

BNP DOUBLE 65P and 220P Dual-Station Pressure Blast Cabinets O. M. 22964

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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.

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

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1.0 INTRODUCTION

1.1 Scope of Manual

1.1.1 These instructions cover set-up, operation, maintenance, troubleshooting, optional accessories, and replacement parts for BNP dual station pressure blast cabinets.

The instructions covers the operation of all pull-thru reclaimers and the installation of the dust collector. One of the following supplemental manuals is provided with the dust collector. Refer to the appropriate manual for operation and maintenance of the collector.

- CDC-1 Dust collectors, manual stock no. ... 28225
- RPC-2 Dust collector, manual stock no. 22788
- RPH Dust collectors, manual stock no. 21449

A supplemental manual, stock number 20951, is provided for the Sentinel media metering valve.

1.1.2 These instructions 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 BNP blast cabinets enclose the blasting environment to provide efficient blasting while maintaining a clean surrounding work area. Production rates are influenced by size of nozzle, compressor output, working pressure, type and size of media, angle and distance of the nozzle from the blast surface. BNP pressure cabinets consist of four major components:

1. Cabinet Enclosure
2. Reclaimer
3. Blast Machine
4. Dust Collector

1.3.2 Cabinet Enclosure:

BNP Double 65

Approximate work chamber dimensions:
372" wide x 35" deep x 37" high.

BNP Double 220

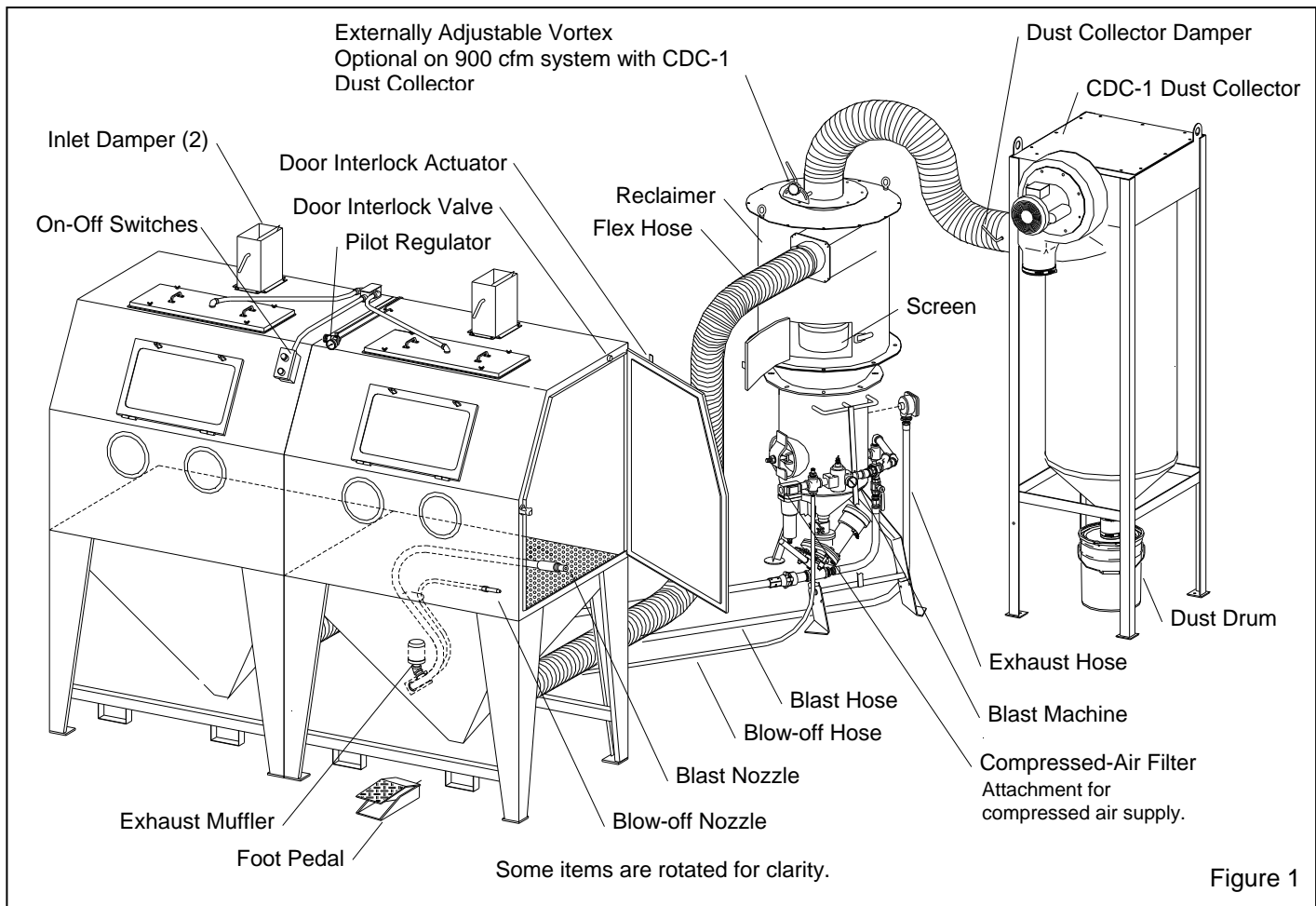
Approximate work chamber dimensions:
100" wide x 39" deep x 43" high.

1.3.3 Refer to Figure 1 for arrangement of components using a CDC-1 dust collector. Figure 2 shows the arrangement with an RPC-2 (900 cfm) reverse-pulse dust collector with dust drawer.

An optional RPH collector is set up the same way but includes a hopper that is easier to empty and has additional storage. Upgrading to an RPH collector may be done at any time. The overall height of the RPH-2 is approximately 10-feet, 4-inches, and increases to 12-ft when the top access door is open. RPH dust collectors are standard with systems requiring 1200 cfm and larger dust collectors.

1.4 Theory of Operation

1.4.1 Once the components are correctly setup and turned ON, the cabinet is ready for operation by actuation of the foot pedal. Fully depressing the foot



pedal pressurizes the blast machine, causing the media to be propelled through the blast hose and 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. Lightweight dust and fines remain airborne and are drawn out to the dust collector. Heavier reusable media fall through the screen into the reclaimer hopper for reuse. The dust collector traps dust and fines and discharges clean air. When the foot pedal is released, the blast machine depressurizes, blasting stops, and stored media refills the machine.

1.5 Blast Machine and Controls

1.5.1 Clemco blast machines (pressure vessels) are certified to conform to the ASME (American Society of Mechanical Engineers) Boiler and Pressure Vessel Code, Section VIII, Division 1. It is the owner's responsibility to maintain the integrity of the vessel in accordance with the requirements of state regulations. Regulations may include regular inspection and hydrostatic testing as described in National Board inspection code and jurisdictional regulations and /or Laws.

⚠ WARNING

Welding, grinding, or drilling on the blast machine could weaken the vessel. Compressed air pressure could cause a weakened blast machine to rupture, resulting in death or serious injury. Welding, grinding, or drilling on the vessel, without a National Board R stamp, voids the Clemco ASME certification.

1.5.2 All welding repairs to the vessel must be performed by certified welders at shops holding a National Board R Stamp. Welding performed by any welder not properly qualified per the ASME code voids the Clemco ASME certification.

1.5.3 Do not exceed the maximum working pressure rating (PSI) of the blast machine. The maximum pressure rating is stamped into ASME nameplate which is welded to the side of the vessel.

⚠ WARNING

Excessive compressed air pressure could cause a blast machine to rupture. To prevent serious injury or death, do not exceed the rated pressure of the blast machine.

1.5.4 OSHA does not require pressure relief valves on blast machines when air compressors supplying air to the blast machines are built to ASME⁽¹⁾ code and comply with OSHA⁽²⁾ regulations. OSHA regulation 1910.169 refers to the ASME code when describing the necessity of pressure relief valves on compressed air equipment. **DO NOT** operate blast machines with air compressors that are not equipped with properly-functioning pressure relief valves.

⁽¹⁾ American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section VIII, Division 1,

⁽²⁾ Occupational Safety and Health Administration, 29 CFR 1910, 169.

1.5.5 When the cabinet is setup, the blast machine is ready to blast by actuating the foot pedal. Pressing the foot pedal opens the normally closed main inlet regulator, and closes the normally open outlet valve. The incoming air pressurizes the blast machine, and blasting begins. When pressure on the foot pedal is released, the blast machine depressurizes, and blasting stops.

1.6 Metering Valve Options

1.6.1 Unless specified at the time purchase, cabinets are supplied with a fine-mesh Sentinel metering valve. The valve is for use with 50-mesh and finer media, and #10 and finer glass bead. The optional Sentinel metering valve is recommended when using media coarser than 50-mesh. Conversions kits listed in Section 9.1 easily convert the valves.

1.7 Dust Collector Options

⚠ 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 reverse-pulse dust collectors with HEPA after-filters if lead coating or any other toxic materials are being removed by the blasting process. Do not use dry filter dust collectors for those applications.

1.7.1 CDC-1 Dust Collectors: Shown in Figure 1, the collector is available in 900 cfm. The single filter cartridge is cleaned by using a manually-controlled pulse of compressed air. CDC-1 dust collectors are standard with BNP cabinets unless an optional RPC-2 or RPH dust collector is ordered at time of purchase. Refer to manual number 28225.

1.7.2 RPC-2 Dust Collectors: Shown in Figure 2, this collector is available 900 cfm. Dual filter cartridges are automatically cleaned by a timed, periodic pulse of compressed air. Dust collects in the drawer and must be frequently emptied. Refer to manual number 22788.

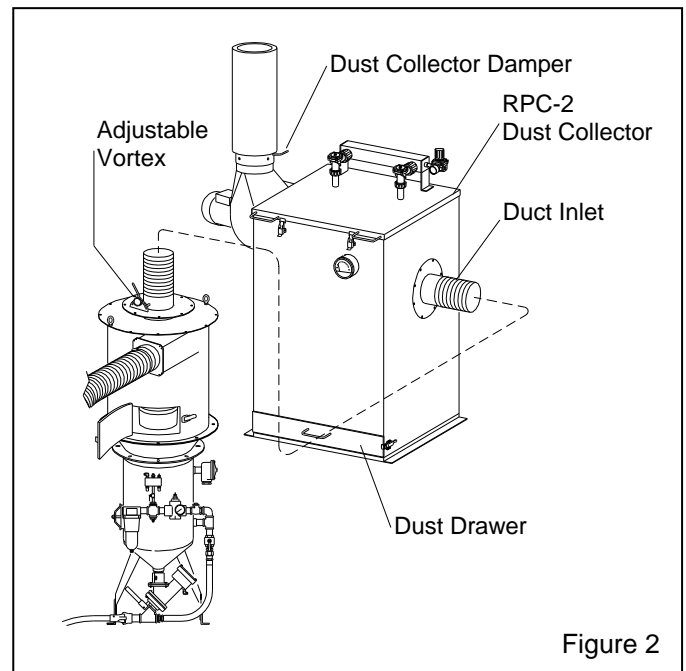


Figure 2

1.7.3 RPH Dust Collector: The RPH-2 is for use with 900 cfm models and RPH-3 for use with 1200 cfm models. They are set up and operate the same as the RPC-2, as shown in Figure 2, but instead of a dust drawer, the collector sits atop a hopper, which provides additional dust storage, and empties into a drum. Refer to RPH manual number 21449.

1.7.4 HEPA (high-efficiency particulate air) Filter: HEPA after-filters provide additional filtration and must be used with a reverse-pulse cartridge collectors when removing lead coatings or any other toxic materials. HEPA filters are listed under Optional Accessories in Section 9.1.

1.8 Reclaimer Options

1.8.1 Replaceable rubber reclaimer liners prolong service life of the reclaimer, and should be installed when using silicon carbide, aluminum oxide, or other aggressive media as noted in Section 1.10.4. Rubber liners are available for reclaimers that have a removable

top and are designed to accept liners. Reclaimer liners are shown in Section 9.12, Figure 40.

1.9 Nozzle Options

1.9.1 Unless otherwise specified at the time of purchase, a 3/16" (#3) orifice, tungsten carbide nozzle. Optional 1/8", 1/4", and 5/16" orifice nozzles are also available. The reclaimer size determines the maximum allowable nozzle size. The table in Figure 3 shows the maximum nozzle size recommended under normal conditions. Normal conditions are moderate part contamination, media break down, media flow, media size, and damper setting, and is further explained within the contents of the manual.

RECLAIMER SIZE	MAXIMUM NOZZLE SIZE
900 cfm	1/4" orifice
1200 cfm	5/16" orifice

NOTICE
Nozzles larger than 1/4" will substantially increase wear on standard 1/2" ID blast hose. Optional 3/4" Supa hose should be used with 5/16" nozzles.

Figure 3

1.9.2 Nozzles with an orifice larger than those recommended could cause air leakage from the cabinet and impair recovery from the cabinet hopper. 5/16" orifice nozzles will substantially increase wear on 1/2" blast hose. Use optional 3/4" Supa hose with 5/16" nozzles. Refer to Optional Accessories in Section 9.1.

1.9.3 Use boron carbide nozzles when blasting with aggressive media, as noted in Section 1.10.4. Refer to Optional Accessories in Section 9.1.

1.10 Blasting Media

WARNING

Obtain Safety Data Sheets (SDS) for the blast abrasive. Abrasive blasting with sands containing crystalline (free) silica can lead to serious or fatal respiratory disease. As NIOSH recommends, do not use abrasives containing more than trace amounts (more than one percent) free silica.

NOTE: Use only abrasives specifically manufactured for blast cleaning which are compatible with the surface being blasted. Abrasive produced for other applications may be inconsistent in size and shape, contain particles that could jam the abrasive metering valve, or cause irregular wear.

1.10.1 ZERO pressure blast cabinets utilize most common reusable media, with the appropriate metering valve as noted in Paragraph 1.6, specifically manufactured for dry blasting. Media sizes listed are guidelines only, based on standard 3/16" orifice nozzle and average conditions, such as blast pressure, media/air mixture, visibility inside the cabinet, humidity, and reclaimer cleaning rate. Refer to the table in Figure 4.

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), and dust collector filter loading (differential pressure across the filter cartridge(s)).

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

1.10.2 Steel and Shot: Standard cabinet models configured for steel media use are available. They include appropriately sized conveying hose and rubber curtains to protect the cabinet walls from peening and rapid wear.

Switching to steel media requires a smaller diameter conveying hose (usually reduced one size from standard) and a 1200 cfm or larger reclaimers. Rubber curtains should be used to protect the cabinet walls from peening and rapid wear. **NOTE:** Steel grit or shot is too heavy to use with cabinets equipped this 900 cfm reclaimers.

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

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

This table offers a guideline to media selection based on standard 3/16" orifice nozzle (3/8" with plastic and similar weight media blasting at low pressure) and average conditions, (air pressure, media/air mixture, visibility, contamination of parts being cleaned, humidity, media friability, reclaimer cleaning rate, etc.). As a rule, larger nozzles deliver more media, requiring higher performance from the reclaimer. Larger nozzles decrease the maximum mesh size of media from those recommended. Media that is finer than those recommended may decrease visibility, and carryover to the dust collector. Media coarser than those recommended may be too dense for the reclaimer to recover from the cabinet hopper.

RECLAIMER SIZE	MEDIA TYPE				
	STEEL GRIT	STEEL SHOT	PLASTIC	GLASS BEAD	ALUM. OXIDE
900 cfm with 6" inlet	Do not use	Do not use	N/A See 1.10.8	No. 8 to No. 12	54 to 180 mesh
1200 cfm with 6" inlet	50 to 120	S230 to S70	Do not use	No. 4 to No. 8	16 to 60 mesh
1200 cfm with 7" inlet	Do not use	Do not use	N/A See 1.10.8	No. 4 to No. 12	46 to 180 mesh

Figure 4

When using aggressive media only occasionally, install an optional aluminum oxide kit. The kit includes heavy-lined flex hose, rubber curtains for the cabinet interior, and a boron carbide-lined nozzle. When using aggressive media on a regular basis, install the aluminum oxide kit and a fully-rubber-lined reclaimer. NOTE Rubber-lined reclaimers are available as factory-installed items and can be field installed on reclaimers if they have removable tops and designed to accept liners. Nozzles lined with boron carbide extend nozzle wear life. See Optional Accessories in Section 9.1.

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

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

1.10.7 Plastic Media: Plastic and similar media requires a blast machine with a 60 degree conical bottom. Refer to Clemco's AEROLYTE cabinet brand.

1.10.8 Bicarbonate of Soda: Bicarbonate of soda is not recommended for use in standard cabinets. Bicarb is a one-use media usually used and will quickly saturate the filter cartridge(s). Refer to Clemco's AEROLYTE cabinet line for cabinets that are specifically designed for use with bicarbonate of soda.

1.11 Compressed Air Requirements

1.11.1 The size of the compressor required to operate the cabinet depends on the size of the nozzle and blasting pressure. The table in Figure 5 shows air consumption of nozzles when new. It does not show the recommended compressor size. As nozzles wear, they will consume up to 70% to 80% more air. Consult with a compressor supplier for a suggested compressor size based on the air consumption. NOTE: A separate air line is required for the reverse-pulse dust collector.

Nozzle size	Air Pressure (psi)			
	50	60	70	80
1/8"	11	13	15	17
3/16"	26	30	33	38
1/4"	47	54	61	68
5/16"	77	89	101	113

* Figures are approximate and for reference only, and may vary for different working conditions. Several variables, including media flow and nozzle wear affect cfm consumption.

Figure 5

1.11.2 The air filter at the blast machine inlet, removes condensed water from compressed air. The filter automatically drains when moisture fills the bowl to a certain level. Its use is especially important in areas of high humidity, or when fine-mesh media are used. Moisture causes media to clump and prevents free flow through the metering valve. 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.

1.12 Electrical Requirements

All wiring external to the cabinet is provided by the user to comply with local electrical codes.

1.12.1 Electrical requirements depend on the size and phase of the dust collector exhaust motor. NOTE: Full load amps (FLA) shown below are for the motor only; the lights draw less than one amp. Standard cabinets are supplied as follows:

900 cfm: 2 HP, 208/230/460V, 3-PH, 60 HZ

Supplied with 230-volt control panel unless 460-volt is specified at the time the order is placed.

FLA 208/5.5, 230/5.6, 460/2.8.

1200 cfm: 5 HP, 208/230/460V, 3-PH, 60 HZ

Supplied with 230-volt control panel unless 460-volt is specified at the time the order is placed.

FLA 208/12 to 13, 230/12 to 13, 460/6.

Additional wiring information is in Section 2.11.

2.0 INSTALLATION

2.1 General Installation Notes

2.1.1 Refer to Figure 1 (and Figure 2 for optional RPC-2 dust collector) for the general arrangement and Figure 7 for the control line schematic. Place all components in a convenient 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. Provide enough clearance at the dust collector for maintenance and to remove the dust container. Place the blast machine directly behind the cabinet with the blast hose connection toward the cabinet. The reclaimer may be rotated on the blast machine to make hose connections with as few bends as possible. Determine the best location for all components and position them before making compressed air connections, electrical connections, and attaching flex hose.

2.1.2 Refer to the dust collector owner's manual to set up the dust collector and prepare it for operation.

2.2 Assemble Blast Machine and Reclaimer

2.2.1 Apply adhesive-backed strip gasket to the top of the flange on the blast machine. Punch out an opening at each bolt hole.

2.2.2 If the optional storage segment is used, place it on the blast machine. The access door should be on the bottom, and rotated to allow access to the door. Bolt into place. Apply adhesive backed gasket to the top flange as described in Section 2.2.1

2.2.3 Use a lift, raise the reclaimer over the blast machine assembly, and lower it in place. Attach with fasteners provided. **NOTE: 1200 cfm and larger reclaimers are mounted on legs. Slide the blast machine under the reclaimer and bolt flanges together.**

⚠ WARNING

Do not work under the reclaimer while it is hanging from the lifting device. Severe injury or death could occur if the reclaimer is released before it is secured to the blast machine.

2.3 Support the Blast Machine

2.3.1 Use chain, cable, or other means to temporarily support the blast machine and reclaimer during final assembly.

2.4 Connect Conveying Hose, Ref. Figure 6

Refer to Page 28, Figure 31 for hose sizes.

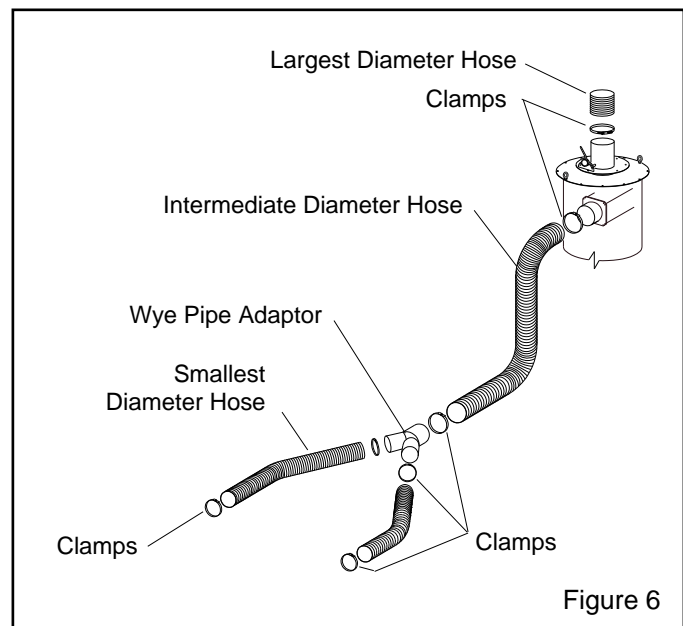


Figure 6

2.4.1 Connect the two smallest diameter flexible conveying hoses between the cabinet hopper adaptor pipes and wye pipe adaptor. It is easier to slip the hose over the adaptor and to create a tighter seal if the first two or three inches of wire are removed from the inside of the hose. Use care not to damage the hose. NOTE: The hose wire helps dissipate static electricity in the conveying hose, and also helps ground each segment. In order for the hose wire to dissipate static electricity, the wire must touch the metal of each segment. Clamp the flex hose securely with worm clamps provided.

2.4.2 Connect the intermediate diameter flex hose between the wye pipe and reclaimer inlet adaptor. Clamp the flex hose securely with worm clamps provided.

2.4.3 The largest diameter hose connects between the reclaimer outlet and dust collector inlet.

2.5 Connect Blow-Off Hose

2.5.1 Attach the 1/2" blow-off hose coming from the cabinet hopper, to the compatible fitting between the air filter and pressure regulator. Refer to the schematic in Figure 7.

2.6 Connect Blast Hose

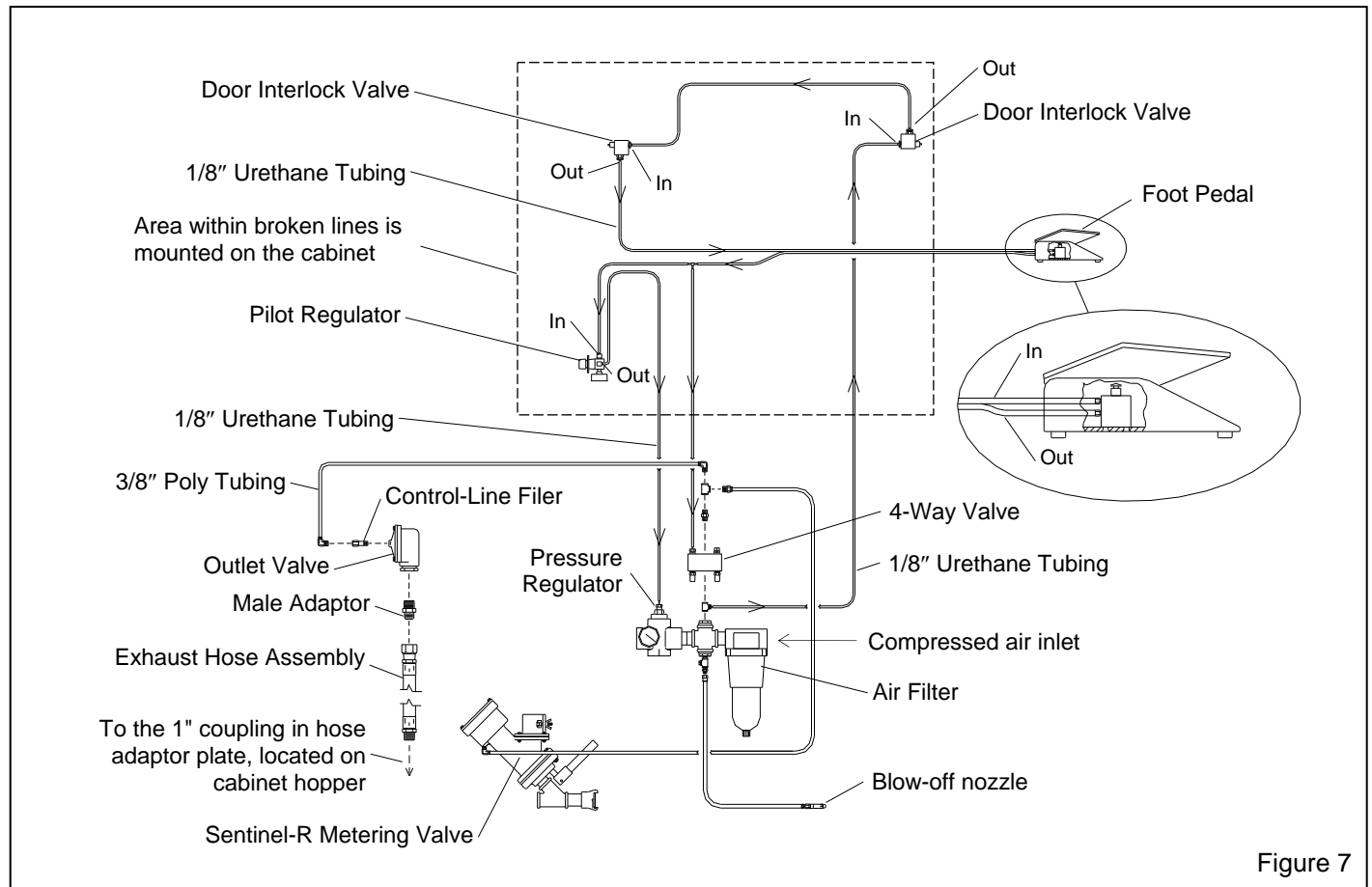
⚠ WARNING

Hose disconnection while under pressure could cause serious injury. Use safety lock-pins and safety cables on all coupling connections to help prevent hose couplings from accidental disconnection while under pressure. Lock-pins and safety cables are listed under Optional Accessories in Section 9.1.

2.6.1 Connect the blast hose from the cabinet hopper to the coupling at the bottom of the blast machine. Make sure coupling gaskets are in place and couplings are secured with safety lock-pins.

2.7 Attach Blast Machine Exhaust Hose

2.7.1 Screw the male end of the exhaust hose into the 1" coupling in the hose adaptor plate, located on the cabinet hopper, turning the hose as required. Connect the female swivel end to the male adaptor on the blast machine outlet valve.



2.8 Connect Urethane Control Tubing

2.8.1 Uncoil the 1/8" urethane control tubing, from under the cabinet. The end of each tubing is numbered 1, 2 or 3. Connect the tubing to the adaptor with the corresponding number on the pressure regulator, piping, and 4-way air valve. Refer to the schematic in Figure 7 to confirm the connections.

2.9 Connect Compressed Air Supply Line(s)

⚠ WARNING

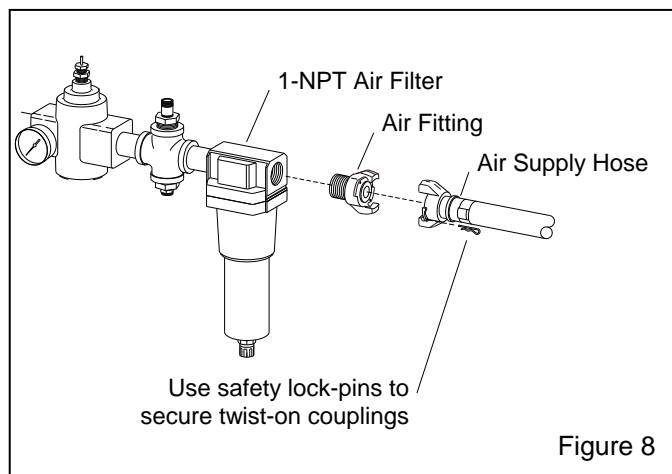
Failure to observe the following before connecting the equipment to the compressed air source could cause serious injury or death from the sudden release of compressed air.

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

2.9.1 Apply thread sealant to the male threads of an air fitting that is compatible with the air supply hose fitting, refer to Section 2.9.2, and install it onto the 1-NPT air filter located at the blast machine inlet, as shown in Figure 8. Note that the style of connection shown is for reference only.

⚠ WARNING

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



⚠ 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 lines before performing maintenance.

2.9.2 Install an isolation valve at the air source to enable depressurization for service, and connect a 1" ID or larger air line from the air source to the air filter on the blast machine. A smaller diameter hose may reduce blasting efficiency.

2.9.3 Refer to the dust collector owner's manual and connect a compressed-air line to the pulse manifold.

2.10 Ground Cabinet

2.10.1 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.

2.11 Connect Electrical Service

⚠ WARNING

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

All wiring external to the cabinet is provided by the user to comply with local electrical codes.

2.11.1 Three-Phase Wiring

NOTE: a wiring schematic is packed inside the cabinet's control panel. After wiring is completed, keep a copy of the schematic with the manual for future reference and for electrical replacement parts.

2.11.1.1 Refer to the wiring schematic stowed inside the control panel mounted on the cabinet and wire from the users disconnect to the panel and from the panel to the dust collector motor, per instruction on the motor data-plate.

2.11.1.2 Check the amperage on initial start up; if the motor draws excessive amperage, gradually close the dust collector damper, located on the inlet on CDC dust collectors, and on the exhaust outlet on RPC and RPH dust collectors, until the amperage is within the specifications shown on the motor plate.

2.11.2 Check Motor Rotation

2.11.2.1 After wiring is completed, observe the warning that follows and check the motor rotation. To check rotation, turn the On-Off switch ON and quickly turn it OFF, causing the motor to rotate slowly. Look through the slots in the motor fan housing where rotation of the fan can easily be observed. Proper rotation is indicated by the arrow on the exhaust housing; the fan should rotate toward the exhaust outlet. If it rotates in reverse, change the wires as noted on the motor plate to reverse rotation.

⚠ WARNING

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

2.12 Anchor Blast Machine

2.12.1 Anchor holes are located in the blast machine leg pads. When all the components are in their permanent position, remove the temporary supports and anchor through the holes to secure the machine to the floor.

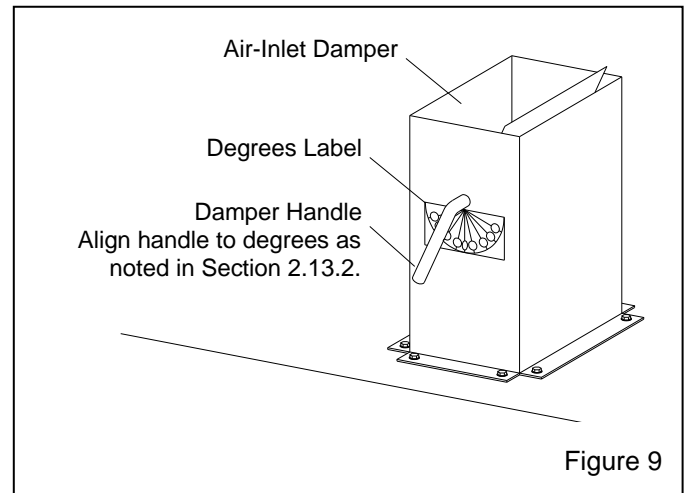
2.13 Cabinet Air-Inlet Dampers, refer to Figure 9

2.13.1 The air-inlet dampers are located on the top of the cabinet and must be set to match the cabinet dimensions and reclaim size.

2.13.2 The label on the dampers show the settings in degrees. The initial settings should align the handle as noted below:

Double 65 w/900.....align handles to 30 degrees
 Double 65 w/1200.....align handles to 30 degrees
 Double 220 w/900.....align handles to 30 degrees
 Double 220 w/1200..align handles to 0 degree (full open)

2.13.3 Loosen the lock nuts and position the damper. When correctly positioned, tighten the lock nuts to maintain the setting. Refer to Section 5.6 for adjustment procedure.



2.14 Final Assembly

2.14.1 Insert a section of 3/8 tubing into the automatic drain at the bottom of the compressed-air filter and place the other end into a pail. When the filter automatically drains, the water will drain into the pail.

2.14.2 Position the foot pedal on the floor in front of the operator station being used.

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

3.0 FIELD INSTALLED ACCESSORIES

3.1 Aluminum Oxide Kit

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

Field-installed (or replacement factory installed) kits consist of black rubber curtains with grommets, curtain hardware, boron carbide nozzle and light-lined flex hose. If the existing flex hose is in good condition, reserve the new 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

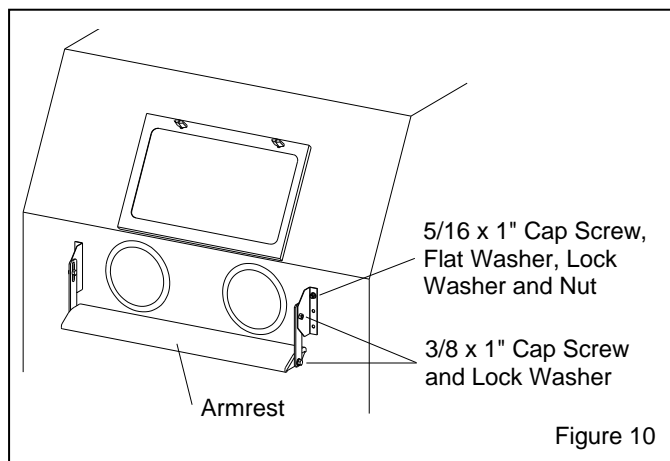
The optional manometer kit is listed in Section 9.1.

3.3.1 Consistent static pressure is necessary for precise media separation, as the reclaimers 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 5.3 to adjust static pressure. Refer to Section 5.7 for manometer instructions.

3.4 Armrest

3.4.1 Assemble the armrest and mounting brackets as shown in Figure 10.

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



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

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

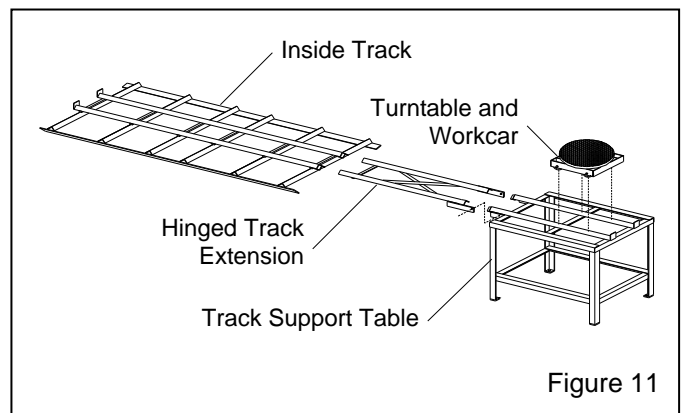
3.4.5 Loosen the fasteners on the slotted bracket and raise or lower the armrest to a comfortable position.

3.5 Turntable with Workcar and Track

3.5.1 Components of the turntable and track assembly are shown in Figure 11. The assembly consists of:

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

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 workcar stops are opposite the entry door.



3.5.2 Place the inside track in the cabinet over the existing grate as shown in Figure 12.

3.5.3 Position the track support table and extension as shown in Figure 13. When the hinged extension is lowered, the extension tracks must rest on the angled locating supports welded to the bottom of the inside tracks, and butt against the inside tracks.

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

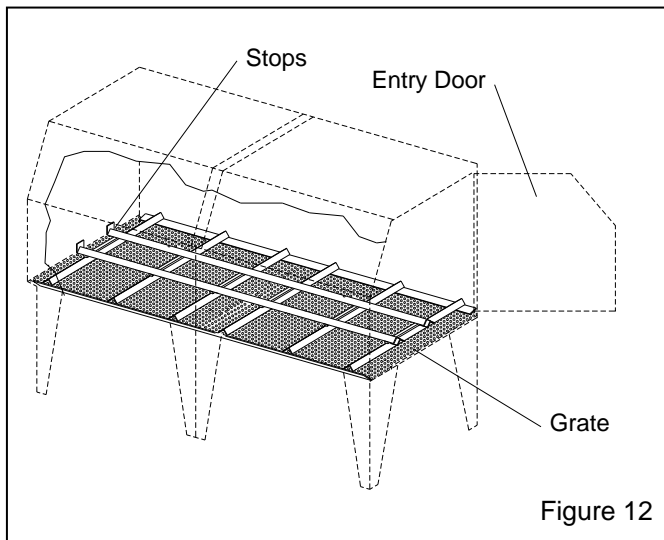


Figure 12

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

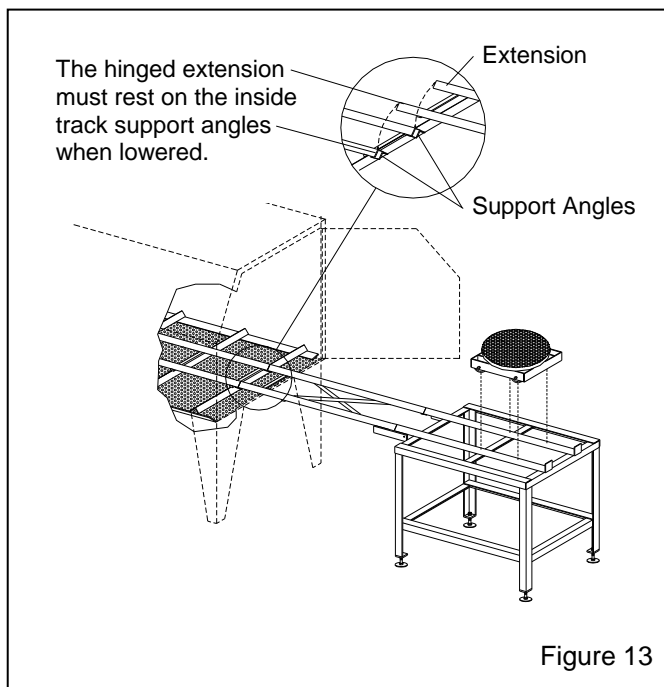


Figure 13

4.0 OPERATION

4.1 Media Loading and Unloading

4.1.1 Media Capacity: Media capacity is approximately 2,0 cubic feet. The machine is full when media reaches the level of the pop-up valve.

4.1.2 Media Loading: With the exhauster OFF, add clean dry media by pouring it into the reclaimer hopper through the reclaimer door. **Do not pour media directly into the cabinet hopper, as over filling 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.

4.1.3 Media Unloading: To empty the cabinet and blast machine of media, turn the exhauster ON and blow-off the cabinet interior until all media is recovered from the cabinet. Reduce pressure to 40 psi. Place an empty container, such as a bucket, on the cabinet grate. Remove nozzle and nozzle washer, close the door, close the choke valve and press the foot pedal. Direct media flow into the container. Empty the container when full or before it is too heavy to handle, and repeat the process until the machine is empty. Return the choke valve to the full open position. Clean the nozzle holder threads and inspect the threads on the nozzle and nozzle holder before reinstalling the nozzle washer and nozzle. If complete purging of media is required, use a vacuum to clean media residue in cabinet hopper and blast machine head.

4.2 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.

4.2.1 Load and unload parts through either door.

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

4.2.3 When blasting small parts or objects having small pieces that could become dislodged and fall off, place an appropriately-sized screen over the grate (or under the grate when frequently blasting small parts) to prevent parts from falling into the hopper.

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

4.3 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 exhauster running until the cabinet is clear of all airborne dust.**
- **Stop blasting immediately if dust leaks are detected.**

4.3.1 Slowly open the air valve on the air supply hose to the blast machine. Check for air leaks on the initial start up and periodically thereafter.

4.3.2 Turn ON the lights and exhauster. The on/off switch performs both functions.

4.3.3 Load parts.

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

4.3.5 Insert hands into rubber gloves.

4.3.6 To blast, hold the nozzle holder or hose just behind the nozzle holder, point the nozzle toward the object to be blasted, and apply pressure to the foot pedal. Blasting will begin almost immediately.

WARNING

Shut down the cabinet immediately if dust leaks from the dust collector or cabinet. Make sure the dust collector filters are correctly seated and not worn or 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 dust generated by blasting. Identify all material being removed by blasting, and obtain Safety Data Sheets (SDS) for the media.

4.3.7 Adjust the pilot pressure to the required blasting pressure, per Section 5.1. The regulator is located on the top, middle of the cabinet. **NOTE: Pressure registers on the gauge only while blasting.**

NOTE: When blasting 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.

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

4.4 Stop Blasting

4.4.1 To stop blasting, remove pressure from the foot pedal. The blast machine will depressurize each time the foot pedal is released.

4.4.2 The blast machine refills with media stored in the reclaimer each time the foot pedal is released. Refilling takes approximately 15 seconds.

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

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

4.4.5 Unload parts. Shut off the air supply valve, drain the air filter, and switch off the lights and exhauster.

4.5 Blasting Technique

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

5.0 ADJUSTMENTS

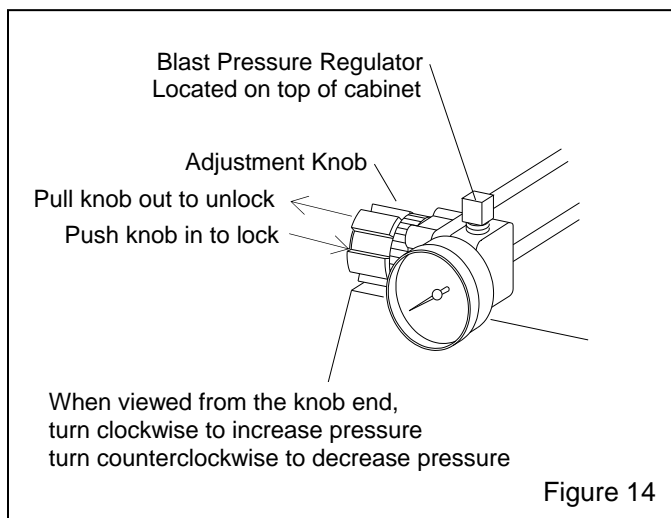
5.1 Blasting Pressure

5.1.1 The pilot pressure regulator, located on the top of the cabinet, enables the user to adjust blasting pressure to suit the application. The suitable pressure for most purposes is about 80 psi. Lower pressures may be required on delicate substrates, and will reduce media breakdown. Higher pressure may be required for difficult blasting jobs on durable substrates, but will increase media breakdown. Optimal production can only be achieved when pressure is carefully monitored.

5.1.2 If the application requires blasting below 40 psi, first pressurize the blast machine at 40 psi, and then turn the pressure to the required setting before blasting the part. If the initial pressure is below 40 psi the pop-up valve may not seal.

5.1.3 Pressure registers on the gauge only while blasting. While holding the nozzle securely, adjust air pressure at the pilot regulator located on the top front edge of the cabinet.

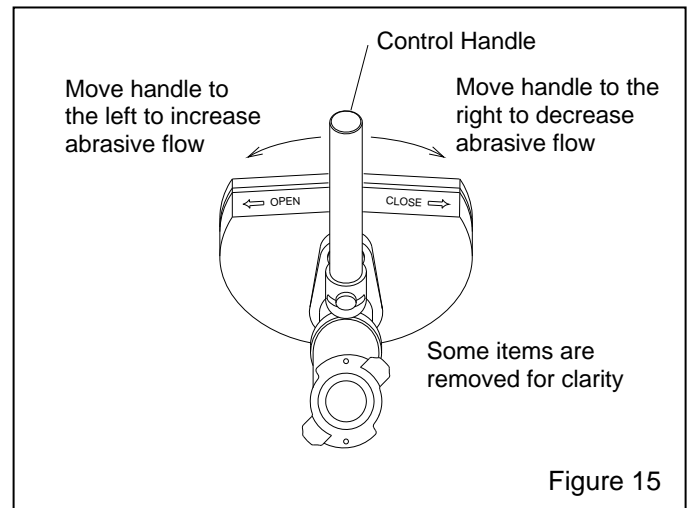
5.1.4 To adjust pressure, unlock the knob by pulling it out as shown in Figure 14, and turn it clockwise to increase pressure or counter-clockwise to decrease pressure. Once operating pressure is set, push in on the knob to lock it and maintain the setting.



5.2 Media Metering

These instructions and the illustration in Figure 15 are for a standard cabinet with Sentinel Metering Valve. Optional metering valves may function differently, but the process is similar. Refer to the metering valve owner's manual for the operation of the valve provided.

5.2.1 Adjust media flow using the metering valve located at the bottom of the blast machine. The valve is closed when the handle is fully to the right. To adjust, begin with the valve closed, press the foot pedal and have someone slowly move the handle to the left to increase media flow. Allow time for the flow to stabilize before further adjusting. The valve is fully open when the handle is at the full left position. The optimum flow rate depends on the type and size of media and blasting pressure, and can best be determined by experience. Use as little media as possible to do the job while maintaining the best cleaning rate. Generally, with the correct mixture, abrasive can be seen as light discoloration as it exits the nozzle.



5.3 Reclaimer Static pressure

5.3.1 Constant static pressure balance is necessary for precise media separation. Correct static pressure varies with the size of reclaimer and the size, weight and type of media.

5.3.2 Adjust static pressure by opening (handle in line with air flow) or closing (handle perpendicular to air flow) the dust collector damper. Refer to the dust collector owner's manual, the damper is located on the inlet on CDC-1 dust collector, and on the exhaust outlet on RPC and RPH dust collectors. If the damper is not opened far enough, the reclaimer will not remove fines, resulting in dusty media, poor visibility, and possible media blockage in the conveying hose. If the damper is opened too far, it may cause carryover (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.

5.3.3 A manometer is useful when adjusting or monitoring static pressure. The optional manometer kit is listed under Optional Accessories in Section 9.1. Refer to Section 5.7 for operation. The following are static pressure starting points for given media. Static pressure may need to be lower with finer media and higher with coarser media. Run the media through several blast cycles allowing the reclaimer to function with these settings. Inspect the media in the reclaimer and fines in the dust collector as noted in Paragraph 5.3.2. Continue adjusting static pressure until optimum media cleaning without carryover is attained.

Glass Bead No. 4 to 7	3" to 3-1/2"
Glass Bead No. 8 to 13	2-1/2" to 3"
Alox. 60 & coarser	4" to 5"
Alox. 80 & finer	2-1/2" to 3"
Steel Grit	6" to 7"

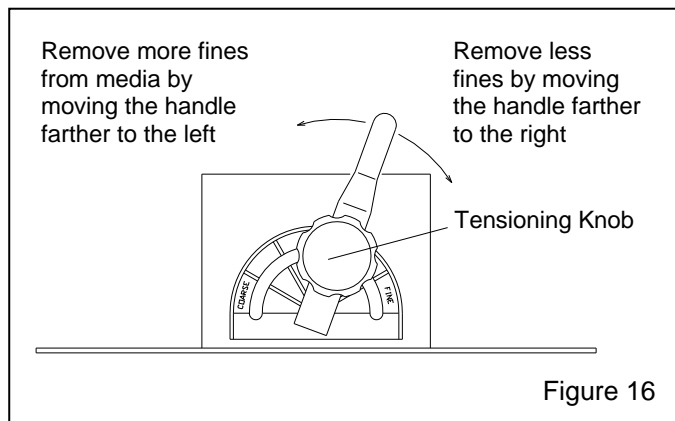
5.3.4 If the damper has been adjusted and carryover or excessive dust in the media continues, the optional adjustable vortex cylinder may help by fine-tuning media separation. The vortex cylinder is usually required only when using 180-mesh and finer media, or lightweight media. Refer to Section 5.4 and Accessories in Section 9.1.

5.4 Optional Externally-Adjustable Vortex Cylinder
 NOTE: The externally adjustable vortex is an option when the cabinet is provided with a CDC-1 Dust collector. The vortex is standard with reclaimers when the cabinet is provided from the factory with an RPC or RPH dust collector.

The vortex cylinder fine-tunes media separation. Before adjusting the cylinder, adjust the damper on the dust collector to increase or decrease static pressure per Section 5.3. Once the damper is adjusted, adjust the cylinder.

5.4.1 The vortex cylinder is located atop the reclaimer where the flex hose connects. Adjustments are made by loosening the handle's tensioning knob and moving the handle to achieve the correct setting. When the correct setting is established, tighten the locking knob to prevent movement. Start with the lever slightly to the right (about one o'clock as shown in Figure 16) of the vertical position.

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



5.4.3 To Remove Less Fines: (Excessive usable media is carried to the dust collector) Lower the vortex cylinder by moving the lever right toward "FINE", in 1/4" increments at the indicator plate. NOTE: If the cylinder is lowered too far, the reclaimer will again begin to allow usable media to be carried over, and cause abnormally high static pressure.

5.4.4 When using media finer than 180-mesh, the inlet baffle of the reclaimer may need to be removed. Refer to Section 1.10.6.

5.5 Door Interlocks, Figure 17

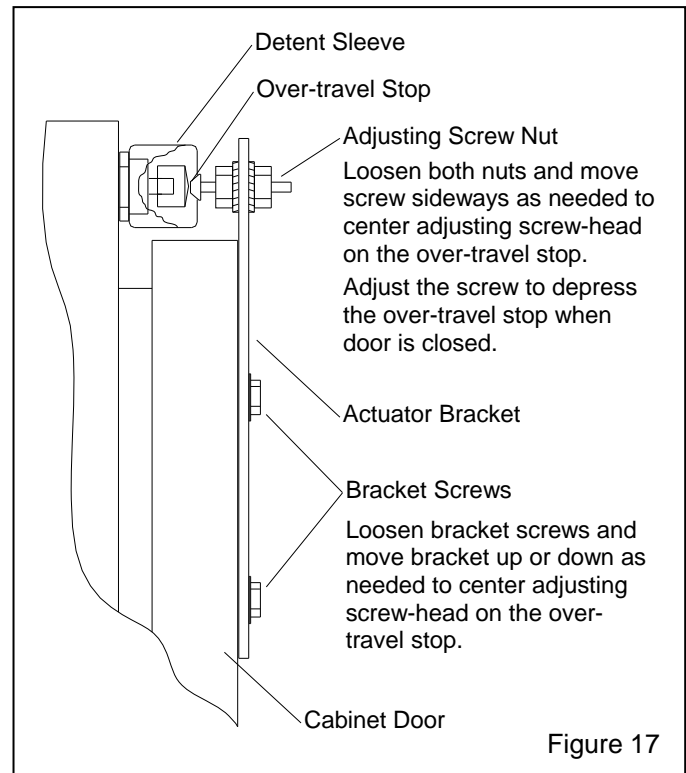
⚠ WARNING

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 either door is 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 normally require field adjustment unless parts are replaced. When adjustment is required, proceed as follows.

5.5.2 Close cabinet doors.

5.5.3 Loosen the actuator bracket screws and adjusting screw nut. Move the actuator bracket up or down, and the screw sideways, to center the 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 open the door only enough to disengage the interlock switch. The interlocks should stop the blasting when the doors are opened, 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 running.

5.6 Cabinet Air-Inlet Damper (cabinet static pressure)

5.6.1 Once the inlet is initially set per Section 2.13, 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 dust collector damper as noted in Section 5.3.**

5.6.2 Using a manometer (as noted in Section 5.7 and 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 farther to decrease static pressure or close it farther to increase pressure.

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

5.7 Optional Manometer

NOTE: These instructions show several methods of taking static-pressure readings (negative pressure) on cabinet reclaimers 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 rigid ducting is used, or 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. Capping the fitting will prevent leaks that alter the reclaimer's separation efficiency. The readings are reference points so it doesn't matter where the readings are taken as long as they are always taken at the same location. Taking readings at different locations could produce different results. Static-pressure readings at the door are generally .5" to 1" lower than those taken above the reclaimer.

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

5.7.2 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.

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

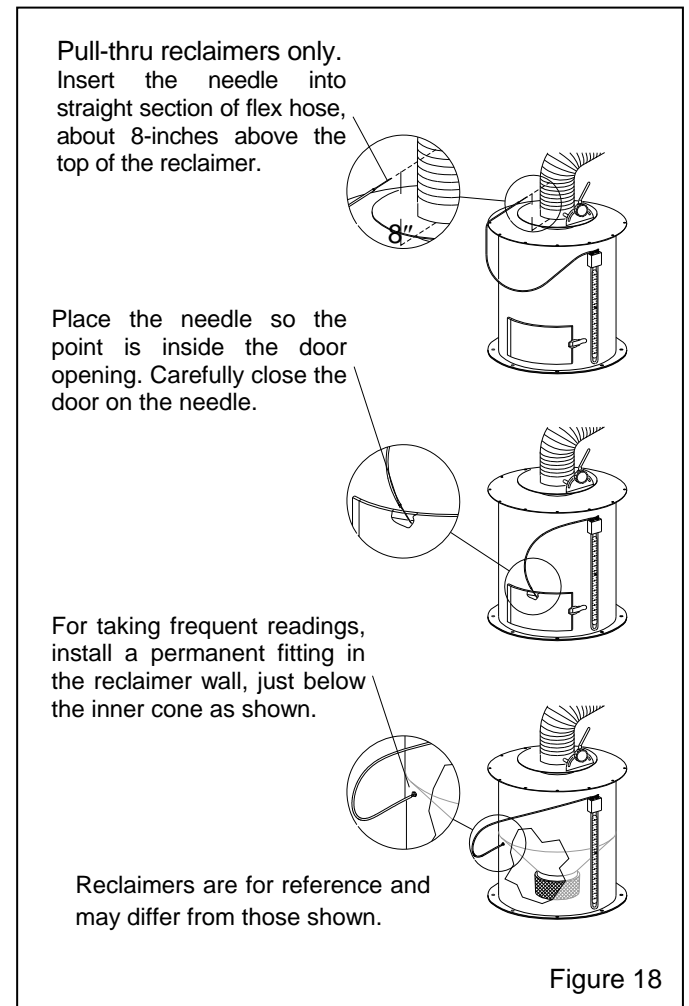
5.7.4 Open both manometer valves (elbows) per the instructions provided with the manometer.

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

5.7.6 Adjust the slide rule to align the zero with the fluid level. Refer to Figure 19.

5.7.7 Needle placement: Ref. Figure 18.

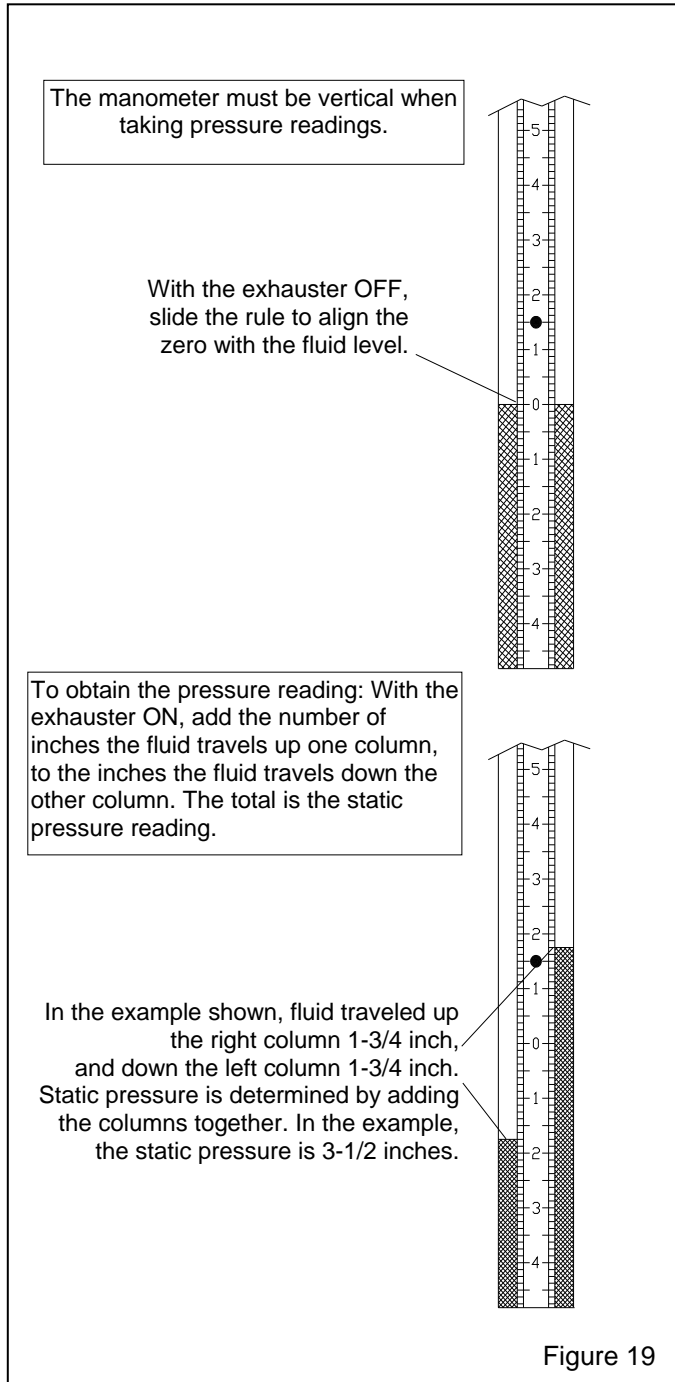
5.7.7.1 Taking readings in the flex hose: Remove the needle protector, and insert the needle into the flex hose approximately 8" from the top of the reclaimer.



5.7.7.2 Taking readings at the reclaimer door: 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, creating an airtight seal.

5.7.8 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.



5.7.9 To find the static pressure, add the number of inches the fluid travels up one column to the inches the fluid travels down the other column. Refer to the example in Figure 19.

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

6.0 PREVENTIVE MAINTENANCE

NOTE: To avoid unscheduled downtime, establish an inspection schedule. Inspect all parts subjected to media contact, including; nozzle, media hose, flex hose, in addition to all items covered in this section. Adjust frequency of inspections as needed based on usage, type of media, and condition of parts being blasted.

6.1 Daily

6.1.1 Check media level in reclaimer and refill as necessary.

6.1.2 Check reclaimer debris screen for debris. The screen is accessible through the reclaimer door. With the exhauster OFF, remove the screen and empty it daily or when loading media. Empty the screen more often if part blasted causes excessive debris. Do not operate the machine without the screen in place, oversized byproduct from blasting could plug the nozzle.

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

6.1.4 Refer to the dust collector owner's manual and empty dust containers. Adjust intervals based on filling rate.

6.1.5 Refer to the dust collector owner's manual and drain the pulse manifold at the end of each shift.

6.1.6 Refer to the CDC-1 dust collector manual for pulsing instructions and pulse the cartridge at least every half hour of blasting and before turning OFF the exhauster. Dusty blasting conditions will require more frequent pulsing. RPC and RPH dust collectors are automatically pulsed at timed intervals.

6.2 Weekly

6.2.1 Make sure that couplings are secure and lock pins and safety cables are in place.

6.2.2 Check coupling gaskets, couplings, and nozzle holders for leaks and wear. Replace as necessary.

6.2.3 Inspect nozzle for wear. Replace when orifice diameter is worn 1/16" larger than original size. Replace the nozzle washer when worn.

6.2.4 While blasting have someone inspect all external piping, hoses, valves, and couplings for air leaks. If leaks are found repair immediately.

6.2.5 While blasting have someone check the blast machine for air leaks. If leaks are found around the pop-up valve, inspection door, or pipe fittings at the bottom of the cone, stop blasting immediately and repair or replace worn parts. If leaks are not identified and corrected, abrasive erosion could cause irreparable damage to the blast machine.

6.2.6 Inspect the blast hose for wear and thin spots by pinching it every 6 to 12 inches. Soft spots mean the hose is worn. The first sign of wear is usually along the outside radius where the hose bend just behind the nozzle holder. Replace the hose as soon as soft spots are noted. **Couplings will not safely grip worn hose, and may detach under pressure.**

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

6.2.8 Inspect flex hoses for wear.

6.2.9 Inspect outlet valve diaphragm: Remove the cap four screws and inspect the diaphragm. Replace the diaphragm if worn or cracked. Continued use with a worn diaphragm will quickly wear the valve casting.

6.2.10 Inspect view window cover lens, Replace as needed per Section 7.3.

6.2.11 During operation, inspect cabinet door seals for media leaks.

6.3 Monthly

6.3.1 Inspect reclaimer wear plate or rubber liners for wear. Replace as necessary per section 7.10 or 7.11.

6.3.2 Inspect reclaimer door gasket for wear or damage.

6.4 Dust Collector

Reverse-pulse dust collectors are covered in a separate manual. Refer to Section 1.1.1.

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

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

7.2 Blast Hose and Nozzle, Refer to Figure 20

7.2.1 When replacing blast hose make sure the hose is square cut and that it is fully inserted into the nozzle holder and coupling until it seats tightly against the shoulder in the holder and coupling as shown in Figure 20. Make sure correctly sized screws are used to secure the nozzle holder and blast hose coupling. Screws should not penetrate the inside of the blast hose.

7.2.2 Replace the nozzle when its inside diameter has increased by 1/16", or sooner if pressure diminishes noticeably. Make sure the nozzle washer is in good condition and in place before screwing the nozzle into the nozzle holder. Make sure the nozzle is screwed tightly into the nozzle holder; if nozzle is not tight against the nozzle washer, thread erosion will occur and nozzle will fuse to nozzle holder.

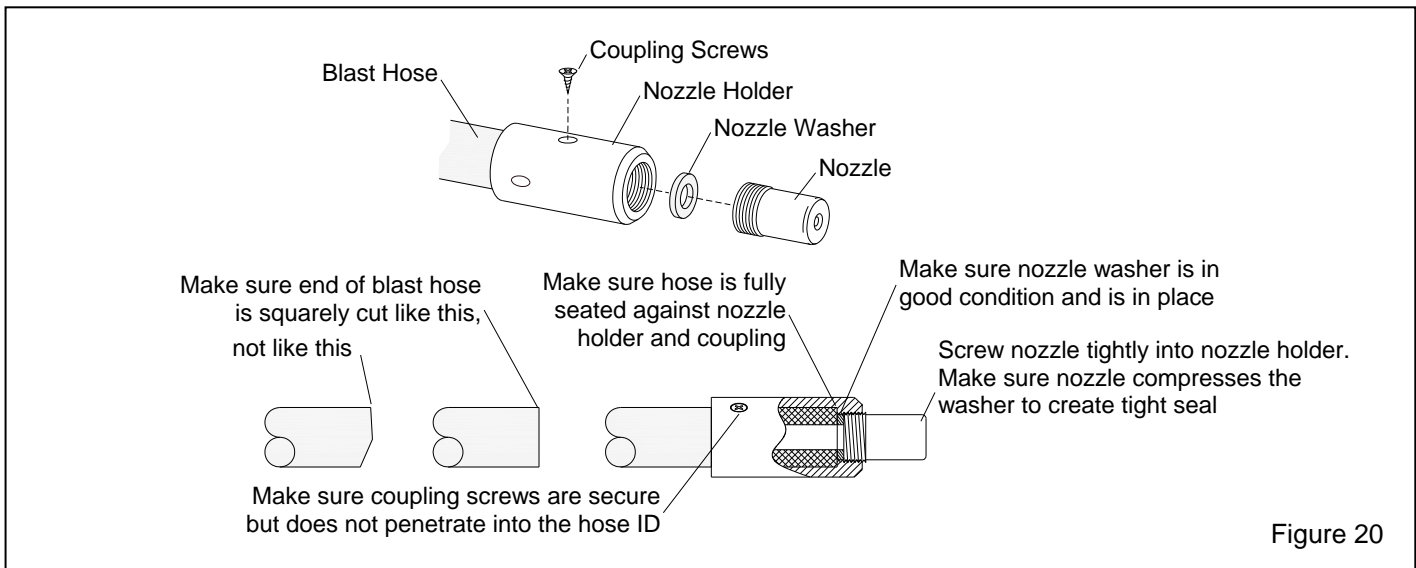


Figure 20

7.3 View Window Cover Lens

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

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

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

7.4 View Window Replacement

⚠ WARNING

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

7.4.1 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 7.6.

7.4.2 Remove the old window.

7.4.3 Inspect the window frame gaskets, both on the window frame and on the cabinet. If either gasket is damaged, replace it per section 7.5.

7.4.4 Install optional view window cover lens per Section 7.3.

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

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

7.5 Window Gasket Replacement, Figure 21

7.5.1 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.

7.5.2 Remove the window and window frame per Section 7.6.

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

7.5.4 Peel a short section of adhesive backing from the 5/16"-thick strip, and adhere the gasket to the center of the top edge of the window opening, as shown in Figure 21. 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.

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

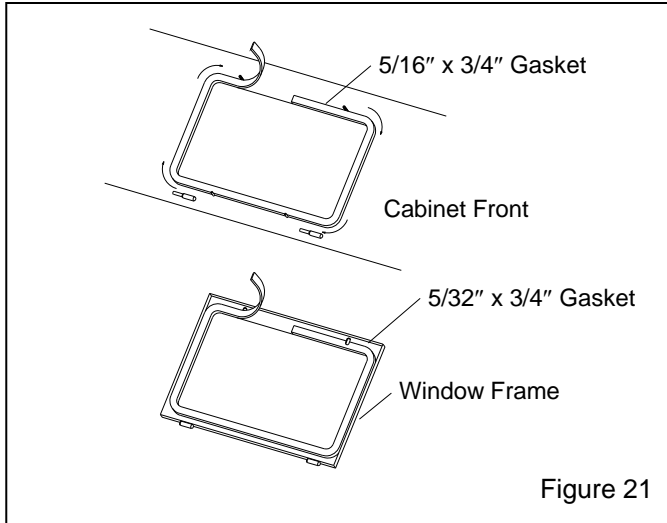


Figure 21

7.5.6 Trim around the window frame bolts slots, as needed.

7.6 Window Frame Removal, Figure 22

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

7.6.2 Remove the window to prevent breakage.

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

7.6.4 Slide the frame to the right, to remove. The hinges separate as shown in Figure 22.

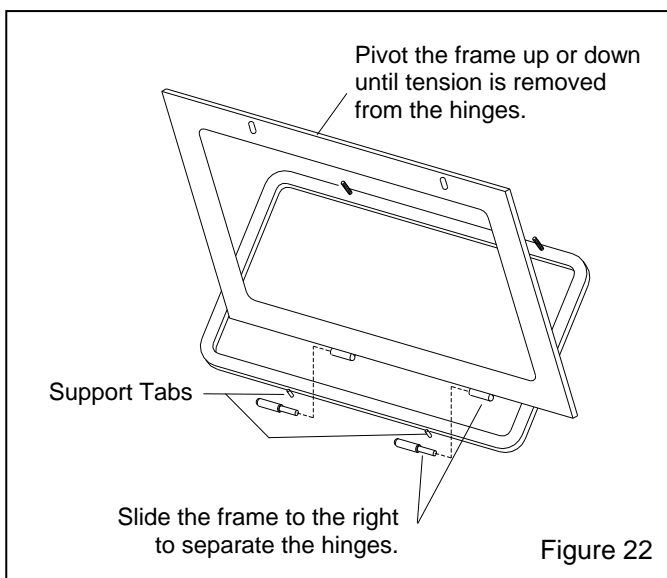


Figure 22

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

7.6.6 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.

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

7.7 Light Assembly

NOTICE

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.

7.7.1 Shut OFF electrical power.

7.7.2 Gasket Replacement

7.7.2.1 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 23.

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

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

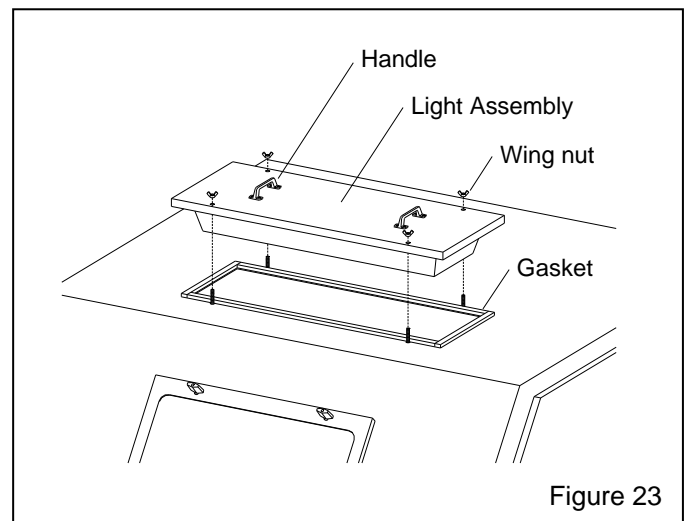


Figure 23

7.7.3 Lens and Tube Replacement

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

7.7.3.2 Flip the fixture over to access the lens screws, ref. Figure 24.

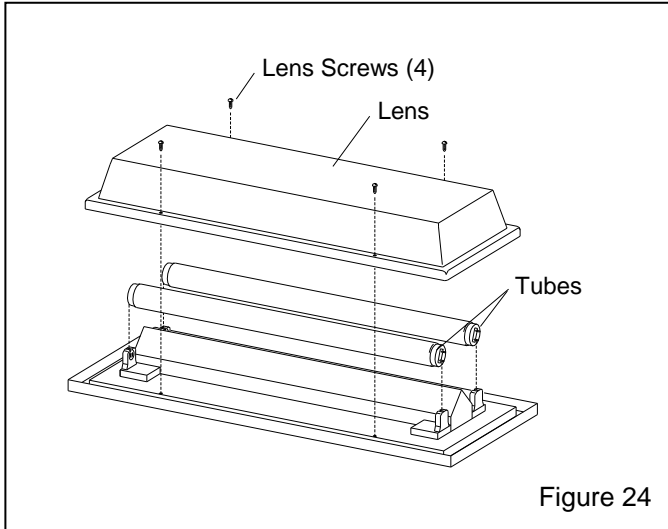


Figure 24

7.7.3.3 Remove the four lens screws and remove lens.

7.7.3.4 Replace the lens or tubes as required.

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

7.7.3.6 Reassemble in reverse order.

7.8 Pop-up Valve Replacement, Figure 25

7.8.1 Empty the machine of media as described in Section 4.1.3.

7.8.2 Depressurize the blast machine, and lockout and tagout the compressed-air supply.

7.8.3 To gain access to the pop-up valve, remove the inspection door assembly.

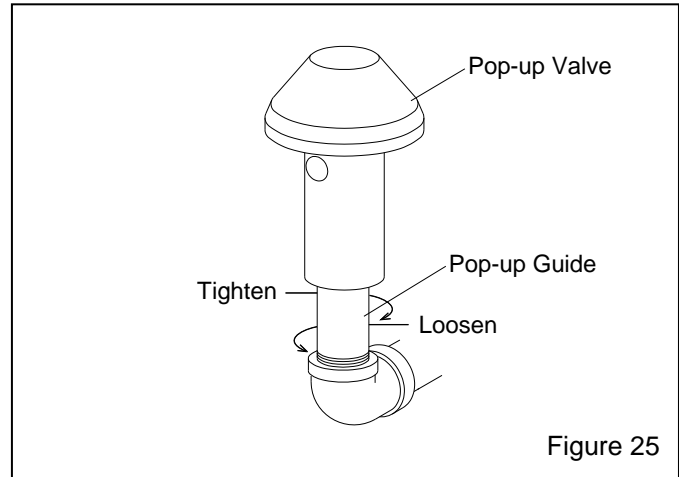


Figure 25

7.8.4 Use a short pipe wrench to unscrew the pop-up valve guide as shown in Figure 25, by turning it counterclockwise. Remove the pop-up valve and guide from the machine.

7.8.5 Slide the new pop-up valve over the guide, and then screw the valve guide (with the pop-up valve on it) into position inside the machine. Tighten the guide wrench-snug, but not wrench-tight. Over-tightening the guide will make it difficult to remove next time the pop-up valve needs replacement.

7.8.6 Put a new gasket on the inspection door, then bolt the door onto the machine.

7.9 Pop-up Valve Seat Replacement

7.9.1 The easiest method to replace the rubber pop-up seat is through the reclaimer access door. If for some reason replacement cannot be made through the reclaimer, observe the warning in Section 7.8 and empty the machine and bleed the air supply line. Remove the inspection door assembly and work through the opening.

7.9.2 Remove the old seat by using a finger, screwdriver, or similar object, to work the seat out of the retainer groove.

7.9.3 Push the new seat all the way through the port and then fit it into the groove. For the last few inches, pull up on the seat and allow it to "pop" into position.

7.10 Reclaimer Wear Plate Replacement

7.10.1 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; remove the

⚠ WARNING

Failure to observe the following procedure before performing any maintenance could cause serious injury or death from the sudden release of compressed air.

- **Depressurize the blast machine.**
- **Lockout and tagout the compressed air supply.**
- **Bleed the air supply line to the blast machine.**

screws and pull out the wear plate from the reclaimers inlet.

7.10.2 Angle the new wear plate into the reclaimers inlet until it is in position with the straight end at the inlet. Using a board or similar object as leverage, pry the wear plate against the inner wall of the reclaimers. While forcing the wear plate against the reclaimers wall, install sheet metal screws through the old screw holes to secure. Caulk between the wear plate and reclaimers to prevent rapid wear in those areas.

7.11 Replacing or Field Installing Optional Reclaimers Rubber Liners, Figure 26. The reclaimers must be designed to accept liners and have a removable top.

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

7.11.2 Remove the bolts and nuts securing the reclaimers top, and then remove the top.

7.11.3 If the reclaimers is currently unlined, proceed to the installation note preceding Paragraph 7.11.11.

7.11.4 Grind the tack welds from the bottom of the inner tube that secures the tube liner to the tube, then slide the liner off the inner tube.

7.11.5 Remove the top liner and tube liner.

7.11.6 Remove the bolts located along the side of the inlet, and remove the inlet baffle.

7.11.7 To remove the inlet-top liner, remove the self-drilling screws securing it to the top of the inlet.

7.11.8 Wall liner and inlet-side liner are held in place with self-drilling screws. From the outside of the reclaimers, remove the screws, and remove the liner.

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

7.11.10 Remove old caulking and adhesive from the weldment.

Installation Notes: The numbers in parentheses (-) shown in Figure 26 and the applicable paragraphs, show the recommended order of installation. When installing the liners, make sure that seams are aligned. The final assembly must be smooth and free of protrusions, edges, and gaps. Any edges will disrupt the air flow, causing wear, and affect the reclaimers's media cleaning efficiency.

7.11.11 (1st) Place the cone-ring liner on the inside of the cone-ring; check fit and trim if needed. Apply medium-set contact cement to the fabric side and install the liner. NOTE: Follow the instructions provided with the adhesive. Some adhesives require it to be applied to both contact surfaces. Smooth out the liner to eliminate air pockets.

7.11.12 (2nd) Place the cone liner in the cone with the fabric side down, and check the fit, trim if necessary. Follow the instructions provided with the adhesive and apply medium-set contact cement to the fabric side, and install the cone liner. Smooth out the liner to eliminate air pockets.

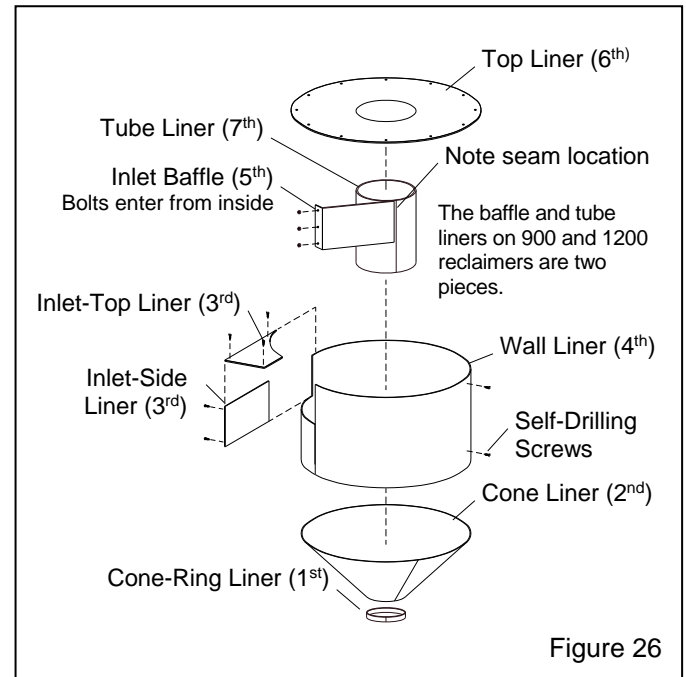


Figure 26

7.11.13 (3rd) Position the inlet-side liner and inlet-top liner to make sure they fit; trimming is occasionally required. Align the inlet-side liner and inlet-top liner and clamp them in place. Use a self-drilling screw at each hole location in the weldment to secure replacement liners. NOTE: To field install new, first-time inlet-side liner and inlet-top liners, after clamping the liners, use self-drilling screws at each liner corner to secure them.

7.11.14 (4th) Clamp the wall liner in place, making sure it is flush with the top of the reclaimers body and that the cutout is aligned with the reclaimers inlet. Mark the wall liner at the three bolt-hole locations for the inlet baffle. Remove the liner and drill the bolt holes. Reinstall the wall liner. Align the three bolt holes and temporarily place bolts through the holes to hold it in place. Clamp the liner, and while pushing the liner against the weldment, secure replacement liners, with self-drilling screws at each existing hole location. NOTE: To field install a new, first-time wall liner, use self-drilling screws to secure it at the seam and an inch or two from the top

and bottom at each quadrant. Remove the temporary inlet baffle bolts after the liner is secured.

7.11.15 Apply silicone caulking to seal seams around the inlet-side liner and reclaimer weldment, and between the inlet-top liner and wall liner seam. Apply caulking at the seams of the cone-ring liner and cone liner and between the cone liner and wall liner. Wipe the caulking smooth.

NOTICE

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

7.11.16 (5th) Apply adhesive-backed strip gasket to the edge of the inlet baffle that will fit against the inner tube. Install the inlet baffle; bolts should be installed from the inside of the reclaimer to attach nuts from the outside.

7.11.17 (6th) Slide the top liner over the inner tube and align the holes in the liner with those in the top. Note that the holes around the inlet are spaced differently from the others. Temporarily install a couple of bolts to keep the alignment.

7.11.18 (7th) Place the tube liner over the inner tube, and use worm clamps to temporarily clamp the liner to the tube. Align the tube liner so the seam is on the backside of the baffle, as shown in Figure 26. Make sure the tube liner is tight against the top liner, then tack it to the bottom of the inner tube in three or four places. Remove the clamps when the tube liner is secured.

7.11.19 Apply caulking to the seam on the tube liner, and between the tube liner and top liner.

7.11.20 Apply caulking around the top edge of the wall liner and inlet-top liner.

7.11.21 Align the reclaimer top assembly and lower it into place being careful not to smear the caulking. Secure the top bolts and inlet baffle bolts.

7.11.22 Working through the reclaimer inlet, wipe the caulking seal smooth. Apply additional caulking to the seam between the baffle and wall liner. Re-caulk any voids.

7.11.23 Install flex hoses.

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

7.12 Sentinel Metering Valve

7.12.1 Refer to the Sentinel media metering valve owner's manual for maintenance.

7.13 Reverse-Pulse Dust Collector

Reverse-pulse dust collectors are covered in a separate manual.

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 nozzle 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(s). Pulse cartridge and empty dust container regularly. When using an RPC or RPH, refer to the reverse-pulse dust collector manual to adjust pulse pressure and pulse sequence.

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 the motor leads as shown on the motor plate. Refer to Section 2.11.

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

8.1.5 Dust collector damper closed too far restricting air movement through the cabinet. Adjust static pressure per Section 5.3.

8.1.6 Cabinet air-inlet damper closed too far restricting air movement in the cabinet. Adjust damper per Sections 2.13 and 5.6.

8.1.7 Reclaimer door open.

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

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

8.1.10 Nozzle worn. Replace the nozzle when its orifice diameter has increased by 1/16".

8.2 Abnormally high media consumption

8.2.1 Fill 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 Dust collector damper open too far. Adjust static pressure per Section 5.3.

8.2.3 Media may be too fine or worn-out.

8.2.4 Using friable media that rapidly breaks down.

8.2.5 Blast pressure too high for the media, causing media to breakdown.

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

8.2.7 Outlet valve not sealing. Inspect diaphragm.

8.2.8 Metering valve requires adjustment. Adjust media flow per Section 5.2.

8.2.9 When using media finer than 180-mesh, the reclaimer inlet baffle may need to be removed. Refer to Section 1.10.6.

8.2.10 Optional externally-adjustable vortex cylinder requires adjustment, refer to Section 5.4.

8.3 Reduction in blast cleaning rate

8.3.1 Low media level reducing media flow. Check and fill if low.

8.3.2 Media/air mixture out of adjustment. Adjust per Section 5.2.

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 nozzle. Blockage may occur as a result of a missing reclaimer debris screen.

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

8.3.6 Air leaking through the outlet valve, reducing blast pressure and control pressure to media metering valve. Inspect diaphragm and outlet valve body.

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.

8.5 Media bridging

8.5.1 Frequent bridging or blockage in the 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 from ambient air.

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 filters 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 blast machine leg or on a bolt on the media metering valve may help to prevent bridging of fine-mesh media. NOTE: To avoid the possibility of compressing media, a vibrator should be setup to start only when the foot pedal is pressed.

8.6 Neither media nor air comes out the nozzle when the foot pedal is pressed

8.6.1 Depressurize the blast machine, and check the nozzle to see if it is plugged. See Section 8.4.

8.6.2 Make sure the blast machine pressurizes when the foot pedal is pressed. If it does not pressurize, refer to Section 8.8.

8.6.3 Make sure the media metering valve and the choke valve are open.

8.7 Blast machine does not pressurize

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

8.7.2 Make sure the pressure regulator is not set too low or OFF. Minimum pressure is 40 psi. Refer to Section 5.1.

8.7.3 Door interlocks not engaging. Check door interlock adjustment per Section 5.5.

8.7.4 Inadequate air supply. Refer to the table in Figure 5.

8.7.5 Inspect the diaphragm in the outlet valve for wear.

8.7.6 Inspect pop-up valve and seat for wear and alignment.

8.7.7 Blocked or leaking control line. Check all fittings and urethane tubing for blockage or leaks.

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

8.7.9 Make sure the lines are not reversed on the foot pedal or pilot regulator. Refer to the schematic in Figure 7.

8.7.10 Check the 4-way valve per Paragraphs 8.11.5 and 8.11.6.

8.7.11 Inspect the check valve for obstruction or broken flap.

8.8 Blast machine does not depressurize or depressurizes too slowly

8.8.1 Check for blockage in the 4-way valve mufflers.

8.8.2 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.

8.8.3 Inspect brass control-line filter attached to diaphragm outlet valve for media blockage. If media is present, inspect outlet valve diaphragm for damage.

8.8.4 Check the outlet muffler that is located inside the cabinet, for blockage.

8.8.5 Check 4-way air valve for jamming per Paragraphs 8.11.5 and 8.11.6.

8.8.6 Check for blockage in the screen in the optional abrasive trap.

8.9 Heavy media flow

8.9.1 Make sure the choke valve is open.

8.9.2 Media metering valve open too far. Adjust per Section 5.2. If adjusting the media valve does not regulate media flow, empty the machine, depressurize the machine, and inspect the internal parts of the valve for wear.

8.10 Media surge: A small amount of surge is normal at start-up.

8.10.1 Heavy media flow. Adjust per Section 5.2

8.10.2 Empty the blast machine, depressurize the blast machine, and inspect the internal parts of the metering valve for wear. Refer to the Sentinel Media Metering Valve manual number 20951.

8.11 Air only (no media) comes out the nozzle

8.11.1 Make sure the machine contains media.

8.11.2 Make sure the media metering valve is not closed. Adjust media flow per Section 5.2.

8.11.3 Make sure the media metering valve opens when foot pedal is pressed. Refer to the metering valve owner's manual.

8.11.4 Check for minor blockage in the media metering valve by fully opening the metering valve, and closing the choke valve. Activate the foot pedal to blow out obstructions. If this procedure fails, depressurize the machine, open the metering valve inspection plate and check for foreign objects.

8.11.5 Check the muffler on the 4-way air valve. Air should exhaust from the muffler when the foot pedal is pressed. If air does not exhaust, remove the muffler and try again. If air exhausts now, the muffler is blocked. If air still does not exhaust, the 4-way valve may be faulty, refer to Paragraph 8.11.6 to check the 4-way valve.

8.11.6 Check the 4-way valve as follows: Depressurize the air supply line. Remove the tubing leading to either the media metering valve or diaphragm outlet valve. Pressurize the air supply line. No air should exhaust from the tube adaptor. Press the foot pedal, air should start exhausting at the adaptor, and stop when pressure on the pedal is released. If it does not operate accordingly, the 4-way valve is faulty or air supply is insufficient.

8.11.7 Outlet valve not sealing. Inspect diaphragm.

8.11.8 Metering valve requires service. Refer to the media metering valve manual.

8.12 Media buildup in cabinet hopper, does not convey to reclaimer

NOTE: 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.

8.12.1 Exhauster motor rotating backwards. The motor should rotate as indicated by the arrow on the exhauster housing. If it does not rotate in the proper direction, **lockout** and **tagout** electrical power and switch the motor leads as shown on the motor plate. Refer to the system's wiring schematic and Section 2.11.

8.12.2 Dust collector damper closed too far restricting air movement through cabinet. Adjust static pressure per Section 5.3.

8.12.3 Dust collector filter cartridge(s) clogged. Refer to the dust collector owner's manual.

8.12.4 Hole worn in flex hose between cabinet hopper and reclaimer inlet or between the reclaimer outlet and dust collector inlet. Replace hoses and route them with as few bends as possible to prevent wear.

8.12.5 Reclaimer door open. DO NOT operate unless door is closed.

8.12.6 Obstruction in flex hose. Remove hoses and check for blockage.

8.13 Static shocks

8.13.1 Cabinet and/or operator not grounded. Abrasive blasting creates static electricity. The cabinet must be grounded to prevent static build-up. Refer to Sections 2.4.1 and 2.10. 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 grate. Static will build-up in the part if not dissipated through the metal cabinet.

8.14 Dust leaking from cabinet

8.14.1 Refer to Section 8.12.

8.15 Dust leaking from dust collector

8.15.1 Damaged or loose filters. Inspect filters, replace as needed.

Refer to the reverse-pulse dust collector manual to service reverse-pulse dust collectors.

9.0 ACCESSORIES AND REPLACEMENT PARTS

9.1 Optional Accessories

Conversion kits to convert from push-thru reclaimer with dry filter to pull-thru for use with reverse pulse dust collector

Description	Stock No.
To convert from dry filter to CDC-1 dust collector Kit includes outlet adaptor pipe, gasket, and fasteners. for 900 cfm reclaimer	28964
To convert from dry filter to RPC or RPH dust collector. (optional for CDC-1 for use with fine mesh media) Kit includes pull-thru adjustable vortex, gasket, and fasteners for 900 cfm reclaimer	28630

Conversion kits, Sentinel metering valve

Description	Stock No.
To convert from fine mesh media to coarse	22848
To convert from coarse mesh media to fine	22849

Time delay door locks 24163
 Lock pins (pkg of 25) for twist-on hose couplings . 11203
 Safety cable, 1/2" OD to 1-1/4" OD blast hose 15012
 Manometer kit 12528
 Noise-reduction arm port covers, pair 24885
 Anti-fatigue floor-mat, for front of cabinet 24744
 Armrest assembly for one station 24900
 Abrasive trap 02011

Aluminum oxide kit, factory-installed: Includes #3 boron carbide nozzle, black rubber wall curtains with grommets and curtain hardware. Does not include rubber reclaimer liners.
 for double 65, 900 cfm 28901
 for double 220, 900 cfm 28902

Aluminum oxide kit, field-installed: Filed-installed kits consists of the items noted above for factory kits but also include light-lined flex hose. Does not include rubber reclaimer liners.
 for double 65, 900 cfm 14146
 for double 220, 900 cfm 21248

Boron carbide nozzle
 CTB-2, 1/8" orifice 21090
 CTB-3, 3/16" orifice 21091
 CTB-4, 1/4" orifice 21092

Rubber curtains, black
 Curtain set
 for double 65 23533
 for double 220 23534
 Back curtain, 2 required
 for double 65 14243
 for double 220 14247
 Front curtain, 2 required
 for double 65 14242
 for double 220 14246
 Door curtain, 2 required
 for double 65 14244
 for double 220 14245

Rubber curtains, white
 Curtain set
 for double 65 23543
 for double 220 23544

HEPA Filter, for use with reverse-pulse dust collectors
 900 cfm free standing 23626
 1200 cfm free standing 23627

Vortex cylinder assembly, adjustable
 for pull-thru reclaimer, 900 cfm 23046

Pass-thru door, with 15-inch square cut-out
 Right door
 for double 65 23610
 for double 220 23612
 Left door
 for double 65 23611
 for double 220 23613

Supa hose, 3/4" ID x 25 feet, uncoupled 21121
 NOTE: Supa hose requires the use of the following coupling, contractor thread nozzle holder and nozzle.
 Nozzle holder w/contr. thread, for 3/4" Supa hose . 11398
 Coupling, CQPS-3/4 for 3/4" Supa hose 11395
 Gasket, CQGP-1, for 11395-3/4" Supa hose coupling pack of 10..... 08852

Nozzle, short venturi for use with 3/4" ID Supa hose
 TYP-3, 3/16" orifice 23501
 TYP-4, 1/4" orifice 23502

Flex hose, heavy-lined, for heavy usage with aluminum oxide. Available in 15 ft. lengths only
 4" ID 12473
 5" ID 12465
 6" ID 12457

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" dia. 25 lb capacity	12412

Fixed-base Turntable with Bearing, 500 lb Capacity, Figure 27

Item	Description	Stock No.
(-)	20" dia. assembly, 500 lb capacity	12411
(-)	30" dia. assembly, 500 lb capacity	14138
1.	Turntable, replacement	
	20" diameter 500 lb. capacity	18329
	30" diameter 500 lb. capacity	21390
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

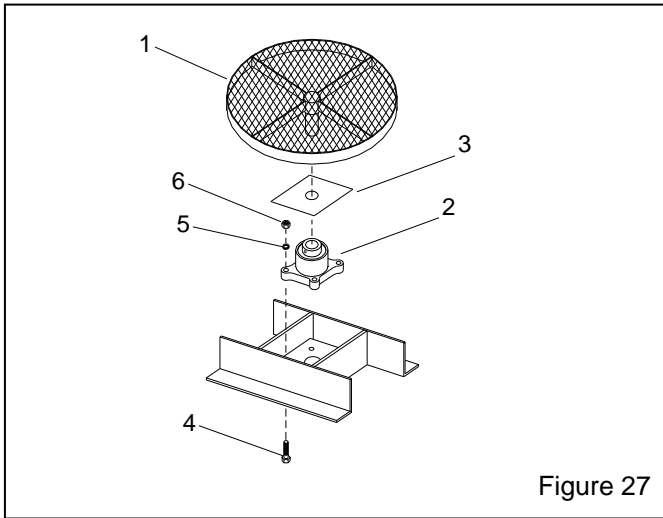


Figure 27

Turntable with Workcar and Track, 500 lb. Capacity, Figure 28

Item	Description	Stock No.
(-)	20" Diameter turntable and track assembly	
	for double 65	13899
	for double 220	21199
(-)	Turntable and workcar replacement	
	20" diameter	24205
1.	Turntable replacement	
	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.

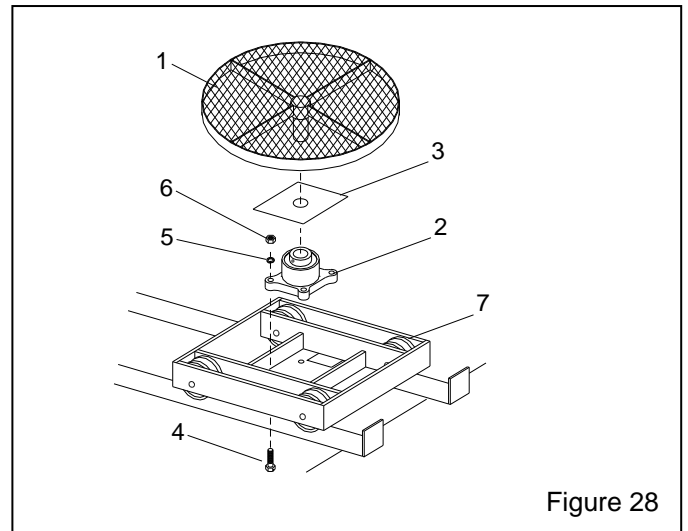


Figure 28

Abrasive Trap, Figure 29

Item	Description	Stock No.
(-)	Abrasive trap, complete	02011
1.	Screen	02012
2.	O-ring	02013
3.	Cap	02014
4.	Body	02015
5.	Lock bar	02016
6.	Screw, 3/8" x 1" thumb	03289
7.	Shoulder screw, 3/8" x 3/8"	03291
8.	Gasket, screen	02434
9.	Decal	02129
(-)	Service kit (items 1, 2, 8 & 9)	01925

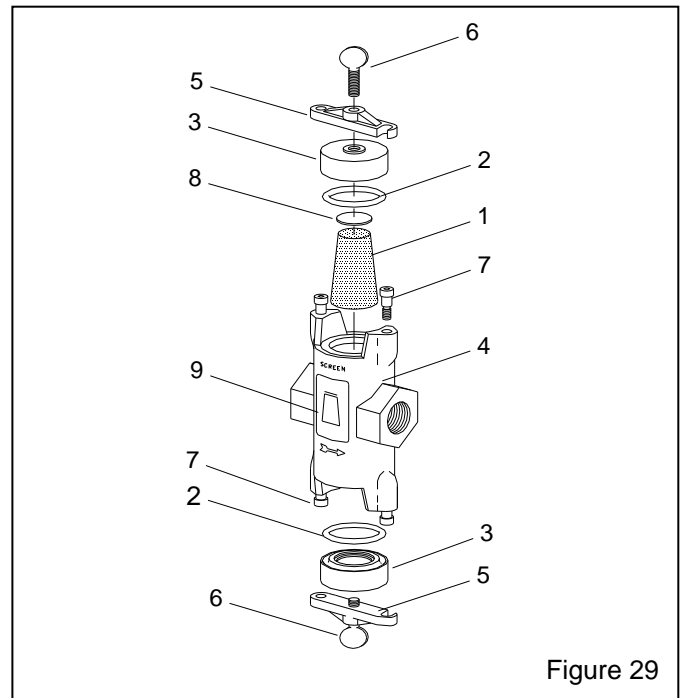


Figure 29

Armrest, Figure 30

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

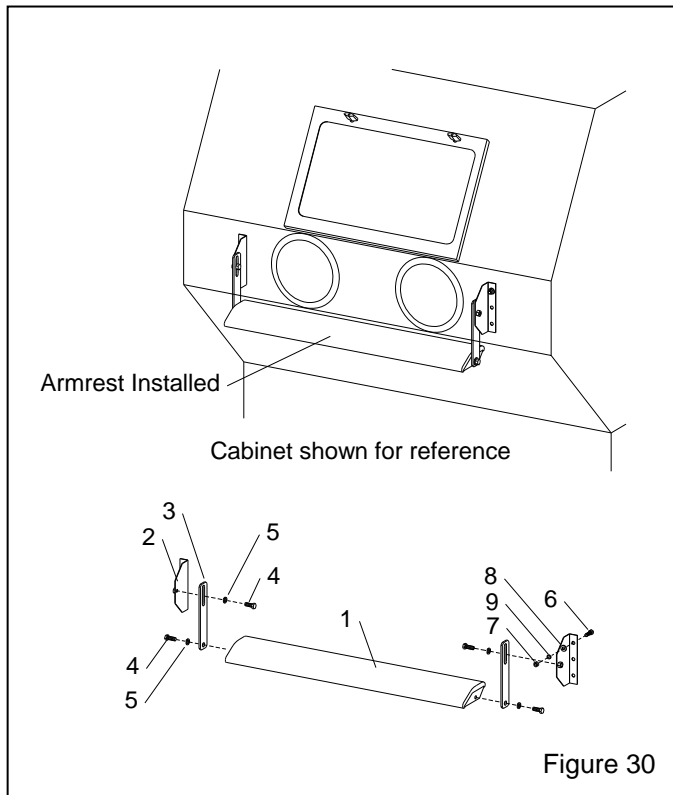


Figure 30

9.2 Flex Hose & Wye Adaptor, Figure 31

Item	Description	Stock No.
1.	Hose, light-lined flex, 5-ft required per side 4" ID for 900 cfm conventional use	12466
	4" ID for 1200 cfm w/steel media	12466
	5" ID for 1200 cfm conventional use	12467
2.	Hose, light-lined flex, specify feet required 6" ID for 900 cfm conventional use	12468
	6" ID for 1200 cfm w/steel media	12468
	7" ID for 1200 cfm conventional use	12469
3.	Hose, unlined flex, specify feet required 7" ID for 900 cfm	12448
	12" ID for 1200 cfm	12460
4.	Clamp, hose for 4" hose	11577
	for 5" hose	11578
	for 6" hose	00750
	for 7", 8", use two for 12" hose	11576
5.	Wye pipe adaptor, 4" x 4" x 6" for 900 cfm conventional use for 1200 cfm w/steel	12379
	5" x 5" x 7", for 1200 cfm conventional ...	16939

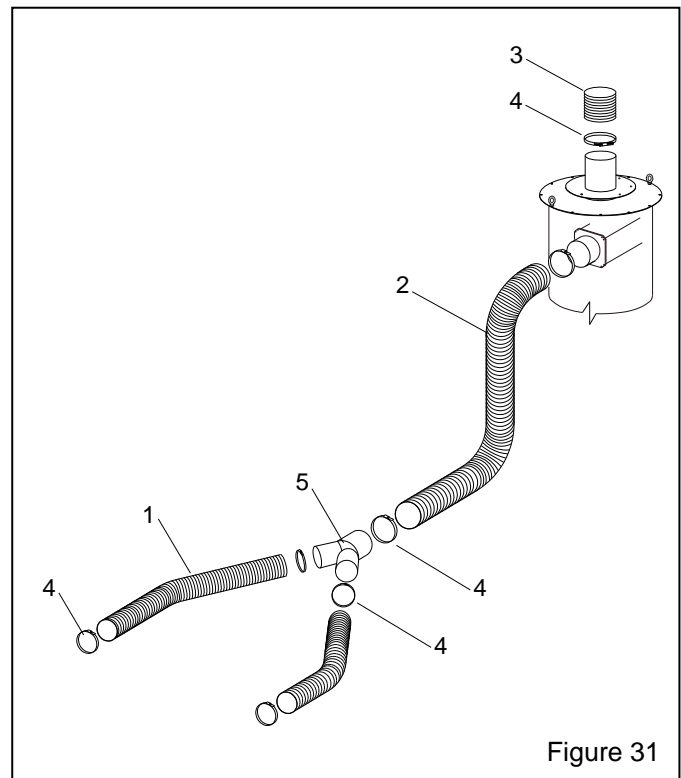


Figure 31

9.3 View Window Assembly, Figure 32

Item	Description	Stock No.
1.	Window glass, 12.5" x 19.5" laminated	12212
2.	Gasket, 5/16" x 3/4", applied to cabinet per foot, 6-feet required	00189
3.	Gasket, 5/32" x 3/4", applied to window frame per foot, 6-feet required	00192
4.	Cover lens, pkg. of 5	06190
5.	Nut, plastic, window frame, 2 required on conventional, 4 on ergo.....	23035
6.	Window frame, quick change for conventional model cabinet	22826
	for ergo model cabinet	25429

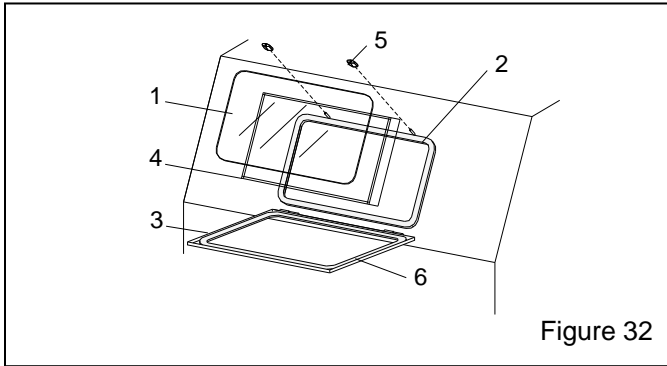


Figure 32

9.4 Light Assembly, Figure 33

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

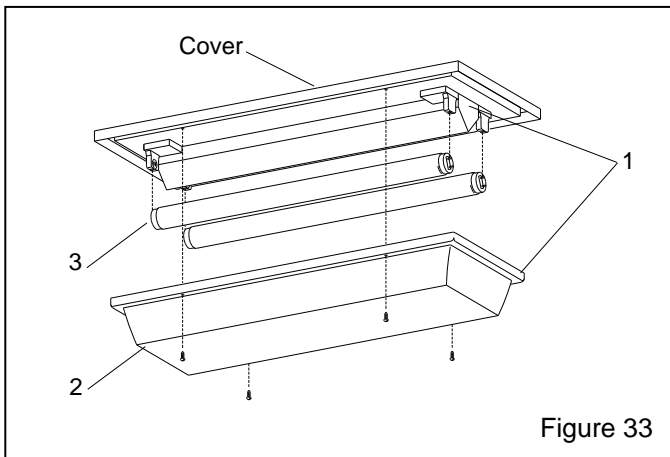


Figure 33

9.5 Foot Pedal Assembly, Figure 34

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

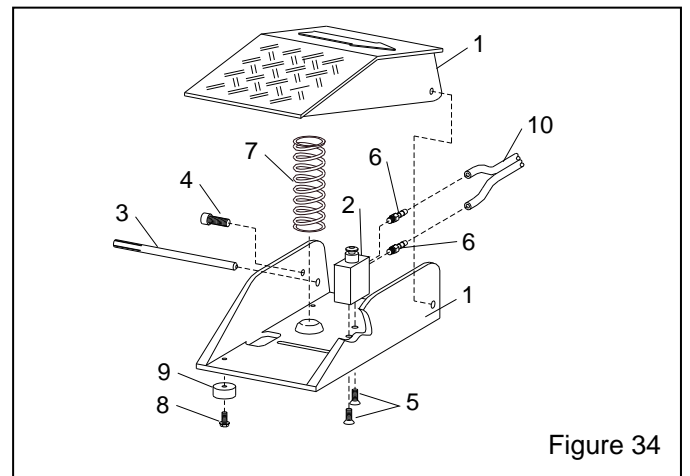


Figure 34

9.6 1" Diaphragm Outlet Valve, Figure 35

Item	Description	Stock No.
(-)	1" Diaphragm outlet valve, complete	03371
1.	Nipple, 1" x close	01701
2.	Diaphragm, outlet valve	06149
3.	Washer, 1/4" lock	03117
4.	Screw, 1/4"x 1" HH Cap.....	03053
5.	Cap, diaphragm outlet	03393
6.	Body, diaphragm outlet	06135
7.	Bushing, 1-1/4" x 1"	01804

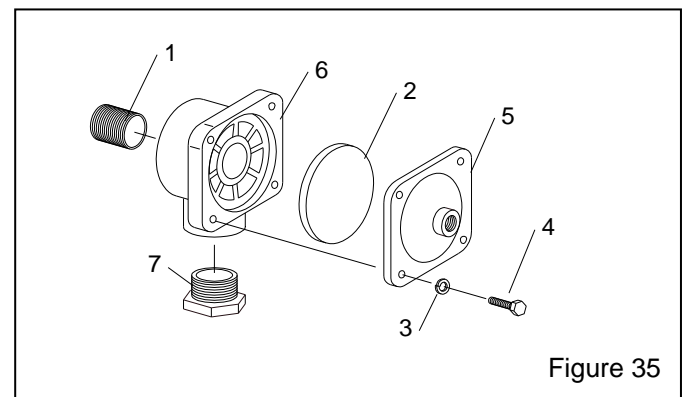


Figure 35

9.7 Cabinet Replacement Parts, Figure 36

Item	Description	Stock No.
1.	Gasket, door, adhesive-backed, per foot, per foot, specify feet required BNP 65 door, 11 ft. per door 00187 BNP 220 door, 13 ft. per door 00187 Light assembly, 7 ft. each location 00187 Air-inlet damper, 3 ft. each location 00187	
2.	Light assembly w/ cover (each) 23255	
3.	Door assembly, left for double 65 20070 for double 220 20074	
4.	Door assembly, right for double 65 20071 for double 220 20075	
5.	Grate for double 65, 2 required 11811 for double 220, 2 required 11810	
6.	Latch kit, door 20064	
7.	Glove set Band-clamp attachment 11215 Quick-change (clampless) attachment... 28820	
8.	Glove, left hand only Band-clamp attachment 12710 Quick-change (clampless) attachment... 28638	
9.	Glove, right hand only Band-clamp attachment 12711 Quick-change (clampless) attachment... 28639	
10.	Clamp, glove 11576	
11.	Clamp, flex hose 5-1/2", for 65 11578 6-1/2", for 220 00750	
12.	Hose, bulk flex, specify length required 5" ID light-lined for 65, 9 ft. required 12467 6" ID light-lined for 220, 9 ft. required 12468	
13.	Grommet, blow-off hose 11798	
14.	Grommet, blast hose 00184	
15.	Adaptor pipe, universal, flex hose 4" for double 65 w/ steel media 23295 5" for std dbl. 65 or dbl. 220 w/ steel 23296 6" for standard double 220 23297	
16.	Gasket, universal flex hose adaptor pipe 4" for double 65 w/ steel media 23258 5" for std dbl. 65 or dbl. 220 w/ steel 23259 6" for standard. double 220 23291	
17.	Muffler, outlet 05068	
18.	Foot pedal assembly, less tubing 20483 with tubing, 14 feet 20195	
19.	Actuator bracket, door interlock 19152	
20.	Over-travel stop, door interlock 20004	
21.	Detent sleeve, door interlock 15042	
22.	Air valve, 3-way, door interlock 12202	
23.	Regulator, 1/8" NPT pilot 12715	
24.	Gauge, pressure, 1/8" cbm 01908	
25.	Fitting, 1/8" NPT elbow x 1/8" barb 11733	
26.	Gasket, hopper plate adaptor 20247	
27.	Plate, hopper hose adaptor 21657	
28.	Damper, air-inlet 23156	
29.	Brace, leg, each for double 65 24443 for double 220 24445	

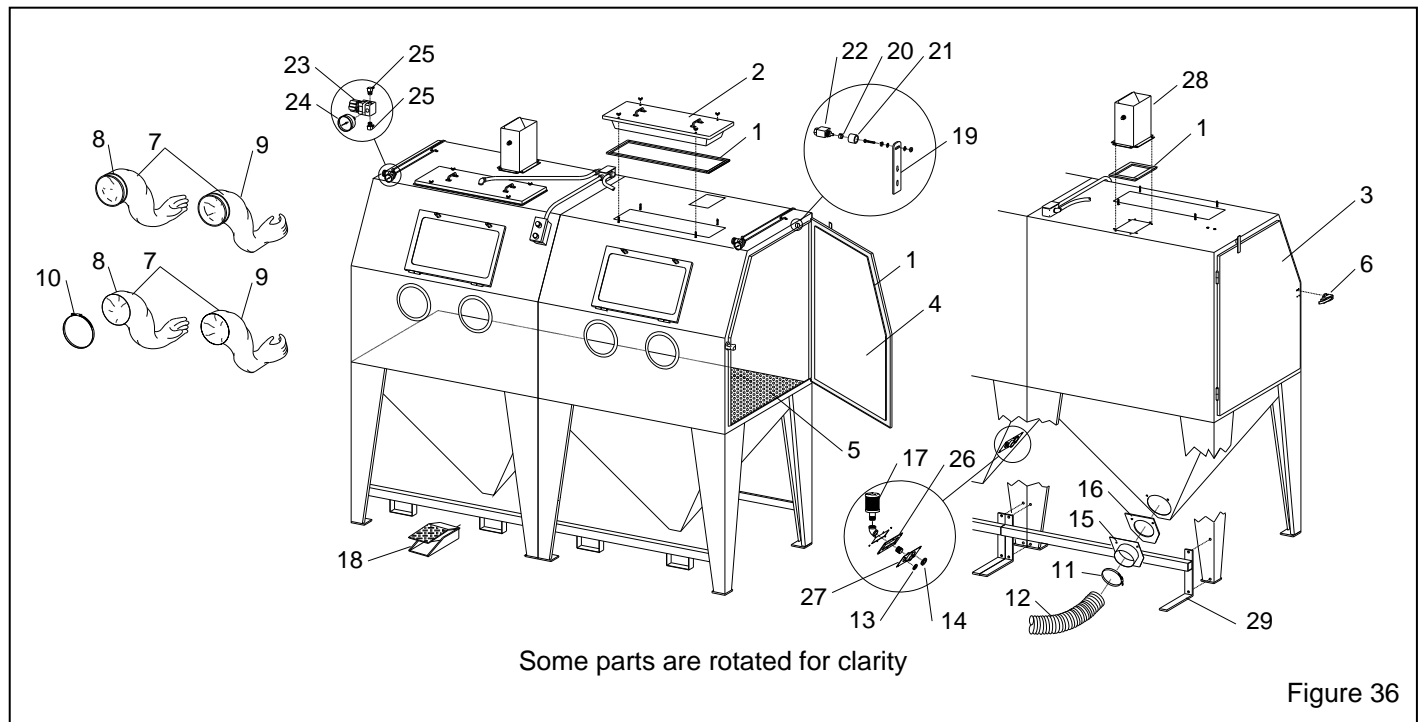


Figure 36

9.8 Plumbing and Air Schematic, Figure 37

Item	Description	Stock No.
1.	Valve, 3-way	12202
2.	Fitting, straight, 1/8" NPT x 1/8" barb	11732
3.	Tubing, 1/8" ID urethane, specify ft reqd.	12475
4.	Tubing, 1/8" ID twin urethane specify feet required	19577
5.	Fitting, straight 1/4" MNPT x 3/8" tube	11736
6.	Tubing, 3/8" OD poly, specify ft. required	12478
7.	Tee, 1/8" tube barb	11734
8.	Metering valve, Sentinel for 50-mesh and finer media, standard for media coarser than 50-mesh	21439 20608
9.	Tee, 1/4" brass	02025
10.	Valve, 4-way air	12203
11.	Fitting, elbow 1/4" M-NPT x 3/8" tube	11685
12.	Valve, 1" diaphragm outlet	03371
13.	Nipple, 1/4" Hex	02808

14.	Filter, 1" w/ auto drain	22425
15.	Bushing 1/4" x 1/8" NPT.	02010
16.	Hose assembly, 1" x 10' exhaust	23915
17.	Muffler, 1/4" bronze	03988
18.	Adaptor, 1/2" NPT x 1/2" male flare	11351
19.	Hose end, 1/2" barb x 1/2" female swivel	15002
20.	Hose end, 1/2" barb x 3/8" M-NPT	06369
21.	Blow-off nozzle	06368
22.	Hose, 1/2" ID air, bulk, specify feet reqd.	12472
23.	Regulator, 1/8" NPT pilot pressure	12715
24.	Gauge, pressure, 1/8" cbm	01908
25.	Fitting, 1/8" NPT elbow x 1/8" barb	11733
26.	Foot pedal assembly, less tubing	20483
	with tubing, 14 feet item 4	20195
27.	Regulator, 1" pilot operated w/ gauge	12052
28.	Gauge, 1/4" cbm	11830
29.	Adaptor, 1" male NPT x 1" male flare	11720
30.	Filter, 1/4" NPT male/female inline	27618
31.	Plug, 1/4-NPT	01950

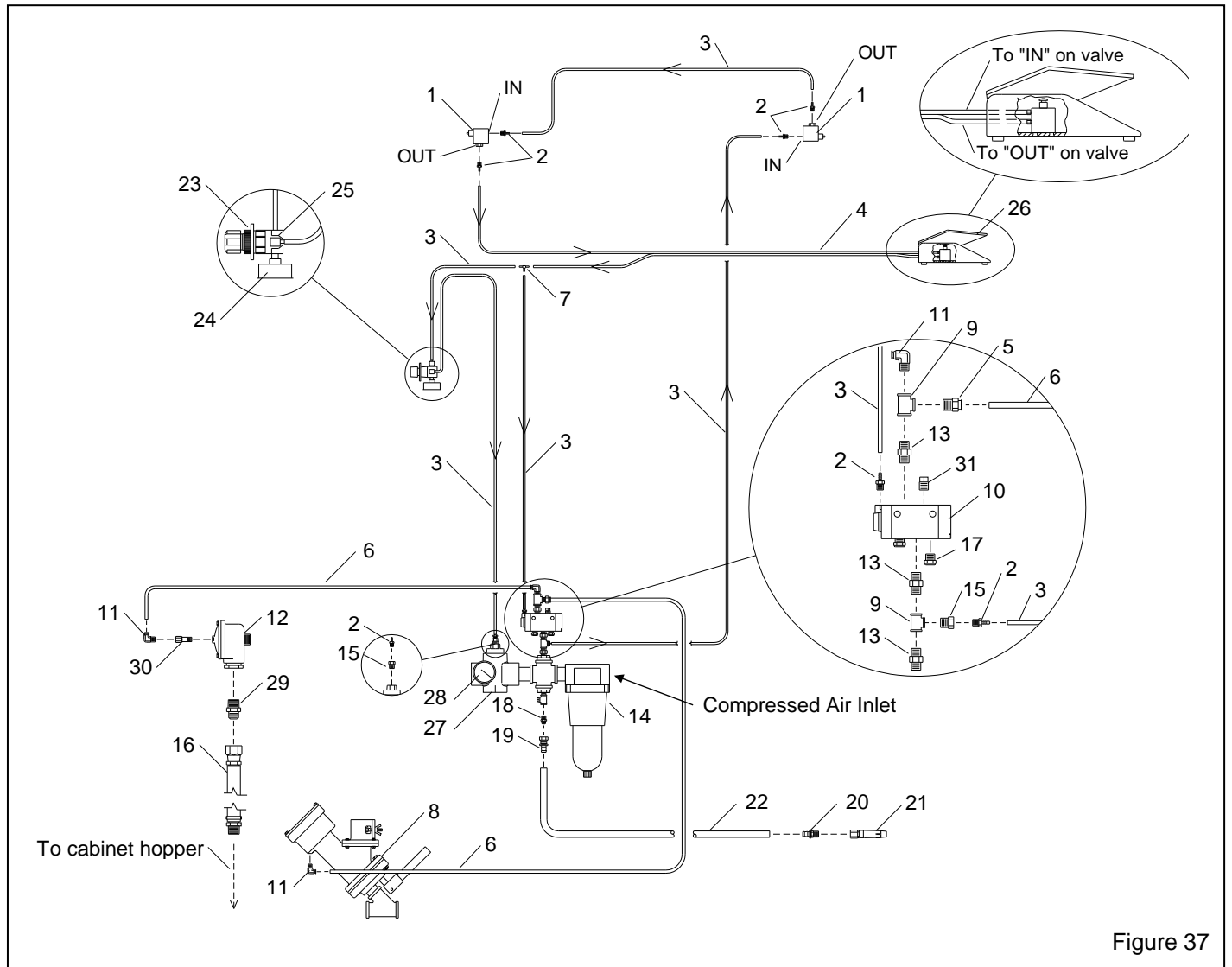


Figure 37

9.9 Blast Machine, Figure 38

Item	Description	Stock No.
(-)	Blast machine assembly, 16" dia., 2 cu. ft. capacity	21135
1.	Ball valve, 1" with handle (choke valve)	02396
2.	Handle, 1" ball valve	22531
3.	Leg pad, right for 1642	20735
4.	Leg pad, left for 1642	20736
5.	Adaptor, 1" male NPT x 1" male flare	11720
6.	Hose assembly, 1" x 18" pusher line	22508
7.	CF Coupling 1-1/4" NPT	00551
8.	Media metering valve, Sentinel for 50-mesh and finer media, standard	21439
	for 50-mesh and coarser media	20608
9.	Inspection door assembly, 6" x 8"	02377
10.	Gasket, 6" x 8" inspection door	02369
11.	Pop-up valve with external sleeve	03699
12.	Guide, pop-up, 1-1/4" x 6-1/2" toe nipple	01754
13.	Seat, pop-up valve	02325
14.	Valve, 1" diaphragm outlet	03371
15.	Regulator, 1" pilot operated w/ gauge	12052
16.	Gauge, 1/4" cbm	11830
17.	Filter, 1" w/ auto drain	22425

18.	Check valve, 1" swing	12187
19.	Valve, 4-way air	12203
20.	Gasket, CQG, pkg of 10	00850
21.	Coupling, 1/2" ID hose, CQA-1/2	00599
22.	Nozzle holder, CHE-1/2	00577
23.	Blast hose, 1/2" ID x 16 ft. coupled, includes items 21 & 22	01251
24.	Nozzle, tungsten carbide CT-2, 1/8" orifice	01351
	CT-3, 3/16" orifice, standard	01352
	CT-4, 1/4" orifice	01353
25.	Nozzle washer, NW-1, pkg. of 10	21580
26.	Muffler, 1/4" bronze	03988
27.	Fitting, straight 1/4" M-NPT x 3/8" tube	11736
28.	Fitting, elbow 1/4" M-NPT x 3/8" tube	11685
29.	Hose assembly, 1" x 10 ft. exhaust	23915
30.	Filter, 1/4" NPT male/female inline	27618
31.	Lock pin, coupling (package of 25)	11203

9.10 Sentinel Valve Replacement Parts

Refer to the Sentinel valve owner's manual for replacement parts.

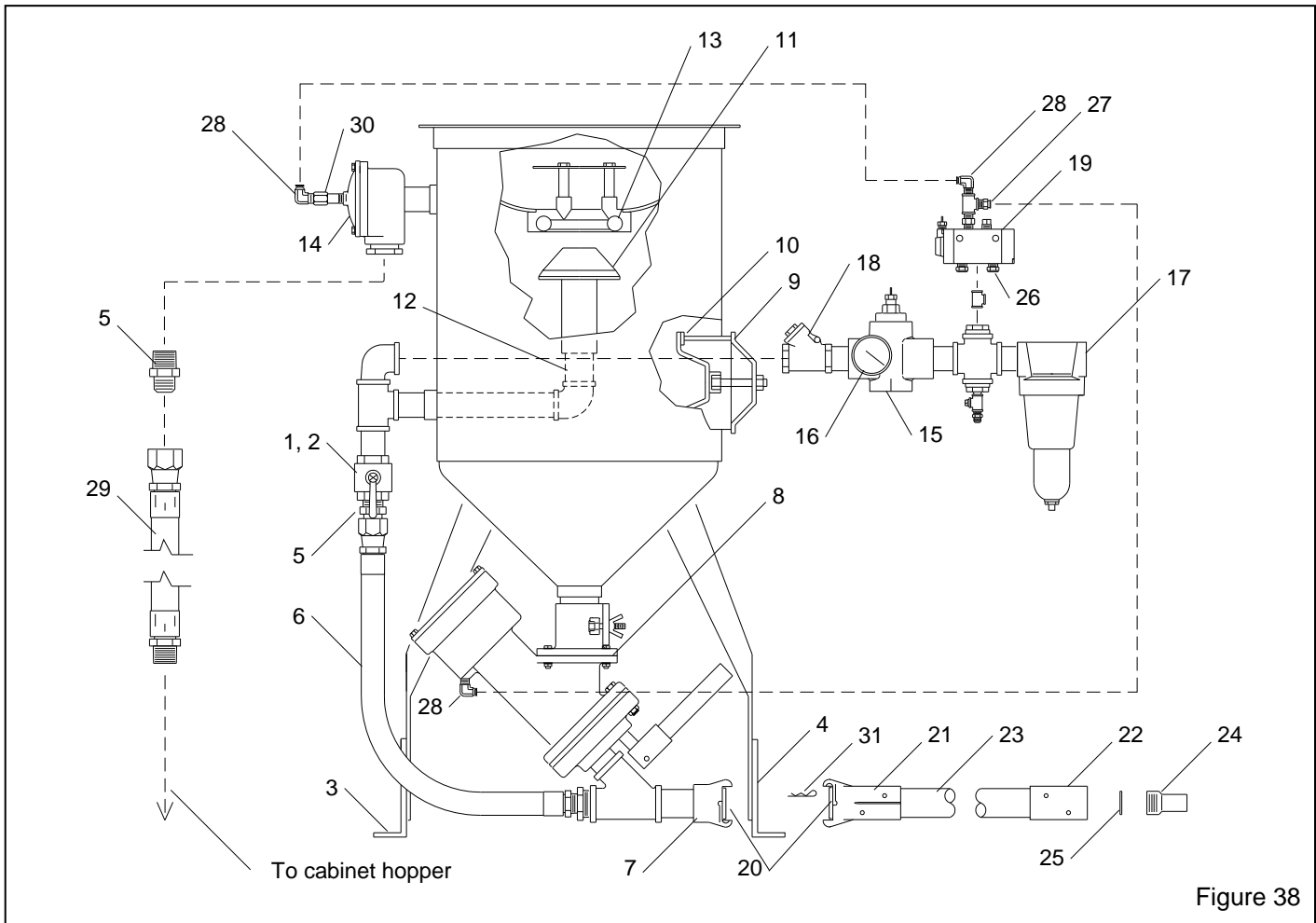


Figure 38

9.11 Reclaimer, Figure 39

Item	Description	Stock No.
(-)	Reclaimer assemblies, pull-thru w/16" dia. flange for 2 cu. ft. blast machine	
	900 cfm with outlet pipe adaptor	28969
	900 cfm w/externally adjustable vortex	21293
	1200 w/externally adjustable vortex	24066
1.	Gasket, 5/16" x 1" adhesive-backed, per foot, specify feet required	00187
2.	Inlet pipe adaptor, 900 cfm, 6"	12363
3.	Gasket, inlet adaptor	
	900 cfm	11759
	1200 cfm	11767
4.	Wear plate, rubber-lined w/mounting screws	
	900 cfm	
	reclaimer with solid top	14055
	reclaimer with removable top	25071
	1200 cfm	19223
5.	Screen assembly	21265
6.	Gasket, door	
	900 cfm	11745
	1200 cfm	11766

7.	Spring latch assembly	12263
8.	Door, 900 cfm w/gasket and latch	14271
9.	Gasket, 2" adhesive-backed, per foot, specify ft. required	13089
10.	Eyebolt 3/8-NC	00430
11.	Hose support, inlet	
	6", 900 cfm, * optional	16887
	6", 1200 cfm for steel grit	22729
	7", 1200 cfm 7" conventional	20596
12.	Vortex cylinder externally adjustable,	
	900 cfm, optional	23046
	1200 cfm	25432
13.	Top plate assembly, 900 cfm	23040
14.	Adaptor, 7" outlet pipe, 900 cfm	16832
15.	Body section, 900 cfm, w/door & wear plate for reclaimers with bolt-on top	27465
*16.	Body section 900 cfm, with door rubber liners and bolt-on top	27466
17.	Adaptor, 16" dia. blast machine, 900 cfm	23043
*18.	Hose support, outlet, optional	
	7" for 900 cfm	20619
	12" for 1200 cfm	20730

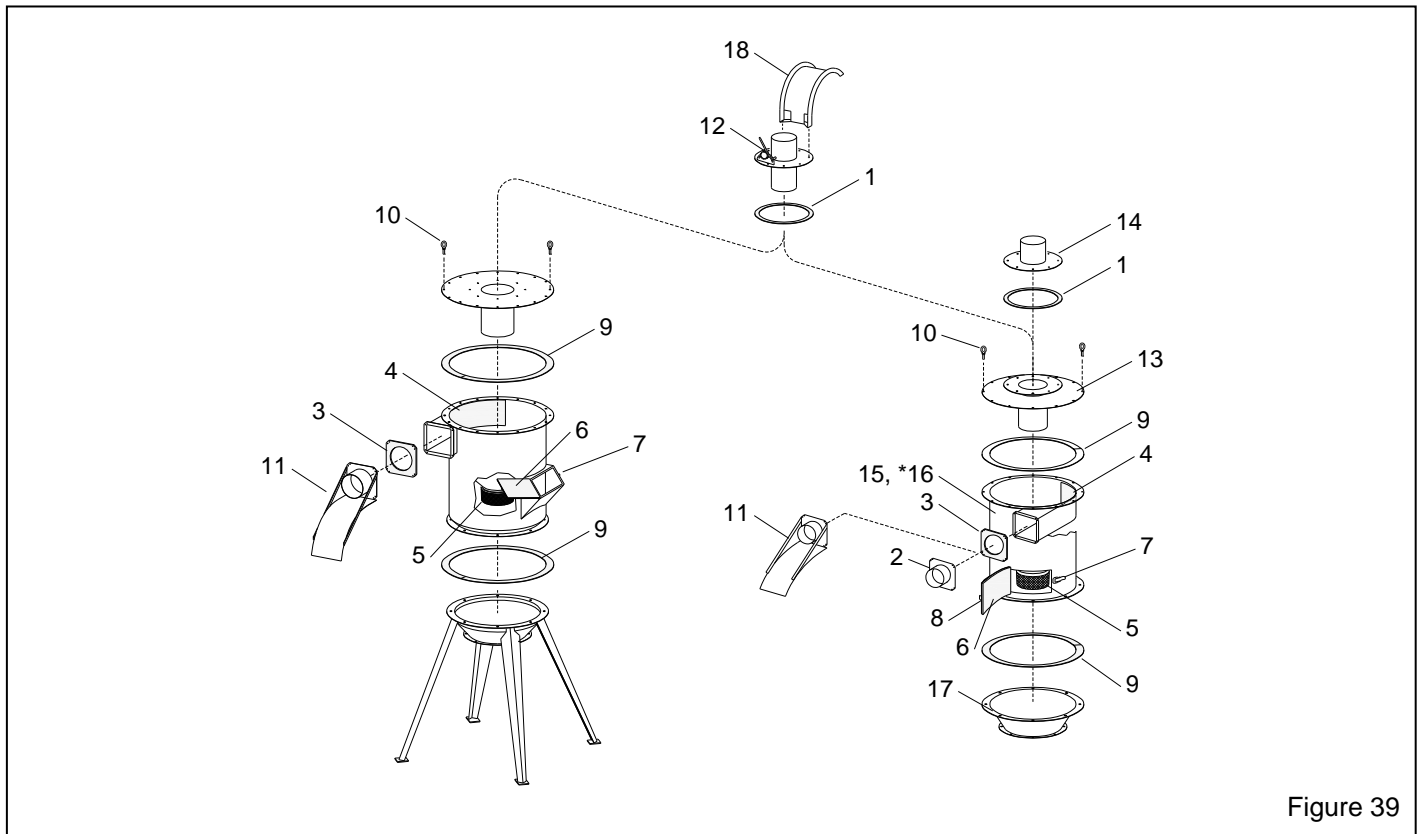


Figure 39

9.12 Reclaimer Liners, Figure 40

Reclaimer must be designed to accept liners and have a removable top.

Item	Description	Stock No.
(-)	Rubber liner sets	
	900 cfm	23151
	1200 cfm	25439
1.	Top liner	
	900 cfm	23059
	1200 cfm	22689
2.	Baffle, lined	
	900 cfm (2-piece).....	23416
	1200 cfm	24654
3.	Side liner, reclaimer body	
	900 cfm	17008
	1200 cfm	25436
4.	Inlet-side liner	
	900 cfm	12830
	1200 cfm	22693
5.	Inner-cone liner	
	900 cfm	16070
	1200 cfm	22694
6.	Inlet-top	
	900 cfm	22827
	1200 cfm	24031
7.	Screw, self-drilling, 10-16 x 3/4"	12722

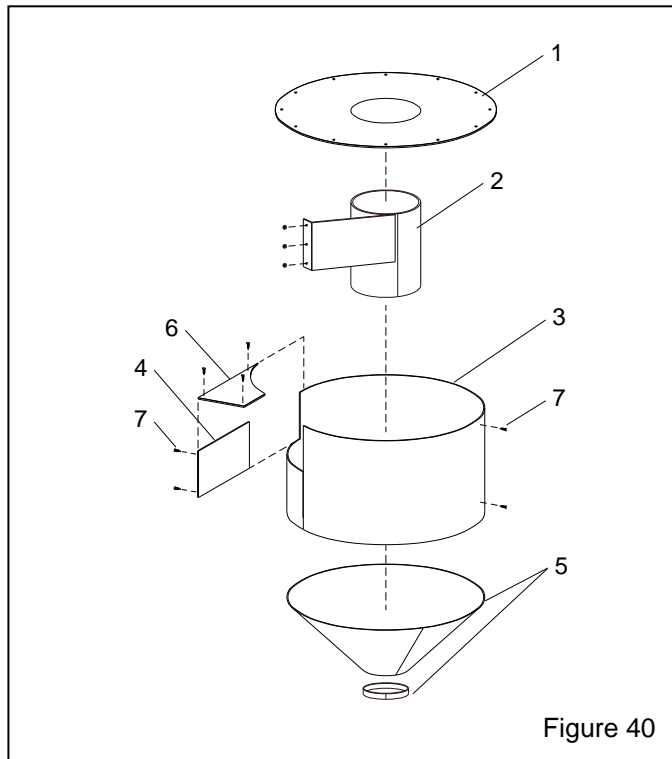


Figure 40