excessive debris. Always replace the screen after cleaning.

6.6   View Window Cover Lens

6.6.1   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.

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

6.6.3   To install a cover lens, carefully remove the adhesive backing leaving the adhesive on the lens, and apply the lens to the clean, dry, inner surface of the view window. Replace the cover lens when it becomes pitted or frosted.

6.7   Compressed-Air Filter

6.7.1   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.

6.8   Media Hose

6.8.1   To avoid unscheduled down-time, periodically inspect the media hose for thin spots, by pinching it every 6 to 12 inches.

7.0   SERVICE MAINTENANCE

⚠ WARNING

Failure to wear approved respirators and eye protection when servicing dust-laden areas of the cabinet and dust collector, and when changing the filter cartridge could result in serious eye irritation and lung disease or death. 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.

7.1 Gloves

7.1.1 Special static-dissipating gloves are 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 Gloves are held in place by metal bands on the inside of the cabinet. To replace, loosen the bands with a screwdriver, replace the gloves, and tighten the bands.

7.2 Nozzle

7.2.1 Replace the nozzle when its diameter has increased by 1/16", or sooner if suction diminishes noticeably. To change the nozzle; unscrew the nozzle holding nut and pull the existing nozzle from the gun. Inspect the nozzle o-ring and replace if worn or damaged. Insert a new nozzle, placing the tapered end toward the jet. Screw the nozzle holding nut onto the gun.

7.3 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 replacement parts.

7.3.1 Remove the two window frame nuts located on the upper edge of the window frame, and swing the window frame open. **NOTE Ergo models are not hinged; they are held by four frame nuts.** If the frame is to remain open, for cleaning or other reasons, remove it per Section 7.5.

7.3.2 Remove the old window.

7.3.3 Inspect the window frame gaskets, both on the window frame and on the cabinet. If either gasket is damaged, replace it per section 7.4.

7.3.4 Install a view window cover lens per Section 6.6.

7.3.5 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.

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

7.4 Window Gasket Replacement, Figure 18

7.4.1 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.

7.4.2 Remove the window and window frame per Section 7.5.

5/16" x 3/4" Gasket

Cabinet Front

Support Tabs

5/32" x 3/4" Gasket
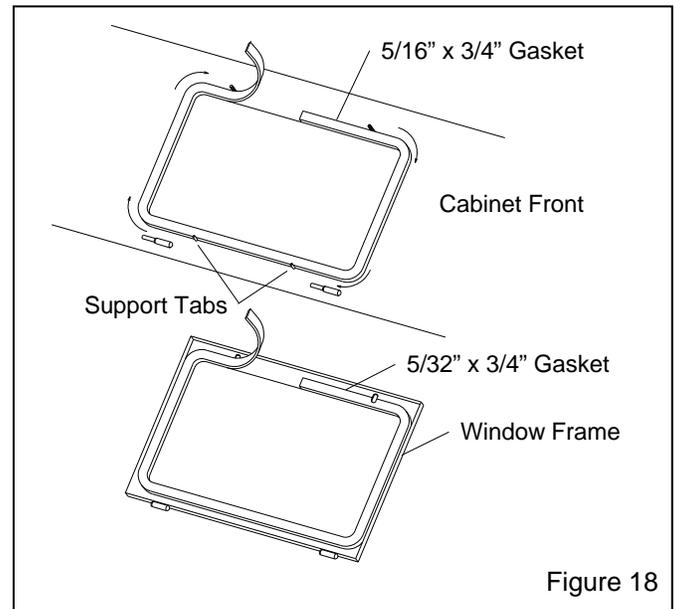
Window Frame

Figure 18

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

7.4.4 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 18. 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.

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

7.4.6 Trim around the window frame bolt slots, as needed.

7.5 Window Frame Removal, Figure 19

7.5.1 Remove the two window frame nuts located on the upper edge of the window frame, and swing the window frame open. **NOTE: Ergo models are not hinged; they are held by four frame nuts.**

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 19.

7.5.5 Replace the frame in reverse order. Align the top bolt holes with the bolts; slide the frame as necessary.

Pivot the frame up or down until tension is removed from the hinges.

Support Tab

Support Tab

Slide the frame to the right to separate the hinges.

NOTE: Ergo models are not hinged.

Figure 19
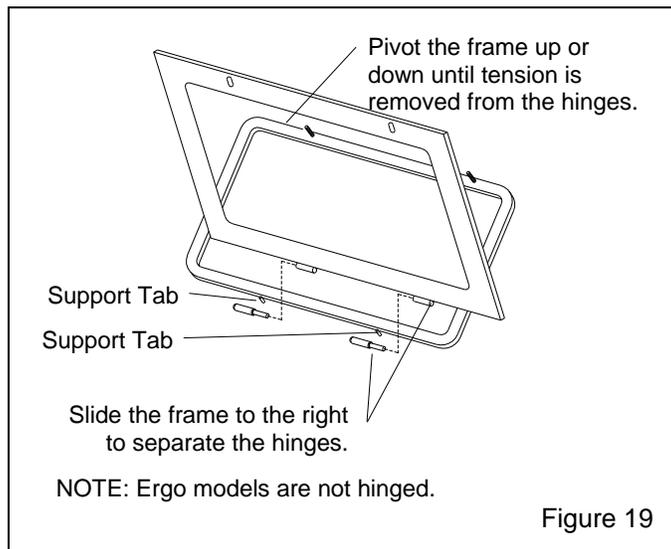
7.5.6 Set the window squarely over the window opening, making sure that all edges of the window are centered and overlapping the window gasket, and that the window is resting on the window support tabs.

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

7.6   Light Assembly

⚠ CAUTION

Use an approved step ladder when servicing the light assembly. Do not climb on top of the cabinet. The cabinet top will not support the weight of a person.

7.6.1 Shut OFF electrical power.

7.6.2   Gasket Replacement

**7.6.2.1** Remove the four wing nuts holding the light fixture to the cabinet, and use the handles to lift the fixture off the cabinet, as shown in Figure 20.

7.6.2.2 Remove all the old gasket material and clean the surfaces of the cabinet.

7.6.2.3 Lay a section of strip gasket next to 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 20. Press the gasket tightly to bond. Repeat the process for each side, compressing the ends to seal.

Handle

Light Assembly

Wing Nuts

Gasket
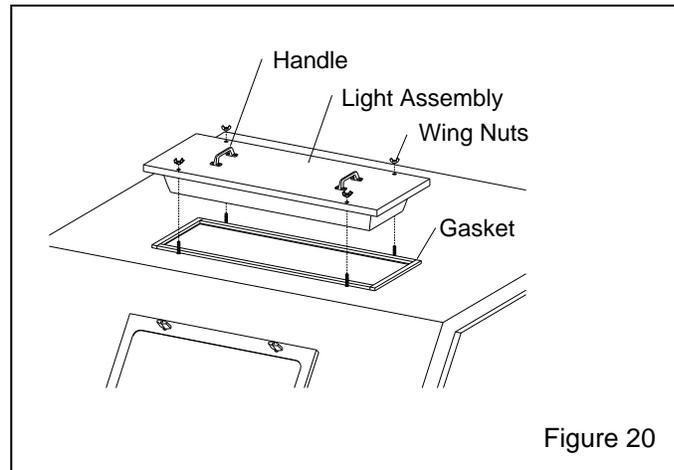
Figure 20

7.6.3   Lens and Tube Replacement

7.6.3.1 Remove the four wing nuts holding the light fixture to the cabinet, and use the handles to lift the fixture off the cabinet.

7.6.3.2 Flip the fixture over to access the lens screws, ref. Figure 21.

7.6.3.3 Remove the four lens screws and remove the lens.

7.6.3.4 Replace the lens or tubes as required.

Lens Screws (4)

Lens

Tubes
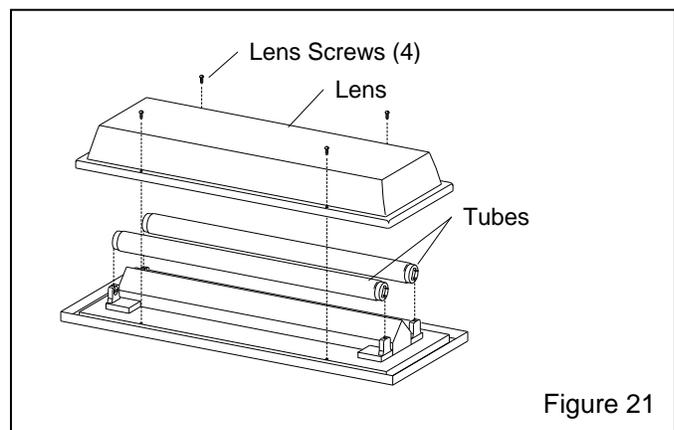
Figure 21

7.6.3.5 Inspect the gasket, and replace if worn or damaged.

7.6.3.6 Reassemble in reverse order.

7.7 Filter Cartridge Replacement, Figure 22

⚠ WARNING

Failure to wear approved respirators and eye protection when servicing dust-laden areas of the cabinet and dust collector, and when changing the filter cartridge could result in serious eye irritation and lung disease or death. 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.

7.7.1   Close the air supply valve and bleed air from the pulse reservoir.

7.7.2   Unlatch the dust container lid from the container and remove the container.

7.7.3   Unlatch and remove the dust collector hopper bottom.

7.7.4   Remove the cartridge retaining nut, washer, and gasket from the support bracket.

7.7.5   Slide the cartridge straight down until it clears the support bracket. A small amount of rocking may be necessary to loosen the gasket seal from the sealing surface.

Cartridge Sealing Gasket

Filter Cartridge

Retaining Nut

Drain

Latch (4)

Hopper Gasket

Hopper Bottom (access door)

Dust Container
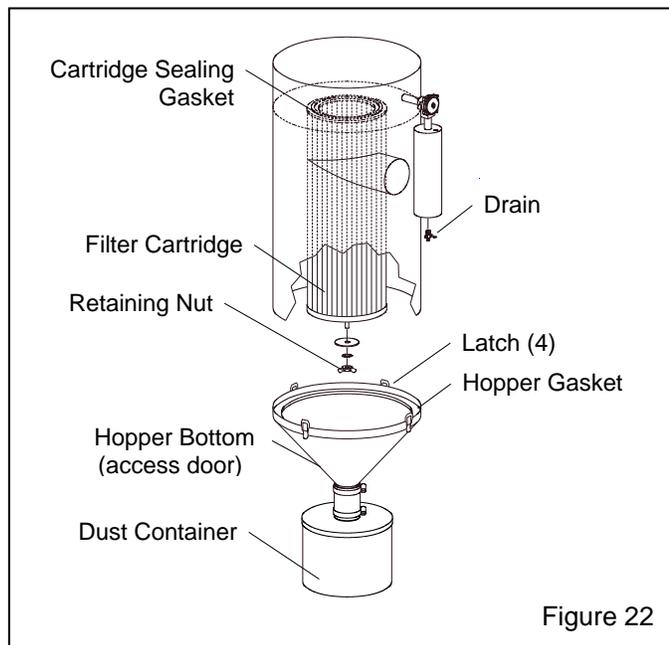
Figure 22

7.7.6   Clean all parts that will be reused, especially around the cartridge sealing area. Scrape off any residual gasket material from the sealing surface.

7.7.7   Install the new cartridge. Tighten the retaining nut until the cartridge cannot be moved by hand. Tighten the nut one additional full turn.

7.7.8   Check the hopper gasket for any condition that will prevent the gasket from sealing. Replace the gasket as required.

7.7.9   Attach the hopper bottom, and latch in place.

7.7.10 Remove the liner from the dust container and dump the contents or the tied-off liner into a suitable disposal receptacle. Replace the liner and attach the container to the lid, making sure the lid and clamp are secure.

7.7.11 Season cartridge per Section 7.8.

7.8 Seasoning Cartridges

NOTICE

Do not pulse a new dust collector or replacement filter cartridge until the cartridge is seasoned per Section 7.8. Pulsing unseasoned cartridges decreases the efficiency of collector and life of the cartridge.

7.8.1   New cartridges must be seasoned. Cartridges are seasoned by letting a dust cake develop on the filter media before starting the pulsing cycles.

7.8.2   To prevent the cartridge from pulsing, turn the pulse regulator off (to 0 psi).

7.8.3   Operate the cabinet without pulsing for about two hours, or until visibility decreases, whichever comes first. At that point turn the pulse regulator to 60 psi, to start the pulsing cycle.

7.9 Reclaimer Wear Plate Replacement

7.9.1   Remove the reclaimer from power module.

7.9.2   Remove the reclaimer inlet adaptor and old wear plate. The wear plate is held in place by screws attached from the outside of the reclaimer. Angle the new wear plate into the reclaimer inlet until it is in position with the straight end at the reclaimer inlet. Insert a board or similar object into the reclaimer inlet for

leverage, and pry the wear plate against the inner wall of the reclaimer. While forcing the wear plate against the reclaimer wall, install sheet metal screws through the old screw holes to secure. Caulk gaps or voids around the wear plate to prevent rapid wear in those areas.

7.9.3   Reinstall the reclaimer.

8.0   TROUBLESHOOTING

⚠ WARNING

To avoid serious injury, observe the following when troubleshooting.
- **Turn OFF the air, and Lockout and Tagout the air supply.**
- **If checking the controls requires air, always enlist the aid of another person to:**
  Hold the blast gun securely.
  Operate the foot pedal.
- **Never bypass the foot pedal or wedge it in the operating position.**
- **Never override the door interlock system**.

8.1   Poor visibility

8.1.1   Dirty filter cartridge. Empty the dust container. Pulse cartridge several times per Section 6.4. Inspect cartridge and replace when necessary.

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 2.4.3.

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

8.1.5   <u>Outlet</u> damper closed too far restricting air movement through the cabinet. Adjust static pressure per Section 5.4.

8.1.6   <u>Inlet</u> damper closed too far restricting air movement into the cabinet. Adjust damper per Section 2.5 and 5.7.

8.1.7   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.

8.1.8   Reclaimer door open.

8.1.9   Obstruction in flex hose between the cabinet hopper and reclaimer inlet.

8.1.10   Paddle wheel worn. Check wheel for wear.

8.2   Abnormally high media consumption

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

8.2.2   Outlet damper open too far. Adjust static pressure per Section 5.4.

8.2.3   Media may be too fine or worn-out.

8.2.4   Using friable media that rapidly breaks down.

8.2.5   Nozzle pressure too high for the media, causing media to break down.

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

8.3   Reduction in blast cleaning rate

8.3.1   Low media level reducing media flow. Check media level in reclaimer; add media or change media as needed.

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 a malfunctioning regulator, a dirty filter element in air filter, partially-closed air valve, leaking air line, or other air tools in use.

8.3.4   Blockage in media hose or gun. Blockage may occur as a result of a damaged or missing reclaimer screen or heavy media flow. Inspect reclaimer screen and 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. Empty the media and store it in an airtight container when cabinet is not in use.

8.5.5 A vibrator mounted either on the reclaimer mounting bolt may help to prevent bridging of fine-mesh media.

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. Check the charts in Figures 3 and 4.

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

8.8.3 Nozzle worn. Replace if worn 1/16" or more.

8.8.4 Blockage in media hose or nozzle. See Sections 8.4 and 8.8.

8.8.5 Air jet and nozzle combination may be wrong. Refer to the table in Figure 3.

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

8.8.7 Nozzle pressure too high, refer to Section 5.1.

8.8.8 Nozzle inserted backward; the tapered end of the nozzle should face toward the air jet.

8.9 Air only (no abrasive) from nozzle

8.9.1 Make sure the reclaimer contains media.

8.9.2 Check media hose for blockage. Media obstructions is usually caused when the media mixture is too rich, adjust media/air mixture per Section 5.3.

8.9.3 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 31.

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 3.

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

8.11.1 Door interlocks not engaging. Check adjustment per Section 5.5.

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 schematic in Figure 31.

8.11.5 Pressure regulator may be set to low or OFF. Check pressure on pilot regulator.

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 when 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 Static shocks

8.13.1 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.

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

8.13.3 Avoid holding parts off the grating. Static will build in the part if not dissipated through the metal cabinet.

8.14 Dust leaking from dust collector

8.14.1 Cartridge not seasoned, season cartridge per Section 7.8.

8.14.2 Damaged or loose cartridge. Inspect filter cartridge.

8.14.3 Faulty seal on the dust collector cone. Inspect seal and replace if damaged.

8.15 Dust collector does not pulse when foot pedal is pressed or released.

8.15.1 Check pressure on dust-collector pulse-pressure gauge. If low, adjust pulse pressure per Section 5.6.

8.15.2 Refer to Figure 23 and make sure the 3-way pulse valve has not come loose from the mounting bracket. Tighten the retaining nut as needed to secure.
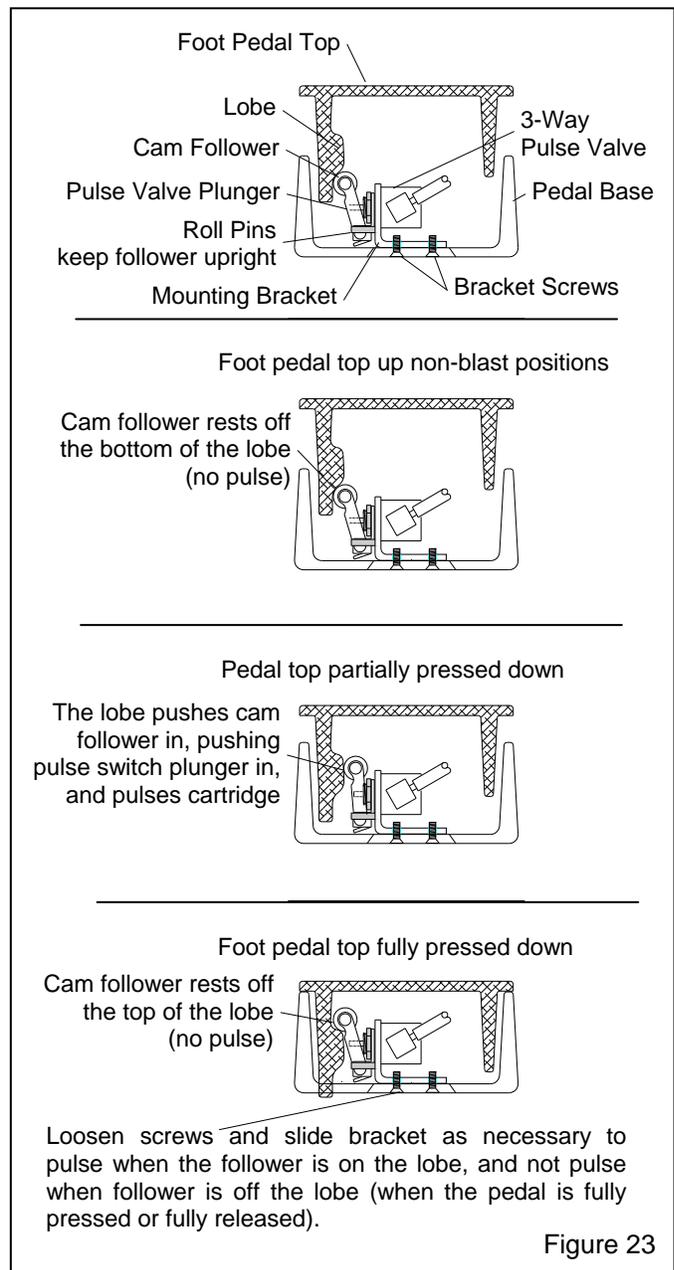

Figure 23

8.15.3 If the cam follower tilts to one side, one or both roll pins are bent or missing. Remove the two screws on the bottom of the pedal and remove the switch and cam follower assembly. Center the cam follower and replace roll pins as needed to hold the cam follower in place. Refer to Figure 23.

8.15.4 Check alignment of pulse-valve cam follower: With the exhauster running and with blast pressure adjusted to 0 psi, hold the foot pedal in hand and fully press the pedal top. The collector should pulse as the cam follower rides over the lobe on the pedal top when the pedal is pressed, and again when the pedal is released, as shown in Figure 23. Note: The pedal should be rapidly pressed and released so the cam follower quickly rides over the lobe; prolonged engagement of the pulse valve will lengthen the pulse, which does not clean the cartridge and wastes compressed air.

The lobe on the pedal top should press the cam follower IN to engage the 3-way pulse valve, and disengage the switch when the pedal is fully pressed and again when the pedal is released. If the switch is not aligned to function as described, align as follows:

- If the switch does not disengage the pulse when the cam follower rides off the lobe, the switch assembly is too close to the lobe. Loosen the two screws on the bottom of the pedal and slide the switch away from the lobe as needed and recheck alignment.
- If the switch does not engage the pulse when the cam follower rides onto the lobe, the switch assembly is too far from the lobe. Loosen the two screws on the bottom of the pedal and slide the switch toward the lobe as needed and recheck alignment.

When the alignment is set correctly set, tighten the screws to prevent movement.

When the pedal is operating correctly, a spurt of air should be heard as cam follower rides off the lobe when the pedal is pressed and again when it is released. If the cam follower is working correctly, and there is no spurt of air when the pedal is pressed and released, it is likely a problem with the 3-way valve; replace the 3-way valve.

8.15.5 Check the diaphragm pulse valve and actuator assembly. Refer to Figure 24.

8.15.5.1 Remove the pilot actuator from the 3-way pulse valve. With the exhauster running and with blast pressure adjusted to 0 psi, press in on the 3-way valve plunger; the cartridge should pulse when the plunger is pressed.

- If the cartridge does pulse, the diaphragm pulse valve and 3-way valve are functioning; proceed to Section 8.15.5.2.
- If it does not pulse, listen for a spurt of air coming from the plunger when the plunger is pressed.

- If it does spurt air, the problem is likely in the diaphragm pulse valve. Inspect the diaphragm for wear or damage.
- If it does not spurt air, the 3-way valve is not functioning. Replace the 3-way valve.

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

8.15.5.2 Hold the pilot actuator and press and release the foot pedal. Observe the piston through the open end of the actuator; the piston should snap toward the end of the actuator each time the pedal is pressed, and return each time the pedal is released.

- If the actuator piston operates as noted, the problem is not in the foot pedal or actuator. Inspect the 3-way and diaphragm valve per Section 8.15.5.1.
- If the actuator does not operate as noted, remove the urethane tubing from the actuator and press and release the foot pedal.
  - If air escapes from the tubing when the pedal is pressed and released the problem is in the actuator. Replace the actuator.
  - If no air escapes from the tubing when the pedal is pressed and released, there is a blockage in the tubing or the problem is in the foot pedal. Inspect the tubing for a blockage and inspect the foot pedal per Sections 8.15.2, 8.15.3, and 8.15.4.

Diaphragm Pulse Valve

3-Way Air Valve

Plunger

Pilot Actuator

Urethane Tubing
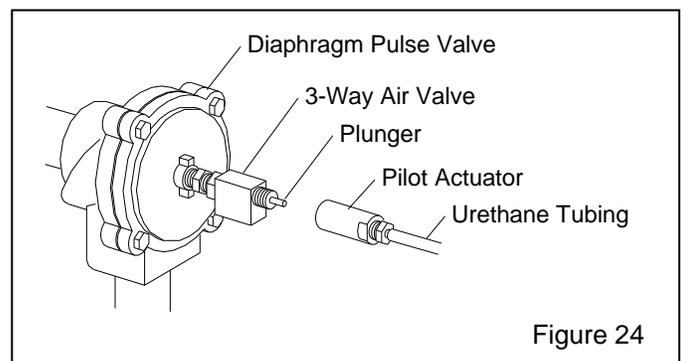
Figure 24

8.16   A steady stream of air is heard within the dust collector when the foot pedal is not pressed.

8.16.1 Cam follower does not ride off the foot pedal lobe. Inspect alignment per Section 18.15.

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

8.16.3 The 3-way valve on the diaphragm pulse valve stuck in exhaust position, inspect 3-way valve.

9.0 ACCESSORIES and REPLACEMENT PARTS

9.1 Optional Accessories (field installed)

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 without Bearing

Description	Stock No.
20" diameter, 25 lb capacity	12412

Fixed-base Turntable with Bearing, 500 lb Capacity Figure 25

Item	Description	Stock No.
(-)	20" diameter assembly	12411
(-)	30" diameter, assembly	14138
1.	Turntable replacement	
	20" diameter	18329
	30" diameter	21390
2.	Bearing, 1-1/2" bore	11517
3.	Protector, bearing	13479
4.	Screw, 1/2-NC x 1-1/2" cap	03454
5.	Washer, 1/2" lock	03516
6.	Nut, 1/2-NC hex	03511
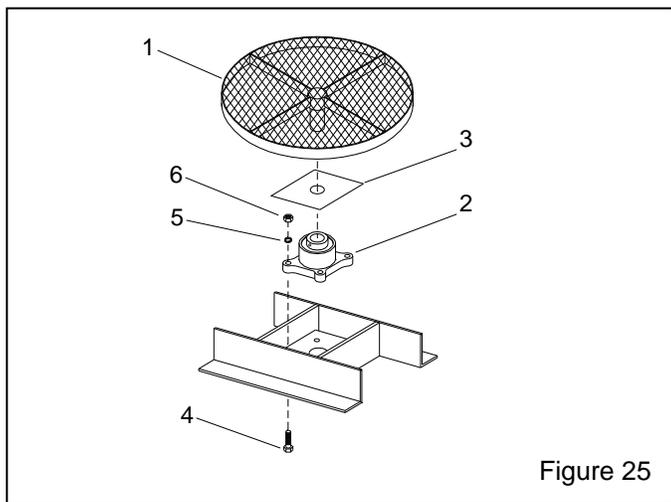
Figure 25

Turntable with Work cart and Track, 500 lb. Capacity, Figure 26

Item	Description	Stock No.
(-)	20" dia. turntable and track assembly	12835
(-)	30" dia. turntable and track assembly	24045
(-)	20" dia. turntable / work cart replacement	24205
(-)	30" dia. turntable / work cart replacement	24086
1.	Turntable replacement	
	20" diameter	18329
	30" diameter	21390
2.	Bearing, 1-1/2" bore	11517
3.	Protector, bearing	13479
4.	Screw, 1/2-NC x 1-1/2" cap	03454
5.	Washer, 1/2" lock	03516
6.	Nut, 1/2-NC hex	03511
7.	Caster, 4" V groove	11594

All other track items are special order. Contact distributor for price and availability.
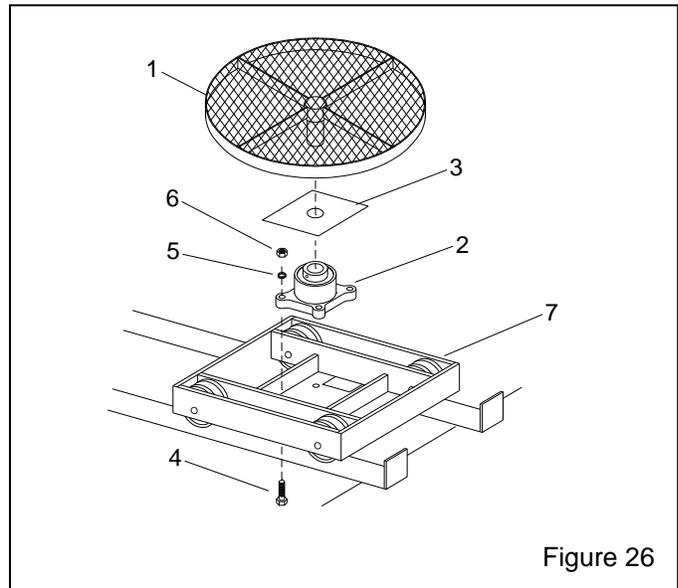
Figure 26

Description	Stock No.
Pass-thru door, with 15 inch-square cut-out	
Right door	
for Pulsar III	23610
for Pulsar VI	23612
Left door	
for Pulsar III	23611
for Pulsar VI	23613

Conversion kit, for Pulsar VI only. Includes all accessories to convert suction (venturi) feed system to pressure system 21660

Steel media kit, for use with steel grit or shot,
Pulsar VI only 21798
    Includes the following plus mounting hardware:
        4" Cabinet hopper outlet adaptor 23295
        Gasket, hopper outlet adaptor 23258
        4" Reclaimer inlet adaptor 12350
        Gasket, inlet adaptor 11779
        4" light-lined hose, 7 ft. required 12466
        Rubber curtains, black 23532

Rubber curtains, black
    Rubber curtain set
        for Pulsar III 23531
        for Pulsar VI 23532
        for Ergo Pulsar III-E 25086
        for Ergo Pulsar VI-E...................................... 25087
    Rubber curtain, back,
        for Pulsar III 14243
        for Pulsar VI 14247
    Rubber curtain, front,
        for Pulsar III 14242
        for Pulsar VI 14246
    Rubber curtain, door 2 required
        for Pulsar III 14244
        for Pulsar VI 14245
    Ergo side extension curtain, each (2 required)
        for Ergo Pulsar III-E 24682
        for Ergo Pulsar VI-E....................................... 24683

Rubber curtains, white
    Rubber curtain set
        for Pulsar III 23541
        for Pulsar VI 23542
        for Ergo Pulsar III-E 25088
        for Ergo Pulsar VI-E....................................... 20589

Rubber sump liner set, black
    for III-P ....special order
    for VI-P 23499

Light-lined duct hose, bulk, for use with aluminum oxide,
specify length required in feet
    4" ID for use with aluminum oxide in Pulsar III
      or steel grit in Pulsar VI 12466
    5" ID for Pulsar VI with aluminum oxide 12467

Aluminum oxide kit: Includes lined flex hose, reclaimer
wear plate, boron carbide nozzle, black rubber curtains
with grommets and curtain hardware.
    for Pulsar III 14241
    for Pulsar VI 14133

Reclaimer rubber liners, for Pulsar VI only,
factory installed or field installed.
Reclaimer must have removable top 24782

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
NOTE: Wide-spray nozzles require the following
accessories:
    Nozzle nut, wide-spray 11916
    Retaining ring, wide-spray 12038
    Nozzle guard, wide-spray 12295

Time delay door locks, for both doors 24163

Differential pressure gauge assembly 23356

HEPA filter assembly 22807

Tumble basket, 2-gallon 12227

Automatic pulse kit 21773

Manometer kit (flexible u-tube) 12528

Noise-reduction arm port covers, pair 24885

Lock pins (pkg of 25) for twist-on hose couplings ... 11203

Anti-fatigue floor-mat, for front of cabinet 24744

Window cover lens, pack of 5 06190

Optional Extension Nozzles, Figure 27

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.	4" Side-angle extension nozzle, complete 5/16" orifice, includes item 7, 8 & 9	21311
5.	6" Side-angle extension nozzle, complete 5/16" orifice, includes item 7, 8 & 9	12374
6.	9" Side-angle extension nozzle, complete, 5/16" orifice, includes item 7, 8 & 9	12373
7.	Tip, side- angle extension	12173
8.	Snap ring, side-angle extension	12040
9.	O-ring, side-angle extension	08977

Standard Nozzle

1, 2, 3

Note:
Leave the standard nozzle in the gun, slip the nozzle holding nut over the extension nozzle, and tighten onto the gun body
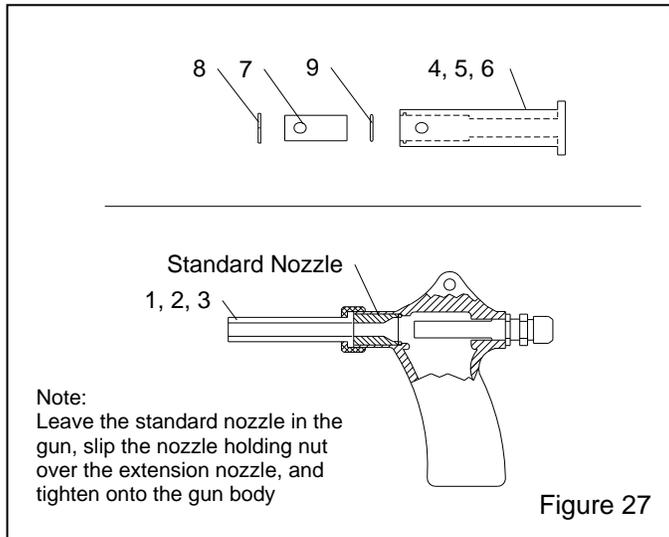
Figure 27

Armrest, Figure 28

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

Armrest Installed

Cabinet shown for reference
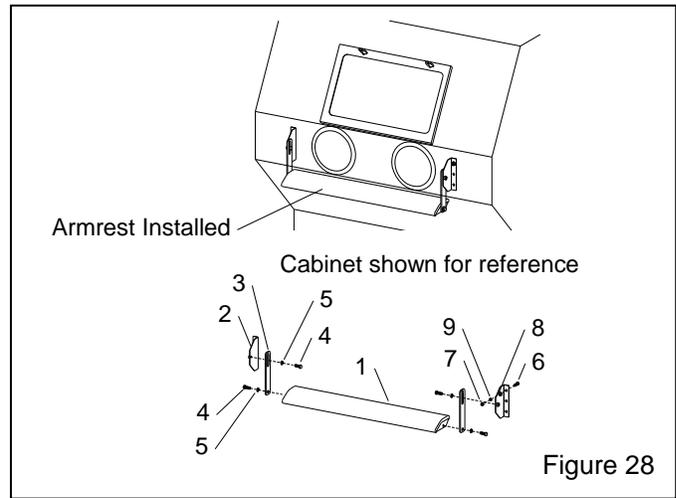
Figure 28

9.2 Foot-Shelf Assembly, Figure 29
Used on ergonomic models only

Item	Description	Stock No.
(-)	Shelf assembly	24835
1.	Shelf, foot	27599
2.	Pin, quick release	24838
3.	Screw, 1/4-NC x 3″ hex head cap	24434
4.	Nut, 1/4-NC Hex	03111
5.	Washer, 1/4 lock	03117
6.	Washer, 1/4 flat	03116
7.	Bracket, foot-shelf mount, each	27600
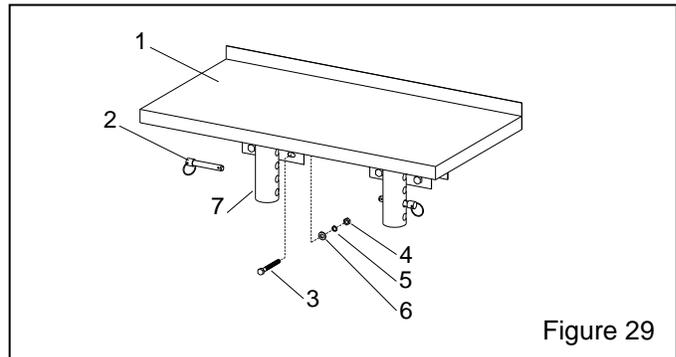
Figure 29

9.3   BNP Gun and Feed Assembly, Figure 30

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

Item	Description	Stock No.
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
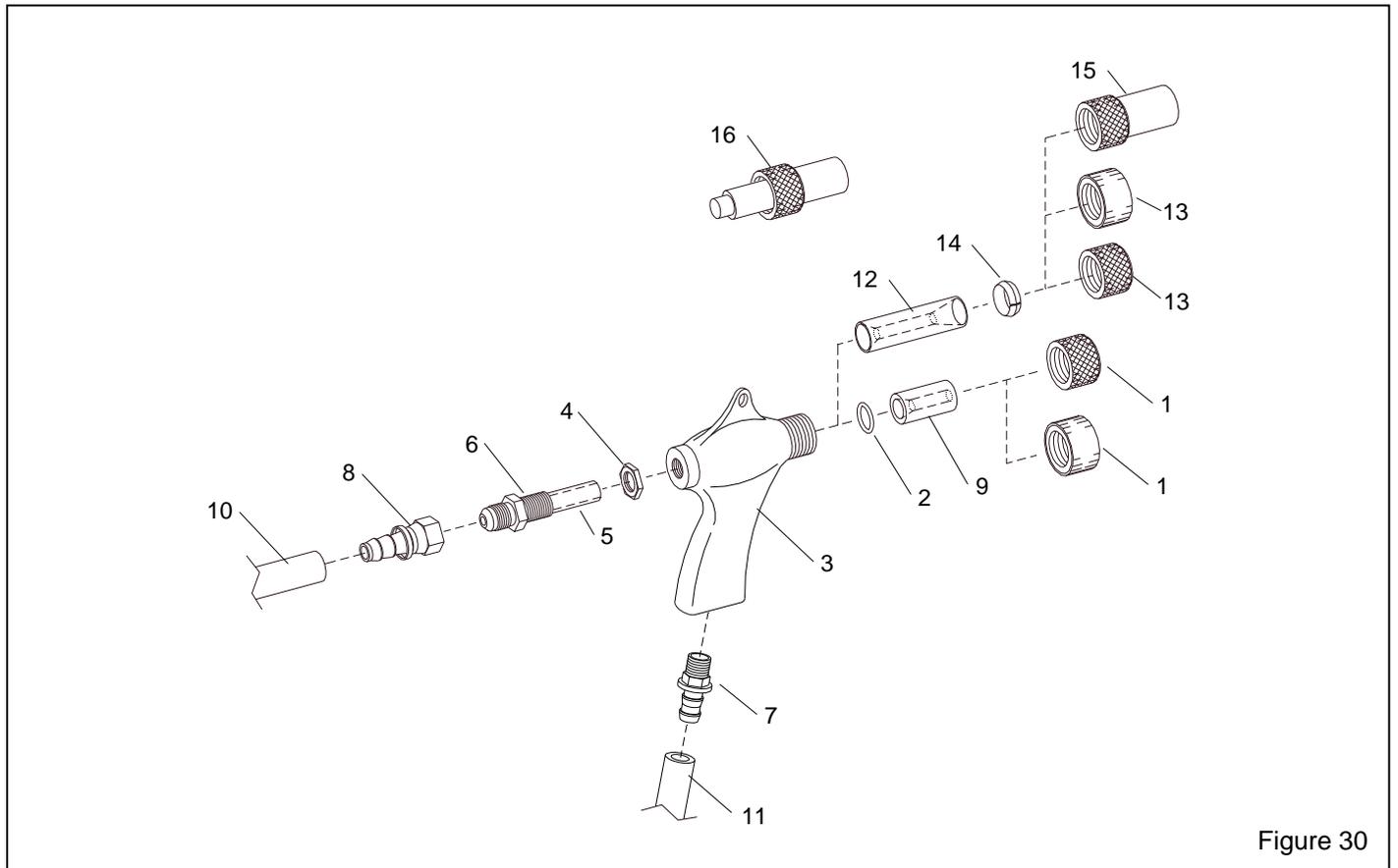
Figure 30

9.4 Cabinet Plumbing Assembly, Figure 31

Item	Description	Stock No.
1.	Valve, 3 way	12202
2.	Fitting, 1/8" NPT x 1/8" barb	11732
3.	Tubing, 1/8" urethane, specify ft. required	12475
4.	Tubing, 1/8" urethane twinline, specify ft. required	19577
5.	Adaptor, elbow 1/4" male NPT x 3/8 tube	11685
6.	Tubing, 3/8" OD poly, 5 ft. required	12478
7.	Tee, 1/8" barb	11734
8.	Regulator w/ gauge, 1/4"	12050
9.	Nipple, 1/8" NPT hex	01962
10.	Actuator, air pilot	19123
11.	Bushing, 1/2"x 1/4" NPT	01801
12.	Tee, 1/2" NPT	01787
13.	Bushing 1/2"x 1/8" NPT	11350
14.	Nipple, 1/2" close	01733
15.	Bushing 1/4"x 1/8" NPT	02010
16.	Bracket, mounting	19231
17.	Filter, 1/2" manual drain	01308
18.	Fitting, 1/2" NPT x 1/2" flare	11351
19.	Hose end, 1/2" barb x 1/2" female swivel	15002
20.	Hose end, 1/2" barb x 3/8" male NPT	06369
21.	Blow-off nozzle	13116
22.	Air hose, 1/2" specify ft. required	12472
23.	Gun assembly, BNP no. 5	12302
24.	Hose, media, clear urethane, specify feet required	12476
25.	Regulator, 1/2" pilot operated	11345
26.	Valve, diaphragm pulse	19578
27.	Regulator, 1/8" pilot	12715
28.	Gauge, pressure	01908
29.	Fitting, 1/8" NPT elbow x 1/8" barb	11733
30.	Metering valve assembly	12417
31.	Foot pedal with tubing	20194
32.	Nipple, 1/4" brass hex	02808
33.	Cross, 1/2" NPT	10254
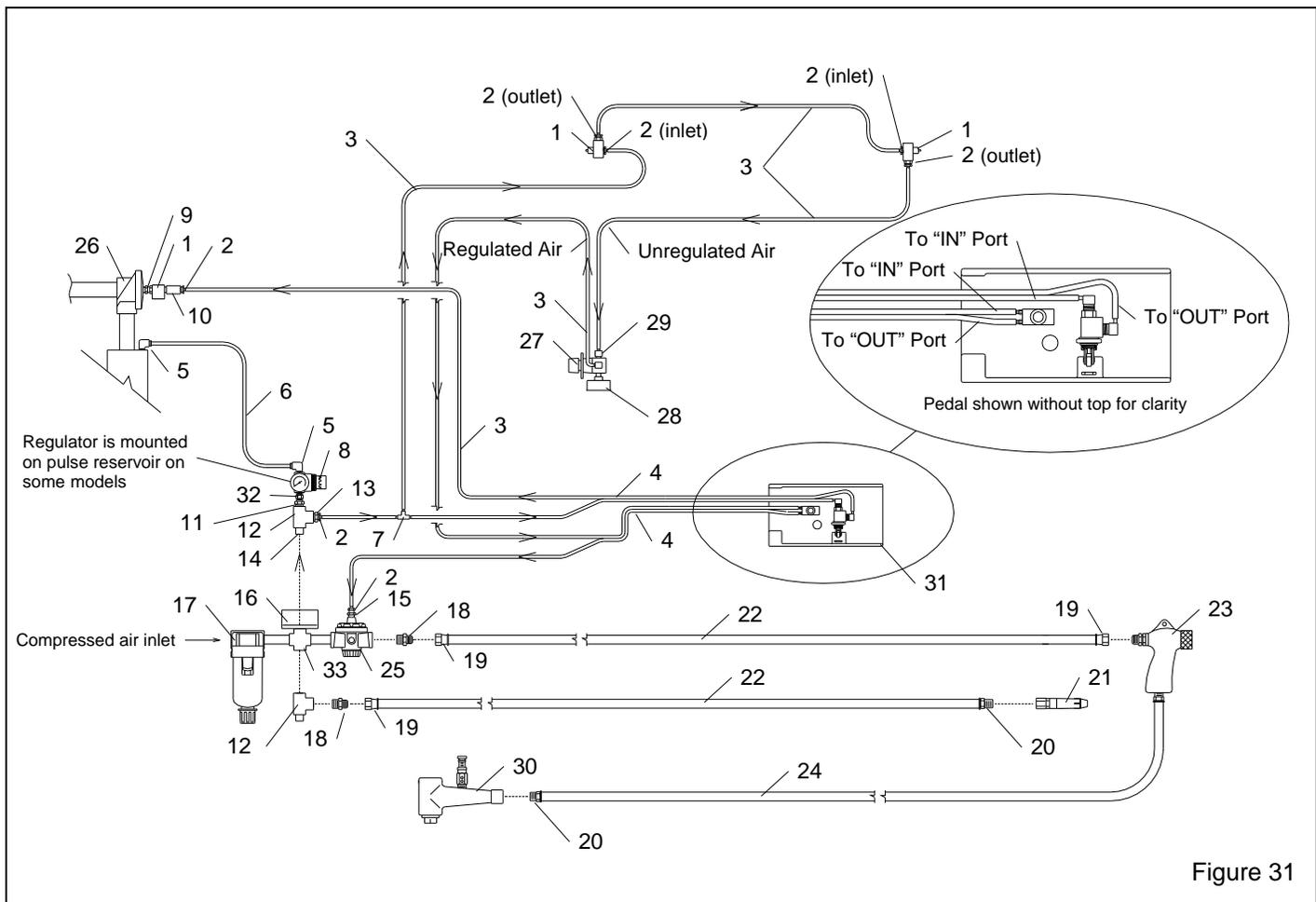
Figure 31

9.5 Cabinet Assembly, Figure 32

| Item	Description	Stock No.
1.	Gasket, door, per foot, specify ft. reqd.	00187
	Pulsar III requires 11 feet	
	Pulsar VI requires 13 feet	
2.	Left door assembly	
	for Pulsar III	20070
	for Pulsar VI	20074
3.	Right door assembly	
	for Pulsar III	20071
	for Pulsar VI	20075
4.	Grate	
	for Pulsar III	11811
	for Pulsar VI	11810
5.	Cover Lens, pkg. of 5	06190
6.	Window glass 12.5" x 19.5"	12212
7.	Gasket, 5/16" x 3/4", applied to cabinet	
	per foot, 6 feet required	00189
8.	Gasket, 5/32" x 3/4", apply to window frame	
	per foot, 6 feet required	00192
9.	Door latch assembly	20064
10.	Adaptor pipe, flex hose	
	4" for Pulsar III, Pulsar VI w/ Steel	23295
	5" for Pulsar VI	23296
11.	Gasket, flex hose adaptor pipe	
	4" for Pulsar III	23258
	4" for Pulsar VI w/ steel media	11780
	5" for Pulsar VI	23259
12.	Grommet, media/air hose	11798
13.	Glove, set	11215
14.	Glove, left only	12710
15.	Glove, right only	12711
16.	Clamp, glove clamp	11576
17.	Motor, exhauster	
	for Pulsar III, 1/2 hp	12308
	for Pulsar VI, 1 hp, 1-ph, standard	12314
	for Pulsar VI, 1 hp, 3-ph, optional	12310
18.	Paddle wheel	
	for Pulsar III	19232
	for Pulsar VI	19234
19.	Grommet, 1/4" ID x 1/2" OD	12762
20.	Motor plate	
	for Pulsar III	20229
	for Pulsar VI	20224
21.	Air valve, 3 way, door interlock	12202
22.	Over-travel stop, door interlock	20004
23.	Detent sleeve, door interlock	15042
24.	Actuator, adj., door interlock	19152
25.	Clamp, flex hose	
	4" for Pulsar III	11577
	5" for Pulsar VI	11578
26.	Hose, light-lined flex, specify feet required	
	4" ID, 6 ft. required	12466
	5" ID, 7 ft. required	12467
27.	Switch, toggle	12127
28.	Nut, plastic, window frame,	
	2 required on conventional, 4 on ergo	23035
29.	Gasket, hopper plate	20247
30.	Plate, hopper hose	21656
31.	Light assembly w/ cover	23255
32.	Gasket, light assembly, applied to cabinet	
	per foot, 7 ft. required	00187
33.	Foot pedal with tubing	20194
34.	Regulator, 1/8" NPT pilot	12715
35.	Gauge, pressure	01908
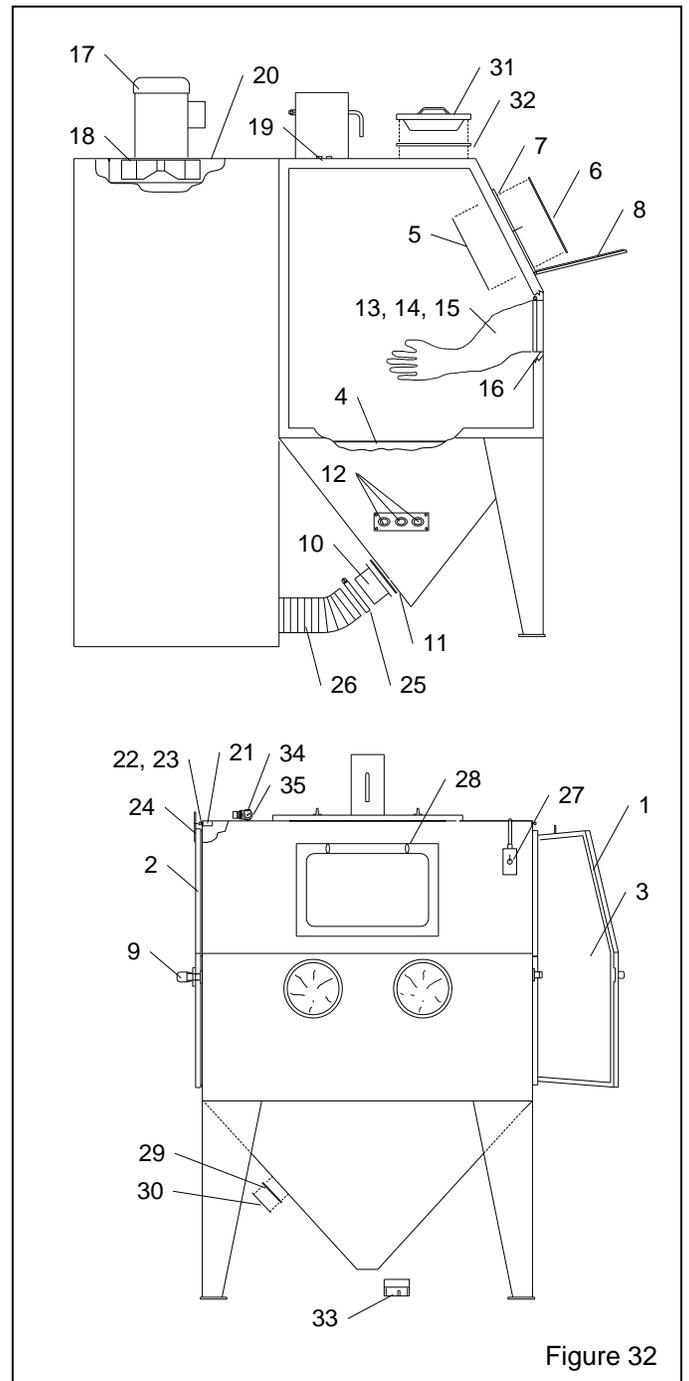
Figure 32

9.6   Light Shield Assembly, Figure 33

Item	Description	Stock No.
(-)	Light shield assembly, w/ cover	23255
1.	Light fixture does not include cover or tubes	24740
2.	Reflector lens	23253
3.	Tube, fluorescent, 17w	24741

Cover shown for reference

Figure 33

9.7   Metering valve assembly, Figure 34

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 34

9.8   Foot Pedal Assembly, Figure 35

Item	Description	Stock No.
(-)	Foot pedal with tubing	20194
1.	Foot pedal casting set, top and base	28379
2.	Bracket, valve mount	22858
3.	Air valve, 3-way, n/c (blast valve)	20026
4.	Valve, 3-way (pulse valve)	12202
5.	Drive pin, grooved	20109
6.	Cam follower	19576
7.	Screw, socket head, 1/4 nf x 3/4"	03086
8.	Screw, fh, 10-32 x 1/2"	19571
9.	Fitting, tube, 10-32 pipe x 1/8" barb	11731
10.	Fitting, 1/8" NPT elbow x 1/8" barb	11733
11.	Spring, 1-1/4" OD x 3-1/2"	20121
12.	Spacer	19258
13.	Tubing, 1/8" ID twin, per foot, 12 ft. req.	19577
14.	Roll pin, 1/8"	20479
15.	Screw, 8-32 x 3/8"	11389
16.	Bumper, neoprene	21522
17.	Tie, nylon wire	12139

Figure 35

9.9   Reclaimer Assembly for Pulsar III, Figure 36

Item	Description	Stock No.
(-)	Reclaimer assembly	20340
1.	Inlet pipe adaptor, for Pulsar III	12365
2.	Gasket, inlet pipe, for Pulsar III	11746
3.	Outlet adaptor, for Pulsar III	20343
4.	Gasket, 5/16" x 1" adhesive-backed, per foot, 4-feet required	00187
5.	Clamp, 6" hose	00750
6.	Hose, 6" flex, 2 feet required	12452
7.	Gasket, door	11745
8.	Debris screen	21265
9.	Door assembly, access	14271
10.	Latch assembly, door	12263
11.	Wear plate w/mounting screws	14060
12.	Metering valve	12417
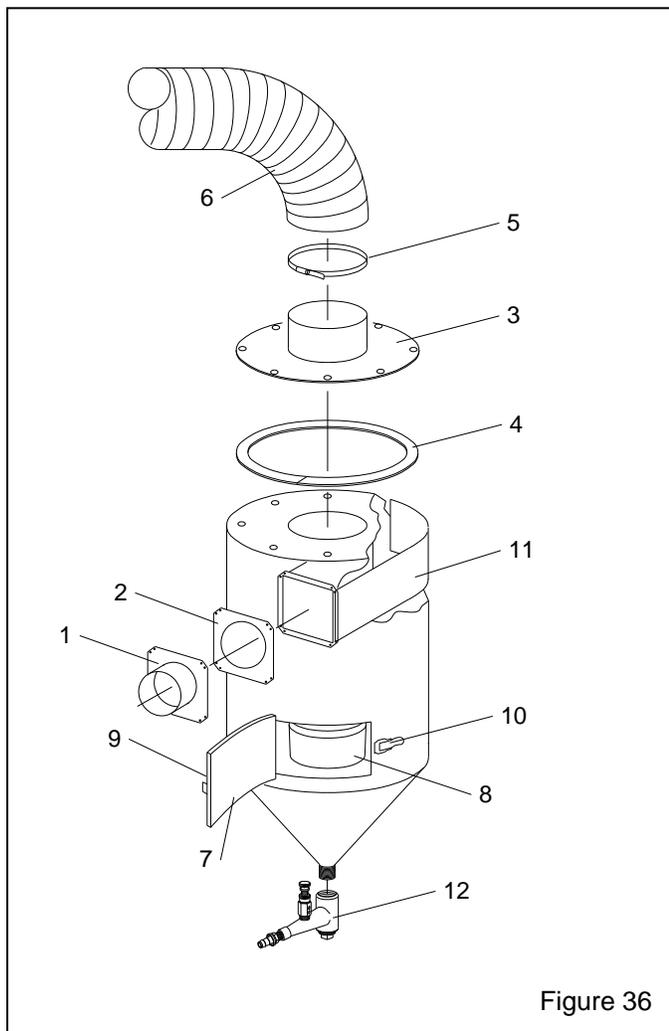
Figure 36

9.10   Reclaimer Assembly for Pulsar VI, Figure 37

Item	Description	Stock No.
(-)	Reclaimer assembly	22677
1.	Inlet pipe adaptor	
	5" for Pulsar VI	12361
	4" for Pulsar VI w/ steel media	12350
2.	Gasket, inlet pipe for Pulsar VI	11779
3.	Outlet adaptor for Pulsar VI	20344
4.	Gasket, 5/16" x 1" adhesive-backed, per foot, 4-feet required	00187
5.	Clamp, 6" hose	00750
6.	Hose, 6" flex, 3 ft. required	12452
7.	Gasket, door	11745
8.	Debris screen	21265
9.	Door assembly, access	14271
10.	Latch assembly, door	12263
11.	Wear plate w/mounting screws	13011
12.	Hopper, for Pulsar VI	21650
13.	Metering valve	12417
14.	Gasket, adhesive-backed 1/8" x 2," per foot, 5 feet required	13089
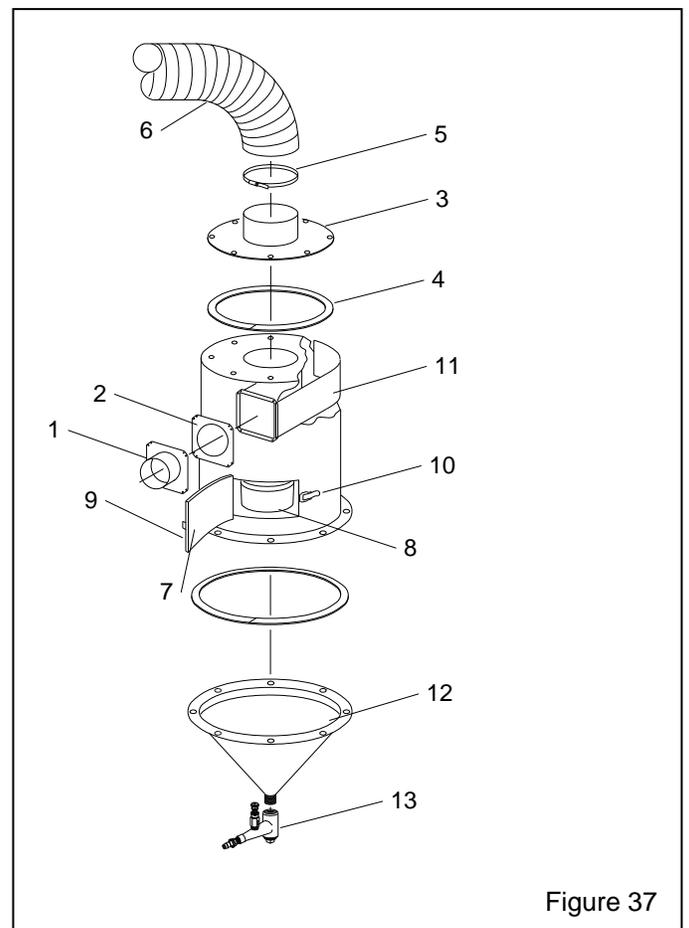
Figure 37

9.11   Dust Collector, Pulsar III, Figure 38

Item	Description	Stock No.
(-)	Repair kit, diaphragm pulse valve 21600	
1.	Valve, 1" diaphragm pulse 19578	
2.	Valve, 3 way 12202	
3.	Fitting, 1/8" NPT x 1/8" barb 11732	
4.	Nipple, 1/8" NPT hex 01962	
5.	Actuator, air pilot 19123	
6.	Fitting, straight, 1/4" NPT x 3/8 tube 11736	
7.	Petcock 01993	
8.	Filter cartridge, 9" x 26" 19122	
9.	Hopper Assembly, includes items 10 & 11 27047	
10.	Gasket, 5/16" x 1" adhesive-backed, per foot, 5-feet required 00187	
11.	Latch assembly 11876	
12.	Hose, 4" light-lined flex, 1 ft. min. order 12466	
13.	Clamp, 4" hose, each 11577	
14.	Dust container assembly includes items 12 & 13 23411	
15.	Washer, 1/2" ID x 1-1/16" OD 03515	
16.	Elbow, 1/4" brass st. 02027	
17.	Washer, 1/2" external lock 21699	
18.	Wing nut, 1/2" NC 20108	
19.	Nipple, 1/4" NPT hex 02808	
20.	Regulator w/ gauge, 1/4" 12050	
21.	Liners, dust container, pack of 5 28621	
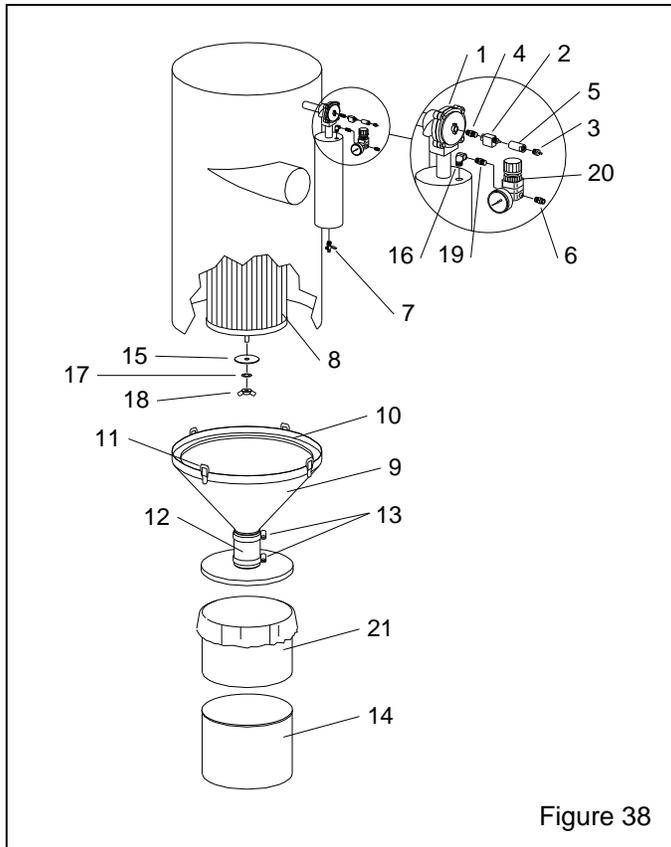
Figure 38

9.12   Dust Collector, Pulsar IV, Figure 39

Item	Description	Stock No.
(-)	Repair kit, diaphragm pulse valve 21600	
1.	Valve, 1" diaphragm pulse 19578	
2.	Valve, 3 way 12202	
3.	Fitting, 1/8" NPT x 1/8" barb 11732	
4.	Nipple, 1/8" NPT hex 01962	
5.	Actuator, air pilot 19123	
6.	Fitting, Straight, 4" NPT x 3/8 tube 11736	
7.	Petcock 01993	
8.	Filter cartridge, 12" x 30" 19121	
9.	Hopper Assembly, includes items 10 & 11............................24029	
10.	Gasket, 5/16" x 1" adhesive-backed, per foot, 7-feet required 00187	
11.	Latch assembly, each 11876	
12.	Hose, 4" light-lined flex, 1 ft. min. order 12466	
13.	Clamp, 4" hose, each 11577	
14.	Dust container assembly includes items 12 & 13 23411	
15.	Washer, 1/2" ID x 1-1/16" OD 03515	
16.	Elbow, 1/4" brass st. 02027	
17.	Washer, 1/2" external lock 21699	
18	Wing nut, 1/2" NC 20108	
19.	Liners, dust container, pack of 5 28621	

Figure 39