PULSAR SUCTION CABINETS
Model III & Model VI

ZERO
Blast Cabinets ®

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AND THIS INFORMATIONAL MATERIAL**

The products described in this material, and the information relating to those products, is intended for knowledgeable, experienced users of abrasive blasting equipment.

No representation is intended or made as to the suitability of the products described herein for any particular purpose of application. No representations are intended or made as to the efficiency, production rate, or the useful life of the products described herein. Any estimate regarding production rates or production finishes are the responsibility of the user and must be derived solely from the user's experience and expertise, and must not be based on information in this material.

The products described in this material may be combined by the user in a variety of ways for purposes determined solely by the user. No representations are intended or made as to the suitability or engineering balance of the combination of products determined by the user in his selection, nor as to the compliance with regulations or standard practice of such combinations of components or products.

It is the responsibility of the knowledgeable, experienced users of the products mentioned in this material to familiarize themselves with the appropriate laws, regulations and safe practices that apply to these products, equipment that is connected to these products, and materials that may be used with these products.

It is the responsibility of the user to insure that proper training of operators has been performed and a safe work environment is provided.

Our company is proud to provide a variety of products to the abrasive blasting industry, and we have confidence that the professionals in our industry will utilize

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OWNER'S MANUAL

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 Suction Blast Cabinets.

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 Z535.4-1998, 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 the user of this equipment of potential personal injury hazards.
Obey all safety messages that follow this symbol to avoid possible injury or death.

CAUTION

Caution used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

⚠ CAUTION

Caution indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

⚠ WARNING

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

⚠ DANGER

Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

1.3 General Description

1.3.1 The Pulsar cabinet encloses the blasting environment to provide efficient blast cleaning 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 three major components.

1. Cabinet Enclosure
2. Reclaimer
3. Cartridge Dust Collector

See Figure 1 for arrangement of components.

1.3.2 The Pulsar Suction Cabinet is available in two models. The Pulsar III has a model 300 reclaimer and dust collector. 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 When the air supply is on, and the cabinet doors are closed, 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. Air moving through the gun draws media into the blast gun mixing chamber. The media mixes with the air and is propelled out the nozzle. After striking the object being blasted, the blast media, along with fines, dust, and by-products generated by blasting, fall through the mesh work table into the cabinet hopper. These particles are drawn into the reclaimer for separation. Dust and fines are first separated from the reusable blast media. Next the media is screened of oversize particles, and returned to the reclaimer hopper for reuse. Dust and fines are drawn from the reclaimer into the dust collector which traps the dust, discharging clean air. When the foot pedal is released the blasting stops.
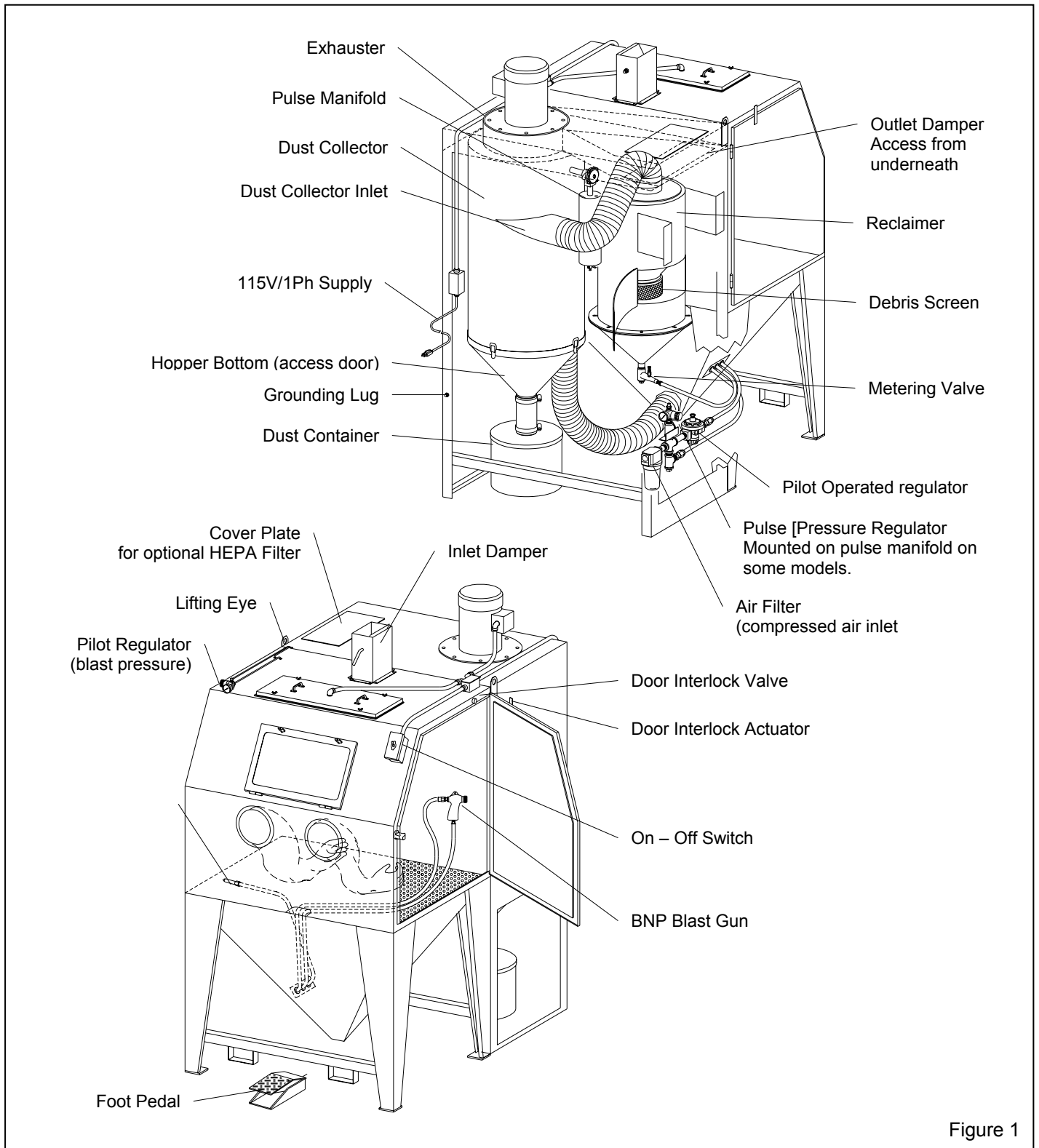
Exhauster

Pulse Manifold

Dust Collector

Dust Collector Inlet

Outlet Damper Access from underneath

Reclaimer

115V/1Ph Supply

Debris Screen

Hopper Bottom (access door)

Grounding Lug

Dust Container

Metering Valve

Pilot Operated regulator

Pulse [Pressure Regulator Mounted on pulse manifold on some models.

Air Filter (compressed air inlet

Cover Plate for optional HEPA Filter

Inlet Damper

Lifting Eye

Pilot Regulator (blast pressure)

Door Interlock Valve

Door Interlock Actuator

On – Off Switch

BNP Blast Gun

Foot Pedal

Figure 1

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 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). 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.

1.5   Nozzle Options

1.5.1   Unless otherwise specified at the time of order, cabinets are shipped with a 5/16" orifice ceramic nozzle and No. 5 (5/32" orifice) air jet. 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.

1.6   HEPA Filters

1.6.1   Optional HEPA after-filters provide additional filtration and <u>must</u> be used when removing lead coatings or <u>any</u> other toxic materials.

⚠ 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   Media

1.7.1   Pulsar cabinets utilize most common media, 180 mesh and coarser that is specifically manufactured for dry blasting. The usable media mesh size and nozzle size are based on typical media flow. Rich media flow or low static pressure will reduce the mesh and nozzle size that may be used.

1.7.2   Steel: Steel grit or shot cannot be used with the Pulsar III. Steel shot S-170 and finer or steel grit 40 mesh and finer may be used with the Pulsar VI. The conveying hose on cabinets using steel should be lined, and reduced one size from standard. Rubber curtains should be used to protect the cabinet walls from peening and rapid wear. Pulsar VI Cabinets can be ordered with conveying hose appropriately sized for steel grit, and with curtains installed. This special requirement must be specified at the time of order. They may also be field installed later. See Optional Accessories in Section 9.1

1.7.3   Sand and Slag: Sand should never be used because of the hazards of using media containing free silica. Slags are not recommended because they rapidly breakdown.

1.7.4   Aluminum Oxide, Silicon Carbide, and Garnet: Aggressive media such as these may be used,

but consideration must be given to the rapid wear on all parts of the cabinet, reclaimer, nozzle, and hoses, that comes in contact with the media. Use the optional aluminum oxide kit when any of these media are used. See Optional Accessories in Section 9.1.

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 the clumps.

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 specified otherwise, cabinets are supplied with a No. 5 (5/32" orifice) jet. See table in Figure 2 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 of jet and nozzle in applications that produce excessive dust may cause poor visibility.

Figure 2

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 clot and inhibits free flow through the feed assembly. If moisture problems persist, an air dryer may be required.

1.9   Electrical Requirements

1.9.1   Electrical requirements depend on the size and phase of the 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 voltage is 115, 1-phase, a power cord is supplied. If voltage is optional 230/460, 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 2.0.

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   See the table in Figure 3 to determine the minimum ID of air supply line. A smaller diameter hose may reduce blasting efficiency.

| | Jet Size | | |
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 3

2.2.2   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 cabinet.

2.4   Connect Electrical Service

⚠ **WARNING**

Shorting electrical components could result in serious electrical shocks, or equipment damage. All electrical work must be performed by a qualified electrician, and comply with applicable codes.

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.

2.4.1   If voltage 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 can cause electric shock and equipment damage.

2.4.2   If voltage 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.

⚠ **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 being ejected from the exhauster.

2.4.3   Check the rotation of the motor. To check, 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 be rotating clockwise when viewed from the fan end of the motor.

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. The initial settings are as follows:
    Pulsar III...........................align handle to 30 degrees
    Pulsar VI ....align handle to 0 degree (full open)
See 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.

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 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 eyelets, 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.

3.3 Manometer

3.3.1 Constant static pressure balance is necessary for precise separation, as the reclaimer's efficiency is accomplished by a centrifugal balance of particle weight and size. The air balance and static pressure are set by adjusting the outlet damper. The manometer measures static pressure. Use the instruction sheet provided with the manometer, for installation and operation. The optional manometer kit is listed in Section 9.1.

3.4 Turntable with Workcart and Track

3.4.1 Components of the track and turntable are shown in Figure 4. The assembly consists of:
1. The inside track assembly, which is placed inside the cabinet.
2. The hinged, track extension which is attached to the table, and swings up to clear the door.
3. The track support table.
4. Turntable and workcart assembly.

Inside Track
Turntable and Workcart
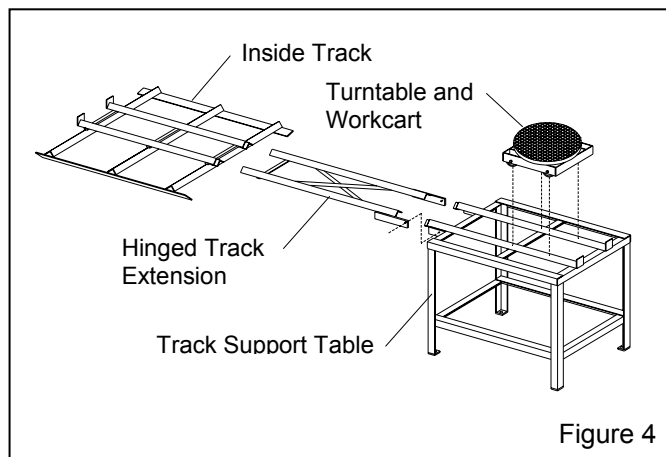Hinged Track Extension
Track Support Table

Figure 4

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.

3.4.2 Place the inside track in the cabinet over the existing grate as shown in Figure 5.
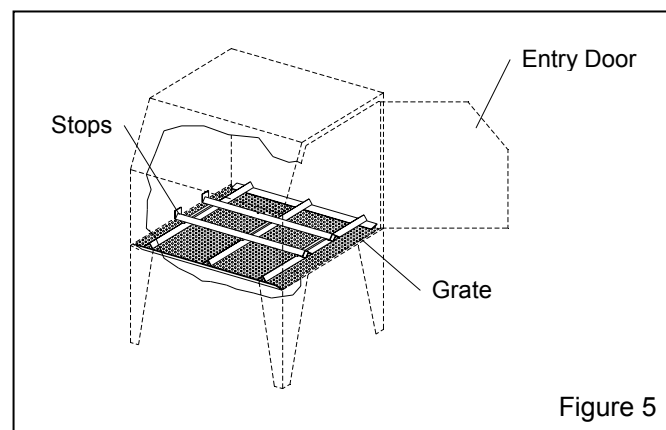

Entry Door
Stops
Grate

Figure 5

3.4.3 Position the track support table and extension as shown in Figure 6. 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.

3.4.4 Holes are provided on the track table leg pads, to permit anchoring when needed.

3.4.5 Raise the track extension to allow opening and closing of the door.

The Hinged Extension must rest on the inside track support angles when lowered.

Extension

Support Angles

Figure 6
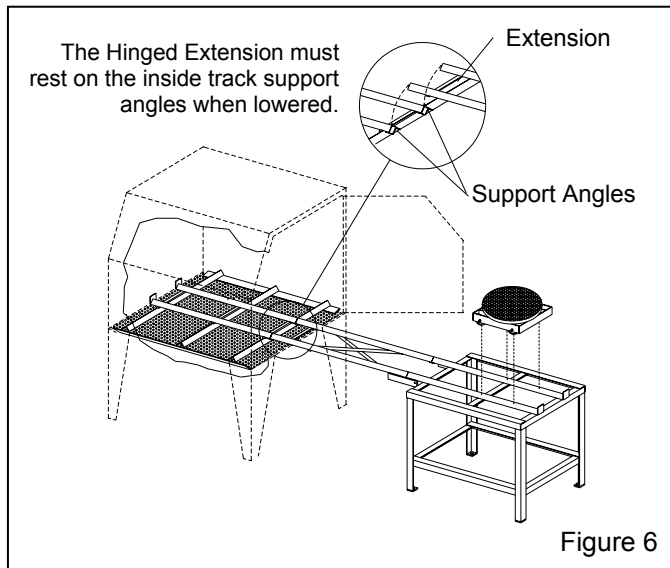
4.0 OPERATION

4.1 Season Filter Cartridge

CAUTION

Do not pulse new dust collectors and cartridges until the cartridge is seasoned. See Section 7.8. Premature pulsing decreases the efficiency of collector and cartridge life.

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 past 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 reclaimer and cabinet of media, allow all media to be 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 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 Load and unload parts through either door.

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

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

4.3.4 Close door. Be certain door is sealed securely, or door interlock system will prevent blasting.

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 doors are opened, or exhauster is switched off.**
- **After blasting, keep doors closed and blower on 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 Adjust the pulse pressure regulator to 60 psi. See Figure 1 for location.

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

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

4.4.5 Load parts.

4.4.6 Close door. Be certain door is sealed securely, or door interlock system will prevent blasting.

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 blasting small parts, use a solid back rest for the part. Without this assist, especially with longer blasting operations, the operator will tire easily from resisting blast pressure. Whenever possible avoid holding small parts that will require blasting into the glove.

4.4.9 When blasting very 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 collector or exhauster. Check that the cartridge is correctly seated and not damaged. Prolonged breathing of any dust could 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 risk vary with type of media and dust generated by blasting. Identify all material being removed by blasting, and obtain a material safety data sheet for the blast media.

4.5   Stop Blasting

4.5.1 To stop blasting, remove pressure on 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 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 used for delicate work. In all cases, highest production can be achieved only when pressure is carefully monitored.

5.1.2 To adjust, unlock the knob, and turn it clockwise to increase pressure or counter-clockwise to decrease pressure. Pressure will usually drop from closed-line pressure when blasting is started. Once operating pressure is set, lock the knob to maintain the setting.

5.2   Air Jet Adjustment

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 hold the jet in place. See Sections 9.1 or 9.5 for optional adjusting tool.

5.3 Media/Air Mixture, Figure 7

5.3.1 Check the media stream for correct media/air mixture; media flow is smooth and appears as a light mist coming from the nozzle.
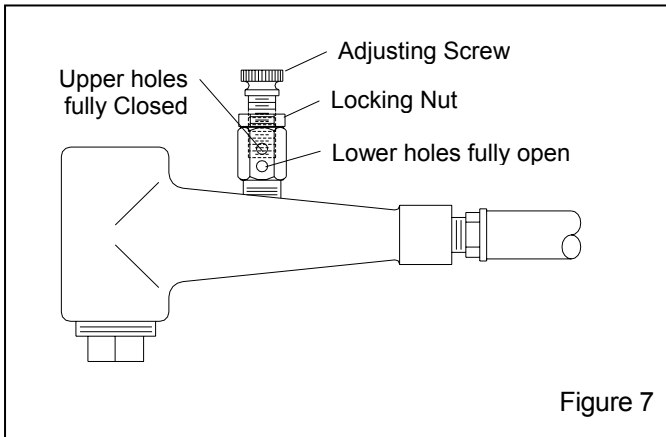
Figure 7

5.3.2 If media does not flow smoothly, loosen the locking nut, and adjust the metering screw until the upper holes in the metering stem are closed-off, and the lower holes are fully open. See Figure 7. 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 locking nut and slowly turn the adjusting screw out (counterclockwise when viewed from the top) until the media flows smoothly. Tighten the locking 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 locking 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 cabinet top (See Figure 1). 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 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 dust removal without media carryover.

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 The following are static pressure starting points for given media. Static pressure may need to be lower with finer media, higher with coarser media.

Glass Bead No. 8 to 10 ....2-1/2 - 3"
Alox. 60 & coarser .... 4 - 5"
Alox. 80 & finer ....2-1/2 - 3"

5.4.4 As the cartridge develops a cake of dust, the static pressure will drop, 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 8

⚠ 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.

Figure 8
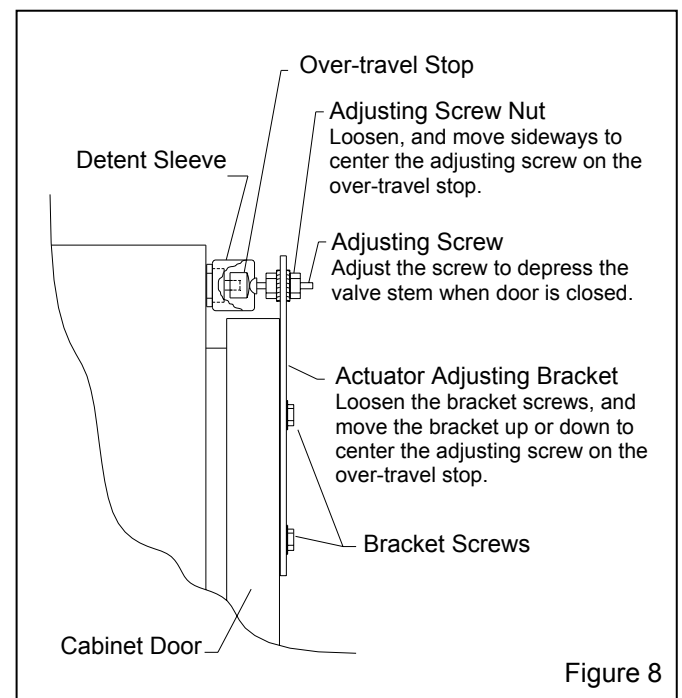
5.5.3 Loosen the actuator bracket screws and adjusting screw nut. Move the actuator adjusting bracket up or down, and the adjusting screw sideways, to center the adjusting screw on the over-travel stop. Tighten the bracket screws.

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 the doors are 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

5.6.1 Adjust pulse pressure using the regulator mounted on the pulse manifold or inlet regulator assembly (see Figure 1). Begin pulse at 60 psi.

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. As dust cakes on the cartridge, the differential pressure increases. Using a manometer to measure the differential pressure is a good way to tell if the cartridge is heavily caked.

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 as noted in Section 5.3, which is controlled by the outlet damper. 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 decrease 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.

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 material safety data sheet 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 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 cover. The cover's flexible inlet hose allows easy removal. Remove the container and dump the contents into a suitable disposal container. Replace the container being certain the cover is in place.

NOTE: Blasting media is usually non-toxic, however, some materials being removed by the process may be. Check with proper authorities for disposal restrictions.

6.3   Pulse Manifold

6.3.1 Open the petcock to drain water from the pulse manifold before and after each use. See Figure 13 for the location of the drain petcock.

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 best way to install a cover lens is to remove the window from the cabinet. If, for some reason, it is not helpful to remove the window, the lens may be applied with it in place.

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

6.7 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. If moisture continues to be a problem, a dryer or after cooler may be required in the air supply.

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 emptying the dust bag or collector 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. Identify all material being removed by blasting, and obtain a material safety data sheet for the blast media.

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 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 from the gun end, 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 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: 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 optional view window cover lens per Section 6.6.

7.3.5   Set the new window (cover lens down) squarely over the window opening, ensuring that all edges of the window are centered and overlapping the window gasket, and that the window is resting on the lower locators.

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

7.4   Window Gasket Replacement, Figure 9

7.4.1   Replace the window frame gasket and cabinet window opening gasket at the first sign of media leakage around the view window, or if gaskets appear damaged. Check the gaskets when changing the view window.

7.4.2   Remove the window and window frame per Section 7.5.

5/16" x 3/4" Gasket

Cabinet Front

5/32" x 3/4" Gasket

Window Frame

Figure 9
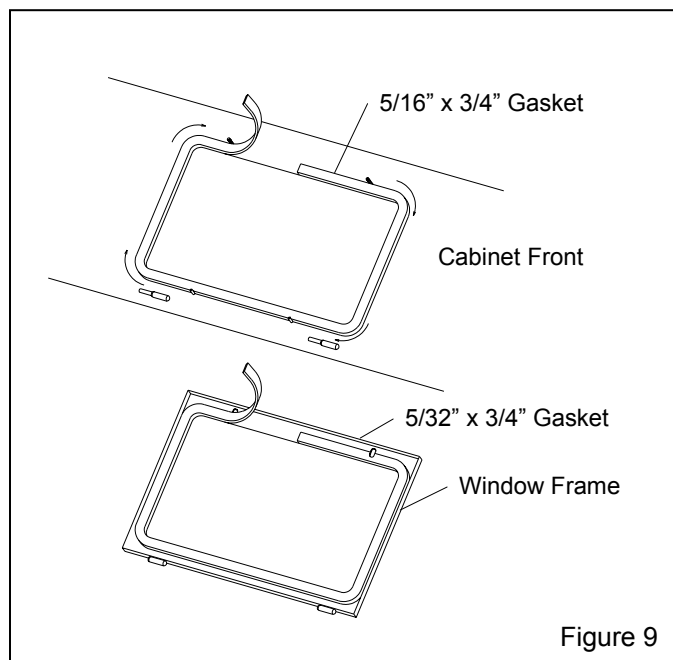
7.4.3   Remove all the old gasket material and clean the surfaces of the cabinet and window frame.

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 9. Peel additional backing as needed, and work the strip around the radius of each corner, pressing it tightly 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 bolts slots, as needed.

7.5   Window Frame Removal, Figure 10

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   Slide the frame to the right, to remove. The hinges separate as shown in Figure 10.

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.

Slide the frame to the right to separate the hinges.

Figure 10
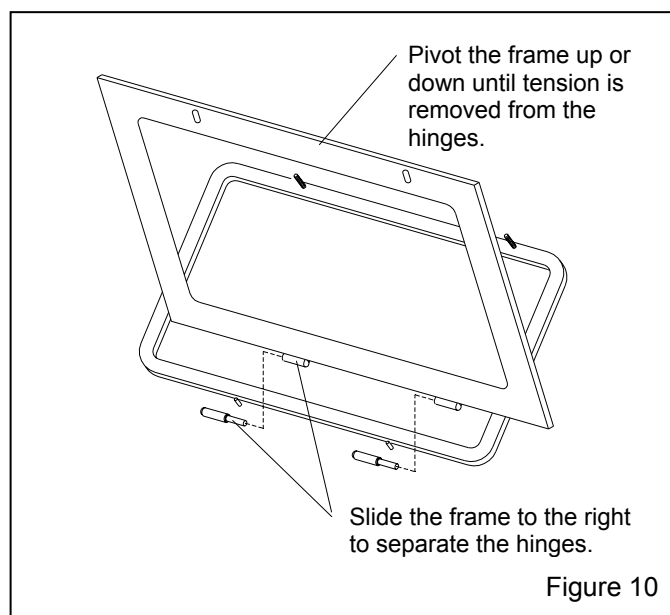
7.5.6   Set the window squarely over the window opening, ensuring that all edges of the window are centered and overlapping the window gasket, and resting on the lower locators.

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 holding wing nuts, and use the handles to lift the fixture off the cabinet, as shown in Figure 11.

Figure 11
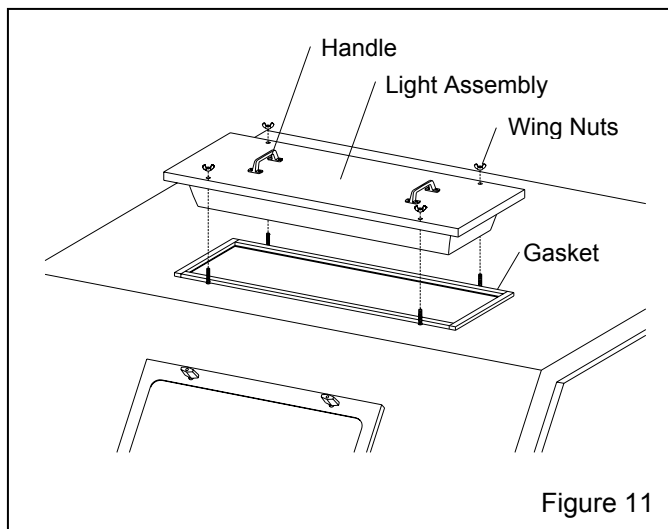
7.6.2.2 Remove all the old gasket material and clean the surfaces of the cabinet.

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 11. Press the gasket tightly to bond. Repeat the process for each side, compressing the ends to seal.

7.6.3   Lens and Tube Replacement

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

7.6.3.2 Flip the assembly over to access the lens screws, ref. Figure 12.

7.6.3.3 Remove the four lens screws and remove the lens.

7.6.3.4 Replace the lens or tubes as required.
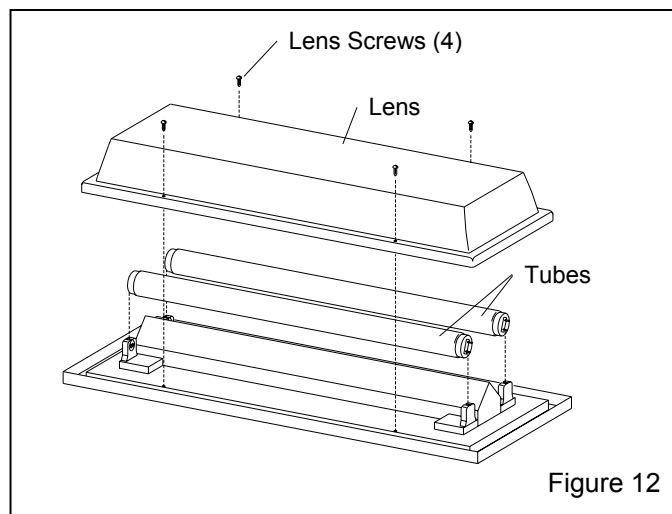
Figure 12

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 13

⚠ 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 material safety data sheet for the blast media.

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

7.7.2   Unlatch and remove the dust collector hopper bottom.

7.7.3   Remove the cartridge retaining nut, washer, and gasket.

7.7.4   Slide the cartridge straight down until it clears the holding bar. A small amount of rocking may be necessary to break the gasket seal of the cartridge.

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

Cartridge Sealing Gasket

Filter Cartridge

Retaining Nut

Latch (4)

Drain

Hopper Gasket

Hopper Bottom (access door)

Dust Container

Figure 13

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

7.7.7 Check the collector hopper gasket for any condition that will prevent the gasket from sealing. Replace the gasket if necessary.

7.7.8 Attach the hopper bottom, and latch in place.

7.7.9 Season cartridge per Section 7.8.

7.8   Seasoning Cartridges

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 stop the pulse, turn the pulse regulator off (to 0 psi).

7.8.3 Operate the cabinet without pulsing for about two hours, or until visibility decreases, which ever 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 cabinet.

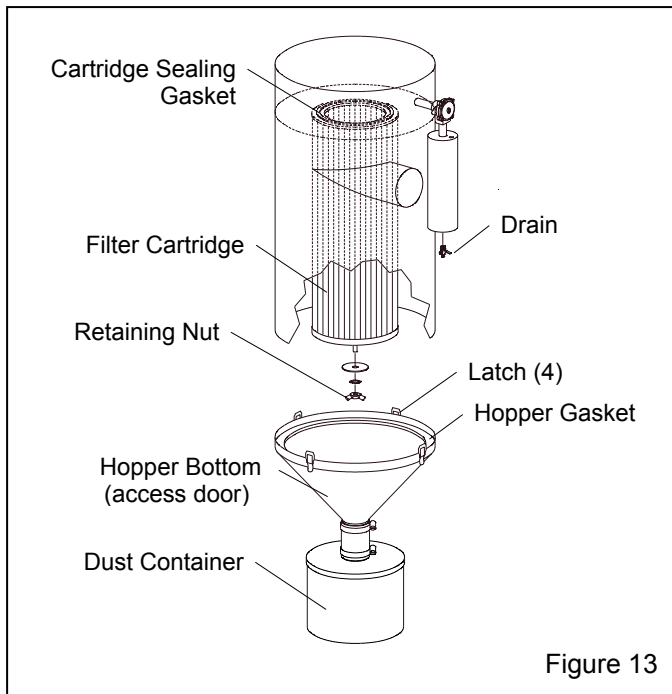**7.9.2** Remove the reclaimer inlet adaptor and old wear plate. The wear plate is held in place by screws attached from the outside of the reclaimer. Angle the new wear plate into the reclaimer inlet until it is in position with the straight end at the reclaimer inlet. Using a board or similar object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

wear plate against the inner wall of the reclaimer and install sheet metal screws to hold in place. Caulk gaps or voids around the wear plate to prevent rapid wear in those areas.

8.0   TROUBLESHOOTING

⚠ WARNING

To avoid serious injury, observe the following when troubleshooting.

- **Turn off the air, and lock-out and tag-out 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 dust container. Cycle pulse several times. Inspect and replace the cartridge if necessary.

8.1.2 Motor rotating backwards. The motor should rotate as indicated by the arrow on the housing. If it does not rotate in the proper direction, LOCK-OUT AND TAG-OUT POWER and switch the motor leads as shown on the motor plate. See Section 2.4.3.

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

8.1.4 Outlet damper closed too far restricting air movement in cabinet. Adjust static pressure per Section 5.4.

8.1.5 Inlet damper requires opening. Restrictions at the inlet damper reduces air movement in the cabinet. Open damper per Section 2.5 and 5.7.

8.1.6 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.

8.1.7 Reclaimer door open.

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

8.2   Abnormally High Media Consumption

8.2.1   Door on reclaimer open, or improper fit or worn door gasket. Air entering the reclaimer at this point will cause media to be carried into 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 and fill if low.

8.3.2   Incorrect metering valve adjustment. Adjust 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 line or gun. Blockage may occur as a result of a missing debris screen, incorrect metering valve adjustment permitting heavy media flow. Check metering valve adjustment 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 bridges 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 moisture in the compressed air line, or from absorption.

8.5.2   To avoid contaminating media from the workpiece, 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. If the problem persists, it may be necessary to change media more often, or install an aftercooler or air dryer.

8.5.4   Absorption. Some media tends to absorb moisture from the air, especially fine-mesh media in high humidity areas. 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 prevent bridging of fine-mesh media.

8.6   Neither Media Nor Air Comes Out The Nozzle When The Foot Pedal Is Pressed.

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

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

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

8.6.4   Check that lines are not reversed on the foot pedal or pilot regulator. See schematic in Figure 18.

8.6.5   Pressure regulator may be turned down or off. Check pressure on pilot regulator.

8.6.6   Make sure the air compressor is on and air supply valves are open.

8.6.7   Nozzle Plugged. See Section 8.4.

8.7 Blasting Does Not Stop When The Foot Pedal Is Released

8.7.1 Make sure the 3-way valve in the foot pedal exhausts air when the pedal is released. If it does not, check the line for blockage, and check the switch for defect.

8.8 Blockage In Media Hose

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

8.8.2 Wet or damp media. See Section 8.5.

8.9 Media Surge

8.9.1 Heavy media flow. Adjust per Section 5.3.

8.10 Poor Suction In Media Hose

8.10.1 Inadequate air supply. Check the charts in Figures 2 and 3.

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

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

8.10.4 Blockage in media hose or nozzle. See Section 8.4 and 8.8.

8.10.5 Wrong size combination air jet and nozzle. See chart in Figure 2.

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

8.11 Blow-Back Through Media Hose

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

8.11.2 Air jet may be too large for nozzle. See table in Figure 2.

8.12 Static Shocks

8.12.1 Cabinet and/or operator not grounded. Abrasive blasting generates static electricity. The cabinet must be 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.

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

8.13 Dust Leaking From Dust Collector

8.13.1 Damaged or loose cartridge. Inspect filter cartridge.

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

9.0 ACCESSORIES and REPLACEMENT PARTS

9.1 Optional Accessories (field installed)

Description	Stock No.
Pass-thru door, with 15 inch square cut-out	
Right door	
for Pulsar III	23610
for Pulsar IV	23612
Left door	
for Pulsar III	23611
for Pulsar IV	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 IV	23532
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

Rubber curtains, white
    Rubber curtain set
        for Pulsar III 23541
        for Pulsar IV 23542

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 eyelets and curtain hardware.
    for Pulsar III 14241
    for Pulsar VI 14133

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:
    Wide spray nozzle nut 11916
    Wide spray retaining ring 12038
    Wide spray nozzle guard 12295

HEPA filter assembly 22807
Tumble basket, 2 gallon 12227
Automatic pulse kit 21773
Adjusting tool, air jet (orifice) 19041
Manometer kit 12528
Window cover lens, pkg. of 5 06190
Lock pins (pkg of 25) for twist-on hose couplings 11203

20" Turntable, with bearing, 250 lb. capacity 12411

20" Turntable, without bearing, 25 lb. capacity 12412

30" Turntable, with bearing, 500 lb. capacity
    for Pulsar VI 14138

20" Turntable, work cart and track assembly,
  500 lb. capacity
    for Pulsar III 13530
    for Pulsar VI 12835

Turntable with Bearing, 20" 250 lb. Capacity
Figure 14

Item	Description	Stock No.
1.	Turntable, 20" diameter less base	18329
2.	Bearing, 1-1/2" bore	11517
3.	Protector, bearing	13479
4.	Screw, 1/2-NC x 1-1/2" cap	03454
5.	Lock-washer, 1/2"	03516
6.	Nut, 1/2-NC hex	03511
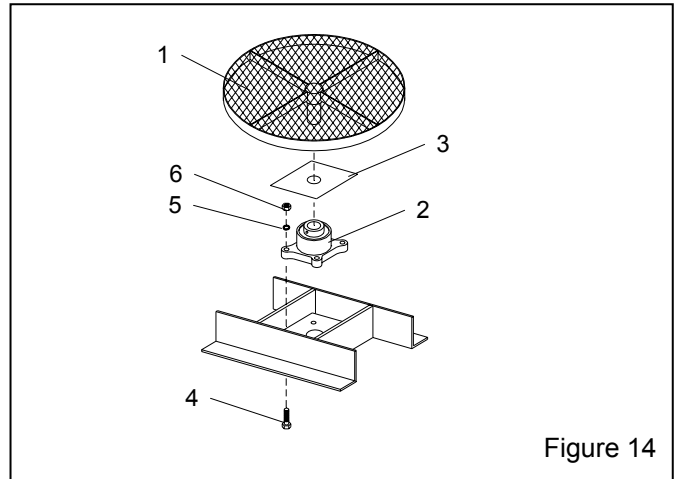
Figure 14

Turntable with Workcart and Track, 500 lb. Capacity, Figure 15

Item	Description	Stock No.
1.	Turntable, 20" diameter	18329
2.	Bearing, 1-1/2" bore	11517
3.	Protector, bearing	13479
4.	Screw, 1/2-NC x 1-1/2" cap	03454
5.	Lock-washer, 1/2"	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 15

9.2   Optional Extension Nozzles, Figure 16

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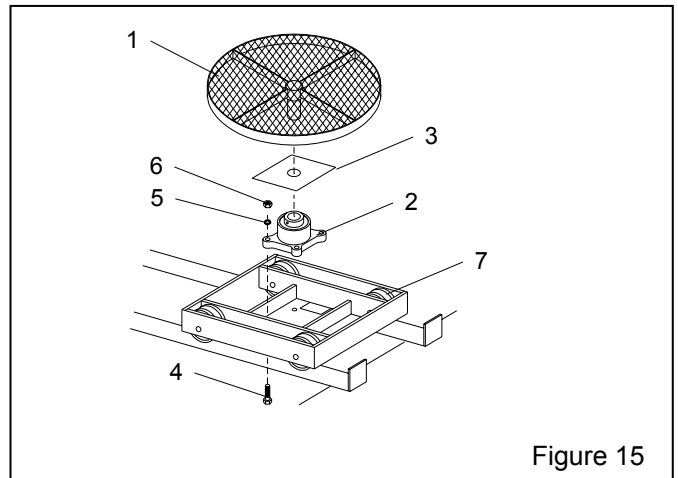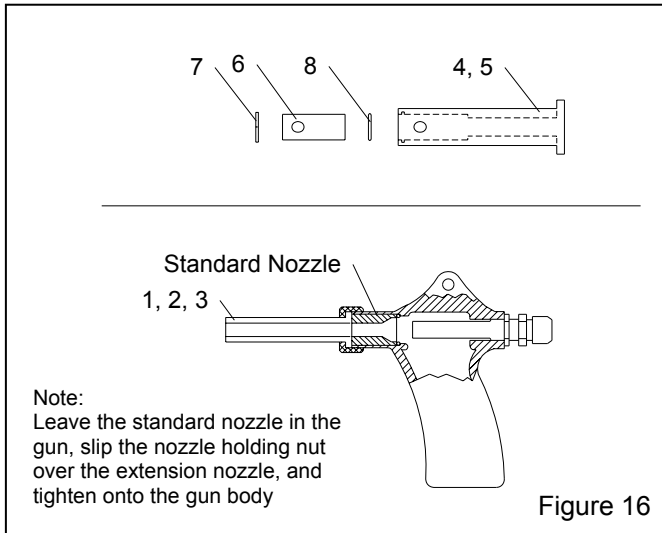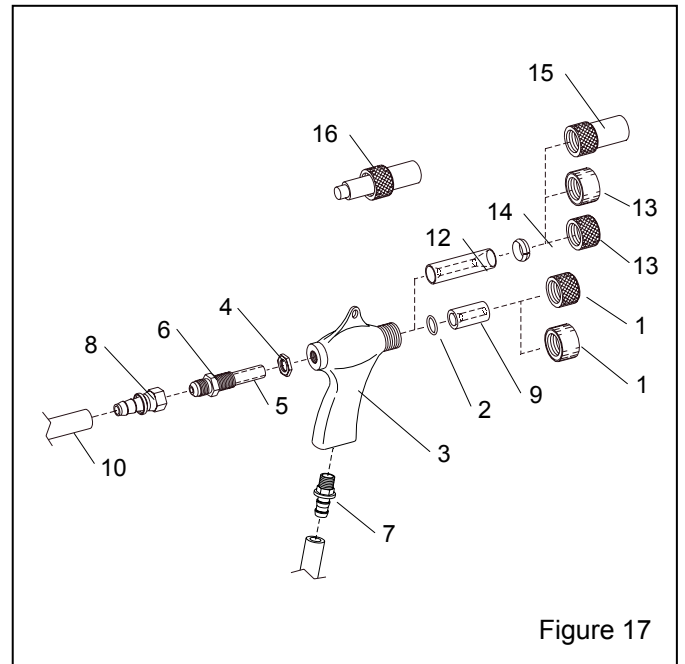
Figure 16

9.3   BNP Gun and Feed Assembly, Figure 17

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.   Orifice adjusting tool 19041

Figure 17

9.4   Cabinet Plumbing Assembly, Figure 18

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	11831
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
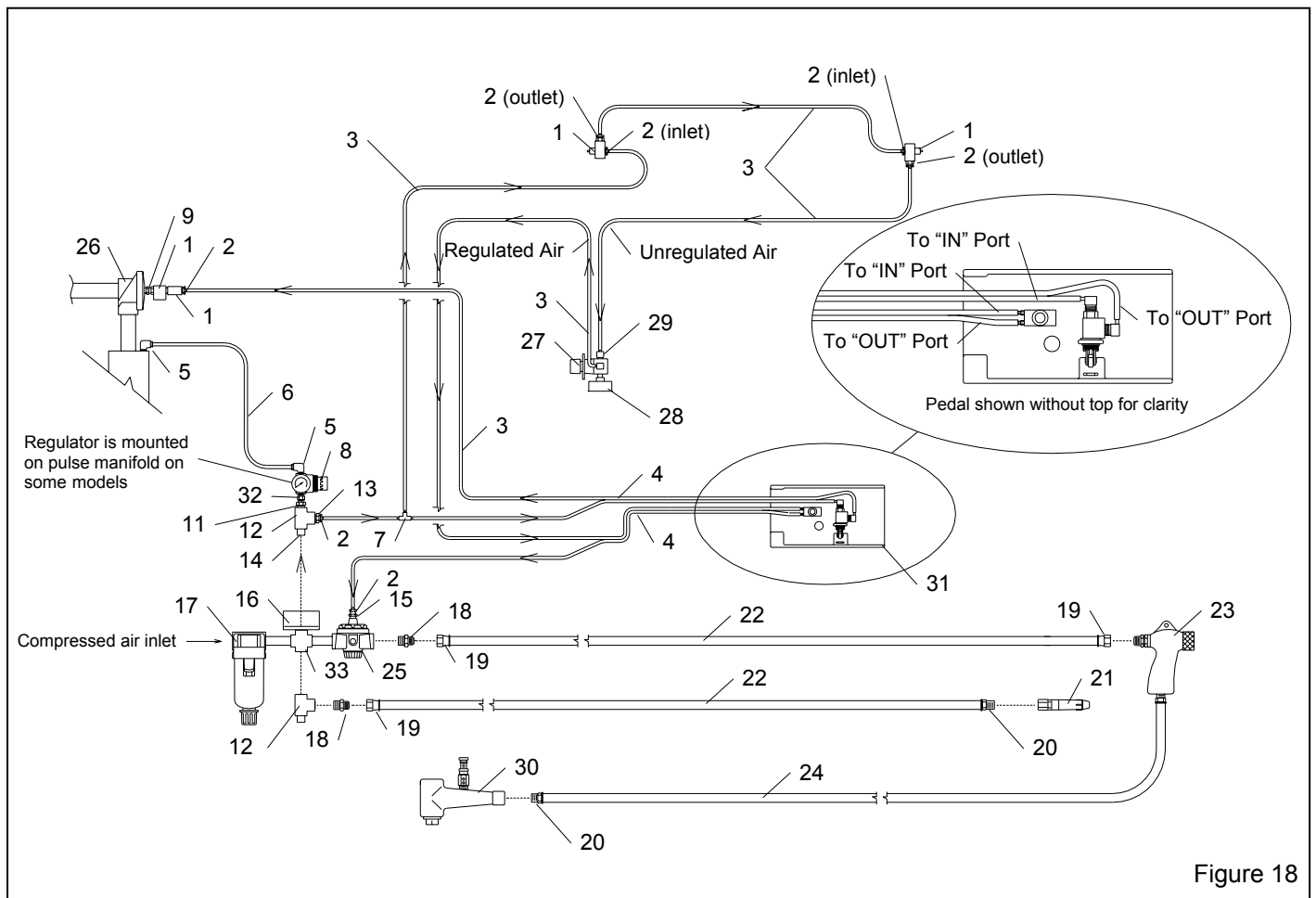
Figure 18

9.5   Cabinet Assembly, Figure 19

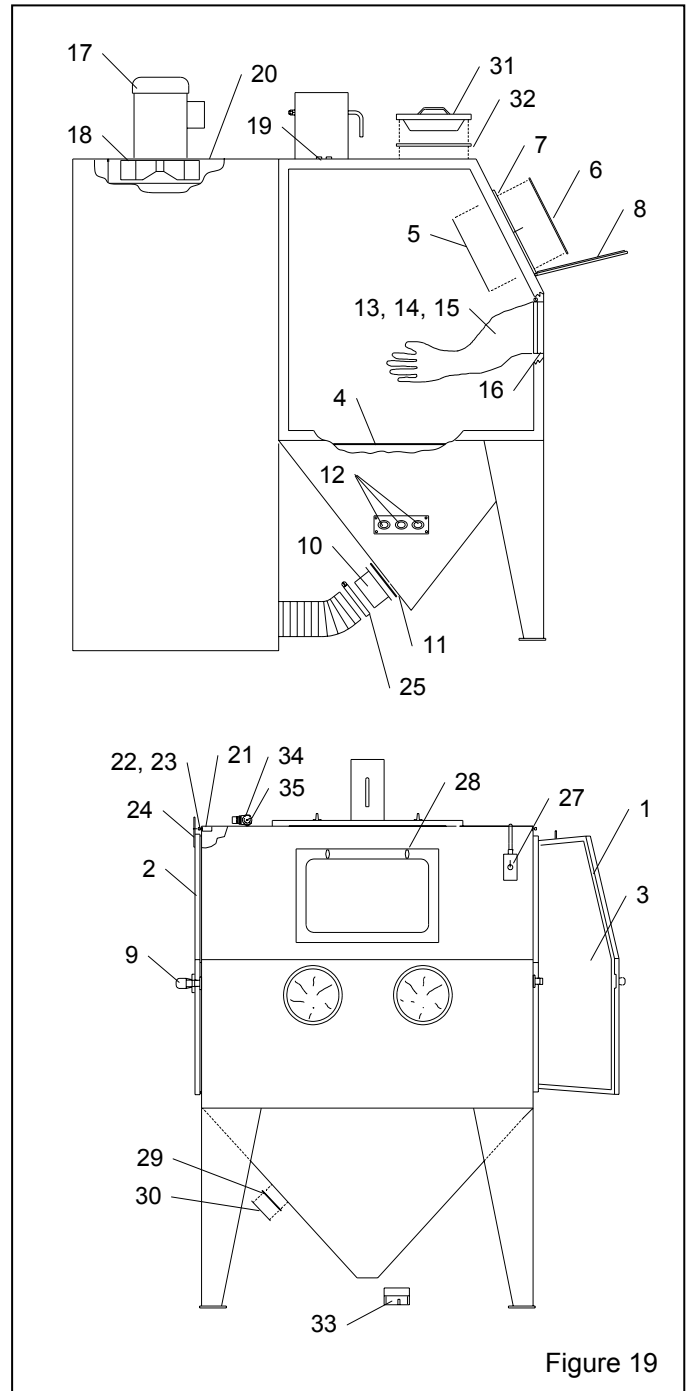| Item	Description	Stock No.
1.	Gasket, door, per foot, specify feet reqd.	00187
	Pulsar III requires 11 feet	
	Pulsar VI requires 13 feet	
2.	Left door assembly	
	for Pulsar III	20070
	for Pulsar VI	20074
3.	Right door assembly	
	for Pulsar III	20071
	for Pulsar VI	20075
4.	Grate	
	for Pulsar III	11811
	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", applied to window frame	
	per foot, 6 feet required	00192
9.	Door latch assembly	20064
10.	Adaptor pipe, flex hose	
	for Pulsar III, 4"	23295
	for Pulsar VI, 5"	23296
11.	Gasket, flex hose adaptor pipe	
	for Pulsar III, 4"	23258
	for Pulsar VI, 5"	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 IV	11578
26.	Hose, light lined flex	
	4" ID for Pulsar III, per foot, 6 ft. reqd.	12466
	5" ID for Pulsar IV, per foot, 7 ft., reqd.	12467
27.	Switch, toggle	12127
28.	Nut, plastic, window frame, 2 required	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 19

9.6   Light Shield Assembly, Figure 20

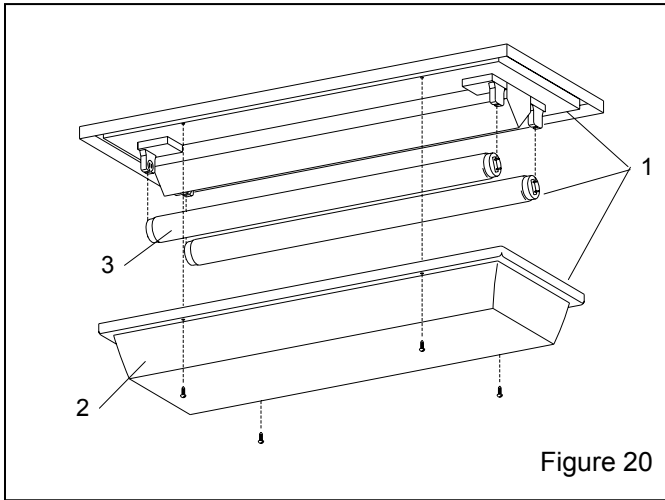| Item	Description	Stock No.
(-)	Light shield assembly, w/ cover complete	23255
1.	Light fixture (assembly less cover)	23251
2.	Reflector lens	23253
3.	Tube, fluorescent, 20w	23252

Figure 20

9.7   Foot Pedal Assembly, Figure 21

Item	Description	Stock No.
(-)	Foot pedal with tubing	20194
1.	Pedal top	20017
2.	Pedal bottom	19991
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
18.	Bracket, valve mount	22858
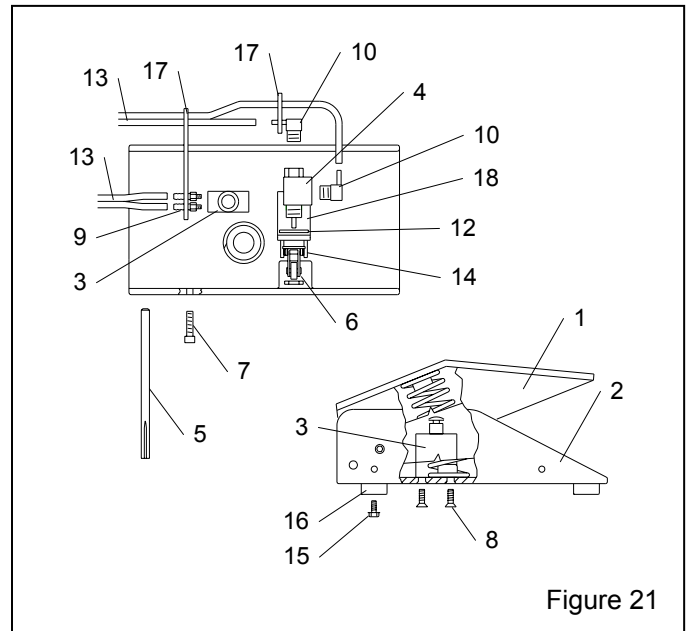
Figure 21

9.8   Metering valve assembly, Figure 22

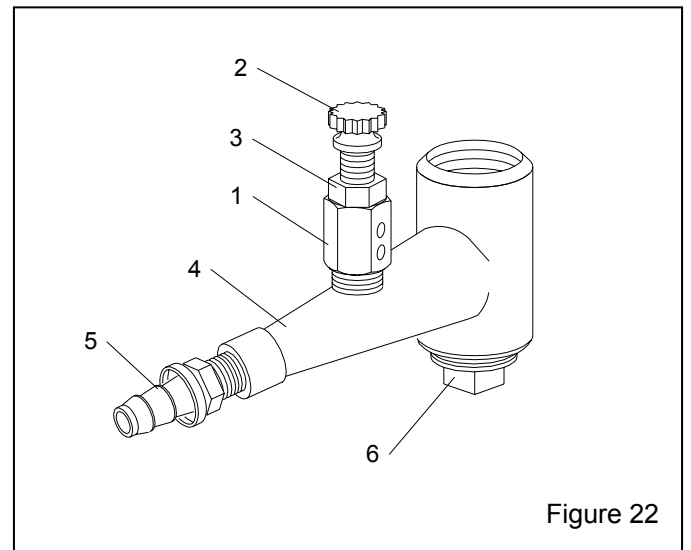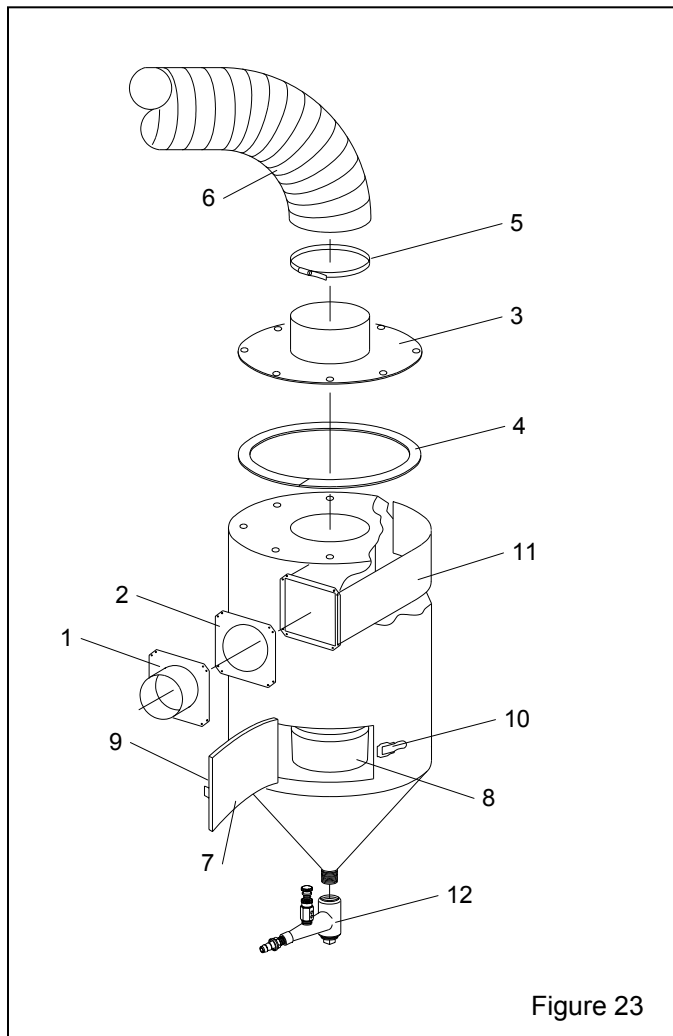| Item	Description	Stock No.
(-)	Metering valve, complete	12417
1.	Stem, metering adjusting	23097
2.	Screw, adjusting	23098
3.	Nut, adjusting stem lock	23099
4.	Body, metering valve	11532
5.	Fitting, hose, 3/8" NPT x 1/2" barb	06369
6.	Plug, metering valve	12011

Figure 22

9.9 Reclaimer Assembly for Pulsar III, Figure 23

Item	Description	Stock No.
(-)	Reclaimer, for Pulsar III, complete	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, (4 ft. required)	00187
5.	Clamp, 6" hose	00750
6.	Hose, 6" flex, 2 ft. required	12452
7.	Gasket, door	11745
8.	Debris screen	21265
9.	Door assembly, access	14271
10.	Latch assembly, door	12263
11.	Wear plate for Pulsar III	14060
12.	Metering valve	12417

9.10 Reclaimer Assembly for Pulsar VI, Figure 24

Item	Description	Stock No.
(-)	Reclaimer, Pulsar VI	22677
1.	Inlet pipe adaptor for Pulsar VI	12361
2.	Gasket, inlet pipe for Pulsar VI	11779
3.	Outlet adaptor for Pulsar VI	20344
4.	Gasket, 5/16" x 1" adhesive backed, (4 ft. 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 for Pulsar VI	13011
12.	Hopper, for Pulsar VI	21650
13.	Metering valve	12417
14.	Gasket, adhesive backed 1/8" x 2" (5 ft. required)	13089

Figure 23

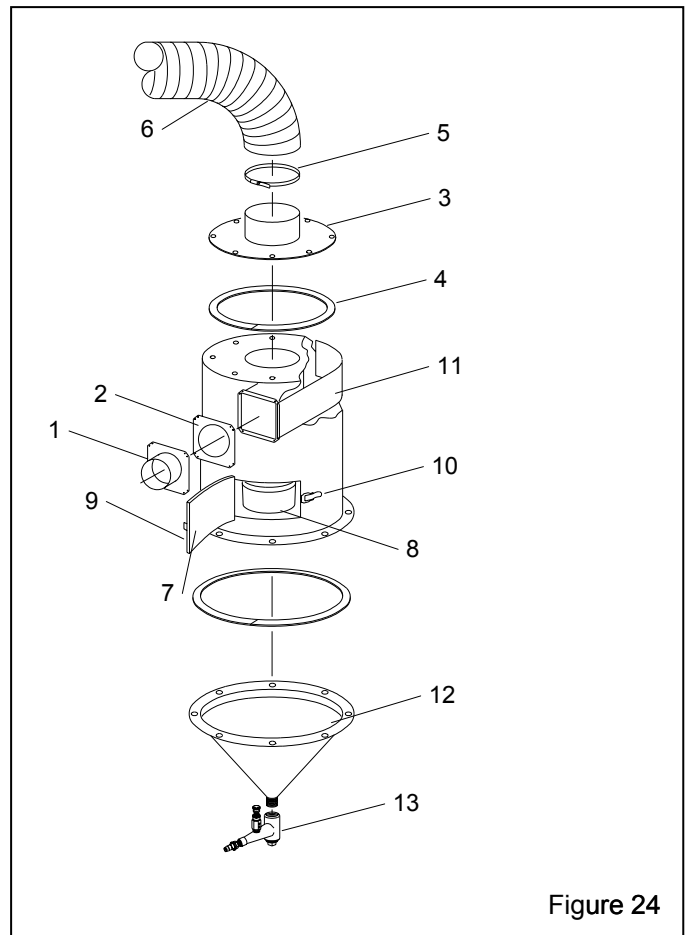Figure 24

9.11 Dust Collector, Figure 25

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, 1/4" NPT x 3/8 tube 11736
 7.   Petcock 01993
 8.   Filter cartridge
        for Pulsar III, 9" x 26" 19122
        for Pulsar VI, 12" x 30" 19121
 9.   Wing nut, 1/2" NC 20108
10.   Gasket, 5/16" x 1" adhesive backed, ... 00187
        Pulsar III requires 5 feet
        Pulsar VI, requires 7 feet
11.   Latch assembly 11876
12.   Hose, l-lined. flex, 4", 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

Figure 25