

# **BNP<sup>®</sup> Double 65 and Double 220 Dual-Station Suction Blast Cabinets O. M. 22963**

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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® Double 65 and 220 Dual-Station Suction Blast Cabinets:

- BNP Double 65 – 900 cfm
- BNP Double 65M – 1200 cfm for steel media
- BNP Double 220 – 900 cfm
- BNP Double 220M – 1200 cfm for steel media

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:

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

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 cabinet 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, and angle and distance of the nozzle from the blast surface. BNP suction cabinets consist of three major components:

- Cabinet enclosure, Dual Station for Dual Operators
- Reclaimer with two media hose outlet
- Dust collector

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

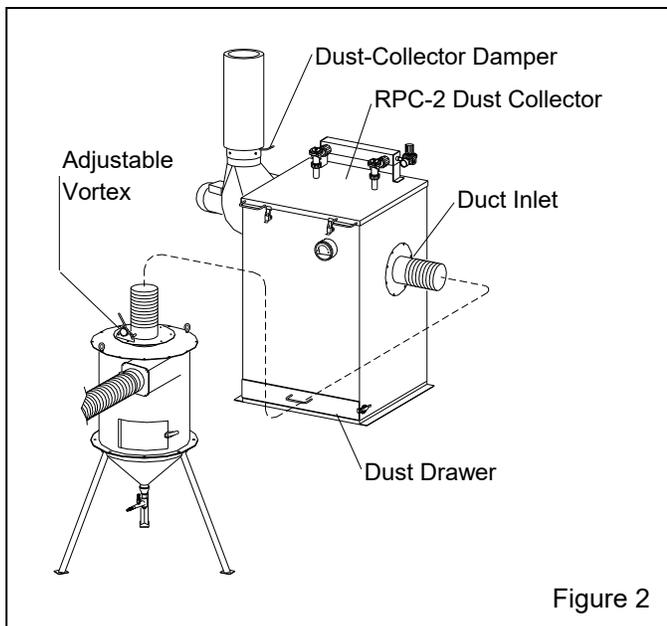
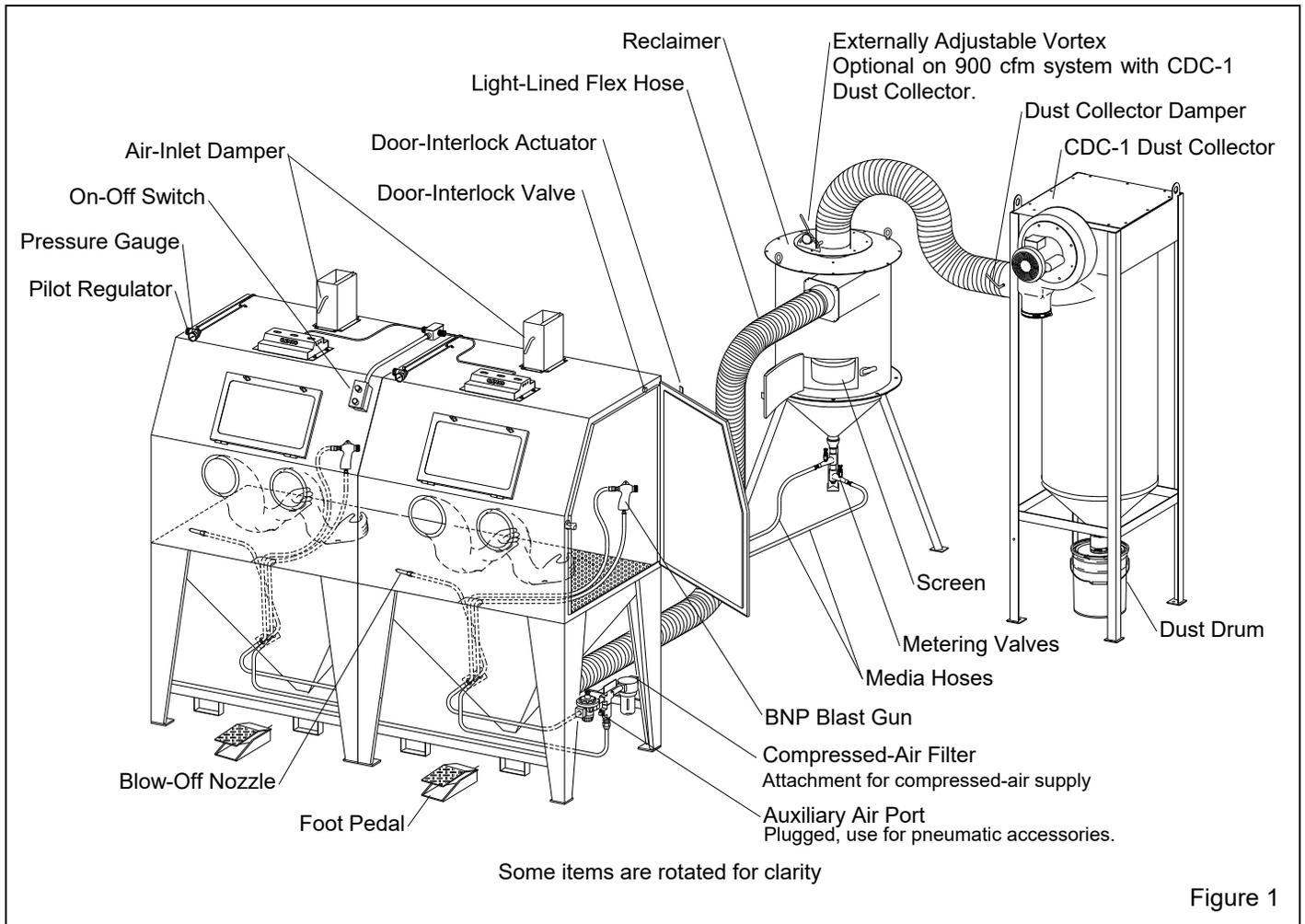
### **BNP Double 65:**

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

### **BNP Double 220:**

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

**1.4.3** Refer to Figure 1 for arrangement of components with a CDC-1 Dust Collector. The illustration shows a free-standing 900 reclaimer; Figure 2 shows the arrangement with an RPC-2 (900 cfm only) Reverse-Pulse Dust Collector with dust drawer. The optional RPH-2 (900 cfm) and RPH-3 (1200 cfm) are set up the same way as the RPC-2, but includes a hopper for additional dust storage and empties into a drum. The overall height of an RPH is approximately 10.5 feet and 12 feet when the top access door is open. An upgraded, RPC-2 or RPH Dust Collector may be added at any time. An RPH- 3 is standard with cabinets requiring 1200 cfm dust collector.



## 1.5 Theory of Operation

**1.5.1** Once the cabinet is correctly set up and turned on, the cabinet is then ready for operation by actuation of a foot pedal. Fully depressing down on either or both of the foot pedals causes air to flow through the blast gun. The partial vacuum created by air moving through the gun draws media into the blast-gun mixing chamber. The media mixes with the air stream and is propelled out the nozzle. After striking the object being blasted, the blast media, fines, dust, and byproducts generated by blasting fall through the grate into the cabinet hoppers. These particles are then drawn into the reclaimer for separation. Dust and fines are first separated from reusable media and pass into the dust collector. Next, the media is screened for oversize particles and returned to the reclaimer hopper for reuse. Dust and fines entering the dust collector are removed from the air stream as they pass through the filters, discharging clean air. When the foot pedal is released, blasting stops.

## 1.6 Reverse-Pulse Dust Collector Options

### 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.

**1.6.1 CDC-1 Dust Collectors:** Shown in Figure 1, the collector is available in 900 cfm models. The single-filter cartridge is cleaned by using a manually controlled pulse of compressed air. Dust collects in a 5-gallon dust drum, which must be frequently emptied. CDC-1 Dust Collectors are standard with BNP cabinets with 900 cfm reclaimer unless an optional RPC-2 or RPH-2 Dust Collector is ordered at time of purchase. Refer to manual number 28225.

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

**1.6.3 RPH Dust Collector:** The RPH-2 (900 cfm model) and RPH-3 (1200 cfm model) are set up and operate the same as the RPC-2, as shown in Figure 2, but instead of a dust drawer the collector sits atop a hopper, which provides additional dust storage and empties into a 30-gallon drum. Refer to manual number 21449.

**1.6.4 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 Nozzle Options

**1.7.1** Unless otherwise specified at the time of purchase, the cabinet is provided with a No. 5 (5/16" orifice) ceramic nozzle and No. 5 (5/32" orifice) air jet. Optional, more durable tungsten carbide and boron carbide nozzles are available and are shown under *BNP Gun and Hose Assembly* in Section 9.3. Use a boron carbide nozzle when blasting with aggressive media, as noted in Section 1.9.4.

## 1.8 Reclaimer Options

**1.8.1** A 900 cfm reclaimer utilizes a CDC-1 reverse-pulse dust collector, optional RPC-2, or RPH-2 dust collector.

A 1200 cfm reclaimer utilizes a RPH-3 reverse-pulse dust collector.

**1.8.2 Replaceable rubber reclaimer liners:** Rubber liners are available for all current 900 cfm and 1200 cfm reclaimers. The reclaimers must be designed to accept liners and have a removable top. The liners prolong service life of the reclaimer and should be installed when using silicon carbide, aluminum oxide, or other aggressive media, as noted in Section 1.9.4. *Rubber liners are shown in Figure 32.*

**1.8.3 Externally adjustable vortex option:** The vortex fine-tunes media separation; refer to Section 5.5 for additional information. The vortex is an option with 900 cfm reclaimers when the cabinet is provided with a CDC-1 Dust Collector, it is standard on 900 cfm reclaimers when the cabinet is provided from the factory with an RPC or RPH dust collector, and is standard on all 1200 cfm reclaimers.

## 1.9 Blasting Media

**1.9.1** 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 ZERO 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 5/32" orifice air jet with 5/16" 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 orifice air jets and nozzles deliver more media, requiring higher performance from the reclaimer. When using larger nozzles, the maximum mesh size of media will be smaller than normally recommended. Using media finer than those recommended may decrease visibility and, at some point, carry over to the dust collector. Media coarser than those recommended may be too dense for the reclaimer to recover from the cabinet hopper.

**1.9.2 Steel shot and steel grit:** Steel shot S-230 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 1200 cfm or larger reclaimers. Rubber curtains should be used to protect the cabinet walls from peening, warping, 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. NOTE: Steel grit or shot is too heavy to use with cabinets equipped with a 900 cfm reclaimer.

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

**1.9.4 Silicon carbide, aluminum oxide, and garnet:** These are the most aggressive of the commonly used media. Aggressive media may be used, but the service life of any components exposed to the media will be reduced. To avoid unscheduled 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. Rubber-lined reclaimers are available as factory-installed items, or field-installed liners can be installed later on 900 cfm and 1200 cfm reclaimers if they have removable tops and are designed to accept liners. Nozzles lined with boron carbide extend nozzle wear life. Refer to *Section 9.3: BNP Gun and Hose Assembly*.

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

**1.9.6 Lightweight and fine-mesh media:** When using lightweight (such as agricultural) media or fine-mesh (180-mesh and finer) media, the reclaimer inlet baffle may need to be removed to retain media and avoid carryover. On reclaimer models with bolt-on removable tops, baffle removal and replacement is easily accomplished, as explained in Section 7.10. Reclaimers with welded-on tops require grinding to remove the baffle, and once it is removed it cannot be replaced.

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

RECLAIMER SIZE	MEDIA TYPE				
	STEEL GRIT	STEEL SHOT	PLASTIC	GLASS BEAD	ALUM. OXIDE
*900 cfm with 6" inlet	Do not use	Do not use	N/A See 1.8.7	No. 6 to No. 12	46 to 180-mesh
1200 cfm with 6" inlet	50 to 120	S-230 to S-70	Do not use	No. 4 to No. 8	16 to 60-mesh
*1200 cfm with 7" inlet	Do not use	Do not use	N/A See 1.8.7	No. 4 to No. 12	46 to 180-mesh

\* Standard reclaimer inlets

Figure 3

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

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

### 1.10 Compressed-Air Requirements

**1.10.1** The size of the compressor required to operate the cabinet depends on the size of the air jet and blasting pressure. Unless otherwise specified, cabinets are supplied with No. 5 (5/32" orifice) jets. Refer to the table in Figure 4 to determine cfm consumption for each gun. When operating with both guns the air consumption is double from that shown. Consult with a compressor supplier for 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 owner's manual. If preferred, remove the plug from the auxiliary air port (shown in Figure 6) and connect a 1/4" ID or larger air line to the dust collector pulse reservoir/manifold.**

Compressed-Air Consumption (per gun**) in CFM				
BNP Gun	Jet Orifice	Nozzle Orifice	CFM	PSI
No. 4	1/8"	5/16"	21	80
No. 5	5/32"	5/16"	32	80
No. 6	3/16"	3/8"	47	80
*No. 7	7/32"	7/16"	62	80
*No. 8	1/4"	1/2"	86	80

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

\*\* When operating with both guns cfm consumption is doubled.

Figure 4

**1.10.2** The air filter at the air-inlet connection reduces condensed water from the compressed air. Its use is especially important in areas of high humidity or when

using fine-mesh media. Moisture causes media to clump and inhibits free flow through the feed assembly. If the filter does not remove enough moisture to keep media dry and flowing, it may be necessary to install an air dryer or aftercooler in the air-supply line.

### 1.11 Electrical Requirements

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

**1.11.1** 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:

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

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

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

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

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

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

Refer to Section 2.5 to connect electrical service.

## 2.0 INSTALLATION

Unless noted otherwise, the sequence of assembly in Sections 2.2 through 2.8 may be done in any order that is convenient for the installer.

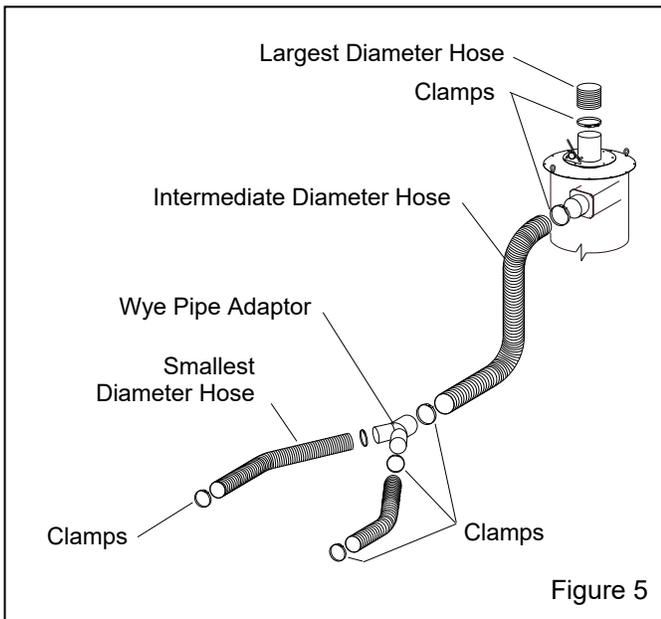
### 2.1 General Installation Notes

**2.1.1** Refer to Figures 1 (and Figure 2 for optional RPC-2 Dust Collector) for the general arrangement. Place all components in a convenient location where compressed air and electrical service are available. The cabinet location must comply with OSHA and local safety codes. Allow for full access to all doors and service areas, and for efficient handling of large parts. Provide enough clearance at the dust collector for maintenance and to remove the dust container. Place freestanding reclaimers directly behind the cabinet with flex hose connections and metering valve facing toward the cabinet 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 owner's manual to set up the dust collector and prepare it for operation.

## 2.2 Connect Conveying (flex) Hoses – Figure 5

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



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

**2.2.3** The largest diameter hose attaches to the reclaimer outlet, which will later be connected to the dust collector.

## 2.3 Connect Compressed-Air-Supply Lines

A separate air line is required for the dust collector pulse. Refer to the dust collector owner's manual. The line may be connected to the auxiliary-air port on the cabinet plumbing, as shown in Figure 6.

### ⚠ WARNING

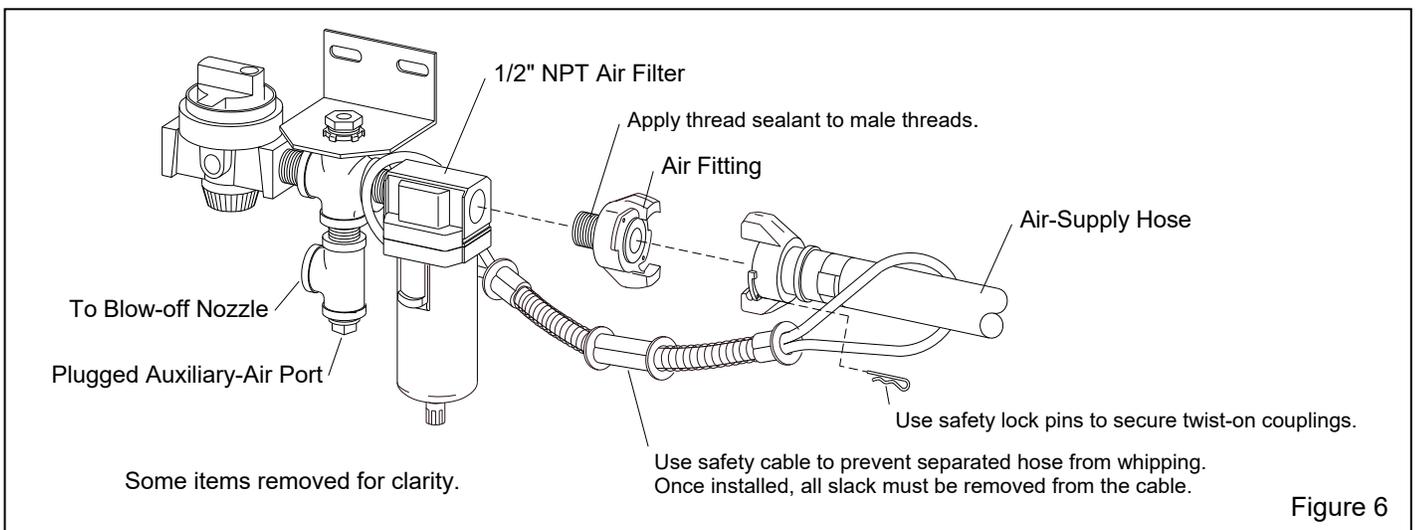
Failure to observe the following before connecting the equipment to the compressed-air source can cause serious injury from the sudden release of trapped compressed air:

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

### ⚠ WARNING

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

**2.3.1** Refer to Paragraph 2.3.2 to determine the recommended air-supply hose size, then refer to Figure 6 and apply thread sealant to the male threads of an air fitting that is compatible with the air-supply hose fitting, and install it onto the 1/2-NPT air filter located under the cabinet hopper. The style of connection shown in Figure 6 is for reference only.



**2.3.2** Refer to the table in Figure 7 to determine the minimum ID air-supply line to the cabinet air inlet. A smaller diameter hose may reduce blasting efficiency.

Air Line Length	MINIMUM COMPRESSED-AIR LINE ID		
	Jet Size		
	1/8" No. 4	5/32" No. 5	3/16" No. 6
25 feet	3/4"	3/4"	1"
50 feet	3/4"	3/4"	1"
75 feet	3/4"	1"	1"
100 feet	3/4"	1"	1"

Figure 7

**2.3.3** Connect the air line from the air source to the air-filter inlet.

## **⚠ 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.**

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

## **2.4 Ground the Cabinet and Dust Collector**

**2.4.1** 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 owner's manual and connect a ground wire to the dust collector.

## **2.5 Connect Three-Phase Electrical Service**

## **⚠ WARNING**

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

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

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.

**2.5.1** 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.

**2.5.2** Check the amperage on initial startup; if the motor draws excessive amperage, gradually close the dust-collector damper, located on the inlet on CDC Dust Collectors and on the exhaustor outlet on RPC-2 and RPH-2 Dust Collectors, until the amperage is within the specifications shown on the motor plate.

**2.5.3** After wiring is completed, observe the warning below 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.**

## **2.6 Connect Media Hoses to Metering Valves**

**2.6.1** Refer to Figure 8 and attach the clear media hoses from under the cabinet hopper to the metering valves at the bottom of the reclaimor hopper by sliding the hose onto the barded fitting on the metering valves.

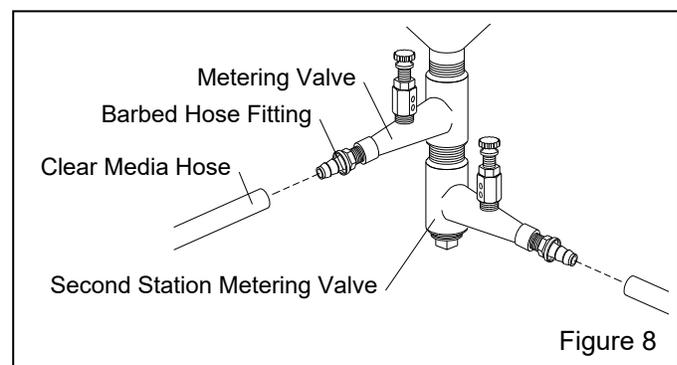
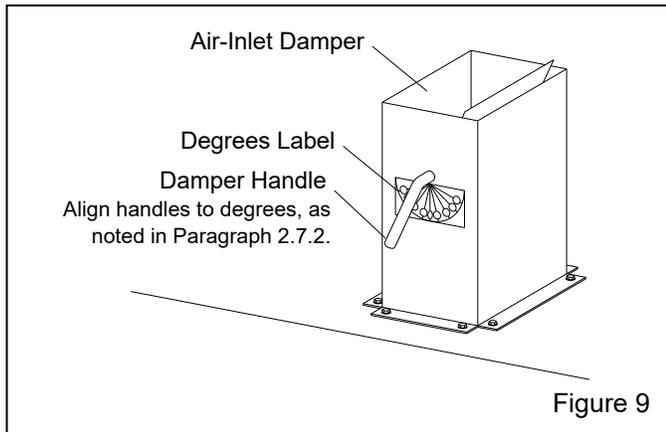


Figure 8

## 2.7 Set Air-Inlet Dampers – Figure 9

**2.7.1** The air-inlet dampers are located on the top of the cabinet and must be set to match the cabinet dimensions and reclaimer size. The air dampers were preset prior to shipment; confirm the initial setting, as noted in Paragraph 2.7.2.



**2.7.2** The label on the damper shows the settings in degrees. The initial setting on both dampers should align the handle as follows:

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

**2.7.3** Loosen the lock nuts and align the damper handle as noted. When correctly positioned, tighten the lock nuts to maintain the setting. Refer to Section 5.6 for adjustment procedure.

## 2.8 Final Assembly

**2.8.1** Position a foot pedal on the floor at the front of the cabinet at each operator station.

**2.8.2** A package of five view-window cover lenses is supplied with the cabinet. To install a cover lens, remove the adhesive backing and apply the lens to the clean, dry, inner surface of the view window. Refer to 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 kits consist of black-rubber cabinet curtains with grommets, curtain hardware, and a boron carbide nozzle.

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

### 3.2 Cabinet Curtains Installation

**3.2.1** Match curtains to corresponding wall and doors.

**3.2.2 Front and rear walls:** Position the curtains on the wall to be protected. Use the curtains as templates to 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

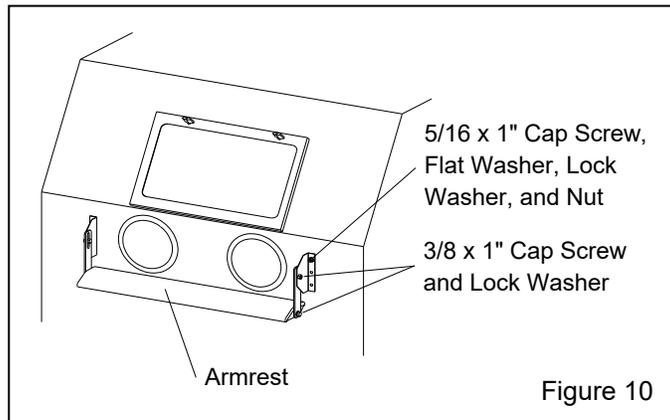
The optional manometer kit is listed in Section 9.1.

**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 5.4 to adjust static pressure. Refer to Section 5.8 for instructions on using the manometer.

### 3.4 Armrest

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

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



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

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

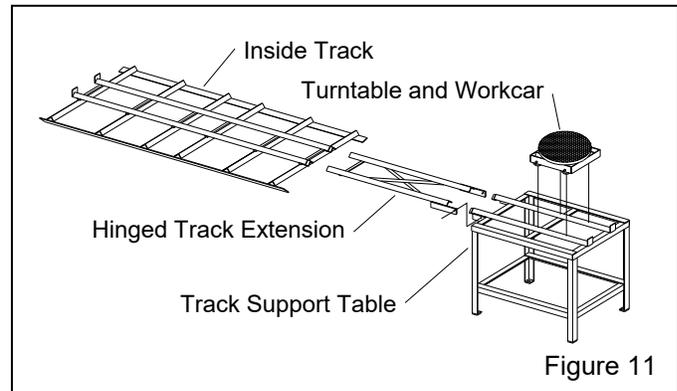
**3.4.5** Loosen the fasteners on the slotted bracket and raise or lower the armrest to a comfortable position.

### 3.5 Turntable with Workcar and Track

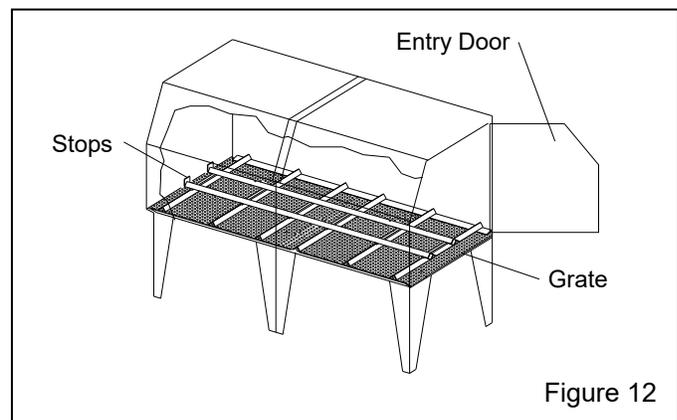
**NOTE:** The track may be placed on either side of the cabinet, allowing entry through either the right side or left side door; the right side is shown in the illustrations. When installing the inside track, place it so the stops, shown in Figure 12, are opposite the entry door.

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

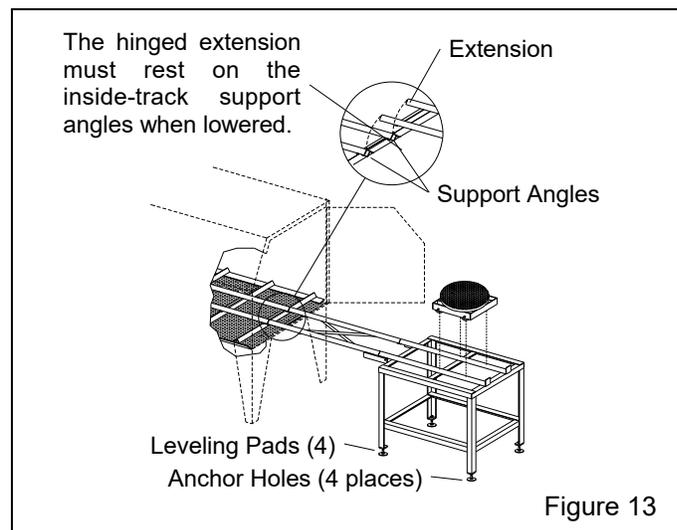
- The inside track assembly, which is placed inside the cabinet.
- The hinged track extension attaches to the support table, swings up to clear the door.
- The track support table.
- Turntable and workcar assembly.



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



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



**3.5.4** 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.

### 3.6 Externally Adjustable Vortex Cylinder

**3.6.1** The externally adjustable vortex is an option when the cabinet is provided with a CDC-1 Dust Collector. The vortex is standard with reclaimers when the cabinet is provided from the factory with an RPC-2 or RPH Dust Collector.

## 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 owner's manual. Pulsing unseasoned cartridges can decrease the efficiency of dust collector and cause premature cartridge failure.**

### 4.1 Media Loading

**4.1.1 Media capacity:** The approximate capacity and minimum media amount is shown in the table below.

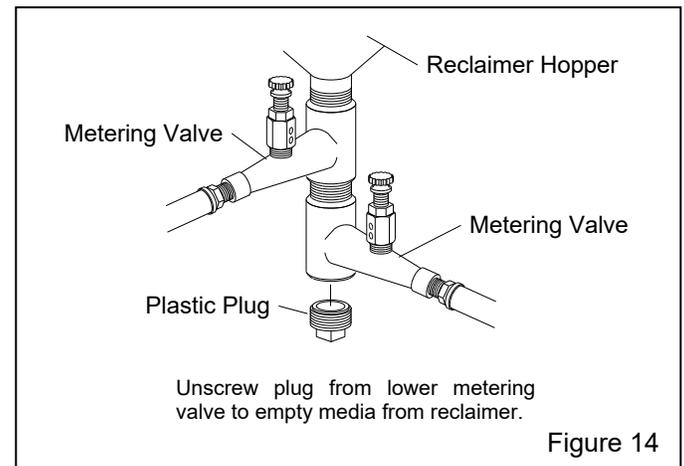
Reclaimer Size	Minimum Wt.	Capacity
900 cfm	30 lbs.	100 lbs. (1 cuft.)
1200 cfm	45 lbs.	150 lbs. (1.5 cuft.)

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

### 4.2 Media Unloading – Figure 14

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

**4.2.2** To purge the media hoses, before replacing the plug turn ON the exhauster, grasp the guns, and press the foot pedals using the guns to blow off the cabinet interior until the air from the guns and the cabinet are clear. Turn OFF the exhauster and replace the plug.



### 4.3 Loading and Unloading Parts

### WARNING

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

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

**4.3.2** Load and unload parts through either door.

**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, reclaiming, and dust-collector doors before blasting. Keep all doors closed during blasting.
- Always wear blast gloves.
- Stop blasting immediately if dust leaks are detected.

**4.4.1** Slowly open the air supply to the cabinet. 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.

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

**4.4.5** Adjust the pilot pressure-regulator to the required blast pressure, per Section 5.1. The regulator is located on the top-left side of both operator stations.

**4.4.6** Insert hands into rubber gloves.

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

### WARNING

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

### NOTICE

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

**4.4.8** 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.

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

#### 4.5 Blasting Technique

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

#### 4.6 Stop Blasting

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

**4.6.2** Use the blow-off nozzle to blow media off cleaned parts.

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

#### 4.6.4 Unload parts.

### 4.7 Shutdown

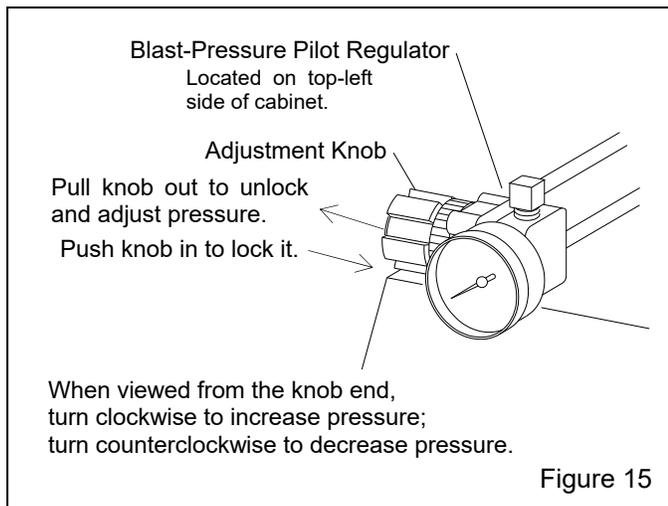
**4.7.1** Shut off the air-supply valve, bleed the air-supply line, and drain the compressed-air filter and dust-collector pulse reservoir.

**4.7.2** Switch OFF the lights and exhauster.

## 5.0 ADJUSTMENTS

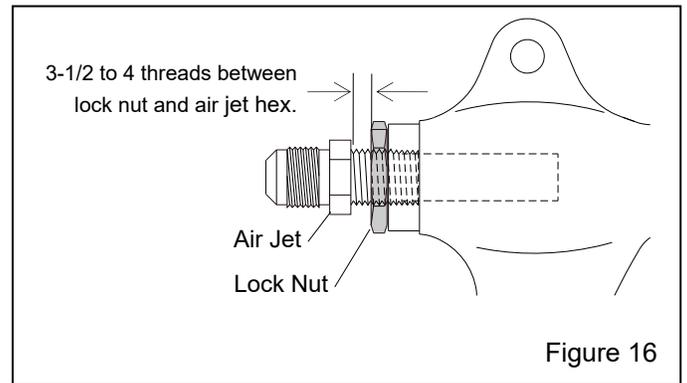
### 5.1 Blasting Pressure (pilot regulator)

**5.1.1** The pilot regulator (located on the top edge of the cabinet to the left side of both operator stations), allow the users to adjust blasting pressure at each station independently of the other while blasting. The suitable pressure for most purposes is about 80 psi. Lower pressures may be required on delicate substrates and will reduce media breakdown. Higher pressure may be required for difficult blasting jobs on durable substrates, but will increase media breakdown. If pressure is too high, suction in media hose will decrease, and if high enough, cause blowback in the hose. Optimal production can only be achieved when pressure is carefully monitored.



**5.1.2** To adjust pressure, unlock the knob by pulling it out, as shown in Figure 15, and turn it clockwise to increase pressure or counterclockwise to decrease pressure. Pressure may drop slightly from closed-line pressure when blasting starts. Once operating pressure is set, push the knob in to lock it to maintain the setting.

### 5.2 Air Jet Adjustment – Figure 16



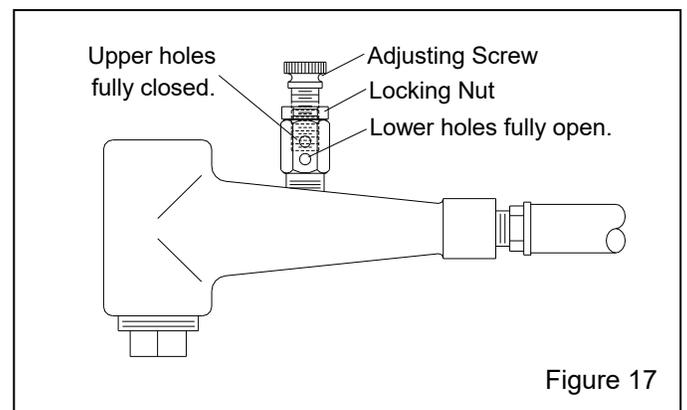
**5.2.1** Thread the air jet 4-1/2 to 5 full turns into the gun body. Doing so will leave 3-1/2 to 4 threads exposed past the lock nut. Tighten the lock nut to maintain the setting. Refer to Section 9.3 for optional adjusting tool, which correctly positions the jet. Instructions are provided with the tool.

### 5.3 Media-Air Mixture (media flow) – Figure 17

**NOTE:** Each metering valve must be adjusted independently of the other.

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

**5.3.2** If media does not flow smoothly, loosen the locking nut and adjust the metering screw until the upper holes in the metering stem are closed off and the lower holes are fully open, as shown in Figure 17. This adjustment is a starting point.



**5.3.3** If pulsation occurs in the media hose, either media is damp and caked, or not enough air is entering the media stream. While blasting, loosen the locking nut and slowly turn the adjusting screw out (counterclockwise

when viewed from the top) until media flows smoothly. Tighten the locking nut finger-tight to maintain the setting.

**5.3.4** If media flow is too light, decrease air in the mixture by turning the metering screw in (clockwise when viewed from the top), covering more of the holes so less air enters the media hose. Tighten the locking nut finger-tight to maintain the setting.

#### 5.4 Reclaimer Static Pressure (dust-collector outlet damper)

**5.4.1** Correct static pressure varies with size of reclaimer, and the size, weight, and type of media.

**5.4.2** Adjust static pressure by opening (handle in-line with air flow) or closing (handle perpendicular to air flow) the dust-collector damper. Refer to the dust collector owner's manual; the damper is located on the inlet on CDC-1 Dust Collectors and on the exhaust outlet on RPC-2 and RPH Dust Collectors. If the damper is not opened far enough, the reclaimer will not remove fines, resulting in dusty media and poor visibility, and possible media blockage in the conveying hose. If the damper is opened too far, it may cause carryover (usable media carried into the dust collector) and result in excessive media consumption. Open only as far as necessary to obtain a balance of dust removal without media carryover.

**5.4.3** A manometer is useful when adjusting or monitoring static pressure. The manometer kit is listed in *Section 9.1: Optional Accessories*. Refer to Section 5.8 for manometer operation. The following are static-pressure starting points for given media. Static pressure may need to be lower with finer media, higher with coarser media. Run the media through several blast cycles, allowing the reclaimer to function with these settings. Inspect the media in the reclaimer and fines in the dust collector, as noted in Paragraph 5.4.2. Continue adjusting static pressure until optimum media cleaning without carryover is attained.

Glass Bead No. 4 to 7 .....	3" – 3-1/2"
Glass Bead No. 8 to 13 .....	2-1/2" – 3"
Aluminum Oxide, 60-Mesh & Coarser .....	4" – 5"
Aluminum Oxide, 80-Mesh & Finer .....	2-1/2" – 3"
*Steel Grit, 50-Mesh to 120-Mesh .....	6" – 7"
*Steel Shot S-170 to S-70 .....	6" – 7"

\*Refer to Section 1.9 for media limitations.

**5.4.4** If the damper has been adjusted and carryover or excessive dust in the media continues, the optional externally adjustable vortex cylinder (optional when the cabinet is provided with a CDC-1 Dust collector standard

with RPC-2 or RPH dust collectors), 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 5.5.

#### 5.5 Externally Adjustable Vortex Cylinder Figure 18

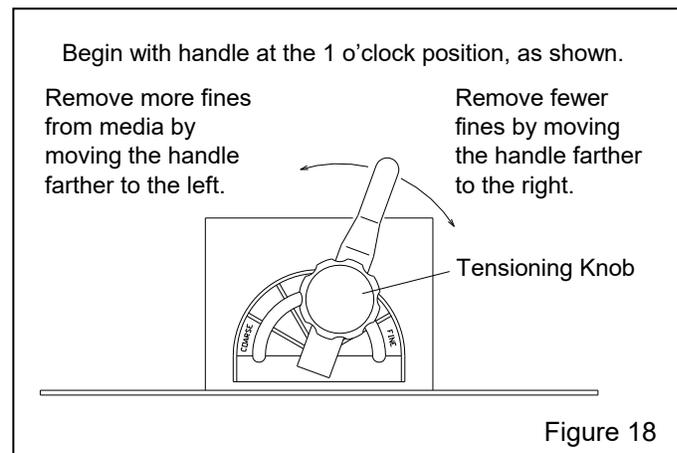
The externally adjustable vortex is an option when the cabinet is provided with a CDC-1 Dust Collector. The vortex is standard on reclaimers when the cabinet is provided from the factory with an RPC or RPH Dust Collector.

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

**5.5.1** The vortex cylinder is located atop the reclaimer where the flex hose connects. Adjustments are made by loosening the handle's tensioning knob and moving the handle to achieve the correct setting. When the correct setting is established, tighten the locking knob to prevent movement. Start with the lever slightly to the right (about 1 o'clock, as shown in Figure 18) of the vertical position.

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

**5.5.3 To remove fewer fines:** (Excessive usable media is carried to the dust collector). Lower the 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, which causes abnormally high static pressure.



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

## 5.6 Cabinet Air-Inlet Dampers

**5.6.1** Once the inlet dampers are initially set, per Section 2.7, 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 5.4. Reclaimer pressure must be set before cabinet pressure.**

**5.6.2** Using a manometer (as noted in Section 5.8 and listed in Section 9.1) is the most accurate method of monitoring and adjusting cabinet pressure. Following the instructions packed with the manometer, start the exhauster, 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 exhauster ON, the gloves should be inflated but not elevated off the grate.

## 5.7 Door Interlocks – Figure 19

### WARNING

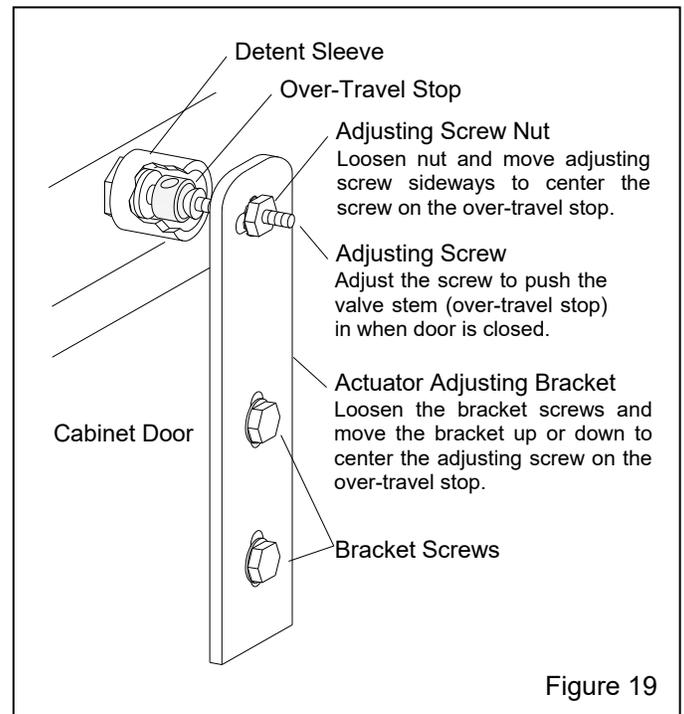
**Never bypass the door interlock system. Doing so can result in serious injury from unexpected blasting.**

**5.7.1** The door interlocks disable the blasting control circuit when doors are open. To enable blasting, the door-interlock switches must be engaged when 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.

**5.7.2** Close cabinet doors.

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

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



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

## 5.8 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; refer to Paragraph 5.8.6.3. Use silicone or other sealant around the fitting to prevent leaks. The fitting should be capable of being capped when the manometer tube is removed. A cap will prevent leaks that alter the reclaimer's separation efficiency. Taking readings at different locations could produce different readings. Static-pressure readings at the door are generally 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 a reading is taken.

**5.8.1** Refer to instructions packed with the manometer for preparing and operating the manometer.

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

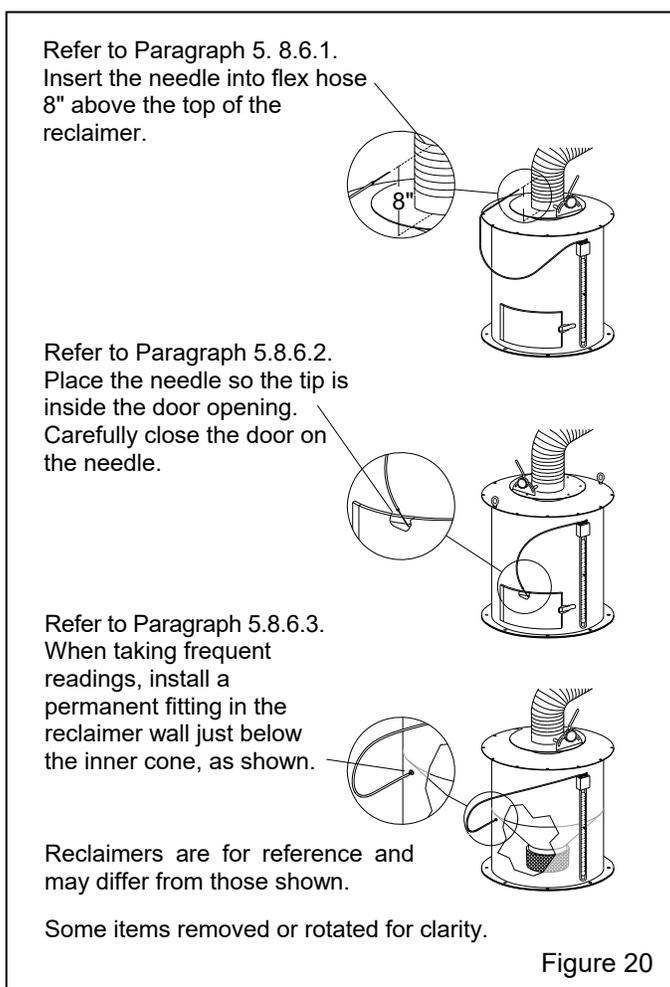
**5.8.3** Leave the needle protector on the needle and insert the needle into the other end of the tubing. The ends of the tubing must fit tight on the manometer and needle; leaks will cause inaccurate readings.

**5.8.4** Open both manometer valves (elbows), per manometer instructions.

**5.8.5** 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.

**5.8.6 Needle placement:** Figure 20 shows the manometer setup for taking both periodic and frequent static-pressure readings.

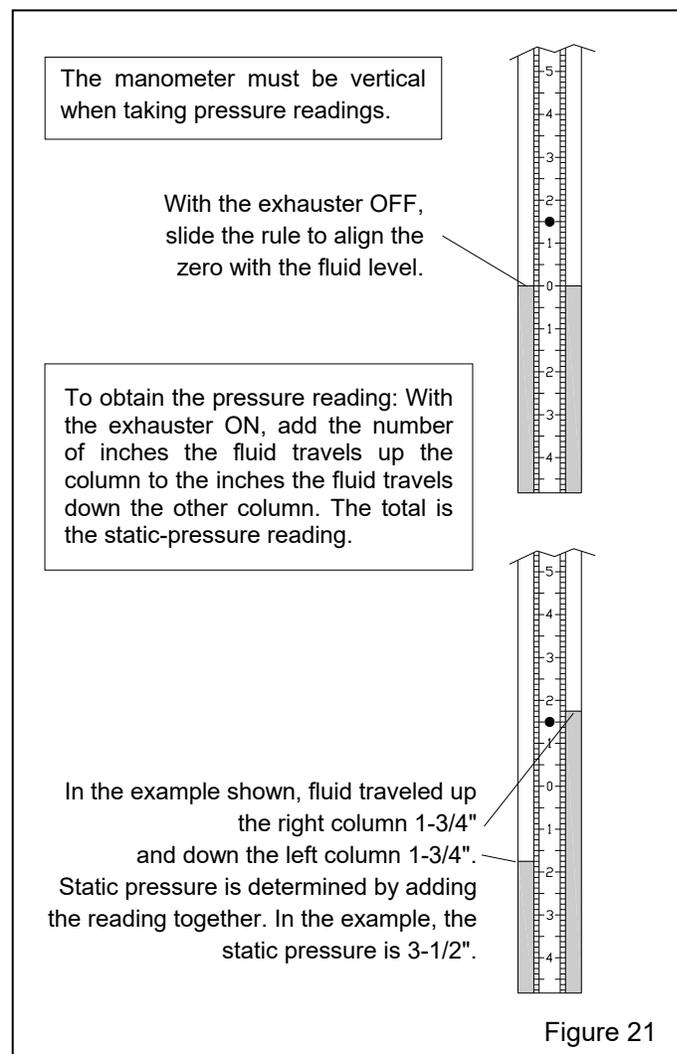
**5.8.6.1 Taking readings in the flex hose:** Remove the needle protector and insert the needle into the flex hose, approximately 8" above the top of the reclaimer.



**5.8.6.2 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.

**5.8.6.3 Taking frequent readings using a permanent fitting:** A permanent fitting may be installed in the reclaimer wall, as shown in Figure 20, 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 carryover of good media to the dust collector.

**5.8.7** Adjust the slide rule to align the zero with the fluid level. Refer to the upper part of Figure 21.



**5.8.8** 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.**

**5.8.9** 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 21.

**5.8.10** 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.**

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## 6.0 PREVENTIVE MAINTENANCE

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### WARNING

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

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

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

## 6.1 Daily Inspection and Maintenance Before Blasting with the Air OFF

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

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

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

**6.1.4 Inspect dust container:** Refer to the dust collector owner's manual and empty dust containers. Adjust schedule based on refill rate.

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

**6.2.1 Inspect cabinet for dust leaks:** During operation, inspect cabinet door seals for media leaks. Dust leaking from the inlet damper or other places on the cabinet indicates saturated filter cartridge. Refer to the dust collector owner's manual.

**6.2.2 Check 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.

**6.2.3 Drain pulse reservoir:** Refer to the dust collector owner's manual and drain the pulse reservoir (manifold) at the end of each shift.

**6.2.4 Cartridge pulsing:** Refer to the CDC-1 Dust Collector manual for pulsing instructions and pulse the cartridge at least every half hour of blasting and before turning OFF the exhauster. Dusty blasting conditions will require more frequent pulsing. RPC and RPH Dust Collectors are automatically pulsed at timed intervals.

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### 6.3 Weekly Inspection and Maintenance Before Blasting with Air OFF

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

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

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

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

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

**6.4.1 Inspect flex hose:** Inspect flex hoses for leaks and wear.

### 6.5 Monthly Inspection and Maintenance

**6.5.1 Reclaimer wear plate and liners:** Remove the flex hose from the reclaimer inlet and use a light to inspect the reclaimer wear plate or optional rubber reclaimer liners for wear. If the rubber is worn through to the backing metal, replace the wear plate per Section 7.8 or rubber liners per Section 7.9, as necessary.

### 6.6 Dust Collector

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

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## 7.0 SERVICE MAINTENANCE

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### 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.**

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### 7.1 Gloves

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

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

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

## 7.2 BNP® Gun and Hose Assembly – Figure 22

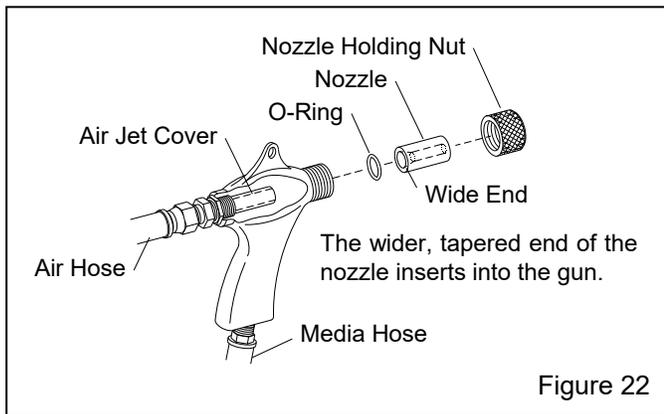


Figure 22

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

### 7.3 View-Window Cover Lens

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

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

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

### 7.4 View-Window Replacement

## **⚠ WARNING**

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

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

**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 a view-window cover lens, per Section 7.3.

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

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

### 7.5 Window-Gasket Replacement – Figure 23

**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 23. Peel additional backing as needed and work the strip around the radius of each corner, pressing it firmly to bond. Trim the gasket to fit and compress the ends to seal.

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

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

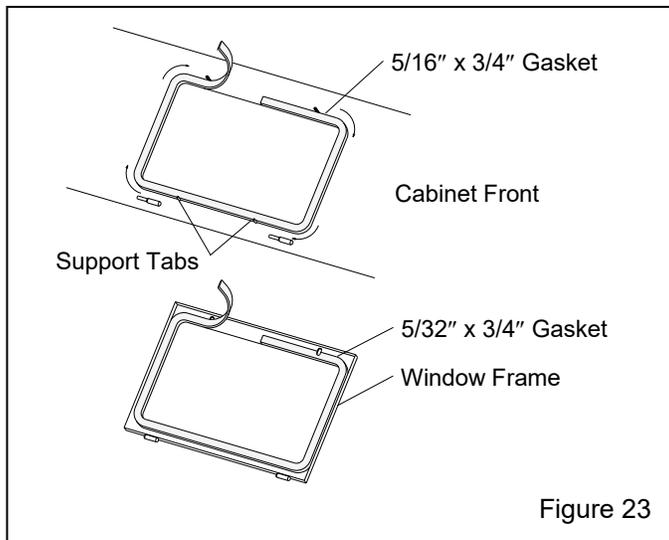


Figure 23

## 7.6 Window-Frame Removal – Figure 24

**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** To remove, slide the frame to the right. The hinges separate, as shown in Figure 24.

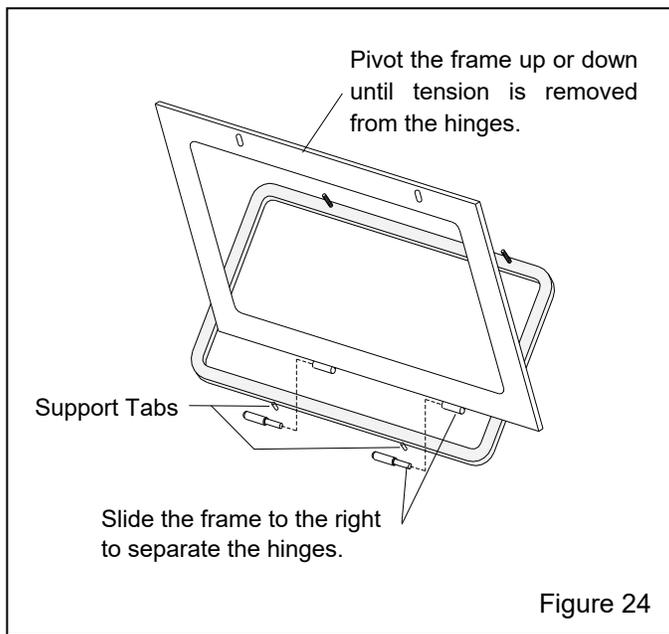


Figure 24

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

**7.6.6** Set the window squarely over the window opening. 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 25

### **⚠ WARNING**

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

### 7.7.1 Remove light-mount cover

**7.7.1.1** Turn OFF electrical power.

**7.7.1.2** Remove the four nuts and washers that attach the light-mount cover to the cabinet and remove the cover, as shown in Figure 25.

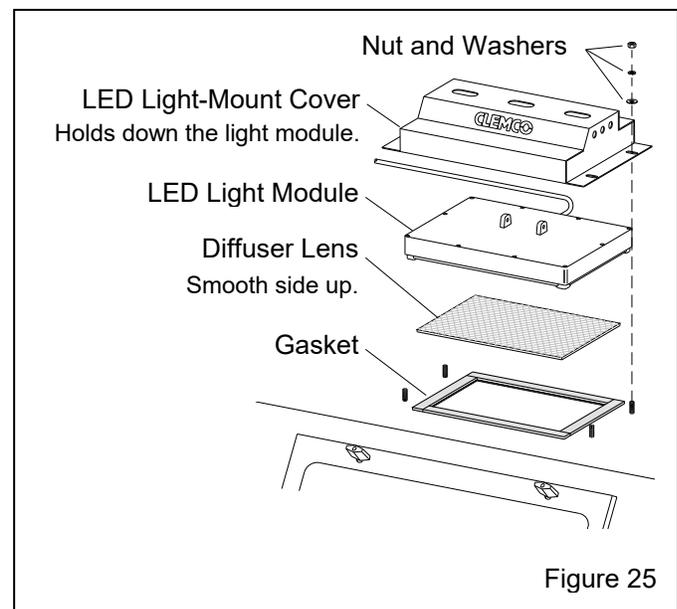


Figure 25

### 7.7.2 Gasket replacement

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

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

**7.7.2.3** Lay a section of strip gasket along the edge of the opening and cut to length, allowing 3/4" overlap on each end. Peel a short section of adhesive backing and adhere the strip gasket to the top edge of the light opening, as shown in Figure 25. Press the gasket to bond. Repeat the process for each side, compressing the ends to seal.

### 7.7.3 Diffuser lens replacement

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

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

### 7.7.4 LED light module replacement

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

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

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

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

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

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

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

**7.7.4.6** Cut the cord to length and wire as follows:

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

**7.7.4.7** Apply power to test the light.

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

## 7.8 Replacing Reclaimer Wear Plate – Figure 26

### WARNING

**To replace the wear plate, the operator must be elevated above the reclaimer on an approved ladder or lift device, or the reclaimer must be removed from the stand. In either case the operator must use a ladder or lift approved for the application. Failure to use proper ladder or lift device and appropriate fall protection can result in serious injury or death.**

Depending on conditions such as height and accessibility, it may be easier to replace the wear plate if the reclaimer is removed from the hopper and leg assembly. If it is removed, set it on a flat level surface.

#### Installation Notes

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

- 900 cfm requires 7 ft for each flange.
- 1200 cfm requires 8 ft for each flange.

**7.8.1** Remove the flex hose from the reclaimer inlet.

### WARNING

**BNP reclaimers weigh between 200 lbs. and 300 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.**

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

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

**7.8.4** Angle the new wear plate into the reclaimer inlet and position it so the straight end is flush with the inlet. Use locking pliers, clamps, or other means where needed to pry the wear plate against the side of the inlet and inner wall. 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.

**7.8.5** 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.

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

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

**7.8.8** Attach the inlet adaptor pipe, replacing the gasket if worn, compressed, or otherwise damaged.

**7.8.9** Replace the lower flange gasket as needed, reattach the reclaimer, and connect the flex.

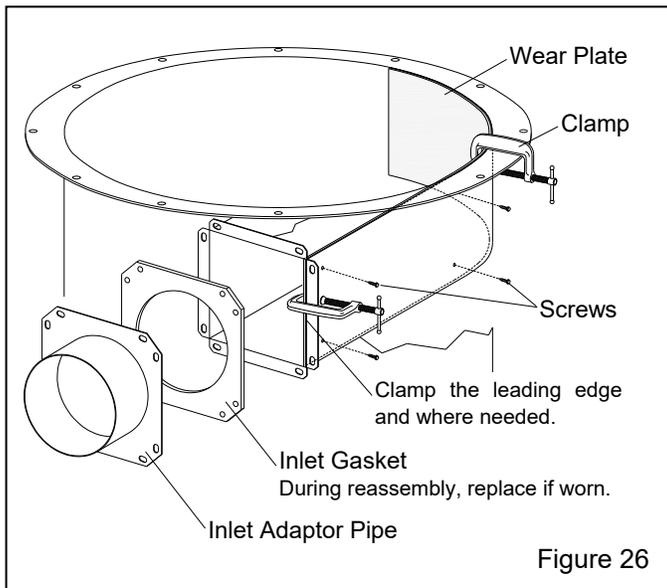


Figure 26

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

## 7.9 Replacing or Field Installing Optional Rubber Reclaimer Liners – Figure 27

The reclaimer must be designed to accept liners and have a removable top, as shown in Figure 27. **NOTE: The following instructions are to replace existing liners or to field install new liners into modular-style**

**reclaimers only. The reclaimer have a removable top and be designed to accept liners.**

**Installation Notes:** Make sure enough 13089 - 2" adhesive-backed gasket is available to replace the compressed or damaged gasket on the reclaimer upper and lower flanges.

- 900 cfm requires 7 feet for each flange.
- 1200 cfm requires 7 feet for each flange.

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 reclaimer is detached from the hopper and leg assembly. Provide a flat surface for the reclaimer to sit.

## ⚠ WARNING

**BNP reclaimers weigh between 200 lbs and 300 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.**

**7.9.1** Remove the flex hoses from the reclaimer inlet and outlet.

**7.9.2** Remove the reclaimer from the hopper and leg assembly.

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

**7.9.4** Remove the reclaimer inlet-pipe adaptor.

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

**7.9.6** If the reclaimer is currently unlined, begin at the installation note preceding Paragraph 7.9.12.

**7.9.7** 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.

**7.9.8** Remove the nuts and washers located along the right side of the inlet and remove the inlet baffle through the top of the reclaimers.

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

**7.9.10** 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.

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

**7.9.12** Remove all old caulking and adhesive from the weldment.

**Installation Note:** The numbers in parentheses (-) shown in Figure 27 and in the following applicable paragraphs show the recommended order of installation. When installing the liners, make sure that seams are aligned. The final assembly must be smooth and free of protrusions, edges, and gaps. Any edges will disrupt the air flow, causing wear and affecting the reclaimer's media cleaning efficiency.

**7.9.13** (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.

**7.9.14** (2nd) Place the cone liner in the cone with the fabric side down, and check the fit and trim if necessary. Apply contact adhesive to the fabric side of the liner and install the cone liner. Smooth out the liner to eliminate air pockets.

**7.9.15** (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.

**7.9.16** (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, making adjustments to make sure it is flush with the top of the reclaimer body and that the inlet-side liner is aligned with the side-liner cutout. Reposition the inlet-side liner as needed.

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

**7.9.17** (5th) Remove the temporary baffle bolts and install the inlet baffle by inserting bolts and flat washers from the inside of the reclaimer and then attach lock washers and nuts from the outside, leaving the baffle slightly loose.

**7.9.18** 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 to even with the liners. Voids will cause premature wear.

## NOTICE

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

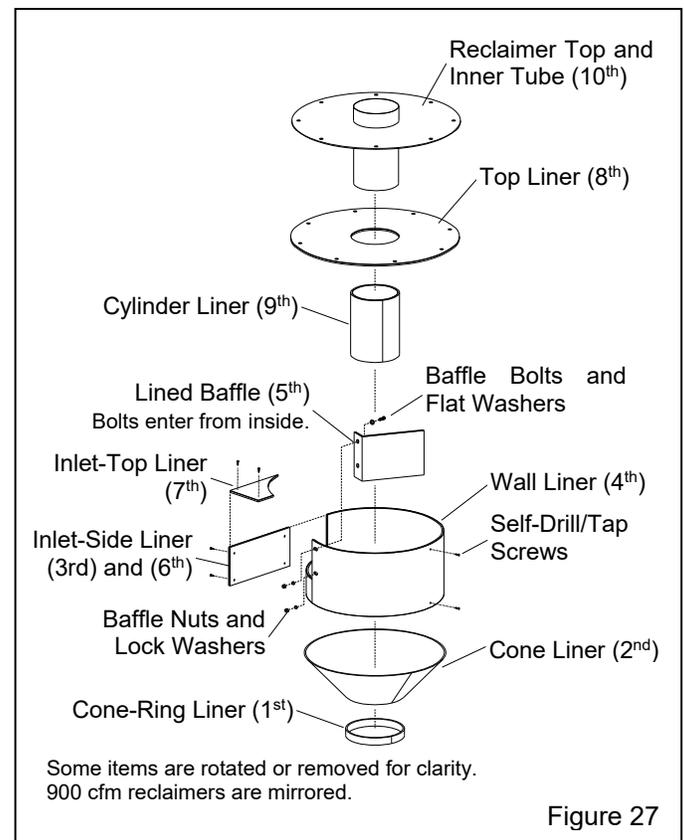


Figure 27

**7.9.19** (6th) Use self-drilling screws through the existing holes 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.

**7.9.20** (7th) Align the front edge of the inlet-top liner to the front of the inlet housing and use self-drilling screws through the existing holes 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.

**7.9.21** (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.

**7.9.22** (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.

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

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

**7.9.25** (10<sup>th</sup>) 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.

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

**7.9.27** 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.

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

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

**7.9.30** Reattach the reclaimer body to the hopper and leg assembly.

**7.9.31** Install flex hoses.

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

## 7.10 Removing or Replacing Reclaimer Inlet Baffle – Figure 28

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

### Installation Notes:

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

- 900 cfm requires 7 feet at each flange.
- 1200 cfm requires 8 feet at each flange.

Depending on conditions such as height and accessibility, it may be easier to replace the baffle if the reclaimer is removed from the hopper and leg assembly.

**7.10.1** Remove the flex hose from the reclaimer top.

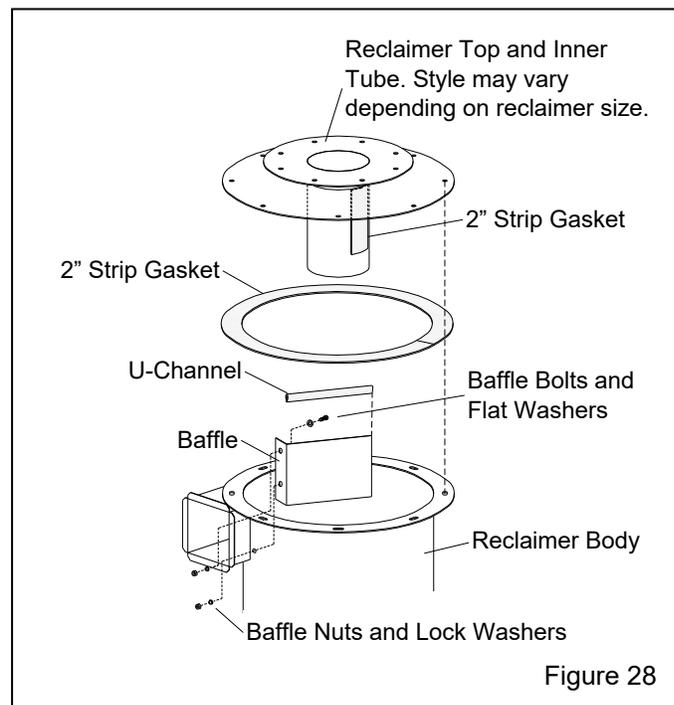


Figure 28

**7.10.2** Remove the fasteners securing the reclaimer top and remove the top.

**7.10.3** Remove the bolts that secure the baffle to the side of the reclaimer inlet and remove the baffle through the top.

**7.10.4** Remove all caulking residue.

**7.10.5** If removing (not replacing) the baffle, remove the strip gasket from the inner tube and install the baffle bolts and reclaimer top. If replacing the baffle, skip to Paragraph 7.10.6.

**7.10.6** When replacing the baffle, make sure the strip gasket on the inner tube is 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.

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

**7.10.8** Install the reclaimer top and allow the caulking to cure before putting the reclaimer into service.

**7.10.9** Reattach the reclaimer body to the hopper and leg assembly and connect the flex hose.

### **7.11 Reverse-Pulse Dust Collector**

Refer to the applicable dust collector manual, as noted in Paragraph 1.1.1, for dust collector maintenance.

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## **8.0 TROUBLESHOOTING**

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### **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.**
  - **When air is required to check the controls, always enlist the aid of another person to:**
    - **Hold the blast gun securely.**
    - **Operate the foot pedal.**
  - **Never bypass the foot pedal or wedge it in the operating position.**
  - **Never 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 power** and switch the motor leads, as shown on the motor plate. Refer to Section 2.5.

**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 5.4.

**8.1.6** Cabinet air-inlet dampers closed too far, restricting air movement through the cabinet. Adjust dampers, per Sections 2.7 and 5.6.

**8.1.7** Reclaimer door open. Check door.

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

**8.1.9** Obstruction in flex hose. Inspect flex hose for blockage.

### **8.2 Abnormally high media consumption**

**8.2.1** Door on reclaimer open or worn door gasket. Air entering the reclaimer around the door will cause media carryover to the dust collector. 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 5.4.

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

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

**8.2.5** Blast pressure too high for the media, causing media to 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** When using media finer than 180-mesh, the inlet baffle of the reclaimer may need to be removed. Refer to Section 1.9.6.

**8.2.8** Optional, externally adjustable vortex cylinder out of adjustment. Adjust per Section 5.5.

### **8.3 Reduction in blast cleaning rate**

**8.3.1** Low media level reducing media flow. Check media level and replenish or replace as needed.

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

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

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

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

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

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

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

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

### **8.4 Plugged nozzle**

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

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

### **8.5 Media bridging**

**8.5.1** Frequent bridging or blockage in the media metering valve can be caused by damp media. Media becomes damp 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 the air filter and receiver tank regularly. Ongoing problems with moist air may require the installation of an air dryer or aftercooler in the air-supply line.

**8.5.4** Absorption. Some media 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 attached to the reclaimer hopper or 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**

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

### **8.7 Blockage in media hose**

**8.7.1** Media obstructions. Usually caused when the media mixture is too rich. Adjust media-air mixture, per Section 5.3.

**8.7.2** Wet or damp media. Refer to Section 8.5.

### **8.8 Poor suction in media hose**

**8.8.1** Inadequate air supply. Refer to Sections 1.10 and 2.3.2, and make sure cfm and air hose requirements are met.

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

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

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

**8.8.5** Air jet and nozzle combination may be wrong. Refer to the table in Paragraph 1.10.1 to combination is correct.

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

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

**8.8.8** Nozzle inserted backward. The wider, tapered end of the nozzle inserts into the gun toward the air jet.

### **8.9 Air only (no media) from nozzle**

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

**8.9.2** Make sure the air hose and media hose are not reversed; the green air hose attaches to the back of the gun and the clear media hose attaches to the bottom of the gun's grip. Refer to Figure 34.

**8.9.3** Blockage in media hose; refer to Section 8.7.

**8.9.4** Poor suction in media hose; refer to Section 8.8.

### **8.10 Blowback through media hose**

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

**8.10.2** Air jet may be too large for nozzle. Refer to the table in Paragraph 1.10.1.

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

### **8.11 Blasting does not begin when the foot pedal is pressed**

**8.11.1** Door interlocks not engaging. Check adjustment, per Section 5.7.

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

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

**8.11.4** Make sure lines are not reversed on the foot pedal or pilot regulator. Refer to the schematic in Figure 40.

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

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

**8.11.7** Check the nozzle to see if it is plugged. Refer to Section 8.4.

### **8.12 Blasting continues after the foot pedal is released**

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

### **8.13 Media buildup in cabinet hopper; 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 carryover to the dust collector and possible blockage in the conveying hose.

**8.13.1** 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 2.5.

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

**8.13.3** Dust collector filter cartridge(s) clogged. Refer to the dust collector owner's manual noted in Section 1.1.1.

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

**8.13.5** Reclaimer door open. DO NOT operate unless door is closed.

**8.13.6** Obstruction in flex hose. Remove hoses and check for blockage.

## 8.14 Static shocks

**8.14.1** Cabinet and/or operator not grounded. Abrasive blasting generates static electricity. The cabinet must be earth-grounded to prevent static buildup. Refer to Sections 2.2.1 and 2.4. If shocks persist, the operator may be building up static. Attach a small ground wire, such as a wrist strap, from the operator to the cabinet.

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

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

## 8.15 Dust leaking from cabinet

**8.15.1** Damaged door gaskets. Inspect and replace damaged gaskets.

**8.15.2** Refer to Section 8.1.

**8.15.3** Refer to Section 8.13.

## 8.16 Dust leaking from dust collector

**8.16.1** Cartridge(s) not seasoned; refer to the dust-collector owner's manual to season cartridge(s)

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

**8.16.3** Refer to the dust-collector owner's manual to service the dust collector.

## 9.0 ACCESSORIES AND REPLACEMENT PARTS

### 9.1 Optional Accessories

#### Turntables and Turntables with Tracks

## **▲ WARNING**

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

#### Fixed-Base Turntable Without Bearing

Description	Stock No.
20" dia. 25 lb capacity .....	12412

#### Fixed-Base Turntable with Bearing, 500 lb Capacity Figure 29

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

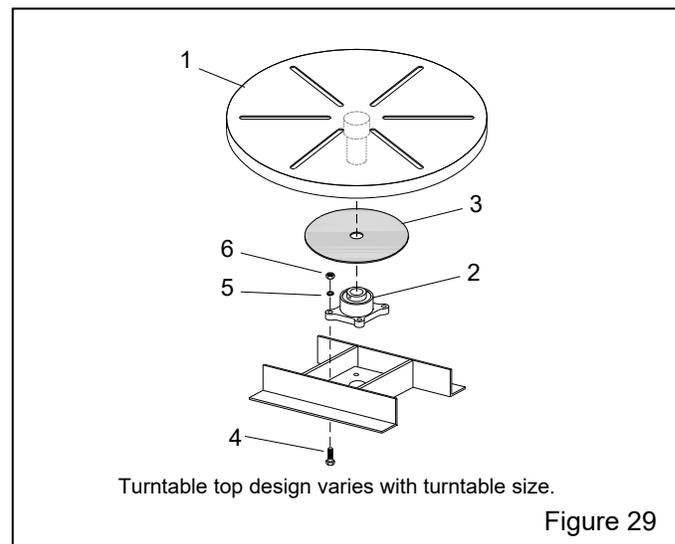
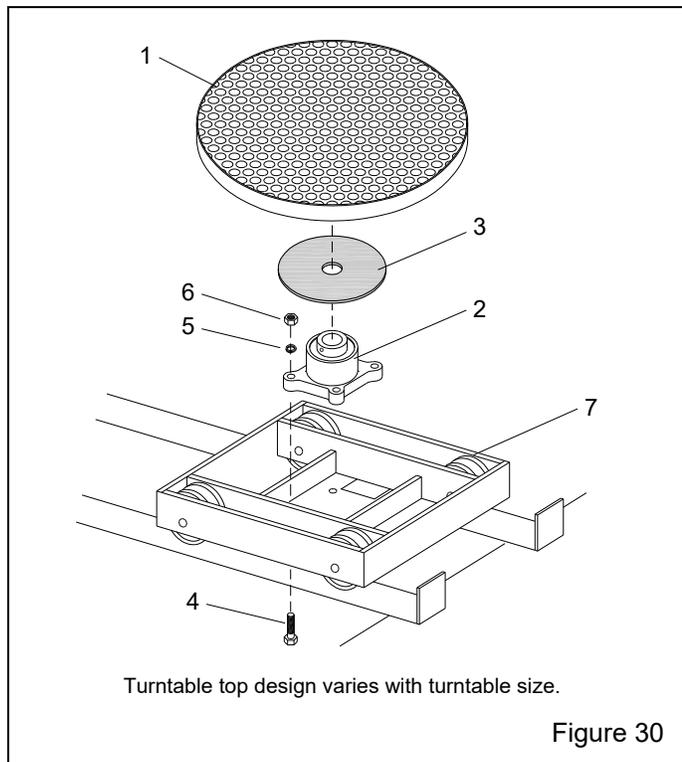


Figure 29

**Turntable with Workcar and Track, 500 lb Capacity  
Figure 30**

Item	Description	Stock No.
(-)	20" dia. turntable and track assembly for double 65 .....	13899
	for double 220 .....	21199
(-)	Turntable & workcar assembly, 20" diameter Includes items shown in Figure 30, less the track .....	24205
1.	Turntable, replacement 20" diameter .....	18329
2.	Bearing, 1-1/2" bore .....	11517
3.	Protector, bearing .....	13479
4.	Screw, 1/2-NC x 1-1/2" cap .....	03454
5.	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.



Time-delay door locks, BNP double cabinet .....	25558
Tumble basket, 2-gallon, door mounted .....	12227
Lock pins (pkg of 25) for twist-on hose couplings ...	11203
Safety cable, for 1/2" to 1-1/4" OD hose .....	15012
Manometer kit .....	12528
Noise-reduction arm port covers, pair .....	24885
Armrest assembly with brackets (one operator) ....	24900
Armrest assembly, replacement (one operator) ....	24899
Anti-fatigue floor-mat, 2 ft x 3 ft, for front of cab. ....	24744

Aluminum oxide kit, factory-installed: Includes #5 boron carbide nozzle, black-rubber cabinet curtains with grommets and curtain hardware. Does not include rubber reclaimer liners.

for double 65 with 900 cfm .....	14130
for double 220 with 900 cfm .....	28894

Aluminum oxide kit, field-installed: Includes light-lined flex hose, #5 boron carbide nozzle, black-rubber cabinet curtains with grommets and curtain hardware. Does not include rubber reclaimer liners.

for double 65 with 900 cfm .....	12945
for double 220 with 900 cfm .....	21196

**Rubber cabinet curtains, black**

Curtain set, w/mounting hardware	
for double 65 .....	23533
for double 220 .....	23534

**Back curtain, 2 required**

for double 65 .....	14243
for double 220 .....	14247

**Front curtain, 2 required**

for double 65 .....	14242
for double 220 .....	14246

**Door curtain, 2 required**

for double 65 .....	14244
for double 220 .....	14245

**Rubber cabinet curtains, white**

Curtain set, w/mounting hardware	
for double 65 .....	23543
for double 220 .....	23544

Flex hose, heavy-lined, for use with steel and heavy usage with aluminum oxide or other aggressive media. Available in 15 ft. lengths only.

4" ID .....	12473
5" ID .....	12465
6" ID .....	12457

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

**Right door**

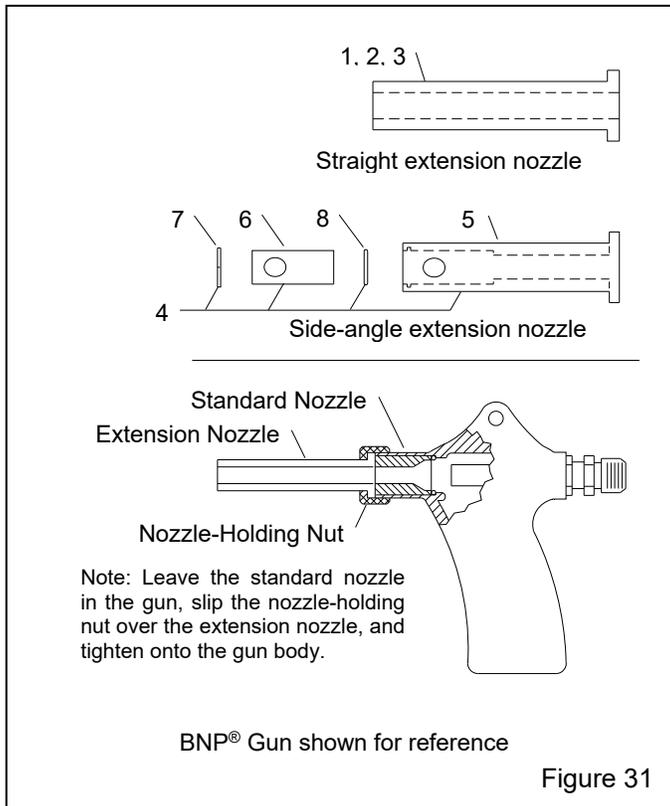
for BNP-65 .....	23610
for BNP-220 .....	23612

**Left door**

for BNP-65 .....	23611
for BNP-220 .....	23613

**Extension Nozzles – Figure 31**

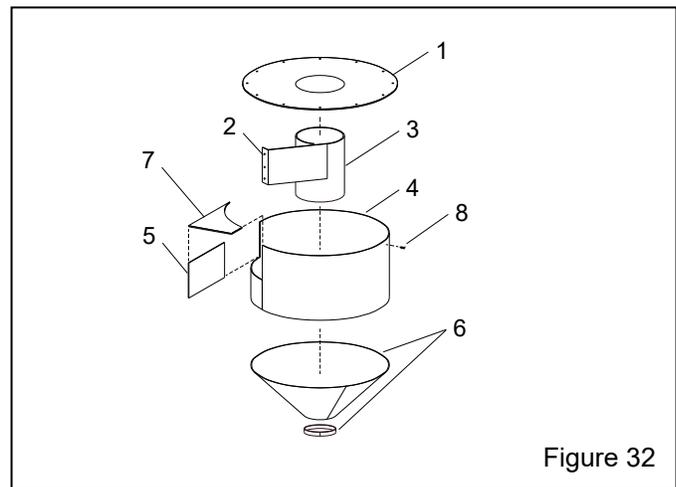
Item	Description	Stock No.
1.	3" Straight extension nozzle	
	No. 5, 5/16" orifice .....	11921
	No. 6, 3/8" orifice .....	11922
	No. 7, 7/16" orifice .....	11923
2.	6" Straight extension nozzle	
	No. 5, 5/16" orifice .....	11927
	No. 6, 3/8" orifice .....	11928
	No. 7, 7/16" orifice .....	11929
3.	9"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



**Reclaimer Liners – Figure 32**

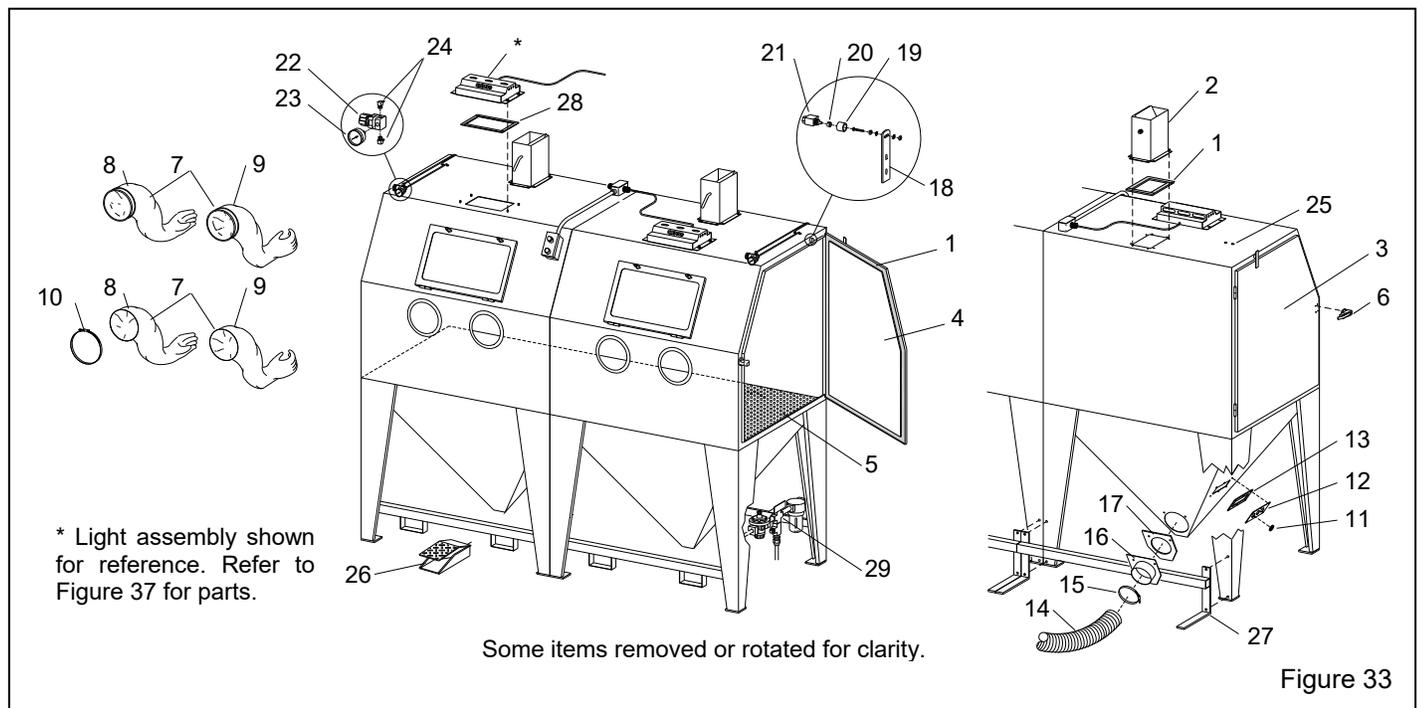
Reclaimer must be designed to accept liners and have a removable top.

Item	Description	Stock No.
(-)	Rubber liner sets	
	900 cfm .....	23151
	1200 cfm .....	25439
1.	Top liner	
	900 cfm .....	23059
	1200 cfm .....	22689
2.	Baffle, lined	
	900 cfm .....	13694
	1200 cfm .....	25437
3.	Inner cylinder liner	
	900 cfm .....	24203
	1200 cfm .....	25438
4.	Wall liner, reclaimer body	
	900 cfm .....	17008
	1200 cfm .....	25436
5.	Inlet-side liner	
	900 cfm .....	12830
	1200 cfm .....	22693
6.	Cone liner	
	900 cfm .....	16070
	1200 cfm .....	22694
7.	Inlet-top	
	900 cfm .....	22827
	1200 cfm .....	24031
8.	Screw, 10-16 x 3/4" self-drill/tap .....	12722



9.2 Cabinet Replacement Parts – Figure 33

Item	Description	Stock No.
1.	Gasket, 5/16" x 1" adhesive-backed, per foot, specify feet required BNP double 65 door, 11 ft. per door .. 00187 BNP double 220 door, 13 ft. per door 00187 Air-inlet damper, 3 ft. each ..... 00187	
2.	Damper, air-inlet, each ..... 23156	
3.	Door assembly, left for double 65 ..... 20070 for double 220 ..... 20074	
4.	Door assembly, right for double 65 ..... 20071 for double 220 ..... 20075	
5.	Grate for double 65, 2 required ..... 11811 for double 220, 2 required ..... 11810	
6.	Latch kit, door, each ..... 20064	
7.	Glove set Band-clamp attachment ..... 11215 Quick-change (clampless attachment)... 28820	
8.	Glove, left hand only Band-clamp attachment..... 12710 Quick-change (clampless attachment)... 28638	
9.	Glove, right hand only Band-clamp attachment..... 12711 Quick-change (clampless attachment)... 28639	
10.	Clamp, for clamp-attached glove ..... 11576	
11.	Grommet, media-air hose, 3/4" ID ..... 11798	
12.	Plate, hopper hose..... 21656	
13.	Gasket, hopper plate ..... 20247	
14.	Hose, light-lined flex, 5-ft required per side 4" ID for 900 cfm conventional use ..... 12466 4" ID for 1200 cfm w/steel media ..... 12466 5" ID for 1200 cfm conventional use ..... 12467	
15.	Clamp, flex hose for 4" hose ..... 11577 for 5" hose ..... 11578	
16.	Adaptor pipe universal, flex hose 4" for 900 cfm conventional..... 23295 4" for 1200 cfm w/steel media ..... 23295 5" for 1200 cfm conventional ..... 23296	
17.	Gasket, flex hose adaptor pipe 4" for 900 conventional ..... 23258 4" for 1200 cfm w/steel media ..... 23258 5" for 1200 conventional..... 23259	
18.	Bracket, door interlock actuator..... 19152	
19.	Detent sleeve, door interlock ..... 15042	
20.	Over-travel stop, door interlock ..... 20004	
21.	Air valve, 3 way, door interlock..... 12202	
22.	Regulator, 1/8" NPT pilot pressure..... 12715	
23.	Gauge, pressure ..... 01908	
24.	Fitting, 1/8" NPT elbow x 1/8" barb ..... 11733	
25.	Grommet, 1/4 ID ..... 12762	
26.	Foot pedal assembly, less tubing ..... 20483 with tubing, 14 feet ..... 20195	
27.	Brace, leg For BNP 65 ..... 24443 For BNP 220 ..... 24445	
28.	Gasket, 5/32" x 3/4", 3 ft required ..... 00192	
29.	BNP filter-regulator inlet piping assembly Refer to Section 9.4 for parts ..... 12763	



9.3 BNP® Gun and Hose Assembly – Figure 34

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

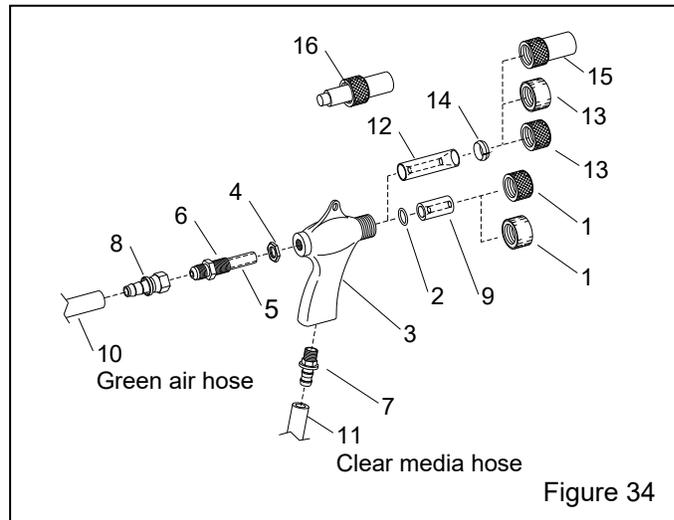


Figure 34

9.4 BNP Filter-Regulator Inlet Piping Assembly – Figure 35

Item	Description	Stock No.
(-)	BNP filter-regulator inlet piping assembly	
	Includes all items shown .....	12763
1.	Filter, 1/2" manual drain air .....	01308
2.	Regulator, 1/2" pilot-operated pressure ....	11345
3.	Bracket, 1/2" regulator assembly .....	19231
4.	Nipple, 1/2" x 2 .....	01734
5.	Cross, 1/2" NPT .....	10254
6.	Lock nut, 1/2" .....	12713
7.	Bushing, 1/2" NPT x 1/8" .....	11350
8.	Adaptor, 1/2" NPT x 1/2" flare .....	11351
9.	Fitting, straight, 1/8" NPT x 1/8" barb .....	11732
10.	Bushing, 1/4" NPT x 1/8" brass.....	02010
11.	Hose end, 1/2" barb x 1/2" female swivel ..	15002
12.	Tee, 1/2" NPT .....	01787
13.	Nipple, 1/2" x close .....	01733
14.	Plug 1/2" NPT .....	01759
15.	Nipple, 1/2" x 3 .....	01735
16.	Screw, 1/2-NC x 1/2 set .....	03471

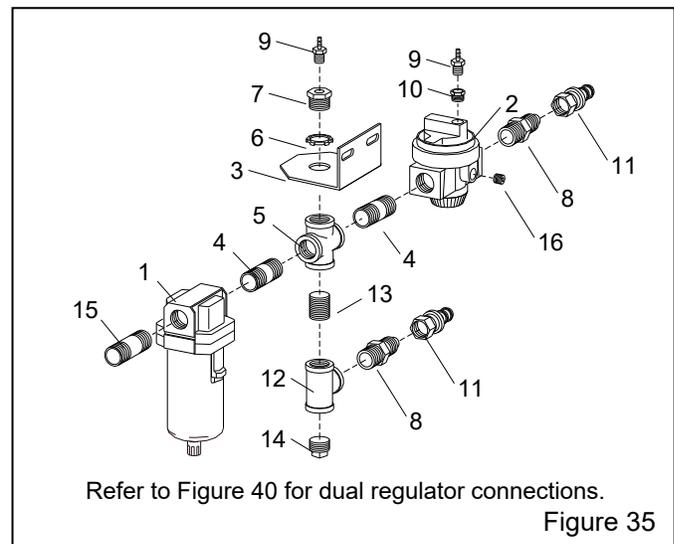


Figure 35

**9.5 View-Window Assembly – Figure 36**

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

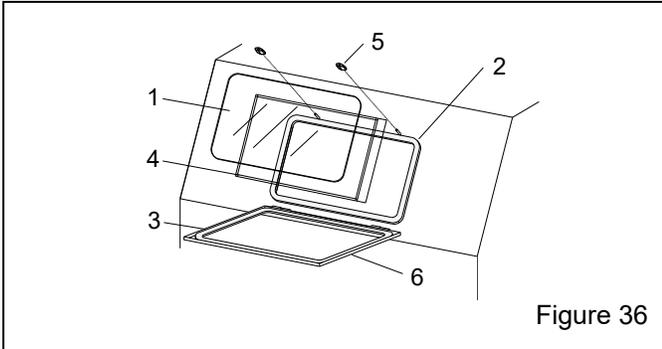


Figure 36

**9.6 LED Light Assembly – Figure 37**

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

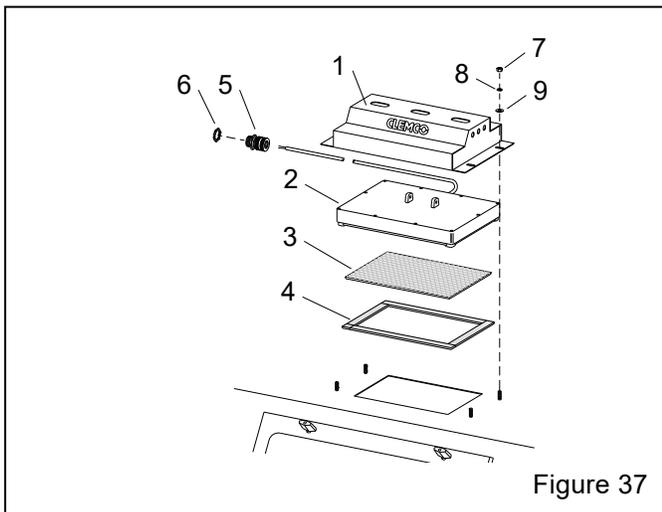


Figure 37

**9.7 Foot-Pedal Assembly – Figure 38**

Item	Description	Stock No.
(-)	Foot-pedal assembly less tubing, includes items 1 thru 9 .....	20483
	with tubing, 14 feet item 10 .....	20195
1.	Foot pedal casting set, top and base .....	28379
2.	Valve, 10-32, 3 way n/c .....	20026
3.	Drive pin, grooved .....	20109
4.	Screw, sh 1/4 NF x 3/4" .....	03086
5.	Screw, 10-32 x 1/2" fh .....	19571
6.	Adaptor, 10-32 threads 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

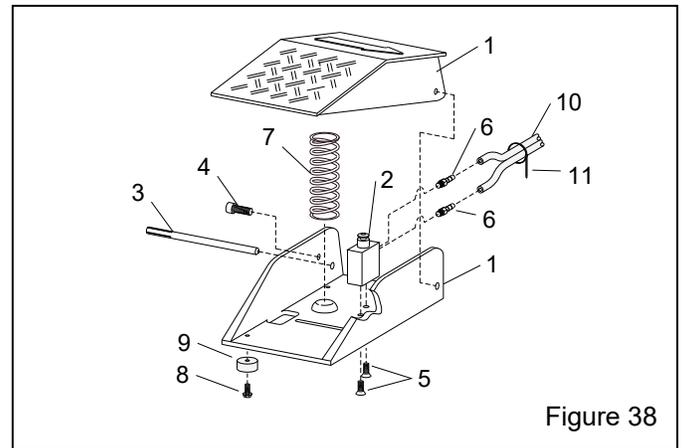


Figure 38

**9.8 Metering Valve Assembly, BNP – Figure 39**

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

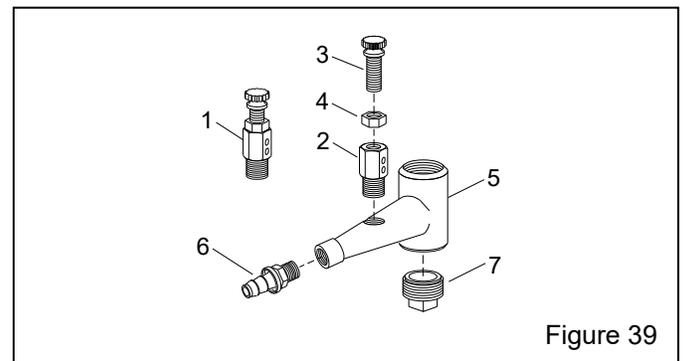


Figure 39

9.9 Cabinet Controls and Plumbing – Figure 40

Item	Description	Stock No.
1.	Valve, 3 way .....	12202
2.	Fitting, straight, 1/8" NPT x 1/8" barb .....	11732
3.	Tubing, 1/8" urethane, specify ft. required ..	12475
4.	Tubing, twin urethane, specify ft. required ..	19577
5.	Foot pedal assembly, less tubing .....	20483
	with tubing, 14 feet item 4 .....	20195
6.	Metering valve assembly, BNP .....	12417
7.	Regulator, 1/8" pilot .....	12715

8.	Gauge, pressure, 1/8" .....	01908
9.	Fitting, 1/8" NPT elbow x 1/8" barb .....	11733
10.	Filter, 1/2" manual drain .....	01308
11.	Adaptor, 1/2" NPT x 1/2" flare .....	11351
12.	Hose end, 1/2" barb x 1/2" female swivel ...	15002
13.	Hose end, 1/2" barb x 3/8" male NPT .....	06369
14.	Blow-off nozzle .....	13116
15.	Air hose, 1/2", specify ft. required .....	12472
16.	Gun assembly, BNP No. 5 (standard) Refer to Section 9.3 for other sizes .....	12302
17.	Hose, clear urethane, specify ft. required ...	12476
18.	Regulator, 1/2" pilot operated .....	11345
19.	Nipple, 1" NPT x close .....	01701

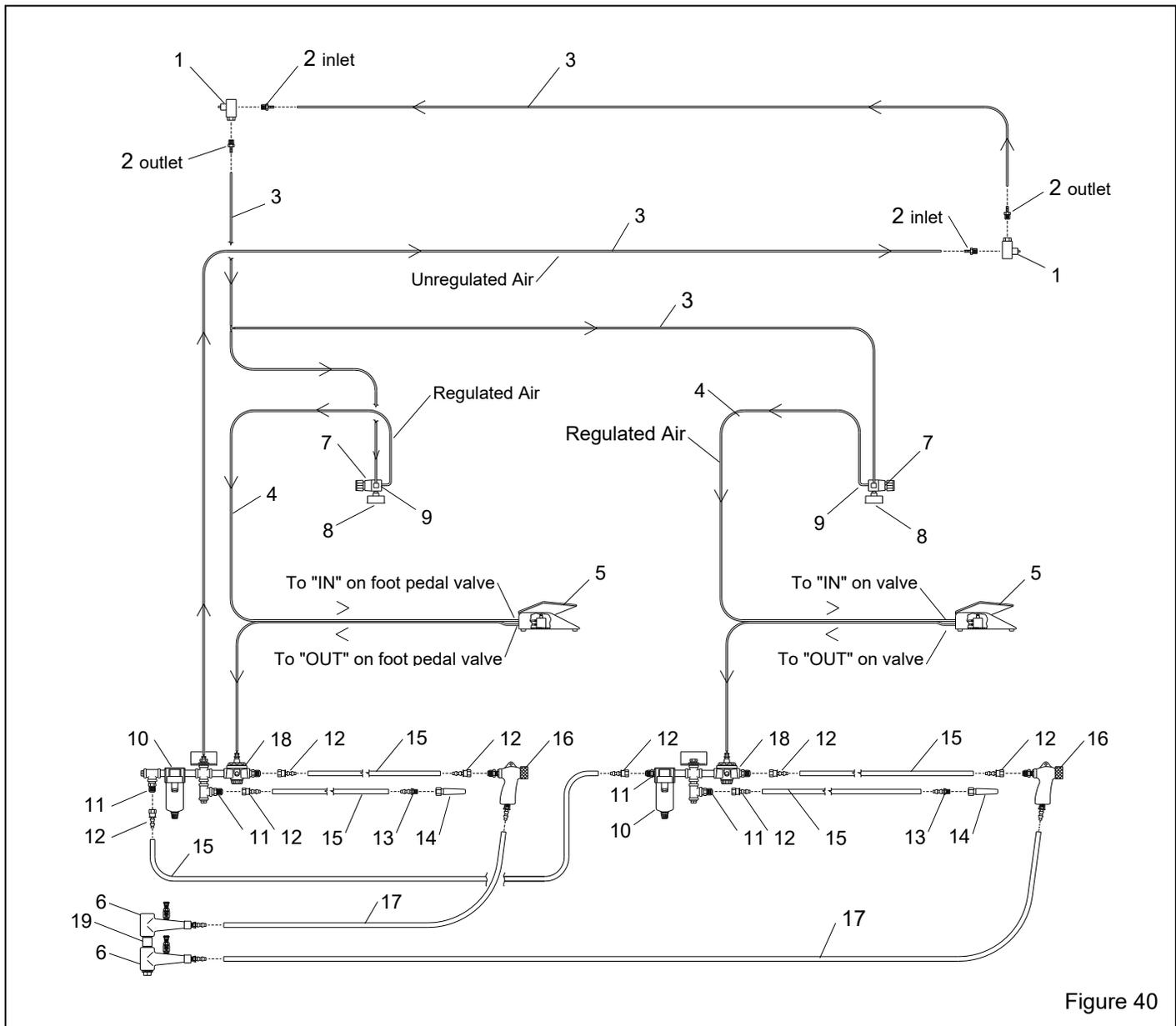


Figure 40

**9.10 Replacement Reclaimer Assemblies**

Replacement reclaimers are pull-thru type for use with reverse-pulse dust collectors; they include the hose inlet, screen, and wear plate, they do not include metering valve, flex hoses, hose clamps, or mounting brackets. Order separately when needed.

Description	Stock No.
900 cfm reclaimer w/ 7" outlet pipe adaptor	28967
900 cfm reclaimer w/external adjustable vortex	21305
1200 cfm reclaimer w/external adjustable vortex	24060

**9.11 900 CFM Modular Reclaimer Replacement Parts – Figure 41**

Refer to Figure 42 for 1200 cfm reclaimer replacement parts.

Item	Description	Stock No.
(-)	900 cfm reclaimer w/ 7" outlet pipe	28967
(-)	900 cfm reclaimer w/external adj. vortex	21305
1.	Gasket, 5/16" x 1" adhesive-backed, per foot, 5 feet required	00187
2.	Screen assembly, 8-mesh	21265
3.	Gasket, reclaimer door	11745
4.	Inlet pipe adaptor, 6"	12363
5.	Gasket, inlet adaptor, 6"	11759

6.	Wear plate, rubber-lined w/mounting screws 900 cfm for reclaimers with bolt-on top	25071
7.	Adaptor, outlet pipe, 7" - 900 cfm	16832
8.	Latch assembly, door	12263
9.	Top assembly, 900 cfm	23040
10.	Hopper and legs assembly	23042
11.	Gasket, 1/8" x 2" adhesive-backed, per foot, 7 ft required at each location	13089
12.	Door assembly, w/gasket and latch	14271
13.	Eyebolt 3/8-NC	00430
14.	U-channel, 3/8, 1 ft required	04076
15.	Baffle, 900 modular	23051
16.	Gasket, 1/8" x 2" adhesive-backed, per foot, 1 ft required at this location	13089
17.	Body section with door and wear plate for reclaimers with bolt-on top only	27465
*18.	Body section with rubber liners and bolt on top	27466
*19.	Clamp, hose, 6-1/2"	00750
*20.	Hose, 6" ID light-lined flex, specify length	12468
*21.	Hose support, 6" inlet, optional	16887
*22.	Hose support, 7" outlet, optional	20619
*23.	Clamp, hose, 8"	11576
*24.	Hose, 7" ID unlined flex, specify length	12448
*25.	Metering valve assembly, BNP	12417
*26.	Nipple, 1" NPT x close	01701
**27.	Vortex cylinder, pull thru 900 modular	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 a CDC Dust Collector, but standard on cabinets provided with an RPC or RPH Dust Collector.

Some items rotated for clarity.

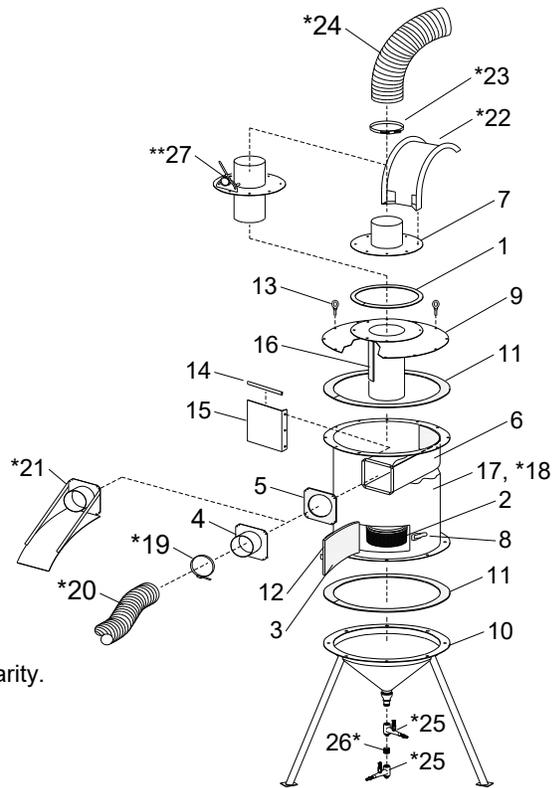


Figure 41

**9.12 1200 CFM Modular Reclaimer Replacement Parts – Figure 42**

Refer to Figure 41 for 900 cfm reclaimer replacement parts.

Item	Description	Stock No.
(-)	Reclaimer assembly, pull-thru style 1200 cfm with adjustable vortex	24060
1.	Gasket, 5/16" x 1" adhesive-backed, per foot, five feet required	00187
2.	Hose support, inlet 6", for steel media	22729
	7", conventional	20596
3.	Gasket, inlet adaptor	11767
4.	Wear plate, rubber-lined w/screws	19223
5.	Screen assembly, 8 mesh	21265
6.	Gasket, door, 1200 cfm	11766
7.	Latch assembly, door	12263
8.	Vortex cylinder externally adjustable, 1200 cfm	25432
9.	U-channel, 3/8, 1-ft required	04076
10.	Baffle, 1200 modular	24903
11.	Top plate assembly, 1200 cfm	24057

12.	Gasket, 2" adhesive-backed, per foot, 8 ft. required at each location	13089
13.	Eyebolt 3/8-NC	00430
14.	Hopper and leg assembly, 1200 cfm	24054
15.	Body section 1200 cfm, w/door assembly, baffle, & wear plate	24050
16.	Gasket, 1/8" x 2" adhesive-backed, per foot, 1 ft required at this location	13089
*17.	Hose, light-lined flex, 9-ft required 6" ID for 1200 cfm w/steel media	12468
	7" ID for 1200 cfm conventional use	12469
*18.	Clamp, hose for 6" hose	00750
	for 7", 8", hose	11576
	for 12" hose, 2 required	11576
*19.	Hose support, outlet, optional 12" for 1200 cfm	20730
*20.	Hose, unlined flex, specify length required 12" ID for 1200 cfm	12460
*21.	Bushing, 3" x 2" NPT	21814
*22.	Bushing, 2" x 1" NPT	13216
*23.	Nipple, 1" NPT x close	01701
*24.	Metering valve assembly, BNP	12417

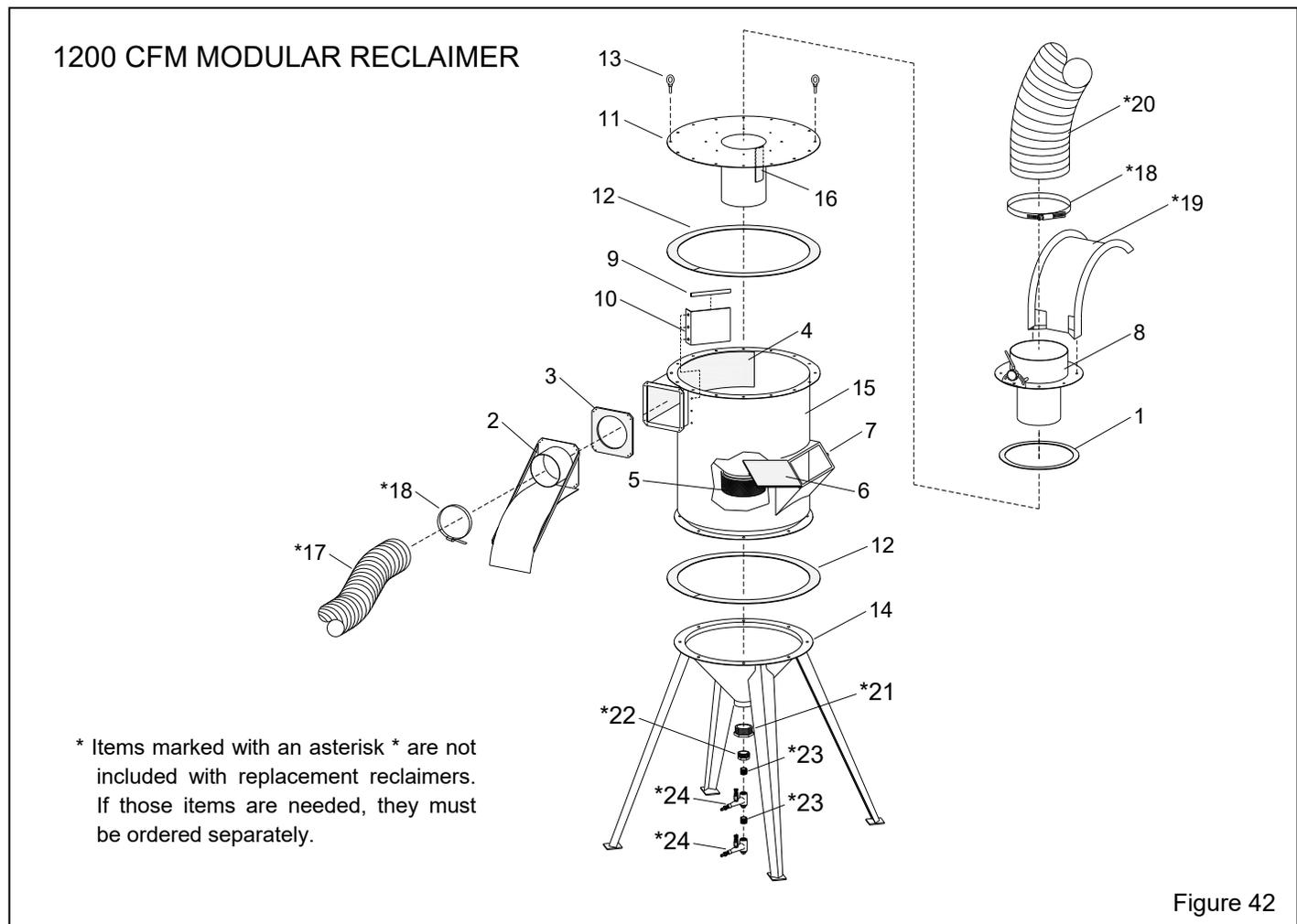


Figure 42

**9.13 Flex Hose and Wye Adaptor – Figure 43**

All hose is sold per foot, specify feet required.

Some trimming may be necessary.

Refer to section 9.1 for heavy lined hose, which is available in 15 ft. length only.

Item	Description	Stock No.
1.	Hose, light-lined flex, 5-ft required per side 4" ID for 900 cfm conventional use .....	12466
	4" ID for 1200 cfm w/steel media .....	12466
	5" ID for 1200 cfm conventional use .....	12467
2.	Hose, light-lined flex, 9-ft required 6" ID for 900 cfm conventional use .....	12468
	6" ID for 1200 cfm w/steel media .....	12468
	7" ID for 1200 cfm conventional use .....	12469
3.	Hose, unlined flex, specify feet required 7" ID for 900 cfm .....	12448
	12" ID for 1200 cfm .....	12460
4.	Clamp, hose for 4" hose .....	11577
	for 5" hose .....	11578
	for 6" hose .....	00750
	for 7", 8" hose .....	11576
	for 12" hose, 2 required .....	11576
5.	Wye pipe adaptor, 4" x 4" x 6" 900 cfm conventional 1200 cfm w/steel .....	12379
	5" x 5" x 7", for 1200 cfm conventional ...	16939

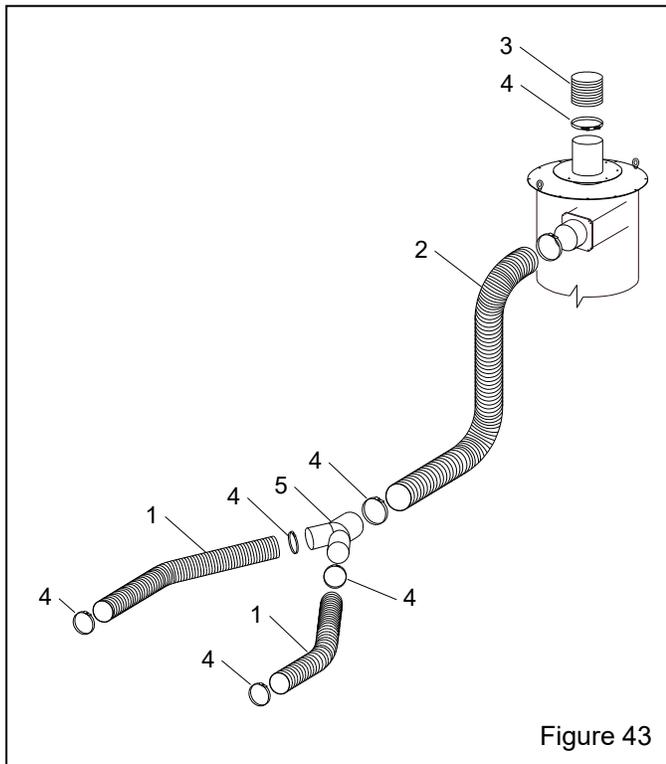


Figure 43