



BNP[®] 65P and 220P Pressure Blast Cabinets O. M. 21278

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

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

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

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

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

This equipment is only one component of a cabinet blasting operation. Other products, such as air compressors, air filters and receivers, abrasives, equipment for ventilating or 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 setup, operation, maintenance, troubleshooting, optional accessories, and replacement parts for the following BNP-65 and 220 series pressure blast cabinets:

- BNP-65PConventional
- BNP-65PM, for use with steel media
Refer to Section 1.11.2 for size limitations
- BNP-220PConventional
- BNP-220PM for use with steel media
Refer to Section 1.11.2 for size limitations

The instructions cover 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. *The CDC and RPC Dust Collectors are no longer available.

- *CDC-1 Dust Collectors, manual stock no. 28225
- *RPC-2 Dust Collector, manual stock no. 22788
- RPH Dust Collectors, manual stock no. 21449
- LPDC Dust Collectors, manual stock no. 32011

A separate operations manual stock no. 32393 is provided for the PQV-Pro Metering Valve. *The GritWizard Metering Valve is no longer available, refer to manual stock no. 31199.

1.1.2 The instructions contain important information required for safe operation of the cabinets. Before using this equipment, all personnel associated with the blast cabinets' operation must read this entire manual and all accessory manuals to become familiar with their 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.

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1.4 General Description

1.4.1 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:

- Cabinet Enclosure
- Reclaimer
- Blast Machine
- Dust Collector

1.4.2 Cabinet enclosure: This manual covers two BNP cabinet sizes.

BNP-65 Approximate work chamber dimensions:
36" wide x 35" deep x 37" high.

BNP-220 Approximate work chamber dimensions:
50" wide x 39" deep x 43" high.

1.4.3 Refer to Figure 1. The illustration shows 900 cfm reclaimer mounted atop the blast machine; the smaller 600 reclaimer is mounted in the same manner.

1.5 Theory of Operation

1.5.1 Blasting: Once the components are correctly set up 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 media to be propelled through the blast hose and out the nozzle. After striking the object being blasted, the blast media, fines, dust, and byproducts generated by blasting fall through the grate into the cabinet hopper. These particles are then drawn into the reclaimer for separation. When the foot pedal is released, the blast machine depressurizes and blasting stops. Media stored in the reclaimer automatically

refills the blast machine when blast machine pressure equalizes, and the pop-up valve drops.

1.5.2 Media recovery and separation: When recovered media enters the reclaimer, dust and fines are first separated from reusable blast media and drawn into the dust collector. Next, the media is screened of oversize particles and returned to the reclaimer hopper for reuse.

1.5.3 Dust filtering: Dust and fines entering the dust collector are removed from the air stream as they pass through the filters, discharging clean air.

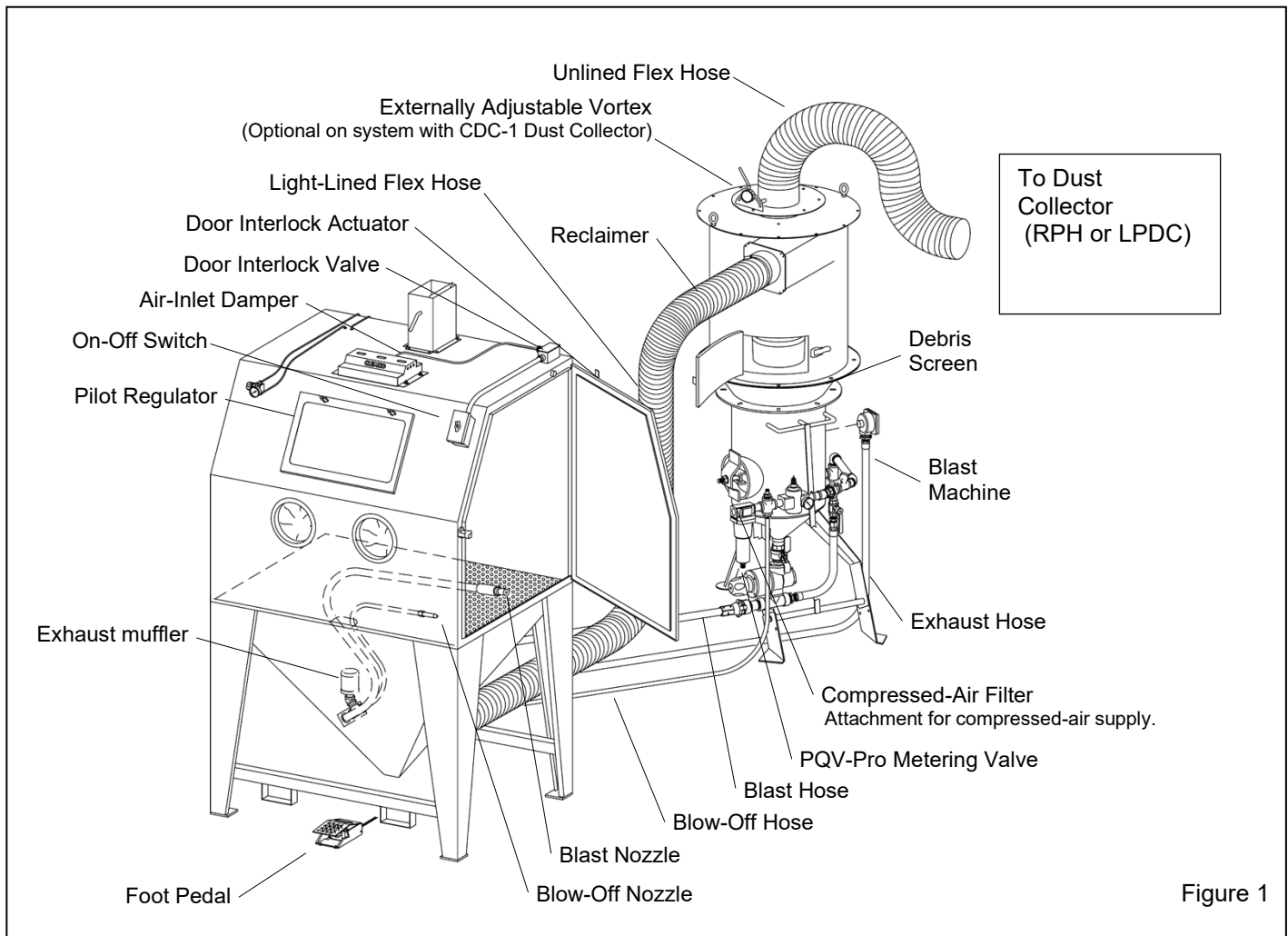


Figure 1

1.6 Blast Machine and Controls

1.6.1 Clemco certifies that its blast machines (pressure vessels) 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 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 can weaken the vessel. Compressed-air pressure can 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.

1.6.2 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.

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

WARNING

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

1.6.4 OSHA does not require pressure-relief valves on blast machines when air compressors supplying air to the blast machines are built to American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1 and comply with OSHA regulation 29 CFR 1910.169, which 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 with maximum pressure less than or equal to the maximum-allowable working pressure (MAWP) stamped on the vessel nameplate.

1.6.5 When the cabinet is set up, 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.

1.7 Dust Collector Options

1.7.1 RPH-2 Dust Collector: The RPH-2 is available in 600 cfm and 900 cfm models. The collector sits atop a hopper, which provides additional dust storage, and empties into a drum. Refer to manual number 21449.

1.7.2 HEPA (high-efficiency particulate air) Filter: Optional HEPA afterfilters provide additional filtration and must be used with a reverse-pulse cartridge collector when removing toxic coatings, heavy metals, or any other toxic materials. Refer to the applicable dust collector manual noted in Paragraph 1.1.1 for the HEPA option.

1.7.3 LPDC Dust Collector: The LPDC is available in 300, 600 and 900 cfm models. The single filter cartridge is cleaned by using a manually controlled pulse of compressed air. Dust collects in an easily rolled out dust bin, which must be frequently emptied. Refer to manual number 32011.

WARNING

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

1.8 Nozzle Options

1.8.1 Unless otherwise specified at the time of purchase, cabinets are provided with a 3/16" orifice tungsten carbide nozzle. Optional 1/8" orifice nozzles are available for use with all cabinets, and 1/4" orifice nozzles are for use with 900 cfm reclaimers only.

1.8.2 Nozzles with an orifice larger than those recommended could cause air leakage from the cabinet and impair recovery from the cabinet hopper.

1.8.3 Use boron carbide nozzles when blasting with aggressive media, as noted in Section 1.11.4. Nozzles lined with boron carbide extend nozzle wear life. Refer to *Section 9.1: Optional Accessories*.

1.9 Reclaimer Options

1.9.1 Replaceable rubber reclaimer liners prolong the service life of the reclaimer and should be installed when using silicon carbide, aluminum oxide, or other aggressive media, as noted in Section 1.11.4. Rubber liners are available for a 600 and 900 cfm reclaimer that has a removable top and are designed to accept liners. Reclaimer liners are shown in Section 9.1, Figure 39.

1.10 Metering Valve Options

1.10.1 The standard media metering valve used on BNP Pressure Cabinets is the PQV Pro metering Valve, suitable for all media types.

1.11 Blasting Media

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

Most common reusable media specifically manufactured for blasting can be used in Clemco blasting cabinets. The listing of media sizes shown in this section and in Figure 3 are provided as a guideline only. The guideline is based on standard 3/16" orifice nozzle and average conditions with variables such as blast pressure, media-air mixture, visibility inside the cabinet, humidity, and reclaimer cleaning-rate.

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

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

1.11.2 Steel shot and steel grit: Steel shot S-170 to S-70 or steel grit 50-mesh to 120-mesh may be used in BNP cabinets configured for using steel media.

Using steel media requires a smaller diameter conveying hose (usually reduced one size from standard) and a 900 cfm or larger reclaimers. Rubber curtains should be used to protect the cabinet walls from peening and rapid wear. For these applications, cabinets can be ordered with reduced-size flex hose appropriately sized for steel grit and with rubber curtains installed. They may also be field installed later. Refer to *Section 9.1: Optional Accessories*. NOTE: Steel grit or shot is too heavy to use with cabinets equipped with 600 cfm reclaimers.

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, such as air pressure, media-air mixture, visibility, contamination of parts being blasted, 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 carry over 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	GLASS BEAD	ALUM. OXIDE	FINE-MESH	PLASTIC
*600 cfm w/5" inlet	Do not use	Do not use	No. 8 to No. 12	80 to 150-mesh	See 1.10.6	See 1.10.8
900 cfm w/5" inlet	50 to 120	S-170 to S-70	No. 4 to No. 8	46 to 100-mesh	Do not use	Do not use
900 cfm w/6" inlet	Do not use	Do not use	No. 8 to No. 12	54 to 180-mesh	See 1.10.6	See 1.10.8

* Available with BNP-65 only

Figure 2

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

1.11.4 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 downtime and maximize cabinet life, periodically inspect the reclaimer wear plate, blast hose, and nozzle for wear and replace parts as needed.

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

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

1.11.6 Lightweight and fine-mesh media: When using lightweight (such as agricultural) media or fine-mesh (180-mesh and finer) media, the reclaimer inlet baffle may need to be removed to retain media and avoid carry over. On reclaimer models with bolt-on removable tops, baffle removal and replacement is easily accomplished, as explained in Section 7.13. Reclaimers with welded-on tops require grinding to remove the baffle and once it is removed it cannot be replaced.

1.11.7 Plastic media: Plastic media requires a blast machine with a 60-degree conical bottom. Refer to Clemco Blast Cabinet line.

1.11.8 Bicarbonate of soda: Bicarbonate of soda is not recommended for use in standard cabinets. Bicarb is a one-use media, which will quickly saturate the filter cartridge(s). Refer to Clemco Blast Cabinet line for cabinets that are specifically designed for use with bicarbonate of soda.

1.12 Compressed-Air Requirements

1.12.1 The size of the compressor required to operate the cabinet depends on the size of the nozzle and blasting pressure. Unless otherwise specified, cabinets are supplied with a 3/16" orifice nozzle. The table in Figure 3 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; refer to the dust-collector operations manual.

1.12.2 The air filter at the blast machine inlet removes condensed water from the 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 inhibits 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.

Compressed-Air Consumption *(cfm)

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

* 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 3

1.13 Electrical Requirements

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

1.13.1 Electrical requirements depend on the size and phase of the dust-collector exhaustor 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:

600 cfm: 1 HP, 115/230V, 1 PH, 60 HZ
115, FLA 115/12, 208/6.6, 230/6.2.

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.

Additional wiring information is in Section 2.11.

2.0 INSTALLATION

2.1 General Installation Notes

2.1.1 Refer to Figure 1 for the general arrangement and Figure 5 for the control line schematic. Select a location

where compressed air and electrical service are available. The cabinet location must comply with OSHA and local safety codes. Allow for full access to all doors and service areas and for efficient handling of large parts. Provide enough clearance in front of the dust collector to remove the dust drum or dust drawer without tipping. Ideally, locate 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 allow for as few bends as possible to prevent wear. Determine the best location for all components and position them before making compressed-air connections, electrical connections, and attaching flex hose.

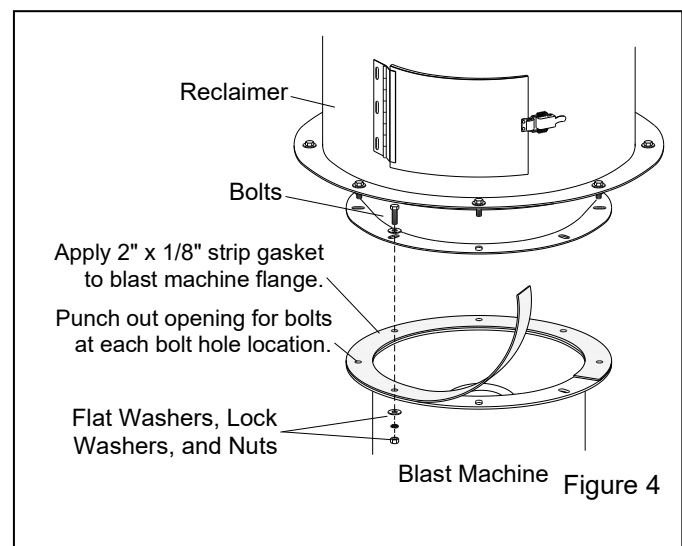
2.1.2 Refer to the dust-collector operations manual to set up the dust collector and prepare it for operation.

2.2 Assemble Blast Machine and Reclaimer Figure 4

! WARNING

BNP reclaimers weigh between 100 lbs. and 150 lbs, depending on the size. When installing or removing the reclaimer, it must be adequately supported and secured to appropriate lift equipment. Failure to secure and use proper lift device can result in injury.

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 upper 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.

⚠ WARNING

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

2.3 Support the Blast Machine

2.3.1 Use chains, cables, or other means to temporarily support the blast machine and reclaimer during final assembly until the machine can be anchored.

2.4 Connect Conveying (flex) Hose

2.4.1 Connect the smaller diameter flex hose between the cabinet hopper pipe adaptor and reclaimer inlet. Connect the larger diameter hose between the reclaimer outlet and dust-collector inlet. It is easier to slip the hose over the adaptor and 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. Clamp flex hose securely in position with worm clamps provided. **NOTE: The wire helps dissipate static electricity in the conveying hose and helps ground each segment. In order for the hose wire to dissipate static electricity, the wire must touch the metal of each segment.**

2.5 Connect Blow-Off Hose

2.5.1 Attach the 1/2" blow-off hose coming from the cabinet hopper to the compatible fitting on the blast machine piping, located between the air filter and pressure regulator. Refer to the schematic in Figure 5.

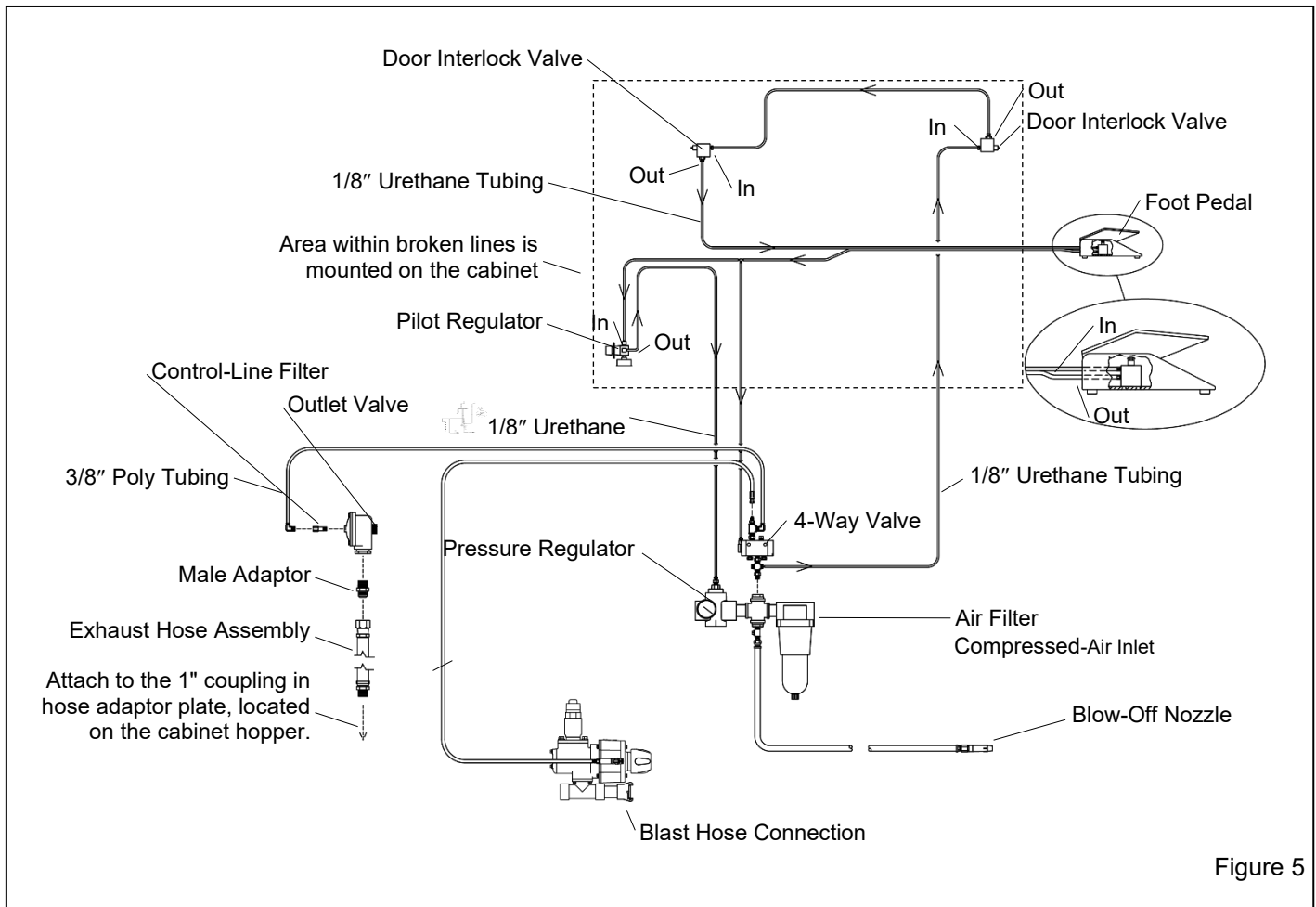


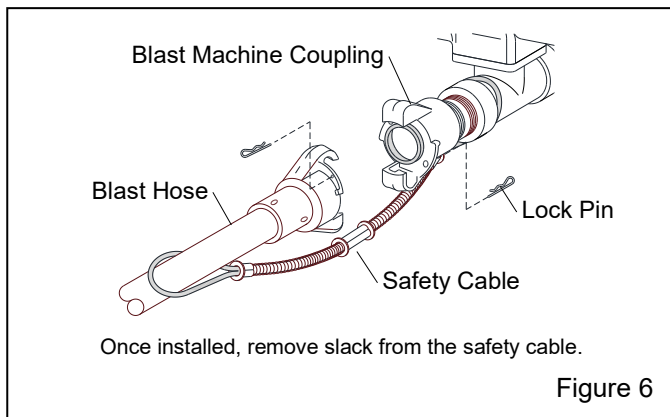
Figure 5

2.6 Connect Blast Hose – Figure 6

⚠ WARNING

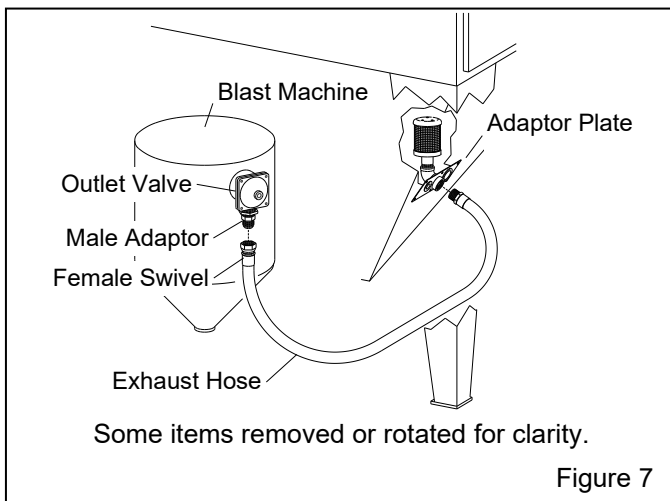
Hose disconnection while under pressure can cause serious injury or death. Use safety lock pins or safety wire to lock twist-on couplings together and prevent accidental separation, and also use safety cables to prevent hose from whipping should separation occur. Safety lock pins and safety cables are listed in *Section 9.1: Optional Accessories*.

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 – Figure 7

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 brown 1/8" urethane control tubing from 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 top of the pressure regulator, piping, and 4-way air valve. Refer to the schematic in Figure 5 to confirm the connections.

2.9 Connect Compressed-Air Supply Line(s) Figure 8

A separate air line is required for the dust-collector pulse. Refer to the dust-collector operations manual.

⚠ WARNING

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

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

2.9.1 Apply thread sealant to the male threads of an air fitting that is compatible with the air-supply hose fitting, as noted in Section 2.9.2, 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 in Figure 8 is for reference only.

⚠ WARNING

Hose disconnection while under pressure can cause serious injury or death. Use safety lock-pins or safety wire to lock twist-on claw type couplings together and prevent accidental separation, and safety cables to prevent hose from whipping should separation occur. Safety lock pins and safety cables are listed in *Section 9.1: Optional Accessories*.

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.

⚠ 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.

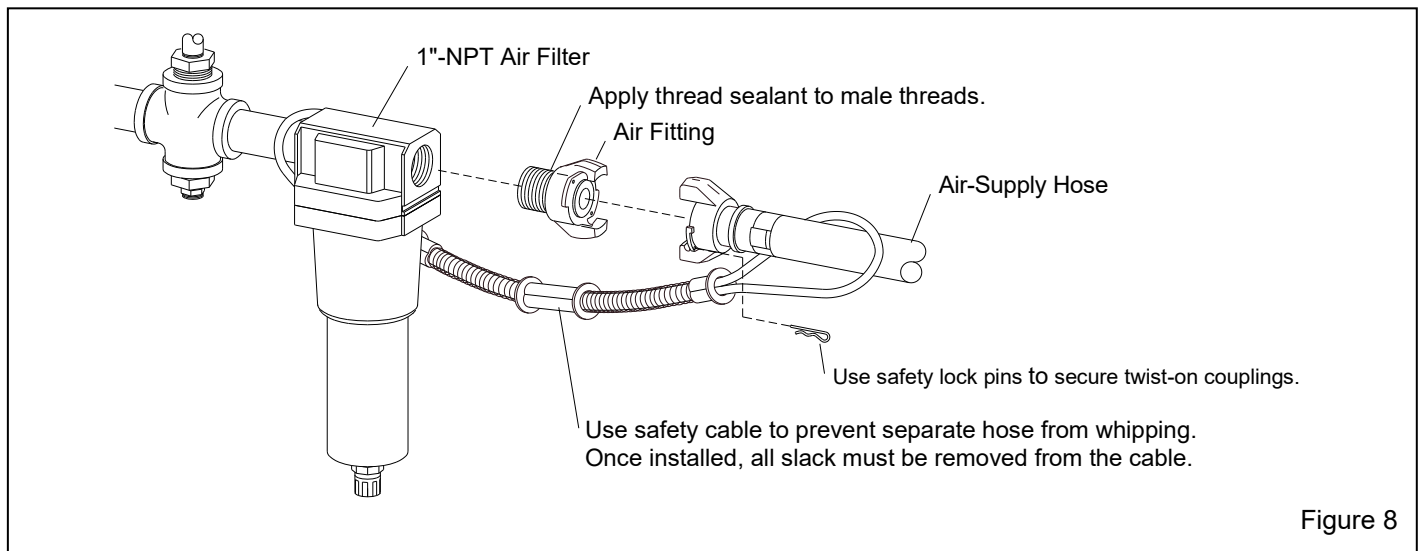


Figure 8

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

2.10 Ground the Cabinet and Dust Collector

2.10.1 To prevent static electricity buildup, attach an external grounded wire from an earth ground to the grounding lug on the left rear of the cabinet. Refer to the dust-collector operations manual and connect a ground wire to the dust collector.

2.11 Connect Electrical Service

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

⚠ WARNING

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

2.11.1 Single-phase wiring – Figure 9

2.11.1.1 Standard 600 cfm cabinets and dust collectors are 115-volt single phase. Incoming power to the cabinet is supplied by a U-ground plug; plug it into a 115-volt outlet.

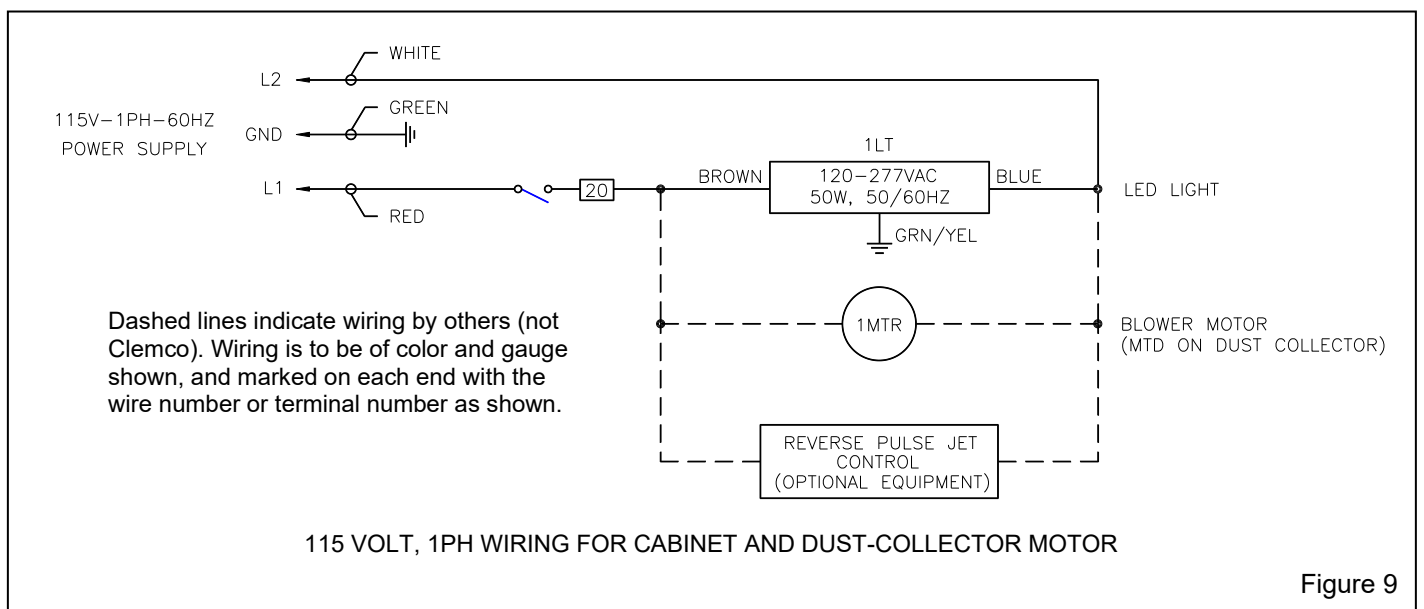


Figure 9

⚠ WARNING

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

2.11.1.2 Refer to the wiring schematic in Figure 9 and wire the dust-collector motor per instruction on the motor data-plate, to the junction box 10; the dust-collector exhaustor motor will start when the cabinet light switch is turned ON, and stop when the switch is turned OFF.

2.11.2 Three-phase wiring

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.

2.11.2.1 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.

2.11.2.2 Check the dust-collector amperage on initial startup. If the motor draws excessive amperage, gradually close the dust-collector damper on the exhaustor outlet on RPH and LPDC dust collectors, until the amperage is within the specifications shown on the motor plate.

2.11.2.3 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 exhaustor housing; the fan should rotate toward the exhaustor outlet. If it rotates in reverse, change the wires, as noted on the motor plate to reverse rotation.

⚠ WARNING

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

2.12 Anchor Blast Machine

2.12.1 After all the components are in their permanent positions, anchor the machine to the floor using the holes located in the blast-machine leg pads and remove the temporary supports.

2.13 Set Air-Inlet Damper – Figure 10

2.13.1 The air-inlet damper is located on the top of the cabinet and must be set to match the cabinet dimensions and reclaimor size. The air damper was preset prior to shipment; confirm the initial setting, as noted below.

2.13.2 The label on the damper shows the settings in degrees. The initial setting should align the handle, as noted.

65 w/600	align handle to 30 degrees
65 w/900	align handle to 0 degree (full open)
220 w/600	align handle to 30 degrees
220 w/900	align handle to 0 degree (full open)

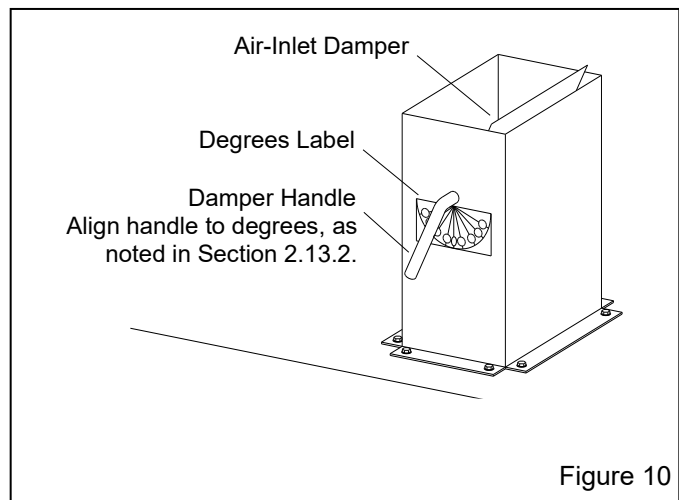


Figure 10

2.14 Final Assembly

2.14.1 Insert a short length of 3/8" tubing into the automatic drain at the bottom of the compressed-air filter, as shown in Figure 11, and place the other end into a pail. When the filter automatically drains, the water will drain into the pail.

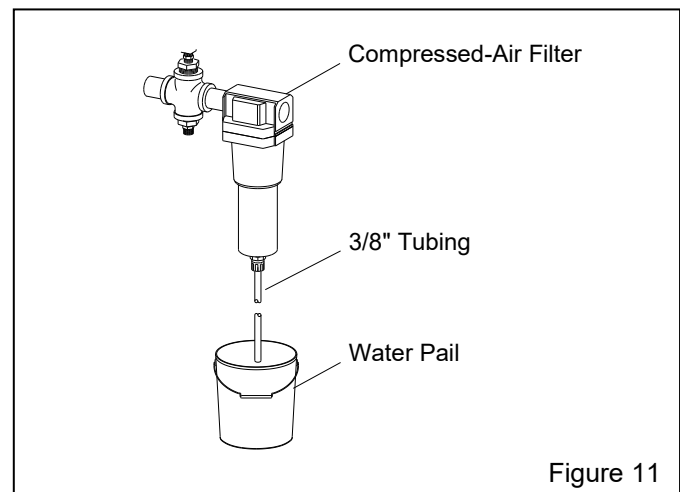


Figure 11

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

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

3.0 FIELD INSTALLED ACCESSORIES

Optional accessories are shown in Section 9.1

3.1 Aluminum Oxide (aggressive media) Kit

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

Factory-installed kit consists of black-rubber curtains for doors, front and rear walls, curtain hardware, and a boron carbide lined nozzle.

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

3.2 Cabinet 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 soundproofing 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 reclaimer's efficiency is achieved by a centrifugal balance of air flow, particle weight, and size. The manometer measures static pressure. Reclaimer static pressure is set by adjusting the dust-collector damper. Refer to Section 5.3 to adjust static pressure. Refer to Section 5.7 for instructions on using the manometer.

3.4 Armrest

3.4.1 Assemble the armrest and mounting brackets, as shown in Figure 12.

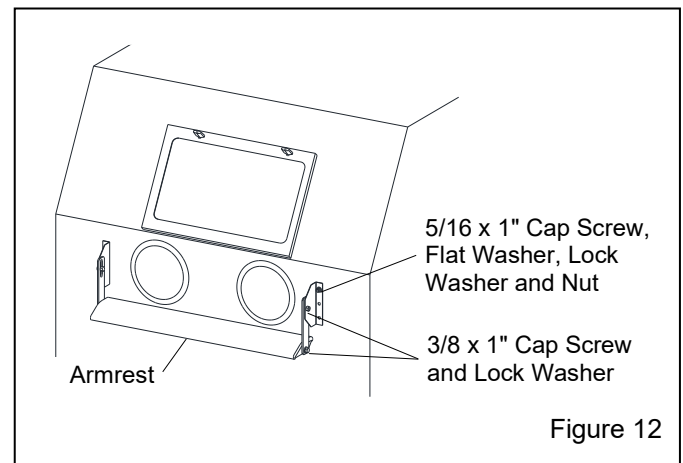


Figure 12

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

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

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

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

3.5 Turntable with Workcar and Track

Installation note: The track may be placed on either side of the cabinet, allowing entry through either the right side or left side door; the right side is shown in the illustrations. When installing the inside track, place it so the stops are opposite the entry door, as shown in Figure 14.

3.5.1 Components of the turntable and track assembly are shown in Figure 13. 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. Track support table.
4. Turntable and workcar assembly.

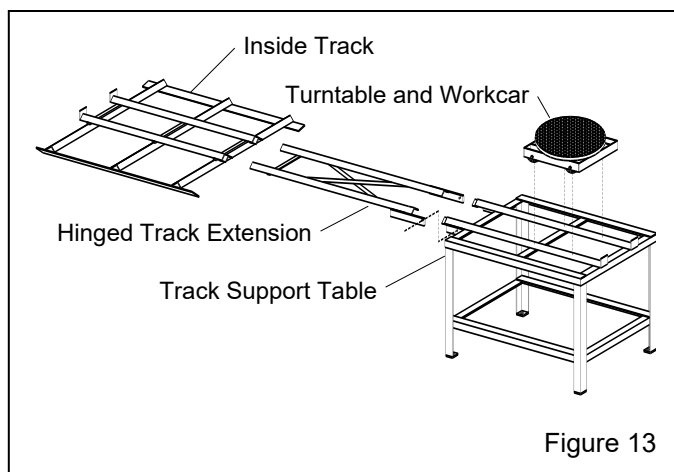


Figure 13

3.5.2 Place the inside track in the cabinet over the existing grate, as shown in Figure 14. The workcar stops must be on the opposite side from the entry door.

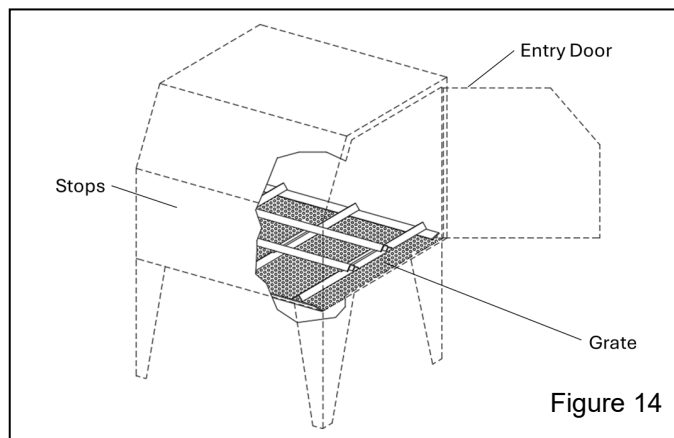


Figure 14

3.5.3 Position the track support table and extension, as shown in Figure 15. When the hinged extension is lowered, the extension tracks must rest on the angled locating supports welded to the bottom of the inside tracks, and butt against the inside tracks.

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

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

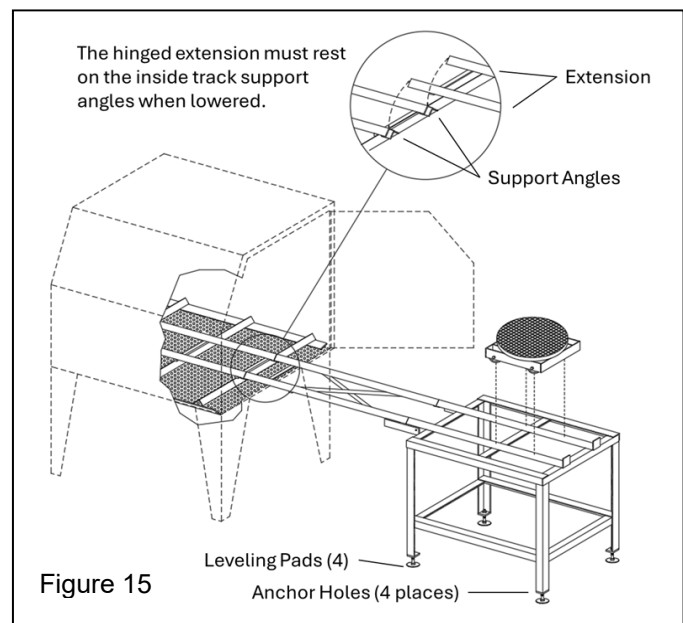


Figure 15

3.6.1 The external adjustable vortex is an option when the cabinet is provided with an LPDC Dust Collector. The vortex is standard with 600 cfm and 900 cfm reclaimers when the cabinet is provided from the factory with an RPH-2 Dust Collector.

Not available for 300 cfm reclaimer.

4.0 OPERATION

NOTICE

Do not pulse new dust collectors or replacement cartridges until the cartridges are properly seasoned, as instructed in the dust-collector operations manual. Pulsing unseasoned cartridges can decrease the efficiency of dust collectors and cause premature cartridge failure.

4.1 Media Loading

4.1.1 Media capacity: Media capacity depends on the reclaimer size. Media capacity of 600 cfm units is approximately 1.6 cubic feet (CF). Full capacity will be below the opening of the pop-up valve. Capacity of 900 cfm units is approximately 2 CF. Full capacity is when media is at 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 through the reclaimer door. **Do not pour media directly into the cabinet hopper, as overfilling may occur.** Overfilling will result in media carry over to the dust collector and possible blockage in the conveying hose. Refill only after all media has been recovered from the cabinet.

4.2 Media Unloading

4.2.1 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 manage, and repeat the process until the machine is empty. Return the choke valve to the fully 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.

4.3 Loading and Unloading Parts

4.3.1 Parts must be free of oil, water, grease, or other contaminants that will clump media or clog filters. Degrease oily or greasy parts prior to blasting.

4.3.2 Load and unload parts through either door.

WARNING

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

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

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

4.4 Blasting Operation

WARNING

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

- **Use the blow-off nozzle to blow media off parts before opening doors.**
 - **After blasting, keep doors closed and exhauster running until the cabinet is clear of all airborne dust.**
 - **Always close cabinet, reclaimer, and dust-collector doors before blasting. Keep all doors closed during blasting.**
 - **Always wear blast gloves.**
 - **Stop blasting immediately if dust leaks are detected. Refer to troubleshooting Sections 8.14 and 8.15 and identify source of leak.**
-

4.4.1 Slowly open the air supply to the blast machine. Check for air leaks on the initial startup and periodically thereafter.

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

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

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

4.4.5 Insert hands into rubber gloves.

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

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

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

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

4.5 Operation and Function of the Choke Valve Figure 16

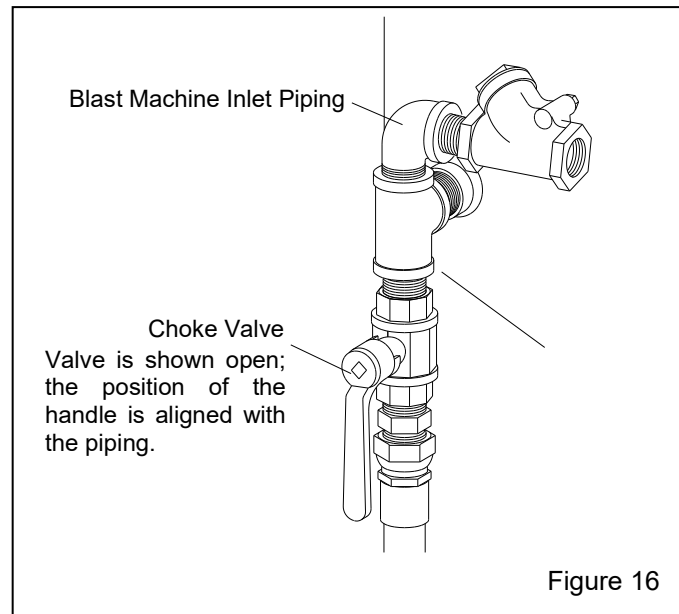
4.5.1 Always fully open the choke valve while blasting; open is when the handle is vertical and aligned with the piping, as shown in Figure 16.

4.5.2 Closing the choke valve while blasting lowers pressure in the pusher line from the pressure in the vessel. Closing the valve forces media through the metering valve to clear minor blockage, such as damp

media, or it is used to rapidly empty the machine to change media.

NOTICE

Do not blast with choke valve closed or partially closed. Prolonged blasting with the choke valve partially closed will accelerate wear on the metering valve.



4.6 Blasting Technique

4.6.1 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.

4.7 Stop Blasting

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

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

4.7.3 Use the blow-off nozzle to blow media off parts.

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

4.7.5 Unload parts.

4.8 Shutdown

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

4.8.2 Switch OFF the lights and exhauster.

5.0 ADJUSTMENTS

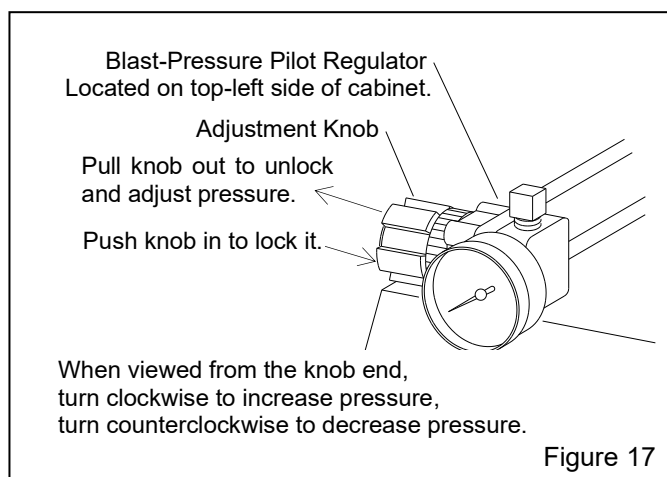
5.1 Blasting Pressure (pilot regulator)

5.1.1 The pilot pressure regulator (located on the top-left side of the cabinet), enables the user to adjust blasting pressure to suit the application. The suitable pressure for most purposes is 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 When 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, begin blasting and adjust air pressure at the pilot regulator.

5.1.4 To adjust pressure, unlock the knob by pulling it out, as shown in Figure 17, and turn it clockwise to increase pressure or counterclockwise to decrease pressure. Once operating pressure is set, push the knob in to lock it and maintain the setting.



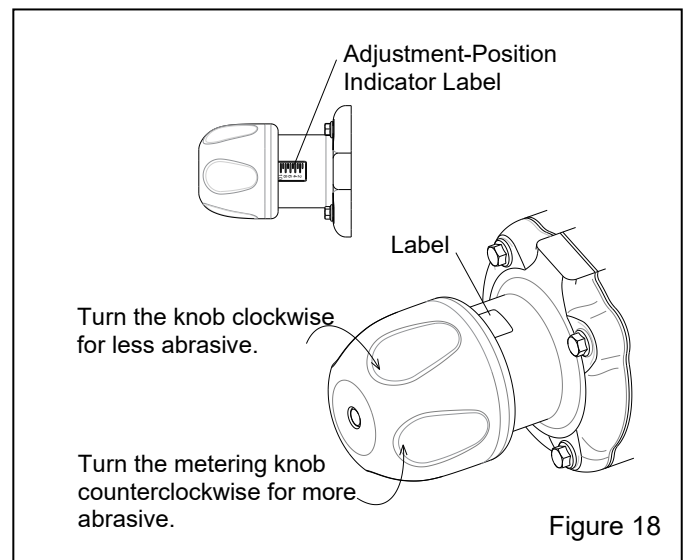
5.2 Media Metering (media flow) – Figure 18

These instructions and the illustration in Figure 18 are for a standard cabinet with PQV-Pro Metering Valve. Optional metering valves may function differently, but the process is similar. Refer to the metering valve operations manual for the operation of the valve provided.

5.2.1 Optimum abrasive flow depends on the type and size of abrasive and blasting pressure, and can best be determined by experience. Use as little abrasive as possible while maintaining the maximum cleaning rate. The air-abrasive mixture should be mainly air. As a rule, the stream of abrasive coming out of the nozzle should barely discolor the air when seen against a contrasting background.

5.2.2 The valve is closed when the knob is fully clockwise. Increase abrasive flow by turning the knob counterclockwise and decrease abrasive flow by turning the knob clockwise, as shown in Figure 18. Begin with the knob set two turns from fully closed. Increase flow by turning the knob no more than 1/4 turn counterclockwise. Allow 10 to 15 seconds for the flow to stabilize before readjusting. Continue adjusting as described until the correct flow is attained.

5.2.3 The indicator label behind the knob shows how far the metering valve is open. When the knob is turned in or out it moves over the label, allowing the operator to reset the valve to the same position when abrasive flow is temporarily changed.



5.3 Reclaimer Static Pressure

5.3.1 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 operations manual; the on the exhaust outlet on RPH and LPDC 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 carry over (usable media carried into the dust collector) and result in excessive media consumption. Open only as far as necessary to obtain a balance of maximum dust removal without good-media carry over.

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 dust and fines removal without carry over is attained.

Glass Bead No. 4 to 7	3-1/2" – 4"
Glass Bead No. 8 to 12	2-1/2" – 3"
Aluminum Oxide 54 to 80-mesh	4" – 5"
Aluminum Oxide 80 to 180-mesh	3" – 4"
*Steel Grit, 50-Mesh to 120-Mesh	6" – 7"
*Steel Shot S-170 to S-70	6" – 7"
*Refer to Section 1.11 for media limitations.	

5.3.4 If the damper has been adjusted and carry over 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 Section 9.1.

5.4 Optional Externally Adjustable Vortex Cylinder

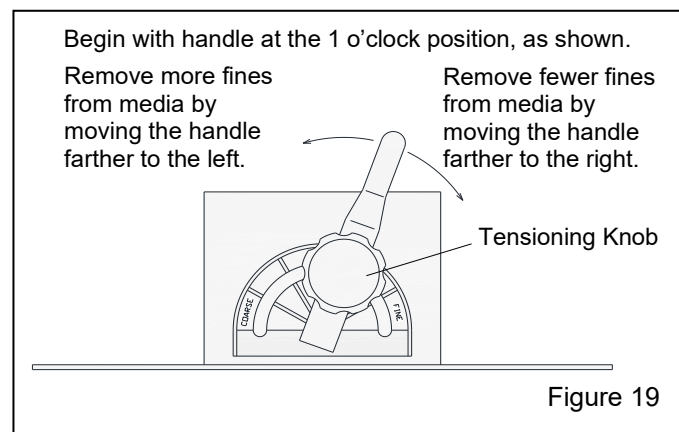
The external adjustable vortex is an option when the cabinet is provided with an LPDC Dust Collector. The vortex is standard with reclaimers when the cabinet is provided from the factory with an RPH Dust Collector.

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 1 o'clock, as shown in Figure 19) 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 fewer fines: (Excessive usable media is carried to the dust collector) Lower the vortex cylinder by moving the lever right toward "FINE" in 1/4" increments at the indicator plate. NOTE: If the cylinder is lowered too far, the reclaimer will again begin to allow usable media to be carried over and cause abnormally high static pressure.



5.4.4 When using media finer than 180-mesh, the inlet baffle in the reclaimer may need to be removed. Refer to Section 1.11.6.

5.5 Door Interlocks – Figure 20

WARNING

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

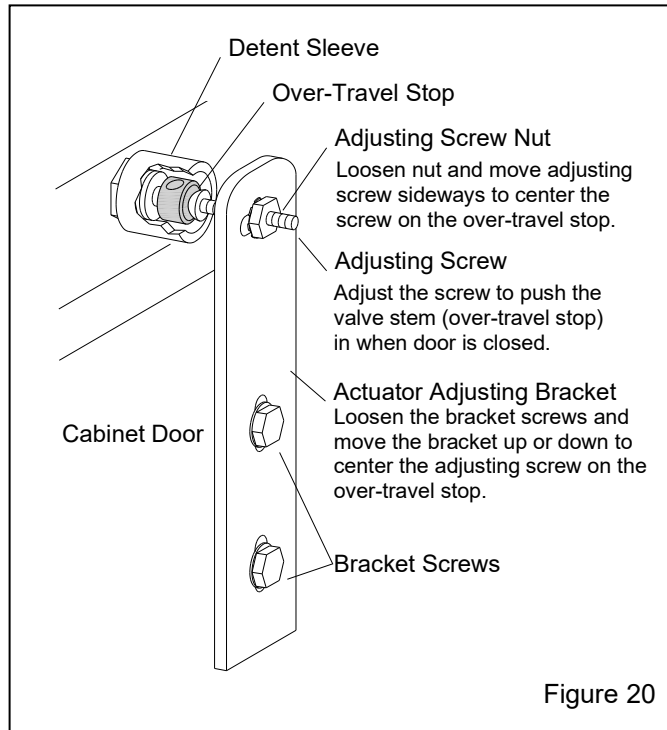
5.5.1 The door interlocks disable the blasting control circuit when either door is open. To enable blasting, the door-interlock switch must be engaged when the doors are closed. The interlocks are set at the factory and do not normally require field adjustment unless parts are replaced. When adjustment 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 adjusting 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. Negative pressure inside the cabinet may cause the doors to flex inward. Tests should be performed with the exhaustor running. Point the nozzle away from the door during the tests and open the door only enough to disengage the interlock switch. The interlocks should stop the blasting when either door is opened and permit blasting when the doors are closed.



5.6 Cabinet Air-Inlet Damper

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. Reclaimer pressure must be set before cabinet pressure.**

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 exhaustor and insert the needle into a glove, and adjust pressure using the cabinet's air-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 exhaustor running, the gloves should be inflated, but not elevated off the grate.

5.7 Optional Manometer

These instructions show several methods of taking static-pressure readings (negative pressure) on reclaimers by using a flexible-tube manometer. Use the method best suited for the application. The instructions explain the processes for taking periodic readings and show how to permanently install the manometer for taking frequent readings. A fitting should be installed when the manometer installation is permanent, as instructed in Paragraph 5.7.6.3. Use silicone or other sealant around the fitting to prevent leaks. The fitting must be sealed and capable of being capped when the manometer tube is removed. Leaks will alter the reclaimer's separation efficiency. Taking readings at different locations could produce different readings. Static-pressure readings at the door are generally 0.5" to 1" lower than those taken above the reclaimer. The readings are reference points, so readings should be taken using the same method each time the reading is taken.

5.7.1 Refer to instructions packed with the manometer for preparing and operating 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 cause inaccurate readings.

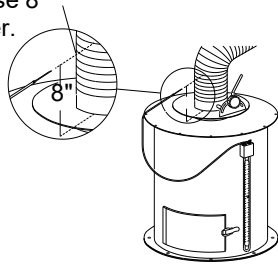
5.7.4 Open both manometer valves (elbows), per manometer instructions.

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

5.7.6 Needle placement: Figure 21 shows the manometer setup for taking both periodic and frequent static-pressure readings.

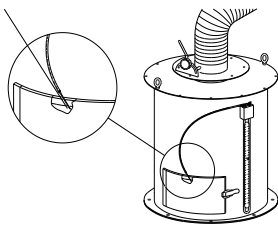
5.7.6.1 Taking readings in the flex hose: Remove the needle protector and insert the needle into the flex hose, approximately 8" above the top of the reclaimer.

Refer to Paragraph 5.7.6.1.
Insert the needle into flex hose 8" above the top of the reclaimer.

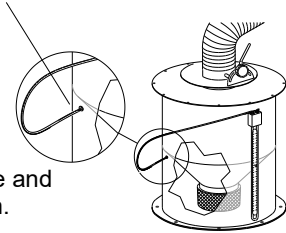


Refer to Paragraph 5.7.6.2.
Place the needle so the tip is inside the door opening.

Carefully close the door on the needle.



Refer to Paragraph 5.7.6.3.
When taking frequent readings, install a permanent fitting in the reclaimer wall just below the inner cone, as shown.



Reclaimers are for reference and may differ from those shown.

Some items removed or rotated for clarity.

Figure 21

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

5.7.6.3 Taking frequent readings using a permanent fitting: A permanent fitting may be installed in the reclaimer wall, as shown in Figure 21, for taking frequent static-pressure readings. Permanent fittings must have a barb to accommodate the 3/16" ID tubing and have a means of sealing the fitting when the manometer is not in use. Use silicone sealer or other sealant to seal around the fitting to prevent leaks. The fitting should be capable of being capped when the manometer tube is removed. Sealing the fitting will prevent leaks that alter the reclaimer's separation efficiency. Air drawn into the reclaimer will cause carry over of good media to the dust collector.

5.7.7 Adjust the slide rule to align the zero with the fluid level. Refer to the upper part of Figure 22.

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

NOTE: Readings must be taken with the cabinet doors open and with the exhauster running.

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 22.

The manometer must be vertical when taking pressure readings, so the fluid is level on both sides.

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

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

Alternate Zeroing: Some may find it easier to read the column by starting the exhauster and then sliding the zero on the rule even with either the high or the low column. The static pressure is how far the fluid travels up or down the other column.

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

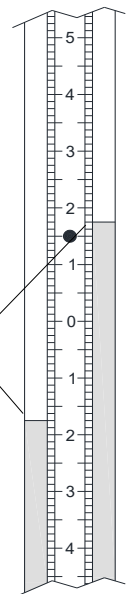
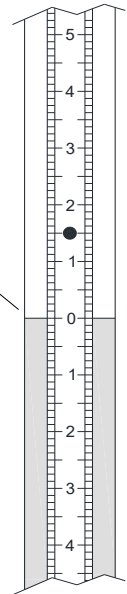


Figure 22

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

6.0 PREVENTIVE MAINTENANCE

WARNING

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

6.1 Inspection Notes

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

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

6.2 Daily Inspection and Maintenance Before Blasting with the Air OFF

6.2.1 Check media level: Check media level through reclaimer door and refill as necessary, per Section 4.1.

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

open, inspect the door gasket for wear or damage. Replace the gasket at the first sign of wear.

6.2.3 Drain compressed-air filter: Empty the 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.

6.2.4 Check dust level in dust container: Refer to the dust-collector operations manual and empty dust containers. Adjust intervals based on filling rate.

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

6.3.1 Inspect blast hose couplings and nozzle holder: Inspect blast-hose couplings, coupling gaskets, and nozzle holder for air leaks.

WARNING

Leaks around couplings and nozzle holders indicate worn or loose-fitting parts. Nozzle holders and couplings that do not fit tightly on hose, as well as nozzles that do not fit tightly in nozzle holders, can disconnect while under pressure. Impact from objects (nozzles, couplings, hoses, or media) disconnected by pressure during operation can cause severe injury.

6.3.2 Check the cabinet for dust leaks: During operation, inspect cabinet door seals for media leaks. Dust leaking from the inlet damper or other places on the cabinet indicates saturated filter cartridge. Refer to the dust-collector operations manual.

6.3.3 Check dust-collector exhaust air for dust: Dust discharge at the dust-collector outlet indicates a leaking or damaged filter cartridge. Check immediately. Note that a small amount of dust egress is normal for a short time before a new cartridge is seasoned.

6.3.4 Drain pulse reservoir: Refer to the dust-collector operations manual and drain the pulse reservoir (manifold) at the end of each shift.

6.3.5 Cartridge pulsing: Refer to the LPDC 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. RPH-2 Dust Collector is automatically pulsed at timed intervals.

6.4 Weekly Inspection and Maintenance Before Blasting with Air OFF

6.4.1 View-window cover lens: Inspect window cover lens and replace as needed, per Section 7.3.

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

6.4.3 Nozzle: Remove the nozzle and inspect nozzle for wear. Replace the nozzle when the orifice diameter is worn 1/16" larger than original size. Before replacing the nozzle, inspect the nozzle washer. Make sure the nozzle washer is in good condition, not worn or otherwise damaged, and in place before reattaching the nozzle.

WARNING

The threads on the nozzle and nozzle holder must be inspected each time the nozzle is secured to the holder. A loose-fitting nozzle can eject under pressure and cause severe injury. Check the threads for wear and make sure the nozzle holder securely holds the nozzle. The nozzle washer must also be inspected for wear. When nozzle washers are worn or missing, media can erode nozzle threads.

6.4.4 Blast hose and couplings

WARNING

Worn blast hose can suddenly burst while under blast pressure. Couplings and nozzle holders will not safely grip worn hose and can blow off under pressure. Compressed air and media escaping from a burst hose, or hose whipping from a disconnected coupling or nozzle holder can cause severe injury.

- Inspect blast hose for wear and soft spots by pinching it every 12 inches. Soft spots mean the hose is worn. First sign of wear is usually along the outside radius where the hose bends just behind the nozzle holder. Replace the hose as soon as soft spots are noted.
- Make sure coupling gaskets are in good condition.
- Make sure coupling screws are fully seated in the coupling and that none are missing.
- Make sure that safety lock pins are inserted in all couplings.
- Make sure safety cables are attached at all blast-hose and air-hose connections and that all slack is removed from the cable.

6.4.5 Outlet valve: Inspect outlet valve diaphragm, per Section 7.10. Remove the four cap screws and inspect the diaphragm. Replace the diaphragm if worn or cracked. Continued use with a worn diaphragm will quickly wear the valve casting.

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

6.5.1 Inspect blast machine plumbing for air leaks: Inspect all external piping, hoses, valves, and couplings for air leaks. If leaks are found, repair immediately.

6.5.2 Blast machine vessel: 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.

NOTICE

If leaks are allowed to continue, abrasive erosion can cause extensive or irreparable damage to the blast machine.

6.5.3 Flex hoses: Inspect flex hoses for wear and negative pressure leaks.

6.6 Monthly Inspection and Maintenance

6.6.1 Inspect reclaimer wear plate or liners: Remove the flex hose from the reclaimer inlet and use a light to inspect the reclaimer wear plate or optional rubber reclaimer liners for wear. If the rubber is worn through to the backing metal, replace the wear plate, per Section 7.11 or rubber liners per Section 7.12.

6.6.2 Pop-up valve: Check the pop-up valve's urethane coating for cracks and grooves. Replace the pop-up valve at the first sign of wear, per Section 7.8.

6.6.3 Pop-up seal: Inspect the rubber pop-up seal and replace at the first sign of wear, drying, or cracking, per Section 7.9.

6.7 Dust Collector

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

7.0 SERVICE MAINTENANCE

⚠ WARNING

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

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

All dust is hazardous to breath; toxicity and health risk vary with type of dust generated by blasting. Prolonged exposure to any dust can result in serious lung disease and death. Short-term exposure to toxic materials, such as lead dust or dust from other heavy metals and corrosives, can cause serious injury or death. Identify all material that is being removed by blasting and obtain a safety data sheet (SDS) for the blast media. Waste dust in the collector can cause serious injury or death through inhalation, absorption, or ingestion. The employer shall meet all OSHA requirements, including but not limited to those for confined space, combustible dust, fall protection, hazard communication, and lockout and tagout procedure for electrical and pneumatic supply.

7.1 Gloves

7.1.1 Special static-dissipating gloves are provided for operator comfort. Gloves need to be replaced periodically as they wear. The first sign of deterioration may be excessive static shocks.

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

7.1.3 Quick-change type, clampless installation: Quick-change gloves are held in place using spring rings sewn into the attachment end of the glove. To install, insert the glove into the arm port so that 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 – Figure 23

7.2.1 To remove old hose, disconnect hose from blast machine and remove nozzle holder or coupling and spray hose with liberal amount of silicone spray or similar lubricant to reduce friction, and then pull the hose through the hopper grommet. Install new hose and couplings in reverse order.

7.2.2 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 sits tightly against the shoulder in the holder and coupling, as shown in Figure 23. 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.

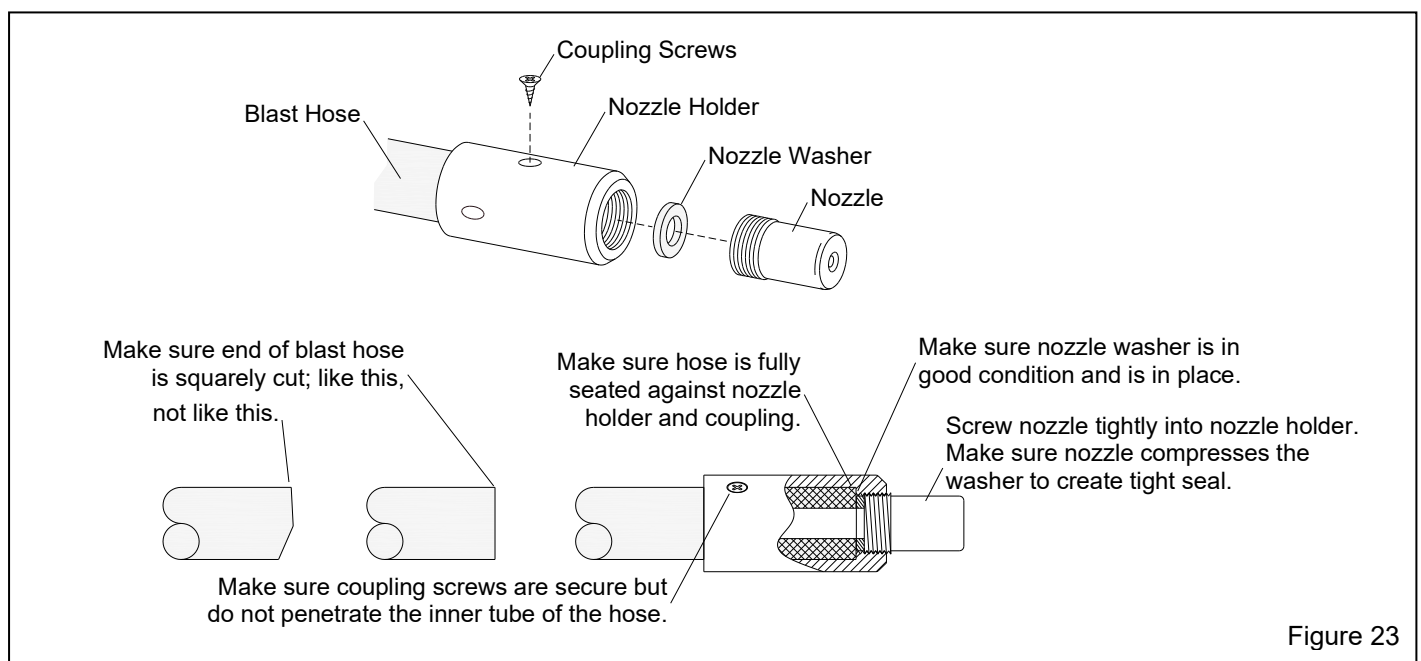


Figure 23

7.2.3 Replace the nozzle when its orifice (the smallest inside diameter) has increased by 1/16" or sooner if blast pressure noticeably diminishes. 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.

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 any 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 can cause severe injury. Use only genuine Clemco laminated replacement glass.

7.4.1 Remove the two window-frame nuts located on the upper edge of the window frame and swing the window frame open. If the frame is to remain open for cleaning or other reasons, remove it, per Section 7.6.

7.4.2 Remove the old window.

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

7.4.4 Install 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 24

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 gasket and adhere the gasket to the center of the top edge of the window opening, as shown in Figure 25. Peel additional backing as needed and work the strip around the radius of each corner, pressing it firmly to bond. Trim the gasket to fit and compress the ends to seal.

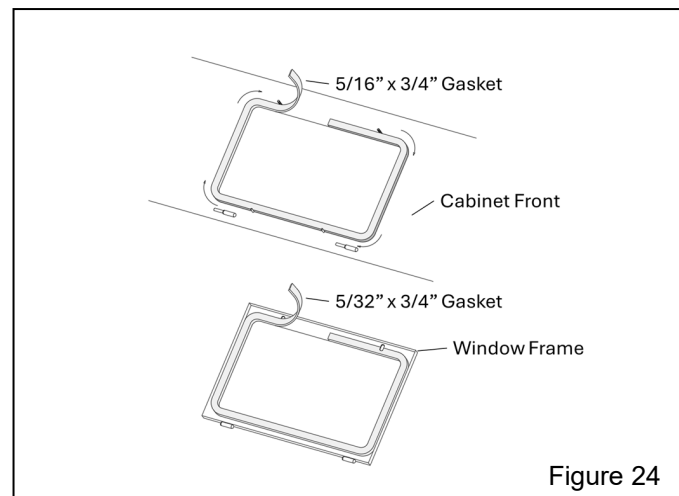


Figure 24

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

7.5.6 Trim around window-frame bolt slots, as needed.

7.6 Window-Frame Removal – Figure 25

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.

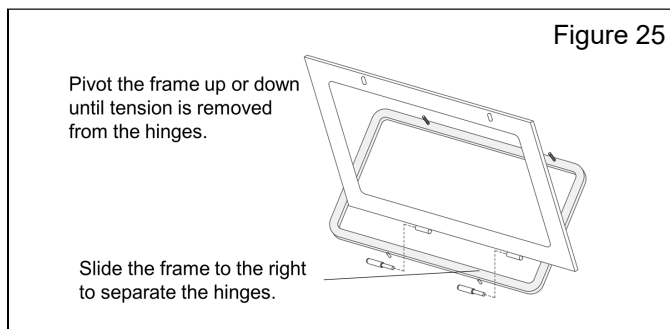
7.6.3 Pivot the window frame up or down until tension is off the frame hinges.

7.6.4 Slide the frame to the right to remove it. The hinges separate, as shown in Figure 25.

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

7.6.6 Set the window squarely over the window opening. Make sure that all edges of the window are centered, 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 LED Light Assembly – Figure 26

⚠ WARNING

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

7.7.1 Remove light-mount cover

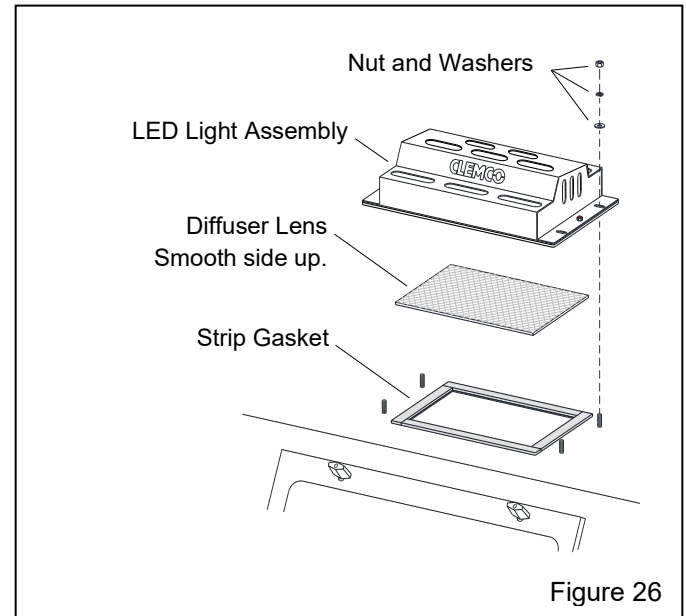
7.7.1.1 Turn OFF electrical power.

7.7.1.2 Remove the four nuts and washers (save them to reuse) that attach the light assembly to the cabinet, lift the light off the diffuser, as shown in Figure 26. Set the light out of the way and within reach of the cord.

7.7.2 Diffuser lens replacement

7.7.2.1 Remove the light assembly, as noted in Section 7.7.1.

7.7.2.2 Lift the diffuser lens off the gasket. Inspect the gasket. If the gasket is compressed or otherwise damaged, replace it per Section 7.7.3 before centering the new diffuser (smooth side up) over the gasket.



7.7.2.3 Set the light assembly on the diffuser and reattach it using the existing nuts and washers.

7.7.3 Gasket replacement

7.7.3.1 Remove the light assembly, as noted in Section 7.7.1.

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

7.7.3.3 Lay a length of strip gasket along a long edge of the light opening and cut to length, allowing 3/4" overlap on each end. Peel the adhesive backing and adhere the strip gasket to the edge of the opening, as shown in Figure 26. Press the gasket to bond the adhesive to the cabinet. Repeat the process on the remaining sides, compressing the ends to seal.

7.7.4 LED light assembly replacement

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

7.7.4.2 Remove the light assembly, per Section 7.7.1.

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

- Black wireHot
- White wireNeutral
- Green wireGround

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

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

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

7.7.4.6 Cut the cord to length and wire as follows:

- Black wireHot
- White wireNeutral
- Green wireGround

7.7.4.7 Apply power to test the light.

7.7.4.8 Tighten the strain-relief compression nut, set the light assembly on the diffuser, and reattach it using the existing nuts and washers.

7.8 Replacing Pop-Up Valve

7.8.1 Empty the machine of media, as described in Section 4.2.

WARNING

Failure to observe the following procedure before performing any maintenance can 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.**

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 as follows:

1. Loosen the inspection-door clamp nut enough to slide the clamp bolt from behind the bolt bracket. Then remove the clamp, bolt, and nut, as an assembly, as shown in Figure 28.

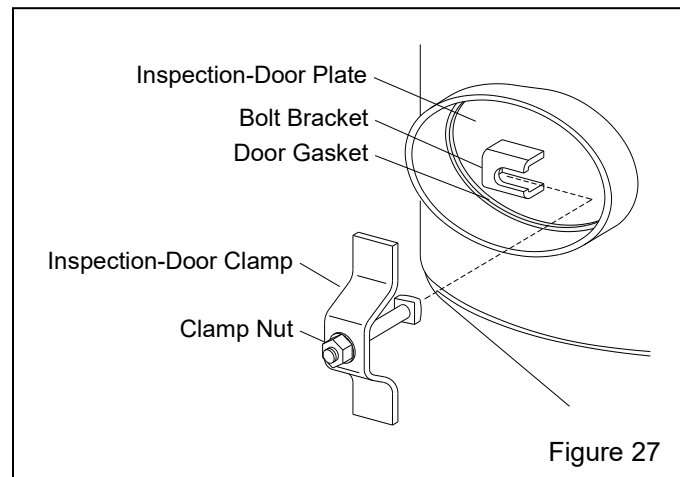


Figure 27

2. Push the inspection-door plate into the blast machine and rotate it so it can be removed through the inspection door. If the plate is stuck to the inspection-hole ring, tap the door with a rubber mallet or similar tool to loosen it. Remove the door gasket if it is cracked, dry, or otherwise damaged.

7.8.4 If the gasket requires replacement, use rubber-based glue to adhere it to the inspection-door plate. Allow the adhesive to cure before bolting the plate onto the machine.

7.8.5 Use a short pipe wrench to unscrew the pop-up valve guide from the elbow by turning it counterclockwise, as shown in Figure 28. Remove the pop-up valve and guide from the machine.

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

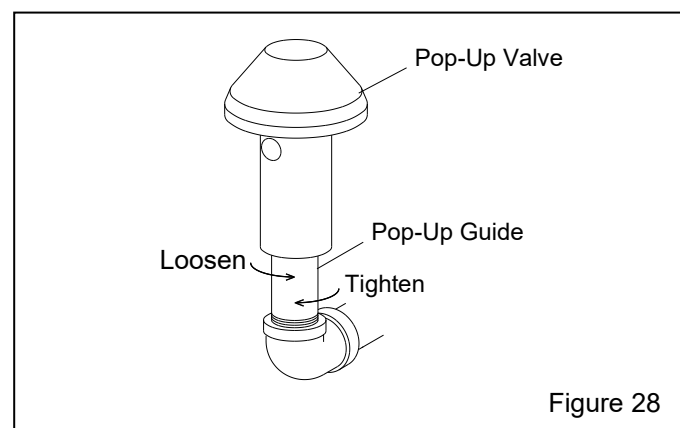
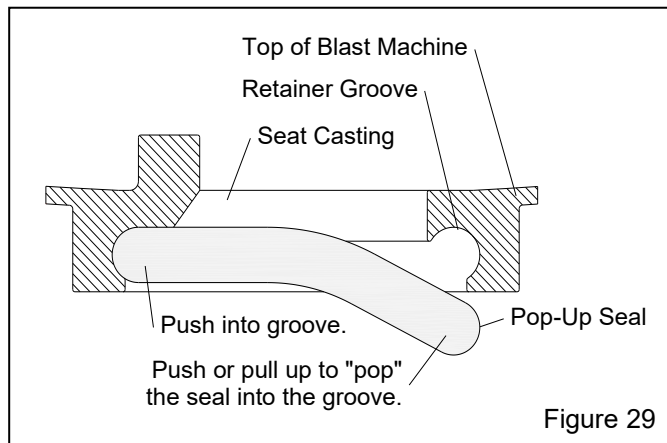


Figure 28

7.8.7 Bolt the plate onto the machine and tighten to approximately 55 ft lbs. Pressurize the vessel and check for air leaks. If leaks are noted, depressurize the machine and tighten the clamp nut.

7.9 Replacing Pop-Up Valve Seal – Figure 29

7.9.1 The easiest method to replace the rubber pop-up seal is through the reclaimer access door. If for any reason replacement cannot be made through the reclaimer, observe the warning in Section 7.8. Empty media from the machine, and bleed the air-supply line. Remove the inspection door assembly, as noted in Section 7.8.3, and work through the opening.



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

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

7.10 Diaphragm Outlet Valve – Figure 30

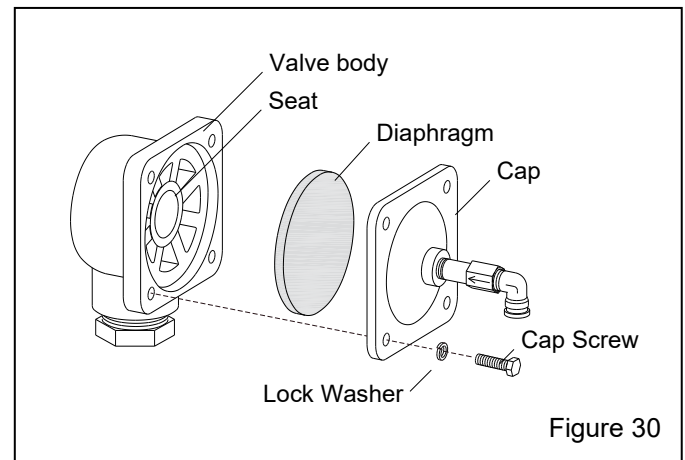
7.10.1 All service on the outlet valve must be done with the air OFF and the air supply locked out and tagged out. It is not necessary to remove the valve from the blast machine.

7.10.2 Remove the cap by unscrewing the four cap screws.

7.10.3 Remove the diaphragm and inspect it for damage. Replace as necessary.

7.10.4 Inspect the rounded seat in the valve body. If worn, replace the body.

7.10.5 Reassemble in reverse order.



7.11 Replacing Reclaimer Wear Plate – Figure 31 Reclaimer with bolt-on, removable top

⚠ WARNING

BNP reclaimers weigh between 100 lbs. and 150 lbs., depending on the size. When installing or removing the reclaimer, it must be adequately supported and secured to appropriate lift equipment. Failure to secure and use proper lift device can result in injury or death. When using a ladder to service the reclaimer, make sure it is approved for the application and that appropriate fall protection is used. Failure to use appropriate ladder and fall protection can result in injury.

Depending on conditions such as height and accessibility, it may be easier to replace the wear plate if the reclaimer is removed from the blast machine. Make sure enough 2" adhesive-backed gasket (stock no. 13089) is available to replace compressed or damaged gaskets on the reclaimer upper flange (and lower, blast machine flange if the reclaimer is removed from the blast machine).

- 600 cfm requires 6 ft for each flange.
- 900 cfm requires 7 ft for each flange.

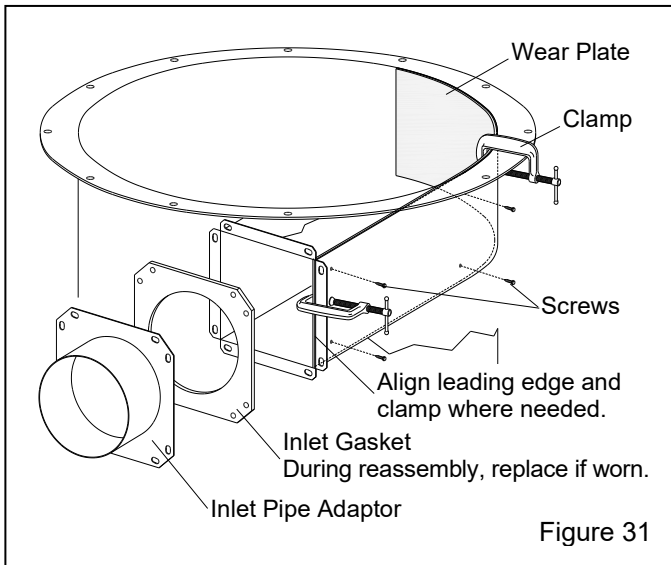
7.11.1 Remove the flex hose from the reclaimer inlet.

7.11.2 Unbolt the reclaimer top and then remove the top.

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

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

7.11.5 Angle the new wear plate into the reclaimer inlet and position it so the straight end is flush with the inlet. Use locking pliers, clamps, board (2 x 4), or other means where needed to pry the wear plate against the side of the inlet and inner wall. Make sure the leading edge of the wear plate is aligned with the reclaimer inlet and that the top edge is even with the top of the reclaimer.



7.11.6 New self-drilling sheet-metal screws are provided with the wear plate; match drill through each old screw hole into the wear plate to secure. Rearrange the clamp(s) as needed to press the wear plate against the reclaimer wall when installing.

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

7.11.8 To avoid rapid wear, apply RTV caulk to fill gaps at the seams on the top, bottom, and leading edge of the wear plate.

7.11.9 Replace the lower flange gasket as needed and reattach the reclaimer to the blast machine.

7.11.10 Use a new inlet gasket and reattach the inlet-pipe adaptor.

7.11.11 Reconnect the flex hose.

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

7.12 Replacing or Field Installing Optional Reclaimer Rubber Liners – Figure 32

The reclaimer must be designed to accept liners and have a removable top, as shown in Figure 32. **NOTE: The following instructions are to replace existing liners or field installing new liners into modular-style 600 cfm and 900 cfm reclaimers only. Modular reclaimers have an upper and lower flange and have a removable top. 600 cfm modular reclaimers are provided as of 09/2018.**

Installation Notes

Make sure enough 2" adhesive-backed gasket (stock no. 13089) is available to replace the compressed or damaged gasket on the reclaimer/blast machine flange.

- 600 cfm requires 6 feet
- 900 cfm requires 7 feet

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

It is easier to replace or install liners if the reclaimer is removed from the blast machine.

⚠ WARNING

BNP reclaimers weigh between 100 lbs. and 150 lbs., depending on the size. When installing or removing the reclaimer it must be adequately supported and secured to appropriate lift equipment. Failure to secure and use proper lift device can result in injury or death. When using a ladder to service the reclaimer make sure it is approved for the application and that appropriate fall protection is used. Failure to use appropriate ladder and fall protection can result in injury.

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

7.12.2 Remove the reclaimer from the blast machine.

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

7.12.4 Remove the reclaimer inlet-pipe adaptor.

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

7.12.6 If the reclaimer is currently unlined, proceed to the installation note preceding Paragraph 7.12.13.

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

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

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

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

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

7.12.12 Remove old caulking and adhesive from the weldment.

Installation Notes: The numbers in parentheses (-) shown in Figure 32 and in the following applicable paragraphs show the recommended order of installation. When installing the liners, make sure seams are aligned. The final assembly must be smooth and free of protrusions, edges, and gaps. Any edges will disrupt the air flow, causing wear and affecting the reclaimer's media cleaning efficiency.

7.12.13 (1st) Place the cone-ring liner on the inside of the cone ring; check fit and trim if needed. Refer to the instructions provided with the adhesive; some adhesives require it to be applied to both contact surfaces. Apply a multi-purpose contact adhesive, such as 3M no. 10 neoprene contact adhesive or equal, to the fabric side of the liner and install the liner. Smooth out the liner to eliminate air pockets.

7.12.14 (2nd) Place the cone liner in the cone with the fabric side down, and check fit and trim if necessary. Apply medium-set contact cement to the fabric side, and install the cone liner. Smooth out the liner to eliminate air pockets.

7.12.15 (3rd) Place the inlet-side liner (rubber side out) against the side of the inlet housing; center the side liner and align the front edge of the liner with the front of the housing. Temporarily clamp the side liner in place.

7.12.16 (4th) Align the wall-liner cutout with the reclaimer inlet housing and lower the liner into the reclaimer. Temporarily insert the baffle bolts through the liner and reclaimer holes to position that side of the wall liner. Clamp the wall liner in place, while adjusting it to make sure it is flush with the top of the reclaimer body and

that the inlet side liner is aligned with the side-liner cutout. Reposition the inlet side liner as needed.

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

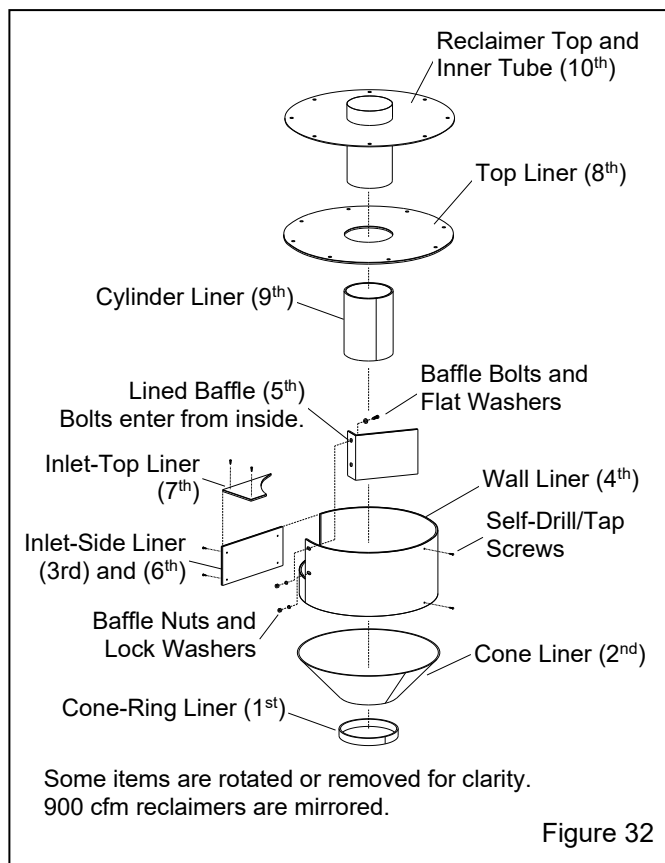


Figure 32

7.12.17 (5th) Remove the temporary baffle bolts and install the inlet baffle by inserting bolts and flat washers from the inside of the reclaimer and attach lock washers and nuts from the outside, leaving the baffle slightly loose.

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

NOTICE

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

7.12.19 (6th) Use self-drilling screws to secure the inlet-side liner to the side of the inlet housing. NOTE: To field install new, first-time inlet-side liners, use self-drilling screws at each liner corner to secure. Remove the clamps after the liner is secured.

7.12.20 (7th) Align the front edge of the inlet-top liner to the front of the inlet housing and use self-drilling screws to secure. NOTE: To field install new, first-time inlet-top liners, after clamping the liners, use self-drilling screws at each liner corner to secure. Remove the clamps after the liner is secured.

7.12.21 (8th) Slide the top liner onto 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 it in alignment.

7.12.22 (9th) Place the cylinder liner over the inner tube. Make sure the liner is tight against the top liner and use worm clamps to temporarily clamp the liner to the tube. Tack weld the bottom of the cylinder liner to the inner tube in three or four places. Remove the clamps when the cylinder liner is secured.

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

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

7.12.25 (10th) Align the reclaimer top assembly over the top of the reclaimer and lower it into place to match the mating holes in the flange, being careful not to smear the caulking. Secure the top bolts and inlet baffle bolts.

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

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

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

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

7.12.30 Reattach the reclaimer to the blast machine.

7.12.31 Install flex hoses.

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

7.13 Removing or Replacing Reclaimer Inlet Baffle – Figure 33

Only reclaimers with bolt-on tops.

When using lightweight media such as agricultural media or very fine media (180 and finer), as noted in Paragraph 1.11.6, good media may be carried over to the dust collector. To prevent lightweight-media carry over, the reclaimer inlet baffle can be removed. Review the following process before beginning to make sure all parts are available.

Installation Notes

Depending on conditions such as height and accessibility, it may be easier to replace the inlet baffle if the reclaimer is removed from the blast machine.

Make sure enough 2" adhesive-backed gasket (stock no. 13089) is available to replace compressed or damaged gaskets on the reclaimer upper flange (and lower flange if the reclaimer is removed from the blast machine).

- 600 cfm requires 6 ft for each flange.
- 900 cfm requires 7 ft for each flange.

7.13.1 Remove the reclaimer top.

7.13.2 Remove the two bolts (three on 900 reclaimer) securing the baffle to the side of the reclaimer inlet and remove the baffle.

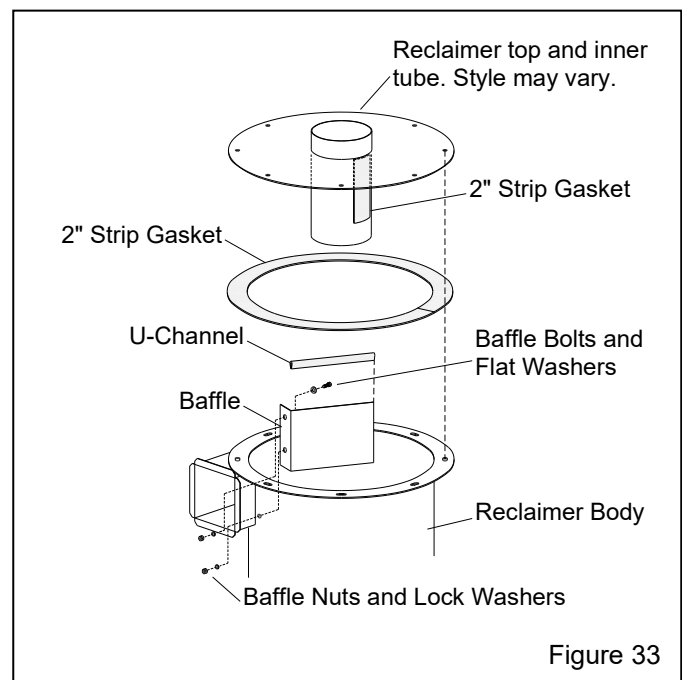


Figure 33

7.13.3 Remove all caulking residue.

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

7.13.5 If removing (not replacing) the baffle, remove the strip gasket from the inner tube and reinstall the baffle bolts in the reclaimer holes. If replacing the baffle, skip to Paragraph 7.13.6.

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

7.13.7 Install the reclaimer top.

7.13.8 If the reclaimer was removed from the blast machine, inspect the 2" flange gasket (usually mounted on the blast machine) if worn, compressed or otherwise damaged, clean old gasket material from the flange and install new 2" strip gasket.

7.13.9 Reattach the reclaimer to the blast machine.

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

7.14 PQV-Pro Metering Valve

7.14.1 Refer to the PQV-Pro Metering Valve Operations Manual for service and replacement parts.

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

8.1 Poor visibility

8.1.1 Dirty filter cartridge(s). Pulse cartridge and empty dust container regularly. Refer to the applicable dust-collector manual noted in Paragraph 1.1.1 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. Check condition of media.

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 through the cabinet. Adjust damper, per Sections 2.13 and 5.6.

8.1.7 Reclaimer door open. Check door.

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. Inspect flex hose for blockage.

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

8.2.2 Dust-collector damper open too far. Adjust static pressure, per Section 5.3.

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

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

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

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 1.11.6.

8.2.10 External adjustable vortex cylinder requires adjustment; refer to Section 5.4. The vortex cylinder is an option on cabinets with LPDC Dust Collector.

8.3 Reduction in blast cleaning rate

8.3.1 Low media level. Check media level and replenish or replace as needed, per Section 4.1.

8.3.2 Media-air mixture out of adjustment. Adjust metering valve, per Section 5.2.

8.3.3 Blockage or partial blockage in nozzle. Blockage may occur because of a missing reclaimer debris screen. Inspect reclaimer screen.

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

8.3.5 Moist media. Frequent bridging or blockage in the area of the metering valve can be caused by moisture. See 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 reinstall as necessary.

8.5 Media bridging

8.5.1 Frequent bridging or blockage in the media metering valve can be caused by damp media. Media becomes damp from blasting parts that are slightly oily, from moisture in the compressed air, 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 of an air line, permitting moisture to condense on the inside, or 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 types tend 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 set up to start when the foot pedal is pressed and stop when the pedal is released.**

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

8.6.1 Heavy media flow. Adjust media, per Section 5.2.

8.6.2 Empty the blast machine, depressurize the blast machine, and inspect the internal parts of the metering valve for wear. Refer to the PQV-Pro Metering Valve operations manual.

8.7 Air only (no media) comes out the nozzle

8.7.1 Make sure the machine contains media.

8.7.2 Make sure the media metering valve is open and media flow is adjusted, per Section 5.2.

8.7.3 Make sure the blast machine is pressurized. See Section 8.9.

8.7.4 Make sure the media metering valve opens when foot pedal is pressed. Refer to the metering valve operations manual.

8.7.5 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, remove the metering-valve inspection plate, and check for foreign objects.

8.7.6 Check the muffler (Item 17, Fig 44) on the 4-way air valve (Item 10, Fig 44). 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 8.7.7 to check the 4-way valve.

8.7.7 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.

8.7.8 Outlet valve not sealing. Inspect diaphragm.

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

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

8.8.1 Depressurize the blast machine. After the pop-up valve has dropped, remove the nozzle to see if it is plugged. See Section 8.4.

8.8.2 Make sure the blast machine pressurizes when the foot pedal is pressed. If it does not pressurize, refer to Section 8.9.

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

8.9 Blast machine does not pressurize

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

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

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

8.9.4 Inadequate air supply. Refer to the cfm air-consumption table in Figure 3.

8.9.5 Inspect diaphragm in the outlet valve for wear.

8.9.6 Inspect pop-up valve and seal for wear and misalignment.

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

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

8.9.9 Make sure the lines are not reversed on the foot pedal or pilot regulator. Refer to the schematic in Figure 5.

8.9.10 Check the 4-way valve for jamming, per Sections 8.7.6 and 8.7.7. When the foot pedal is pressed, the valve should shift, pressurizing the line to the outlet valve and media metering valve.

8.9.11 Inspect the check valve (Figure 45, Item 18) for obstruction or broken flap.

8.10 Blast machine does not depressurize or depressurizes too slowly

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

8.10.2 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.

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

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

8.10.5 Check 4-way air valve for jamming, per Paragraphs 8.7.6 and 8.7.7.

8.11 Heavy media flow

8.11.1 Make sure the choke valve is open.

8.11.2 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.

8.12 Media buildup in cabinet hopper; media does not convey to reclaimer

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

8.12.1 Exhauster motor rotating backward. 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. Refer to Sections 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 operations manual.

8.12.4 Hole worn in flex hose between cabinet hopper and reclaimer inlet or between the reclaimer outlet and dust-collector inlet. Inspect hoses and replace them as needed and route them with as few bends as possible to prevent 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 buildup. See Sections 2.10 and the note in section 2.4.1. 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 and blasting off the grate. Static will buildup in the part if not dissipated through the metal cabinet. If blasting parts off the grate cannot be avoided, attach a ground wire between the cabinet and the part.

8.14 Dust leaking from cabinet

8.14.1 Refer to Section 8.12.

8.15 Dust leaking from dust collector

8.15.1 Cartridge(s) not seasoned; refer to the dust-collector operations manual to season cartridge(s).

8.15.2 Damaged or loose filter cartridge(s). Inspect filters, replace as needed.

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

9.0 ACCESSORIES AND REPLACEMENT PARTS

9.1 Optional Accessories

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, 2 ft x 3 ft, for front of cab. ...	24744

Aluminum oxide kit, factory-installed: Includes #3 boron carbide lined nozzle, black-rubber cabinet wall curtains with grommets and curtain hardware. Does not include rubber reclaimer liners.

for BNP 65	28898
for BNP 220	28899

Aluminum oxide kit, field-installed: Includes light-lined flex hose, #3 boron carbide lined nozzle, black-rubber wall curtains with grommets and curtain hardware. Does not include rubber reclaimer liners.

for BNP 65, 600 cfm	13536
for BNP 220, 900 cfm	13474

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 BNP 65	23531
for BNP 220	23532

Back curtain	
for 65	14243
for 220	14247

Front curtain	
for 65	14242
for 220	14246

Door curtain, 2 required	
for 65	14244
for 220	14245

Rubber curtains, white

Curtain set	
for 65	23541
for 220	23542

Vortex cylinder assembly, adjustable

for pull-thru reclaimer	
600 cfm	29510
900 cfm	23046

Pass-thru door, with 15-inch square cut-out

Right door	
for 65 series	23610
for 220 series	23612

Left door	
for 65 series	23611
for 220 series	23613

Supa hose, 3/4" ID, uncoupled,	
3/4" x 25 ft, cut to length	23101
3/4" x 50 ft, cut to length	23102

NOTE: Supa hose requires the use of the following coupling, contractor-thread nozzle holder, and nozzle.

Nozzle holder, NHP-3/4 w/contractor thread	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.

5" ID	12465
6" ID	12457

Armrest – Figure 34

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

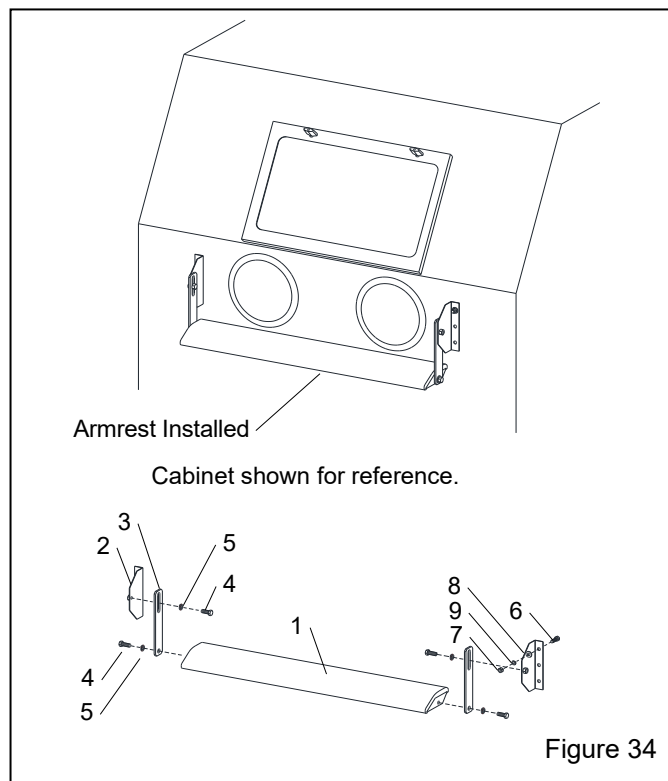


Figure 34

Turntables and Turntables with Tracks

⚠ WARNING

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

Fixed-Base Turntable Without Bearing

Description	Stock No.
20" diameter 25 lb capacity	12412

**Fixed-base Turntable with Bearing, 500 lb. Capacity
Figure 35**

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.	Washer, 1/2" lock	03516
6.	Nut, 1/2-NC hex	03511

20" turntable is slotted as shown.
30" turntable is perforated, as shown in Figure 37.

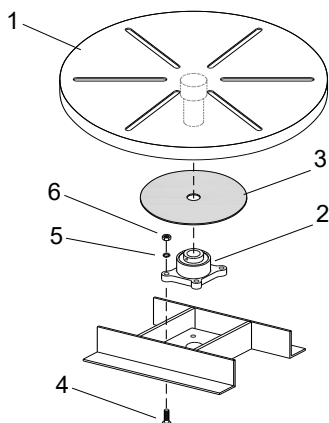


Figure 35

**Turntable with Workcar and Track, 500 lb. Capacity
Figure 36**

Item	Description	Stock No.
(-)	20" diameter turntable and track assembly for 65 series	13530
	for 220 series	12835
(-)	30" diameter turntable and track assembly for 220 series	24045
(-)	Turntable & workcar assembly replacement	
	20" diameter	24205
	30" diameter	24086
1.	Turntable replacement	
	20" diameter	18329
	30" diameter	21390
2.	Bearing, 1-1/2" bore	11517
3.	Protector, bearing	13479
4.	Screw, 1/2-NC x 1-1/2" cap	03454
5.	Washer, 1/2" lock	03516
6.	Nut, 1/2-NC hex	03511
7.	Caster, 4" V groove	11594

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

20" turntable is slotted as shown in Figure 36.
30" turntable is perforated, as shown.

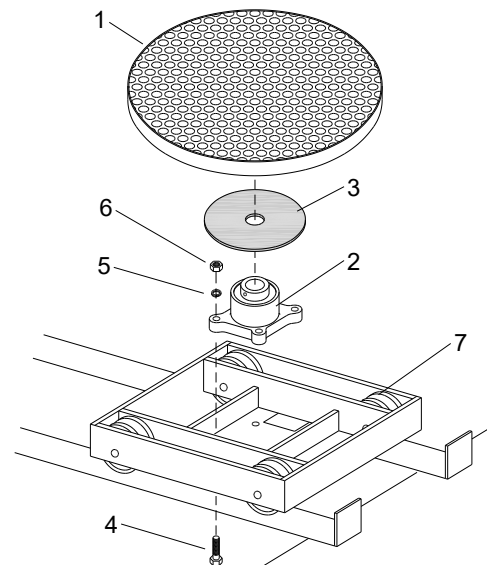


Figure 36

Abrasive Trap – Figure 37

Item	Description	Stock No.
(-)	Abrasive trap, complete	02011
1.	Screen (3)	02012
2.	O-Ring (2)	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 (1)	02434
9.	Decal (1)	02129
10.	Nipple, 1" NPT x 3"	01703
(-)	Service kit (items 1, 2, 8 & 9) Quantity shown in parentheses (-).....	01925

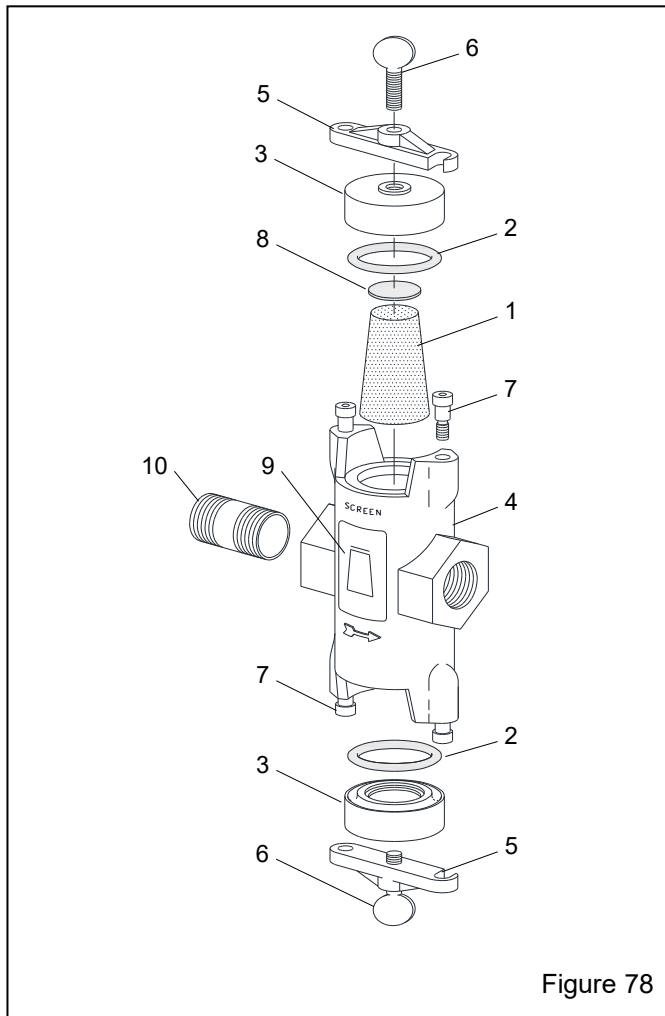


Figure 78

Reclaimer Liners – Figure 38

Reclaimer must be designed to accept liners and have a removable top. 600 cfm liners are for modular-style reclaimers provided on or after 09/1/2018.

Item	Description	Stock No.
(-)	Rubber liner sets	
	600 cfm	29541
	900 cfm	23151
1.	Top liner	
	600 cfm	29535
	900 cfm	23059
2.	Baffle, lined	
	600 cfm	29531
	900 cfm	13694
3.	Inner cylinder liner	
	600 cfm	29530
	900 cfm	24203
4.	Wall liner, reclaimer body	
	600 cfm	29533
	900 cfm	17008
5.	Inlet-side liner	
	600 cfm	29532
	900 cfm	12830
6.	Cone liner	
	600 cfm	29707
	900 cfm	16070
7.	Inlet-top	
	600 cfm	29536
	900 cfm	22827
8.	Screw, 10-16 x 3/4" self-drill/tap	12722

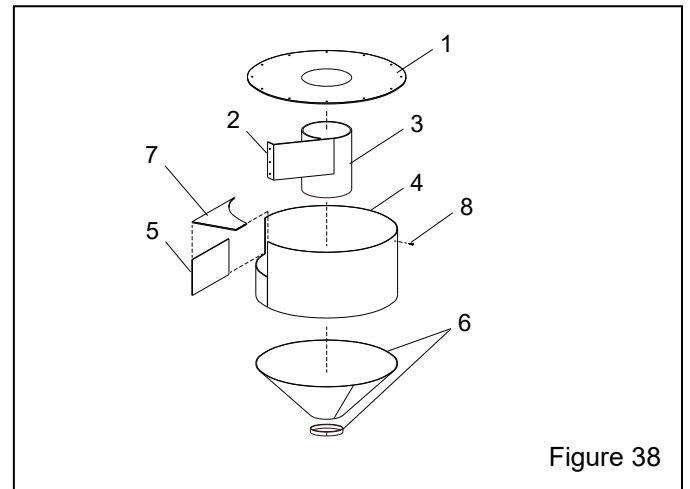


Figure 38

9.2 Cabinet Replacement Parts – Figure 39

Item	Description	Stock No.
1.	Gasket, 5/16" x 1" adhesive-backed, per foot, specify feet required BNP 65 door, 11 ft per door00187 BNP 220 door, 13 ft per door00187 Air-inlet damper, 3 ft required00187	
2.	Gasket, 5/32" x 3/4", 3 ft required00192	
3.	Door assembly, left for 65 series20070 for 220 series20074	
4.	Door assembly, right for 65 series20071 for 220 series20075	
5.	Grate for 65 series11811 for 220 series11810	
6.	Latch kit, door20064	
7.	Glove set Band-clamp attachment11215 Quick-change (clampless) attachment28820	
8.	Glove, left hand only Band-clamp attachment12710 Quick-change (clampless) attachment28638	
9.	Glove, right hand only Band-clamp attachment12711 Quick-change (clampless) attachment28639	
10.	Clamp, glove11576	
11.	Clamp, flex hose 5-1/2", for 6511578 6-1/2", for 22000750	
12.	Hose, light-lined flex, specify Ft required 5" ID for 65, 9 ft required12467 6" ID light-lined for 220, 9 ft required12468	
13.	Grommet, blow-off hose, 3/4" ID11798	
14.	Grommet, blast hose, 1" ID00184	
15.	Adaptor pipe universal, flex hose 5" for 600 cfm or 900 w/ steel media23296 6" for 900 cfm23297	
16.	Gasket, flex hose adaptor pipe 5" for 600 cfm or 900 w/ steel media23259 6" for 900 cfm23291	
17.	Muffler, outlet05068	
18.	Foot-pedal assembly, less tubing20483 with tubing, 14 feet20195	
19.	Bracket, door interlock actuator19152	
20.	Over-travel stop, door interlock20004	
21.	Detent sleeve, door interlock15042	
22.	Air valve, 3 way door interlock12202	
23.	Regulator, 1/8" NPT pilot pressure12715	
24.	Gauge, pressure, 1/8" cbm01908	
25.	Fitting, 1/8" NPT elbow x 1/8" barb11733	
26.	Gasket, hopper plate adaptor20247	
27.	Plate, hopper hose adaptor21657	
28.	Switch, toggle (single phase only)12127	
29.	Damper, air-inlet23156	
30.	Grommet, 1/4" ID12762	
31.	Brace, leg BNP 6524443 BNP 22024445	

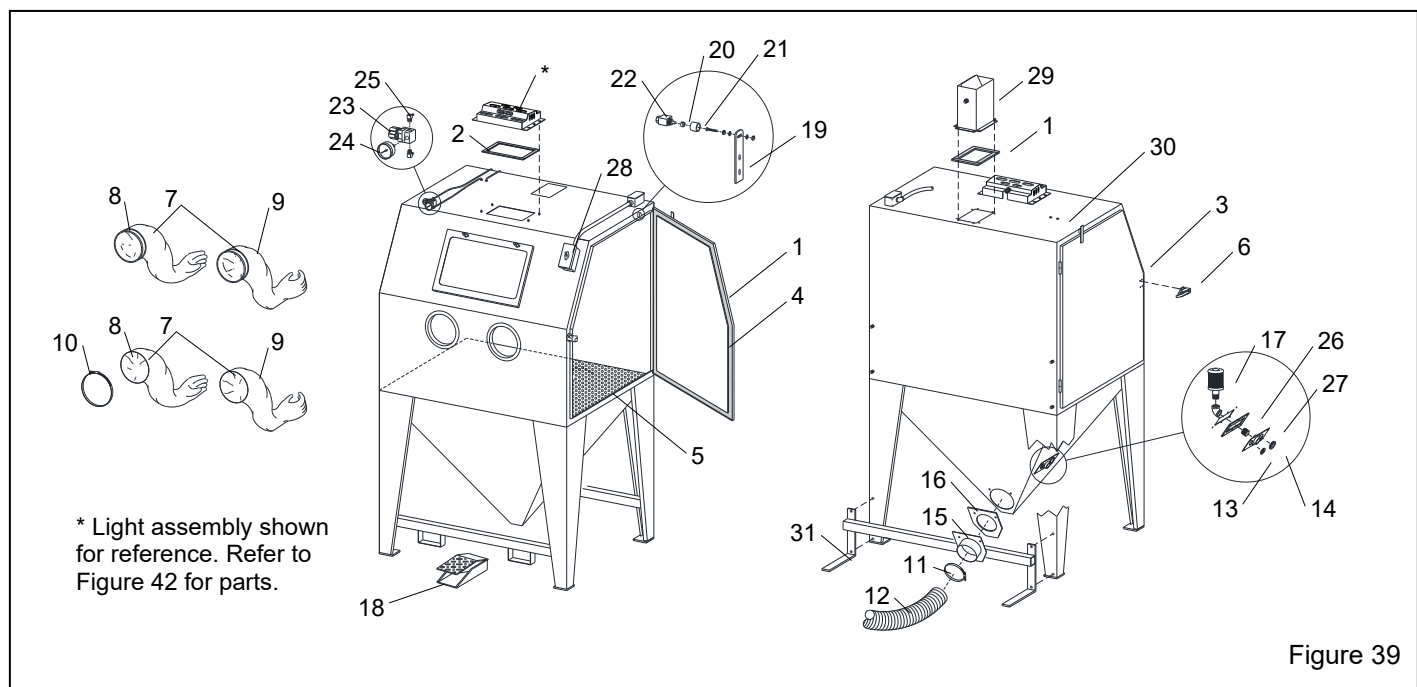


Figure 39

9.3 View-Window Assembly – Figure 40

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 five	06190
5.	Nut, plastic, window frame, 2 required	23035
6.	Window frame, quick change	22826

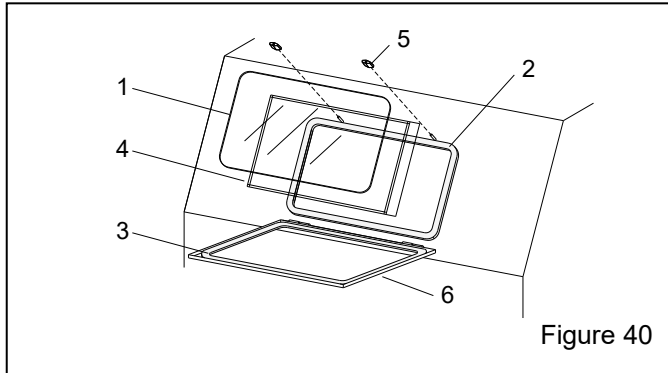


Figure 40

9.4 LED Light Assembly – Figure 41

Item	Description	Stock No.
1.	LED light assembly, includes assembled light module and cover	29711
2.	Diffuser lens	29713
3.	Gasket, 5/32" x 3/4", 3 ft required	00192
4.	Strain-relief connector, 1/2"	11631
5.	Lockut, 1/2" conduit	12713
6.	Nut, 1/4-20 hex	03111
7.	Washer, 1/4 lock	03117
8.	Washer, 1/4 flat	03116

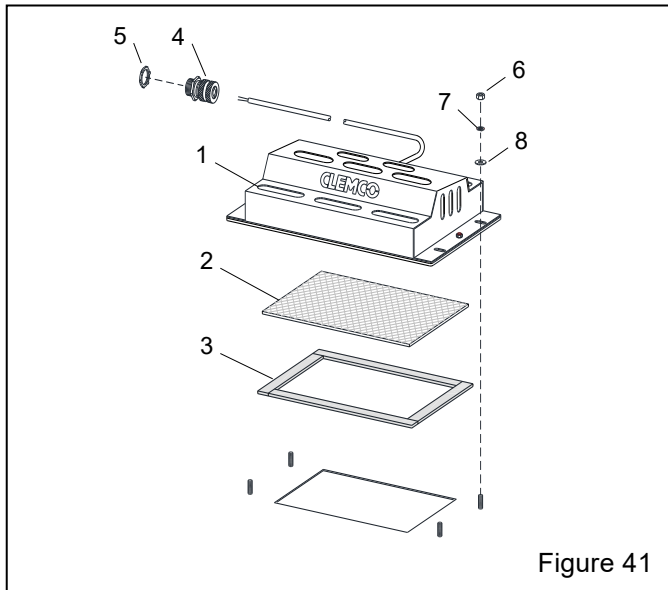


Figure 41

9.5 Foot-Pedal Assembly – Figure 42

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 thread x 1/8 barb	11731
7.	Spring, 1-1/4" x 3-1/2"	20121
8.	Screw, 8-32 x 3/8" thread cutting	11389
9.	Bumper, rubber (feet)	21522
10.	Tubing, 1/8" ID twin, specify ft required	19577
11.	Tie, nylon wire	12139

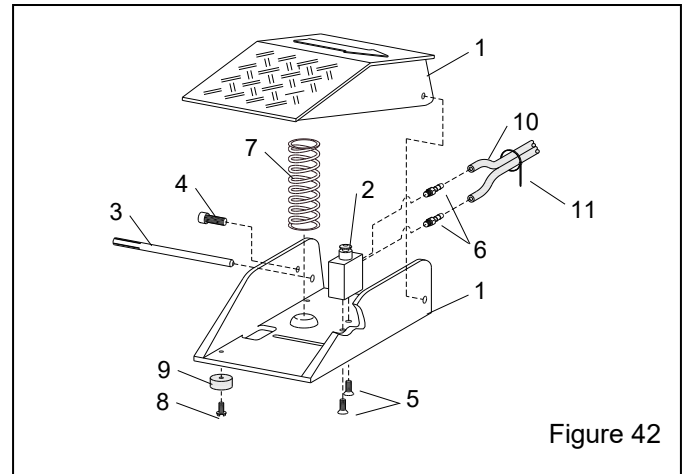


Figure 42

9.6 1" Diaphragm Outlet Valve – Figure 43

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

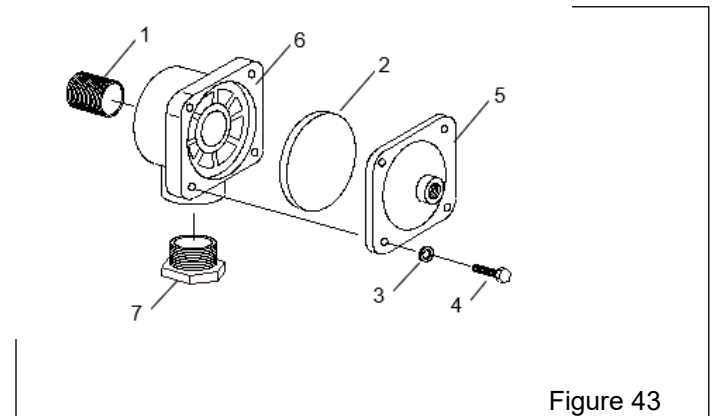
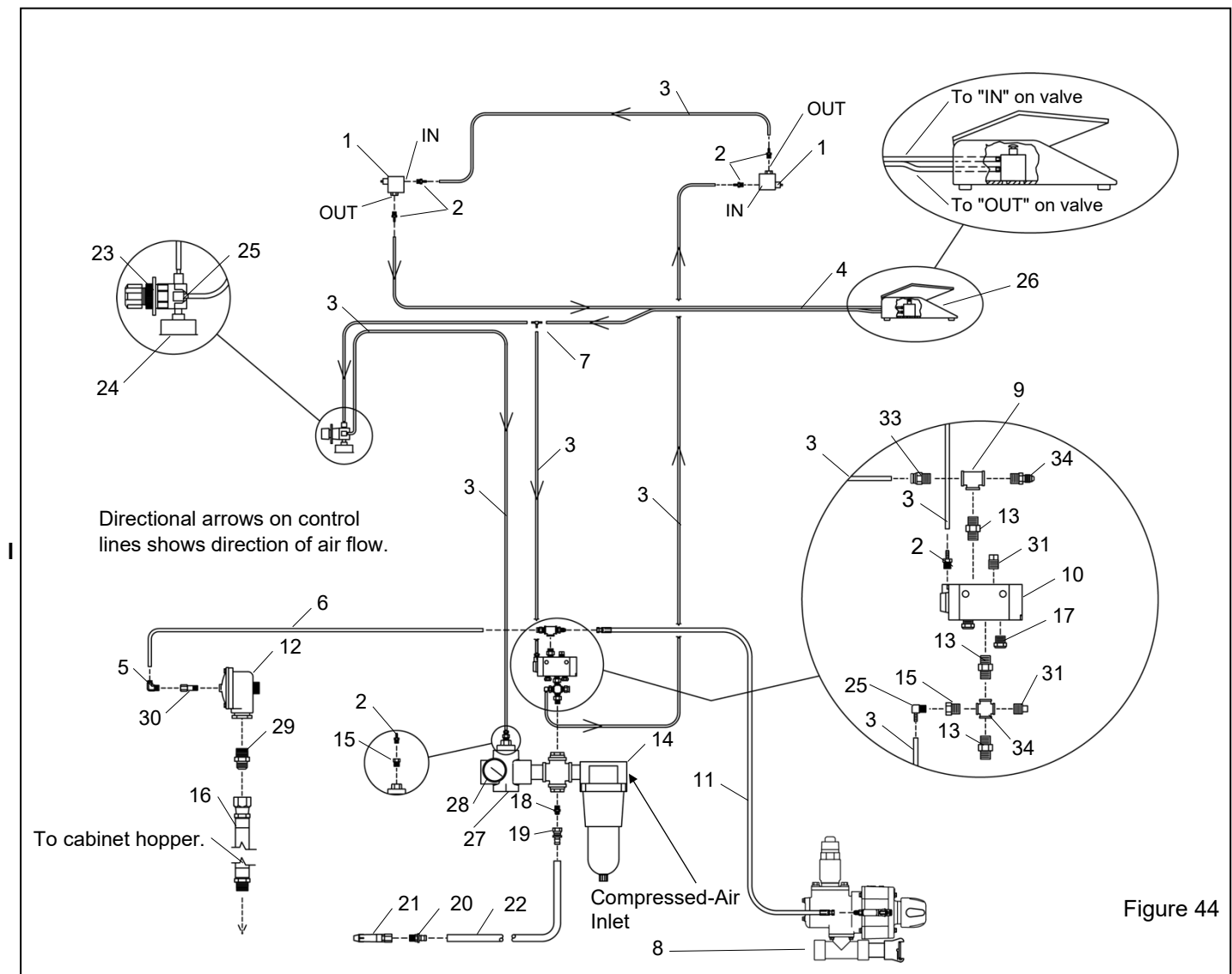


Figure 43

9.7 Plumbing and Cabinet Controls – Figure 44

Item	Description	Stock No.
1.	Valve, 3-way	12202
2.	Fitting, straight, 1/8" NPT x 1/8" barb	11732
3.	Tubing, 1/8" ID urethane, specify ft reqd.	12475
4.	Tubing, 1/8" ID twin urethane specify feet required	19577
5.	Fitting, elbow 1/4" M-NPT x 3/8" tube	11685
6.	Tubing, 3/8" OD poly, 3 ft required	12478
7.	Tee, 1/8" tube barb	11734
8.	Media metering valve, 1-1/4" PQV-Pro with flanged ball valve	32120
9.	Tee, 1/4" brass	02025
10.	Valve, 4-way air	12203
11.	Hose, 3/16" x 5 ft. coupled	03083
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	13116
22.	Hose, 1/2" ID air, bulk, specify ft 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
32.	Fitting, str. 1/4" male NPT x 1/4" tube	11737
33.	Adaptor, 1/4-NPT x male JIC	02494
34.	Cross, 1/4-NPT brass	02193



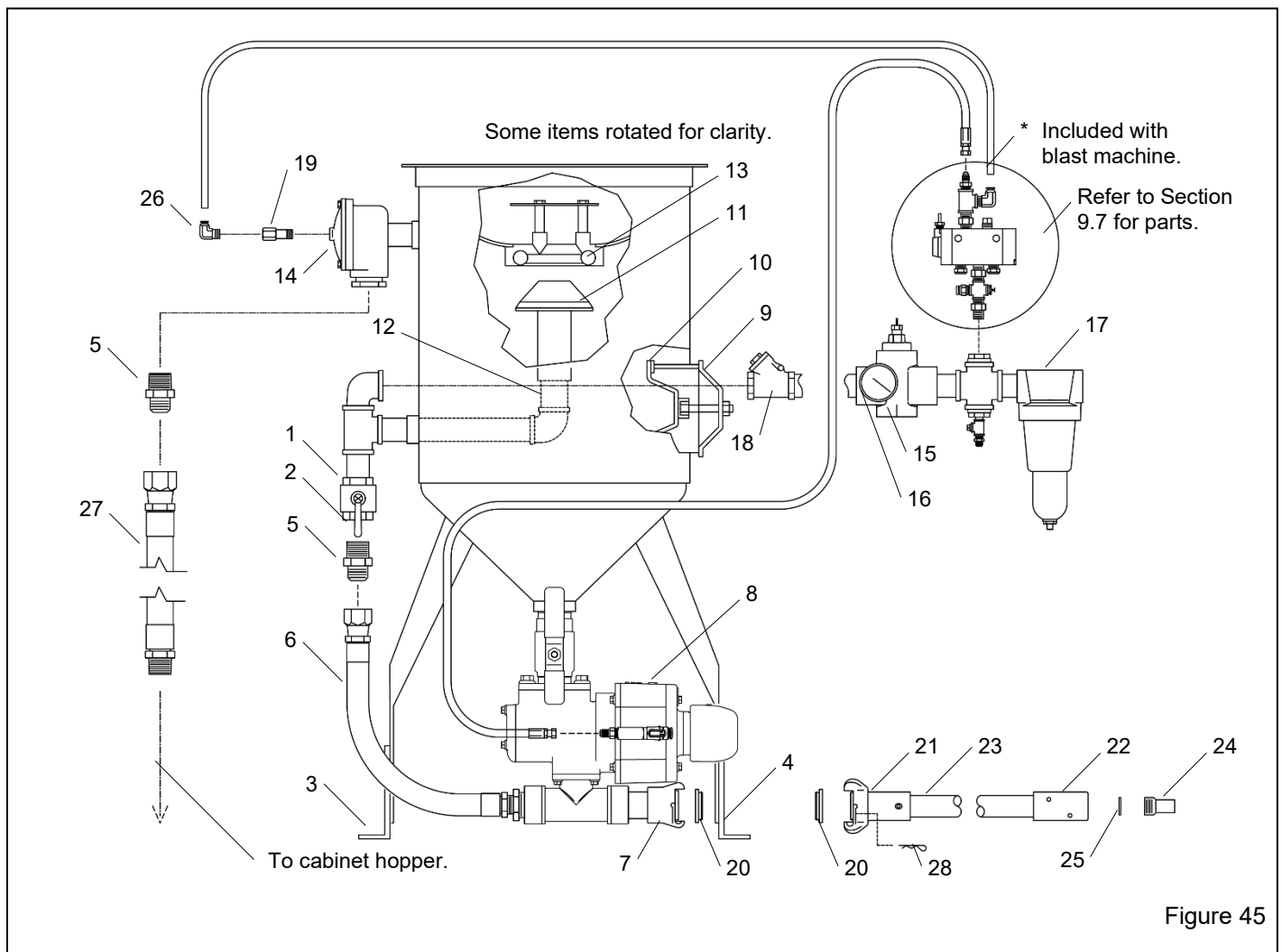
9.8 Blast Machine – Figure 45

Item	Description	Stock No.
(-)	Blast machine assembly, 16" dia., 2 CF capacity, includes items with an asterisk (*)... 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 21" pusher line	22508
7.*	CF Coupling 1-1/4" NPT	00551
8.*	Media metering valve, 1-1/4" PQV-Pro with flanged ball valve	32120
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.*	Seal, 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.*	Filter, 1/4" NPT male/female inline	27618
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.*	Fitting, elbow 1/4" M-NPT x 3/8" tube	11685
27.*	Hose assembly, 1" x 10' exhaust	23915
28.	Lock pin, coupling (package of 25)	11203

9.9 PQV-Pro Metering Valve Replacement Parts

Refer to the PQV-Pro Metering Valve Operations Manual for replacement parts.



9.10 600 CFM Reclaimer, for 16" Dia. Blast Machine Figure 46

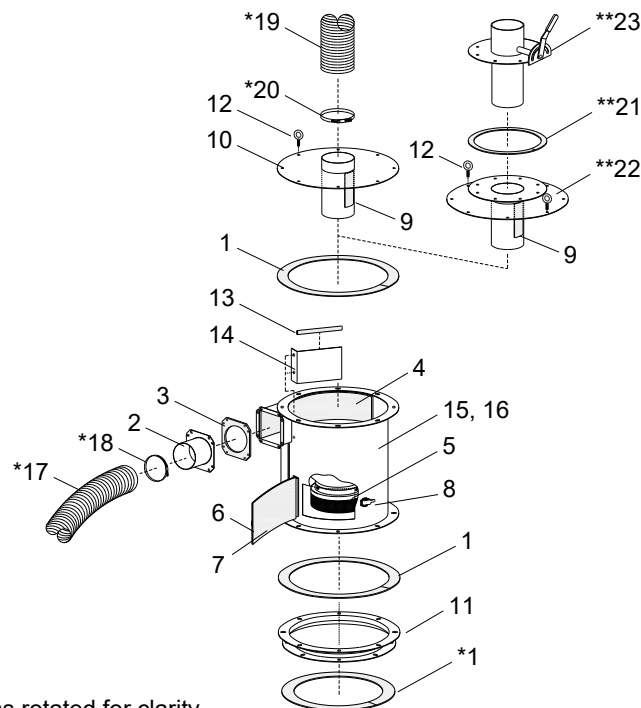
Item Description	Stock No.
(-) 600 cfm reclaimer with item 10, top plate Does not include asterisk (*) (**) items	29497
(-) 600 cfm reclaimer w/external adj. vortex Includes items 21, 22, and 23. Does not include items with asterisk (*).....	29499
1. Gasket, 2" adhesive-backed, per foot, 6 ft required at each location	13089
2. Inlet-pipe adaptor, 5" - 600 cfm	12361
3. Gasket, inlet pipe adaptor, 5" - 600 cfm current modular and all unlined models.....	11779
4. Wear plate, rubber-lined w/mount'g screws ..	29542
5. Screen assembly, 8-mesh	21265
6. Door assembly, w/gasket and latch	14271
7. Gasket, door	11745
8. Latch assembly, door	12263

9. Gasket, 2" adhesive-backed, per foot, 1 ft required at this location	13089
10. Top plate, 600 cfm modular w/6" pipe	29538
11. Adaptor, 16" dia. blast machine,	25243
12. Eyebolt 3/8-NC	00430
13. U-channel, 3/8, 1-foot required	04076
14. Baffle, unlined 600 modular	29524
15. Body section, unlined, with door, wear plate, and baffle	29486
16. Body section, with rubber liners, door, and item 10 top plate	29709
and Item 22 top plate with flange	29495
*17. Hose, light-lined flex, specify feet required 5" ID for 600 cfm	12467
*18. Clamp, 5-1/2" for 5" hose	11578
*19. Hose, 6" ID unlined flex, per foot, specify length required	12452
*20. Clamp, 6-1/2" for 6" ID hose.....	00750
**21. Gasket, 5/16" x 1" adhesive-backed, 4 feet required	00187
**22. Top plate, modular with flange	29487
**23. Vortex cylinder assembly, adjustable, Pull-thru 600 cfm modular	29510

600 CFM MODULAR RECLAIMER

* Items marked with an asterisk (*) are not included with replacement reclaimers. If those items are needed, they must be ordered separately.

**The vortex cylinder is optional with cabinets provided with an LPDC Dust Collector, but standard on cabinets provided with an RPH-2 Dust Collector.



Some items rotated for clarity.

Figure 46

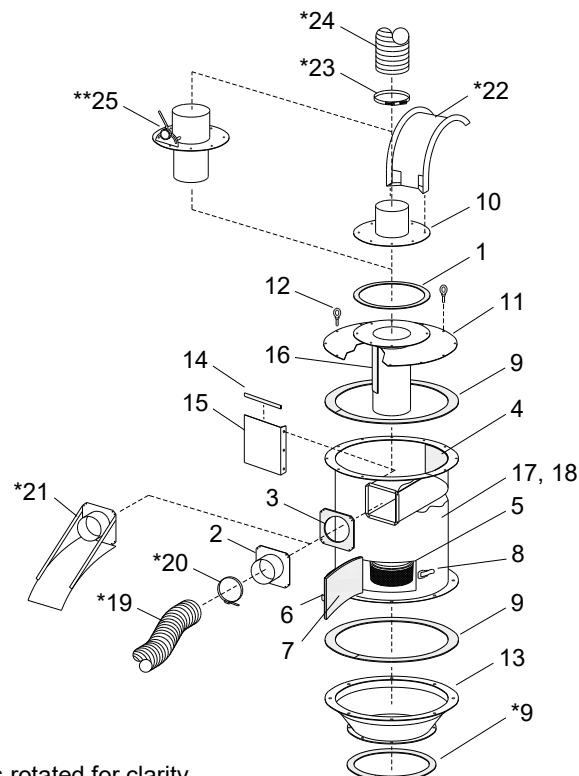
9.11 900 CFM Reclaimer, for 16" Dia. Blast Machine Figure 47

Item Description	Stock No.		
(-) 900 cfm reclaimer with item 10 outlet plate Does not include asterisk (*) (**) items	28969		
(-) 900 cfm reclaimer w/external adj. vortex Includes item 25. Does not include items with asterisk (*). with 6" inlet for standard use	21293		
with 5" inlet for use with steel media	28581		
1. Gasket, 5/16" x 1" adhesive-backed, 5 feet required	00187		
2. Inlet pipe adaptor 900 cfm, 6" standard	12363		
900 cfm, 5" for steel media	14411		
3. Gasket, inlet pipe adaptor 900 cfm 6" standard use	11759		
900 cfm, 5" for steel grit	11779		
4. Wear plate, rubber-lined w/mounting screws 900 cfm with bolt-on top	25071		
5. Screen assembly, 8-mesh	21265		
6. Door assembly, w/gasket and latch	14271		
7. Gasket, door	11745		
8. Latch assembly, door	12263		
9. Gasket, 2" adhesive-backed, per foot, specify ft required	13089		
10. Outlet plate 900 cfm with 7" pipe	16832		
11. Top assembly, 900 cfm	23040		
12. Eyebolt 3/8-NC	00430		
13. Adaptor, 16" dia. blast machine	23043		
14. U-channel, 3/8, 1-foot required	04076		
15. Baffle, 900 modular	23051		
16. Gasket, 1/8" x 2" adhesive-backed, per foot, 1 foot required at this location	13089		
17. Body section, unlined, with door, wear plate, and baffle	27465		
18. Body section with rubber liners, door, and item 11 – top assembly	27466		
19. Hose, light-lined flex, specify length 6" ID, standard use	12468		
5" ID, for use with steel media	12467		
*20. Clamp, hose 5-1/2" for 5" hose	11578		
6-1/2" for 6" hose	00750		
*21. Hose support, inlet – option for 900 cfm 5", for use with steel media, w/5" hose	22324		
6", standard use	16887		
*22. Hose support, 7" outlet – option	20619		
*23. Clamp, 8" for 7" hose	11576		
*24. Hose, 7" ID unlined flex, specify length	12448		
**25. Vortex cylinder assembly, adjustable, 900 cfm pull-thru	23046		

900 CFM MODULAR RECLAIMER

* Items marked with an asterisk (*) are not included with replacement reclaimers. If those items are needed, they must be ordered separately.

**The vortex cylinder is optional with cabinets provided with an LPDC Dust Collector, but standard on cabinets provided with an RPH-2 Dust Collector.



Some items rotated for clarity.

Figure 47