# BNP® 65 and BNP-220
# Suction Blast Cabinets
## O. M. 21309

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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.

## 1.0    INTRODUCTION

### 1.1    Scope of Manual

**1.1.1**    These instructions cover setup, operation, maintenance, troubleshooting, optional accessories, and replacement parts for the following BNP-65 and 220 Suction Blast Cabinets:

- BNP-65S ..............Conventional (stand-up model)
- BNP-65SE ............... Ergonomic (sit-down model)
- BNP-220S ...........Conventional (stand-up model)
- BNP-220SE ............. Ergonomic (sit-down model)

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 Collector .......manual stock no. 21449

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

### 1.3    Table of Contents

### 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
- Reclaimer
- Dust collector

**1.4.2     Cabinet enclosure:** This manual covers two BNP cabinet sizes. Each is available as a Conventional, stand-up model and an ergonomic, sit-down model; totaling four separate cabinet models.

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

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

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

**1.4.3**     Refer to Figure 1 for arrangement of components with a CDC-1 Dust Collector. The illustration shows a freestanding 900 reclaimer; 300 and 600 reclaimers are mounted on the back of the cabinet, as shown in Figure 2. Figure 3 shows the arrangement with an RPC-2 (600 cfm or 900 cfm only) Reverse-Pulse Dust Collector with dust drawer. The optional RPH-2 (600 cfm and 900 cfm) is 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-2 is approximately 10.5 feet and 12 feet when the top access door is open. To upgrade, an RPC-2 or RPH-2 Dust Collector may be added at any time.

Cabinet shown with extended Ergo front and freestanding 900 cfm reclaimer. 300 and 600 cfm reclaimers are mounted on back of cabinet, as shown in Figure 2.
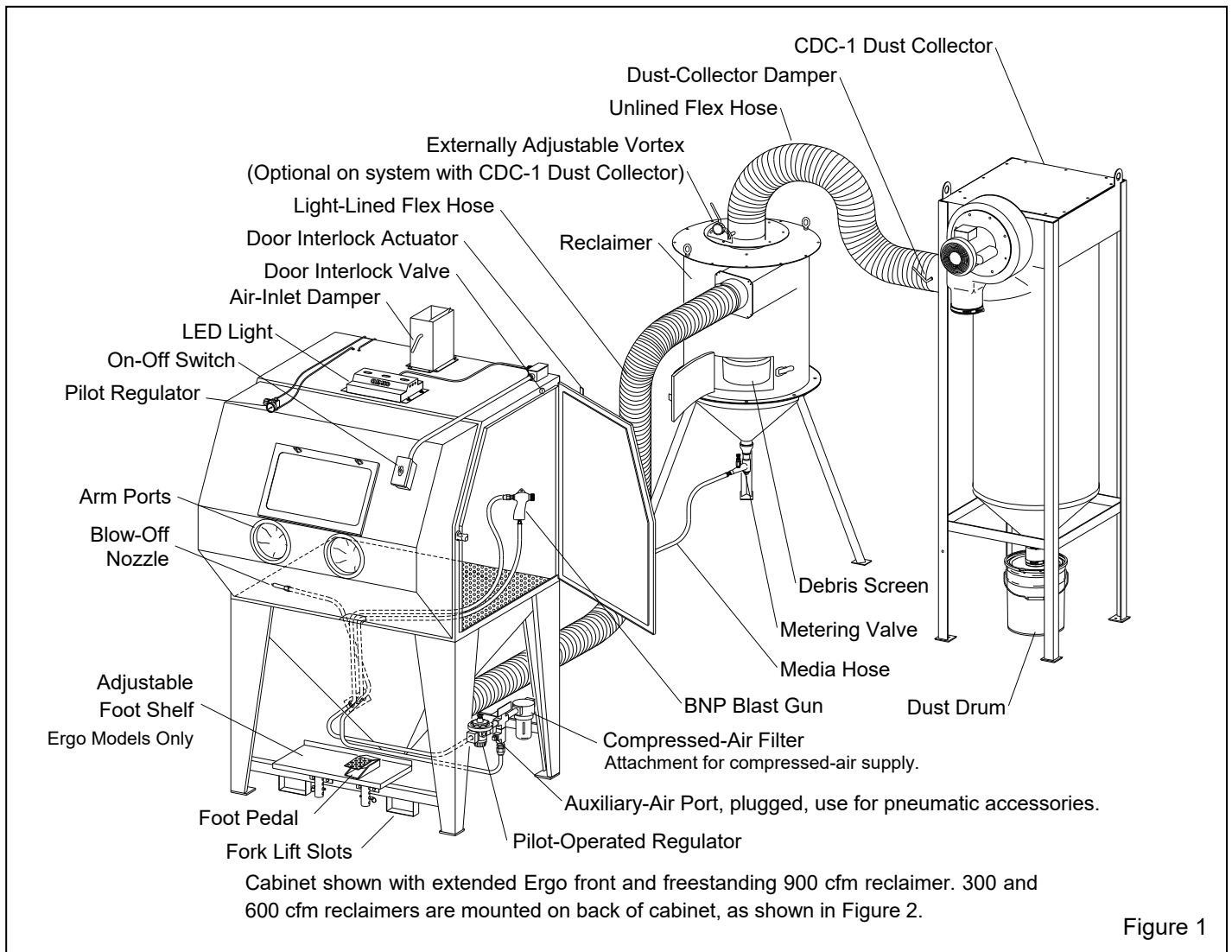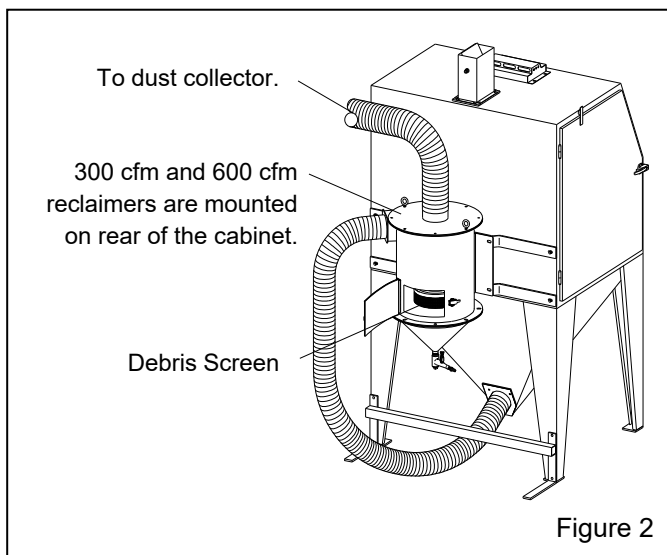
Figure 1



Figure 2

## 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 the foot pedal. Fully depressing down on the foot pedal 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 <u>any</u> 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 <u>any</u> 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 300, 600, and 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 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 3, this collector is available in 600 cfm and 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-2 Dust Collector:** The RPH-2 is available in 600 cfm and 900 cfm models. It is set up and operate the same as the RPC-2, as shown in Figure 3, 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 <u>any</u> other toxic materials. Refer to the applicable dust collector manual noted in Paragraph 1.1.1 for the HEPA option.
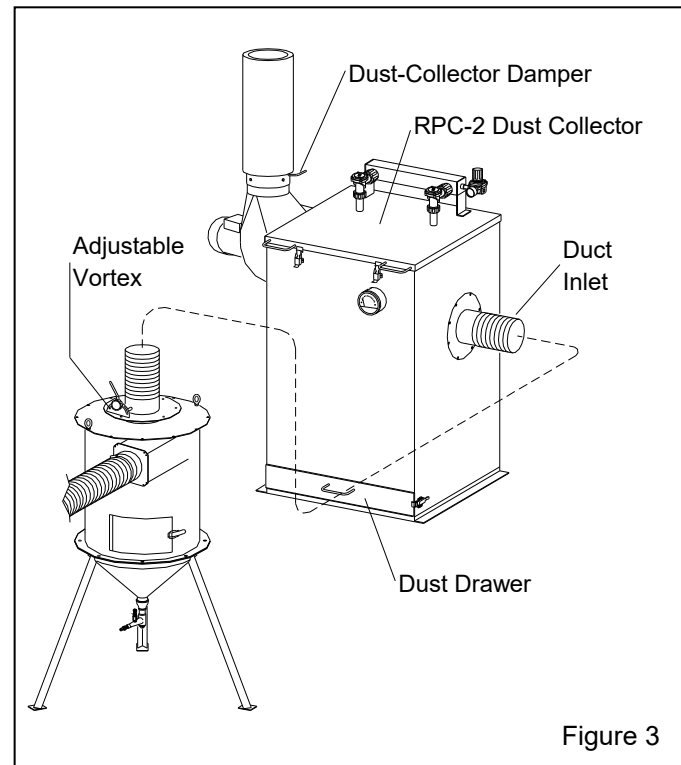


Figure 3

**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 Feed 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          Replaceable rubber reclaimer liners:** Rubber liners are available for 600 cfm and 900 cfm reclaimers that have a removable top and are designed to accept liners. Liners are not available for 300 cfm reclaimers. 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 on Page 32, Figure 35.*

**1.8.2          Externally adjustable vortex option:** Not available for 300 cfm reclaimer**.** The vortex is available for 600 cfm and 900 cfm reclaimers. It fine-tunes media separation; refer to Section 5.5 for additional information. The vortex is an option when the cabinet is provided with a CDC-1 Dust Collector but is standard on reclaimers when the cabinet is provided from the factory with an RPC-2 or RPH-2 Dust Collector.

## 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 4 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-170 to S-70 or steel grit 50-mesh to 120-mesh may be used in BNP Cabinets configured for using steel media.

Using steel media requires a smaller diameter conveying hose (usually reduced one size from standard) and a 900 cfm or larger reclaimers. Rubber curtains should be used to protect the cabinet walls from peening, 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 300 and 600 cfm reclaimers.

**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 600 cfm and 900 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 Feed 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 600 cfm and 900 cfm 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.

**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.

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.

| | MEDIA TYPE | | | | | |
| RECLAIMER SIZE | STEEL GRIT | STEEL SHOT | GLASS BEAD | ALUM. OXIDE | FINE MESH | LIGHT WT. |
|---|---|---|---|---|---|---|
| *300 cfm w/4" inlet | Do not use | Do not use | No. 6 to No. 12 | 60 to 180-mesh | See 1.9.6 | See 1.9.7 |
| *600 cfm w/5" inlet | Do not use | Do not use | No. 6 to No. 12 | 54 to 180-mesh | See 1.9.6 | See 1.9.7 |
| 900 cfm w/5" inlet | 50 to 120 | S-170 to S-70 | No. 4 to No. 8 | 24 to 100-mesh | Do not use | Do not use |
| *900 cfm w/6" inlet | Do not use | Do not use | No. 5 to No. 12 | 30 to 180-mesh | See 1.9.6 | See 1.9.7 |

* Standard reclaimer inlets

Figure 4

## 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 a No. 5 (5/32" orifice) jet. Refer to the table in Figure 5 to determine air consumption. 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. 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. Refer to the dust-collector owners manual.**

Compressed-Air Consumption 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.

Figure 5

**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 exhauster 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:

300 cfm: 1/2 HP, 120/208/230V, 1 PH, 60 HZ
   120, FLA 120/7, 208/3.4, 230/3.5.

600 cfm: 1 HP, 120/230V, 1 PH, 60 HZ
   120, FLA 120/12, 208/6.6, 230/6.2.

900 cfm: 2 HP, 208/230/460V, 3 PH, 60 HZ
   Supplied with 230-volt control panel unless 460-volt is specified at the time the order is placed.
   FLA 208/5.5, 230/5.6, 460/2.8.

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 (and Figure 3 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) Hose

**2.2.1**   Connect the smaller-diameter flex hose between the cabinet-hopper pipe adaptor and reclaimer inlet adaptor, and connect the larger-diameter hose between the reclaimer outlet and dust collector inlet. It is easier to slip the hose over the adaptors and create a tighter seal if the first two or three inches of wire are removed from the inside of the hose. Use care not to damage the hose. Clamp flex hose securely in position with worm clamps provided. **NOTE: The 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.**

## 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.



1/2" NPT Air

Apply thread sealant to male threads.

Air Fitting

Air-Supply Hose

To Blow-off Nozzle

Plugged Auxiliary-Air Port

Use safety lock pins to secure twist-on couplings.

Some items removed for clarity.

Use safety cable to prevent separated hose from whipping. Once installed, all slack must be removed from the cable.
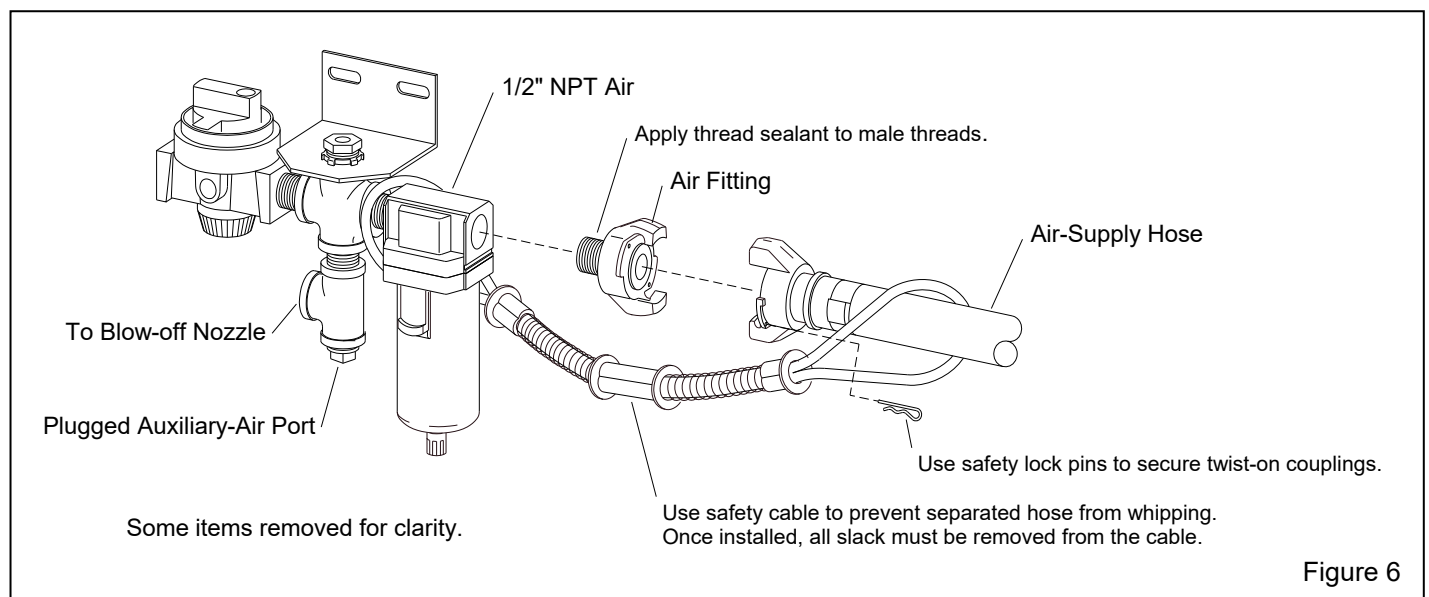
Figure 6

| MINIMUM COMPRESSED-AIR LINE ID | | | |
|---|---|---|---|
| | Jet Size | | |
| Air Line Length | 1/8"<br>No. 4 | 5/32"<br>No. 5 | 3/16"<br>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 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.

### 2.5.1 Single-phase wiring

**2.5.1.1** Standard 300 cfm and 600 cfm cabinets and dust collectors are 120-volt single-phase. Power to the cabinet is supplied by a U-ground plug; plug it into a 120-volt outlet.

# ⚠ WARNING

**Do not use electrical adaptors that eliminate the ground prong on 120-volt plugs. Doing so can cause electric shock and equipment damage.**

**2.5.1.2** Refer to the wiring schematic in Figure 8 and wire the dust collector motor, per instruction on the motor data plate to the junction box mounted on the cabinet. When wired as noted, the dust-collector exhauster motor will start when the cabinet light switch is turned ON and stop when the switch is turned OFF.



115 VOLT, 1PH WIRING FOR CABINET AND DUST-COLLECTOR MOTOR
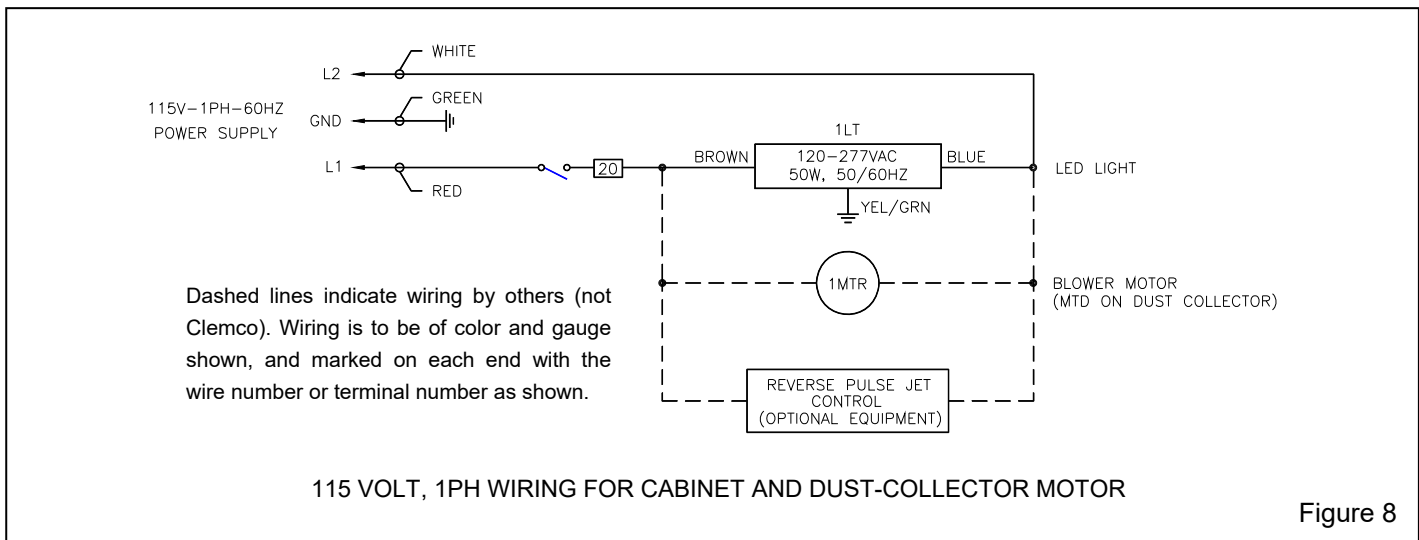
Figure 8

### 2.5.2 Three-phase wiring

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

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

**2.5.2.2** 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 exhauster outlet on RPC-2 and RPH-2 Dust Collectors, until the amperage is within the specifications shown on the motor plate.

**2.5.2.3** 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 exhauster housing; the fan should rotate toward the exhauster outlet. To reverse rotation, change the wires as noted on the motor plate.

## ⚠ WARNING

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

### 2.6 Connect Media Hose to Metering Valve
900 cfm freestanding reclaimer only. Hoses are already attached to 300 and 600 cfm reclaimers.



Metering Valve

Barbed Hose Fitting

Clear Media Hose
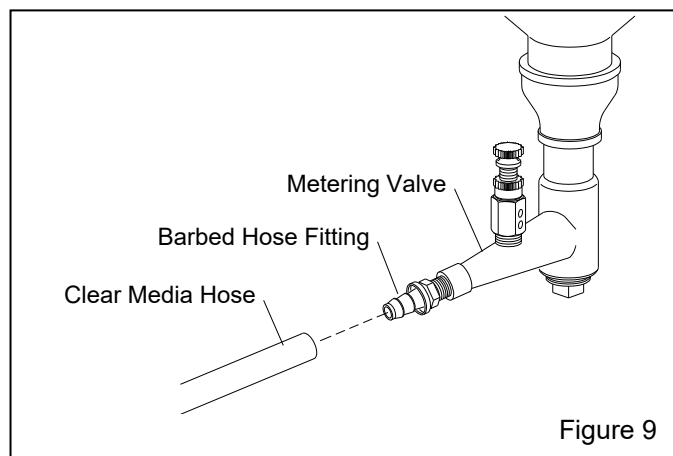
Figure 9

**2.6.1** Refer to Figure 9 and attach the clear media hose from under the cabinet hopper to the metering valve at the bottom of the reclaimer hopper by sliding the hose onto the barded fitting on the metering valve.

### 2.7 Set Air-Inlet Damper – Figure 10

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



Air-Inlet Damper

Degrees Label

Damper Handle
Align handle to degrees, as noted in Paragraph 2.7.2.

Figure 10
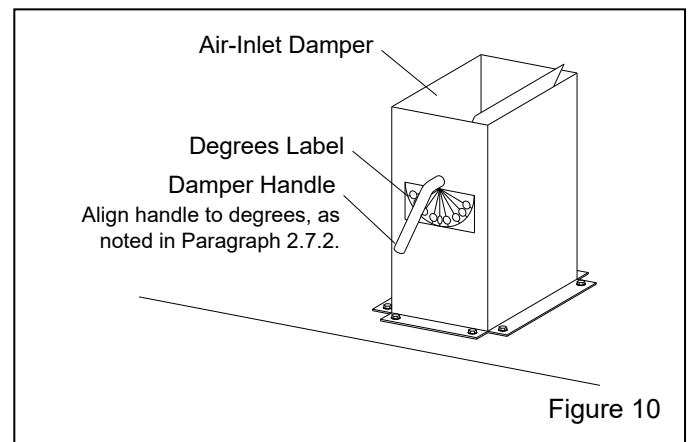
**2.7.2** The label on the damper shows the settings in degrees. The initial setting should align the handle as follows:

65 with 300 reclaimer ....align handle to 30 degrees
65 with 600 reclaimer ....align handle to 30 degrees
65 with 900 reclaimer .. align to 0 degree (full open)
220 with 600 reclaimer ....align handle to 30 degrees
220 with 900 reclaimer .. align 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 the foot pedal on the floor at the front of the cabinet or on the foot shelf on ergonomic models.

**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.

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

### 3.3 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 11.

**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.



5/16 x 1" Cap Screw, Flat Washer, Lock Washer, and Nut

3/8 x 1" Cap Screw and Lock Washer
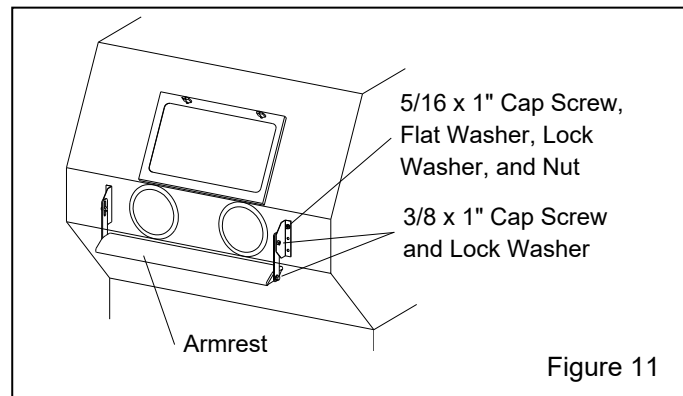
Armrest

Figure 11

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

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

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

### 3.5 Turntable with Workcar and Track

**3.5.1** Components of the turntable and track assembly are shown in Figure 12. The assembly consists of:

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

- Track support table.
- Turntable and workcar assembly.
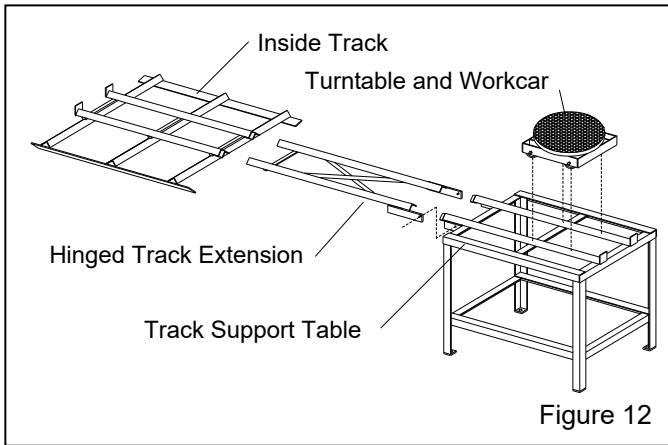


Figure 12

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 13, are opposite the entry door.

**3.5.2**    Place the inside track in the cabinet over the existing grate, as shown in Figure 13.
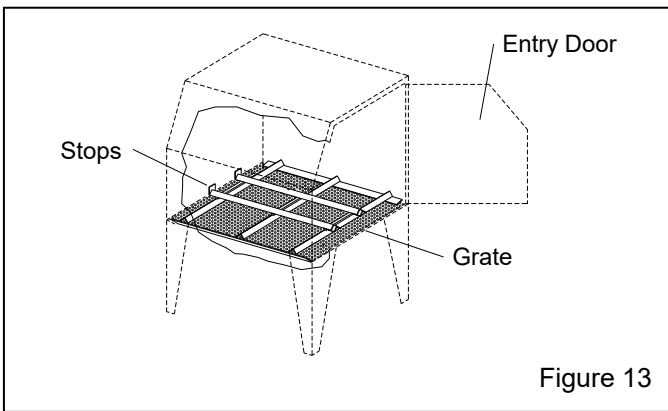


Figure 13

**3.5.3**    Position the track support table and extension, as shown in Figure 14. 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 it must butt against the inside tracks.

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

**3.5.5**    Raise the track extension, and then open and close the door to make sure they function correctly. When certain the table and tracks are aligned and level,

and that the workcar moves smoothly on all tracks, tighten the leveling-pad lock nuts and anchor the support table to the floor through the holes in the leveling pads.
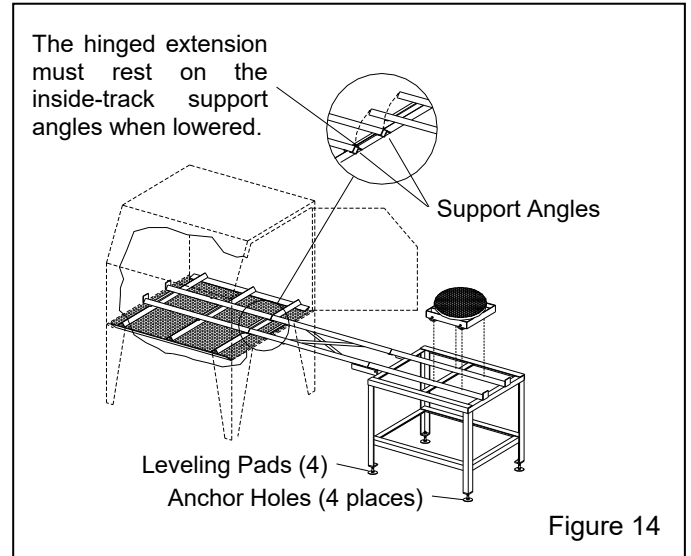


Figure 14

**3.6**    **Optional Externally Adjustable Vortex Cylinder**
Not available for 300 cfm reclaimer.

**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 600 cfm and 900 cfm reclaimers when the cabinet is provided from the factory with an RPC-2 or RPH-2 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 collectors 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 |
|---|---|---|
| 300 cfm | 10 lbs | 50 lbs. (0.5 cuft) |
| 600 cfm | 20 lbs | 75 lbs. (0.75 cuft) |
| 900 cfm | 30 lbs | 100 lbs. (1 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 15**

**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 handle, replace the plug and empty the container. Replace the plug when the reclaimer is empty or purge the hose(s), as noted below.

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



Reclaimer Hopper

Metering Valve

Plastic Plug
Unscrew plug to empty media from reclaimer.

Figure 15
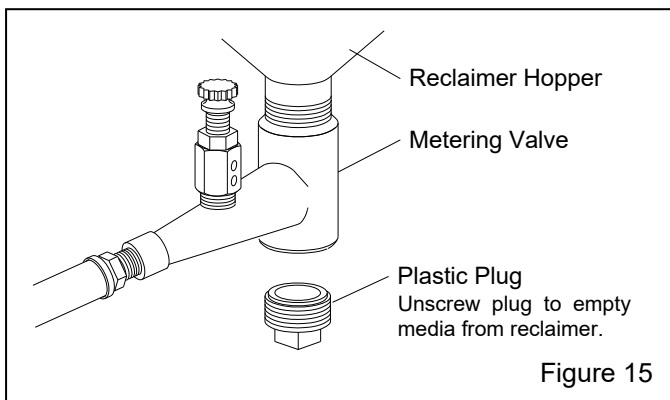
**4.3      Loading and Unloading Parts**

# ⚠ 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**   Load and unload parts through either door.

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

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

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

**4.4      Blasting Operation**

# ⚠ WARNING

**To avoid the inhalation of dust, which can cause respiratory illness from short-term ingestion or death from long-term ingestion:**
- **Use the blow-off nozzle to blow media off parts before opening doors.**
- **After blasting, keep doors closed and exhauster running until the cabinet is clear of all airborne dust.**
- **Always close cabinet, reclaimer, and dust-collector doors before blasting. Keep all doors closed during blasting.**
- **Always wear blast gloves.**
- **Stop blasting immediately if dust leaks are detected.**

**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 the cabinet.

**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-left side of the cabinet), enables the user to adjust blasting pressure while blasting to suit the application. The suitable pressure for most purposes is about 80 psi. Lower pressures may be required on delicate substrates and will reduce media breakdown. Higher pressure may be required for difficult blasting jobs on durable substrates, but will increase media breakdown. 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.



Blast Pressure Regulator
Located on top-left side of cabinet.

Adjustment Knob
Pull knob out to unlock and adjust pressure.
Push knob in to lock it.

When viewed from the knob end, turn clockwise to increase pressure; turn counterclockwise to decrease pressure.
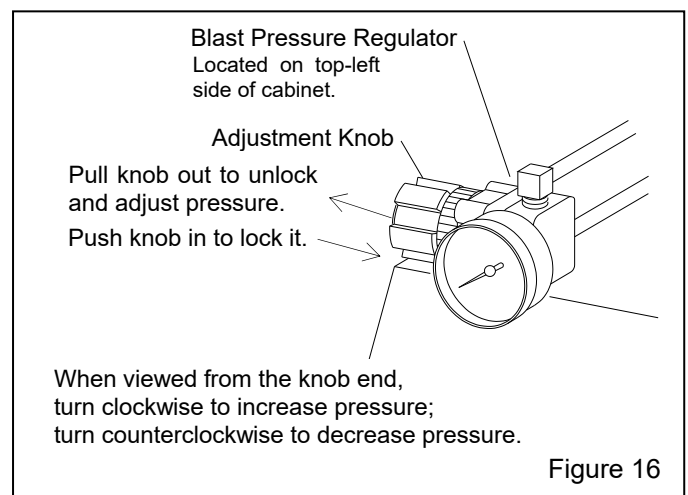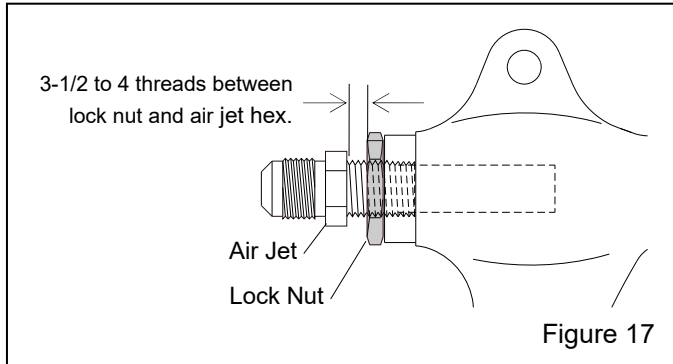
Figure 16

**5.1.2** To adjust pressure, unlock the knob by pulling it out, as shown in Figure 16, 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 17

**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.



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

Air Jet

Lock Nut

Figure 17

## 5.3    Media-Air Mixture (media flow) – Figure 18

**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 18. This adjustment is a starting point.



Upper holes fully closed.

Adjusting Screw

Locking Nut

Lower holes fully open.

Figure 18
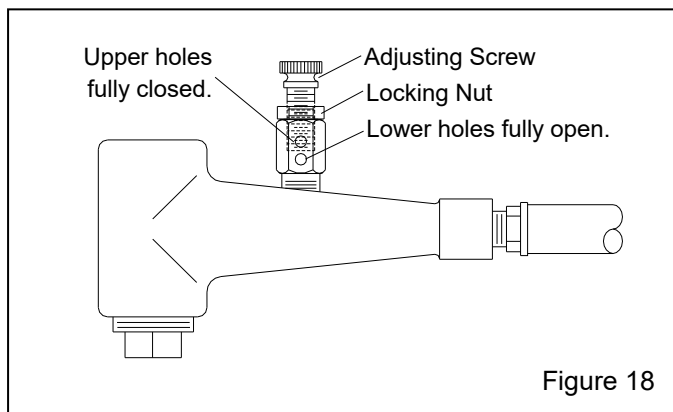
**5.3.3**    If pulsation occurs in the media hose, either media is damp and caked, or not enough air is entering the media stream. While blasting, loosen the locking nut and slowly turn the adjusting screw out (counterclockwise when viewed from the top) until media flows smoothly. Tighten the locking 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 exhauster outlet on RPC-2 and RPH2Dust 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 dust and fines removal 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, available for 600 and 900 reclaimers, 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      Optional Externally Adjustable Vortex
         Cylinder – Figure 19**
Not available for 300 cfm reclaimer.

The externally adjustable vortex is an option when the cabinet is provided with a CDC-1 Dust Collector. The vortex is standard with 600 cfm and 900 cfm reclaimers when the cabinet is provided from the factory with an RPC-2 or RPH-2 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 19) 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 and causes abnormally high static pressure.



Remove more fines from media by moving the handle farther to the left.

Remove fewer fines by moving the handle farther to the right.

Tensioning Knob

Figure 19
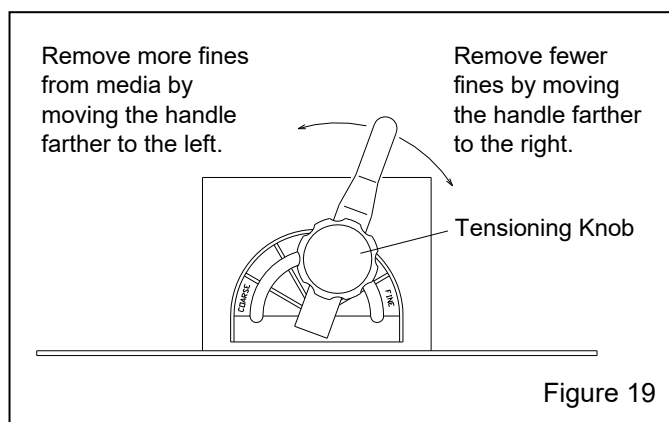
**5.5.4**      When using media finer than 180-mesh, the inlet baffle in the reclaimer may need to be removed. Refer to Section 1.9.6.

**5.6      Cabinet Air-Inlet Damper**

**5.6.1**      Once the inlet damper is 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 20**

## ⚠ 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.

Detent Sleeve

Over-Travel Stop

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

Adjusting Screw
Adjust the screw to push the valve stem (over-travel stop) in when door is closed.

Cabinet Door

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

Bracket Screws

Figure 20

**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, per 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 21 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.



Refer to Paragraph 5.8.6.1.
Insert the needle into flex hose 8" above the top of the reclaimer.

8"

Refer to Paragraph 5.8.6.2.
Place the needle so the tip is inside the door opening. Carefully close the door on the needle.

Refer to Paragraph 5.8.6.3.
When taking frequent readings, install a permanent fitting in the reclaimer wall just below the inner cone, as shown.

Reclaimers are for reference and may differ from those shown.

Some items removed or rotated for clarity.

Figure 21

**5.8.6.2 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.



The manometer must be vertical when taking pressure readings.

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

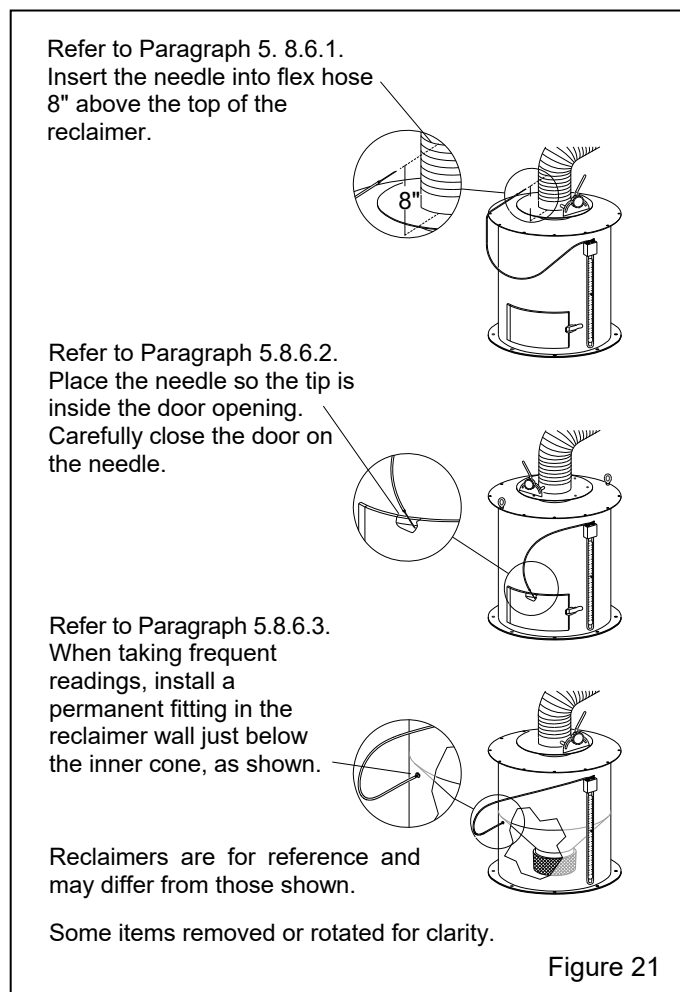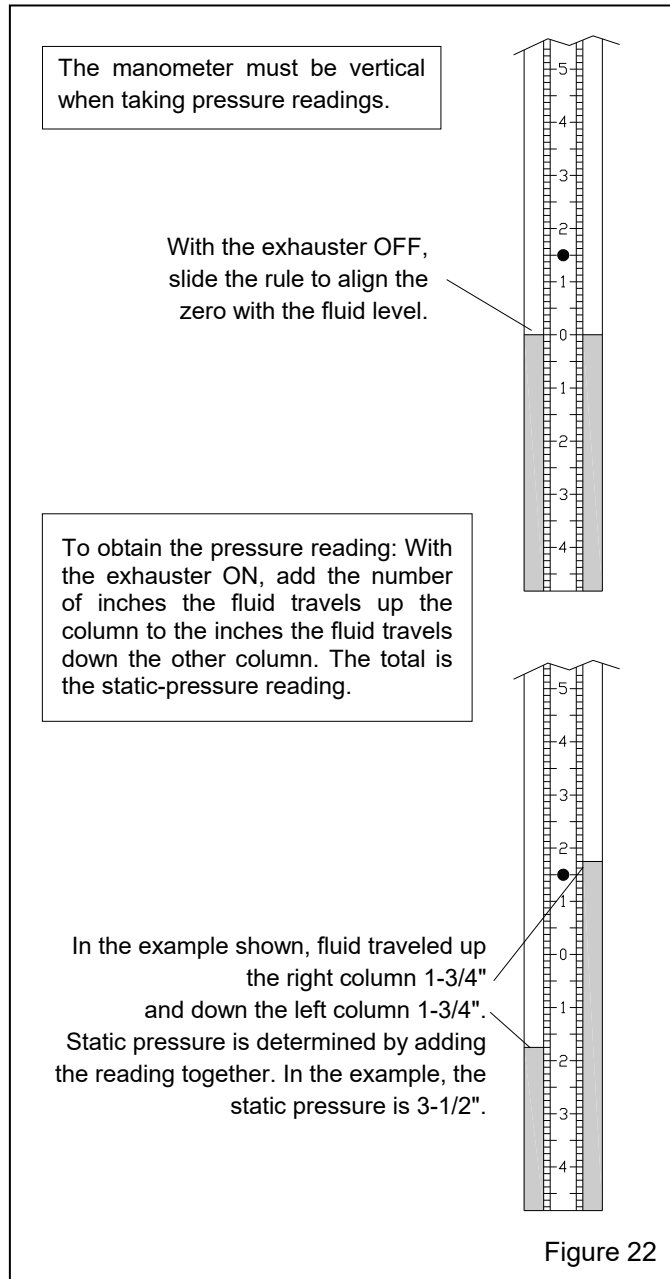To obtain the pressure reading: With the exhauster ON, add the number of inches the fluid travels up the column to the inches the fluid travels down the other column. The total is the static-pressure reading.

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

Figure 22

**5.8.6.3 Taking frequent readings using a permanent fitting:** A permanent fitting may be installed in the reclaimer wall, as shown in Figure 21, for taking frequent static-pressure readings. Permanent fittings must have a barb to accommodate the 3/16" ID tubing and have a means of sealing the fitting when the manometer is not in use. Use silicone sealer or other sealant to seal around the fitting to prevent leaks. The fitting should be capable of being capped when the manometer tube is

removed. Sealing the fitting will prevent leaks that alter the reclaimer's separation efficiency. Air drawn into the reclaimer will cause 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 22.

**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 22.

**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.

**5.9     Foot Shelf, Ergonomic Models Only**

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

**6.0     PREVENTIVE MAINTENANCE**

### ⚠ WARNING

**Failure to wear 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.**

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-2 and RPH-2 Dust Collectors are automatically pulsed at timed intervals.

## 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 assembly:** Inspect internal parts of the BNP Gun for wear. Inspection and replacement of the air jet cover before it wears through will prolong the life of the jet. Replace parts as needed, per Section 7.2.

**6.3.4 Inspect media hose:** Inspect media hose for thin spots by pinching it 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 hoses:** 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.

## 7.0    SERVICE MAINTENANCE

# ⚠ WARNING

**Prior to doing any maintenance or opening the dust collector, the employer must meet required OSHA standards, including but not limited to 29CFR 1910 for:**
- **Appropriate Respirator**
- **Protective Clothing**
- **Toxic and Hazardous Substances**
- **Fall Protection**
- **Lockout and Tagout**

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

## 7.1    Gloves

**7.1.1**    Special static-dissipating gloves are provided for operator comfort. 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 23
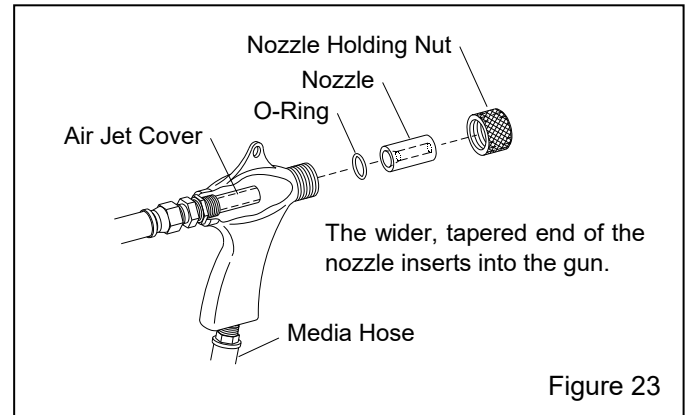


Figure 23

**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. **NOTE: The window frame in Ergo models is not hinged; it is held by four frame nuts.** If the frame is to remain open for cleaning or other reasons remove it, per Section 7.6.

**7.4.2**    Remove the old window.

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

**7.4.4**    Install 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 24**

**7.5.1**    Inspect the gaskets when changing the view window. Replace the window-frame gasket and cabinet-window-opening gasket at the first sign of media leakage around the view window, or if gaskets are worn or otherwise damaged.

**7.5.2**    Remove the window and window frame, per Section 7.6.

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

**7.5.4**    Peel a short section of adhesive backing from the 5/16″-thick strip gasket and adhere the gasket to the center of the top edge of the window opening, as shown in Figure 24. 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.



5/16″ x 3/4″ Gasket

Cabinet Front

Support Tabs

5/32″ x 3/4″ Gasket
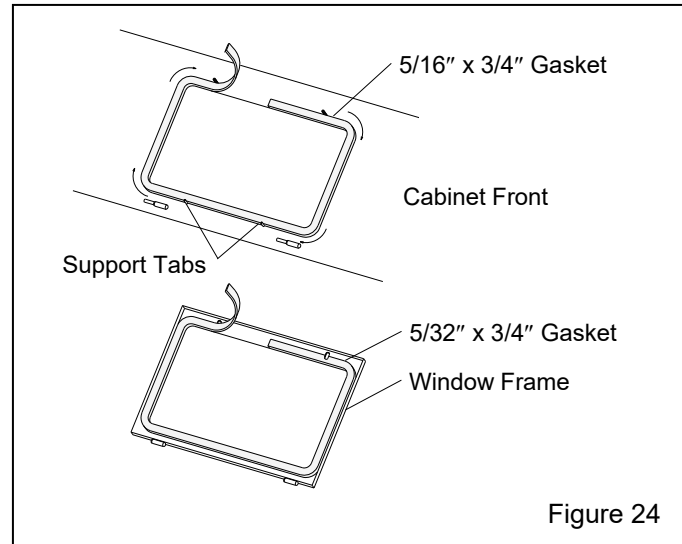
Window Frame

Figure 24

**7.6     Window-Frame Removal – Figure 25**

**7.6.1**    Remove the two window frame nuts located on the upper edge of the window frame and swing the window frame open. **NOTE: The window frame in Ergo models is not hinged; it is held by four frame nuts.**

**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 25.



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

Support Tabs

Slide the frame to the right to separate the hinges.

NOTE: Ergo model frame is not hinged; it is held by four frame nuts.

Figure 25

**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 26**

## ⚠ WARNING

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

**7.7.1      Remove light-mount cover**

**7.7.1.1** Turn OFF electrical power.

**7.7.1.2** Remove the four nuts and washers that attach the light-mount cover to the cabinet and remove the cover, as shown in Figure 26.

Nut and Washers
LED Light-Mount Cover
Holds down the light module.
LED Light Module
Diffuser Lens
Smooth side up.
Gasket
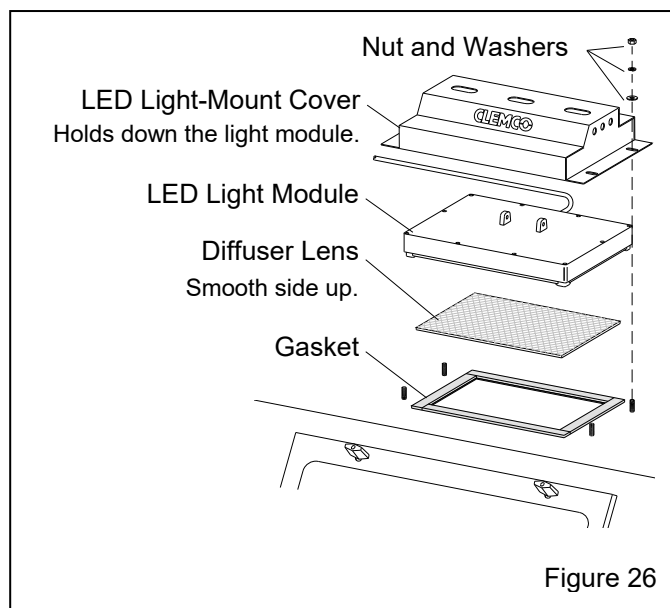
Figure 26

**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 26. 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, pe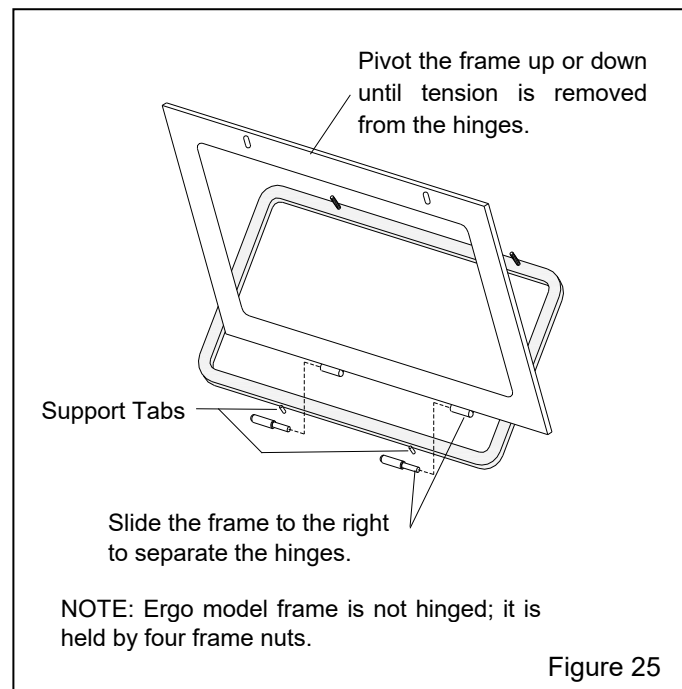r Section 7.7.2, if it is compressed or otherwise damaged, before centering the new diffuser (smooth side up) over the gasket.

**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

## ⚠ WARNING

**To access wear-plate mounting screws, the reclaimer may need to be removed from the cabinet; not applicable to freestanding 900 reclaimers. BNP reclaimers weigh between 100 lbs. and 150 lbs., depending on the size. When removing and installing 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.**

### 7.8.1    Reclaimer with welded-on, nonremovable top, 300 cfm – Figure 27

Refer to Section 7.8.2 to replace the wear plate in reclaimer with bolt-on, removable top.

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

**7.8.1.2** Remove the media hose or metering valve, whichever is easier, then remove the reclaimer mounting bolts and remove the reclaimer.

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

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

**7.8.1.5** Angle the new wear plate into the reclaimer inlet and position it so the straight end is flush with the inlet. Use locking pliers, clamps, or other means to hold the wear plate in position, making sure the leading edge of the wear plate is aligned with the reclaimer inlet, as shown in Figure 27, and that the top edge is even with the top of the reclaimer.

**7.8.1.6** Install the front-two sheet-metal screws through the old screw holes to secure.

**7.8.1.7** Use a board or similar object as leverage to pry the wear plate against the inner wall of the reclaimer.



Figure 27
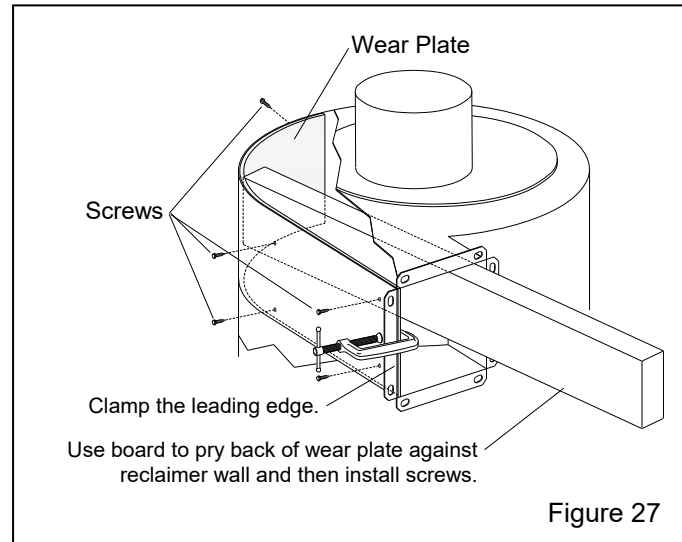
**7.8.1.8** New self-drilling sheet-metal screws are provided with the wear plate. While forcing the wear plate against the reclaimer wall, install the screws through the remaining screw holes to secure. Rearrange the pry board as needed to press the wear plate against the reclaimer wall when installing screws.

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

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

**7.8.1.11** Reattach the reclaimer and connect the flex hose and media hose.

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

### 7.8.2    Reclaimer with bolt-on, removable top 600 cfm and 900 cfm – Figure 28

Depending on conditions such as height and accessibility, it may be easier to replace the wear plate if the reclaimer is removed from the cabinet (or hopper/stand on 900 cfm reclaimer.

Refer to Section 7.8.1 to replace the wear plate in reclaimer with welded-on, nonremovable top.

**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.

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

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

**7.8.2.2** If it is necessary to remove the reclaimer to access the wear-plate mounting screw, remove the media hose or metering valve, whichever is easier, then remove the reclaimer mounting bolts and remove the reclaimer.

# ⚠ WARNING

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

**7.8.2.3** 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.

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

**7.8.2.5** Angle the new wear plate into the reclaimer inlet and position it so the straight end is flush with the inlet. Use locking pliers, clamps, 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.

**7.8.2.6** New self-drilling sheet-metal screws are provided with the wear plate; match drill through each old screw hole into the wear plate to secure. Rearrange the clamp(s) as needed to press the wear plate against the reclaimer wall when installing. **NOTE: The wear plate can also be installed by prying it against the wall as explained in Section 7.8.1**

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

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

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

**7.8.2.10** Replace the lower flange gasket as needed, reattach the reclaimer, and connect the flex hose and media hose.
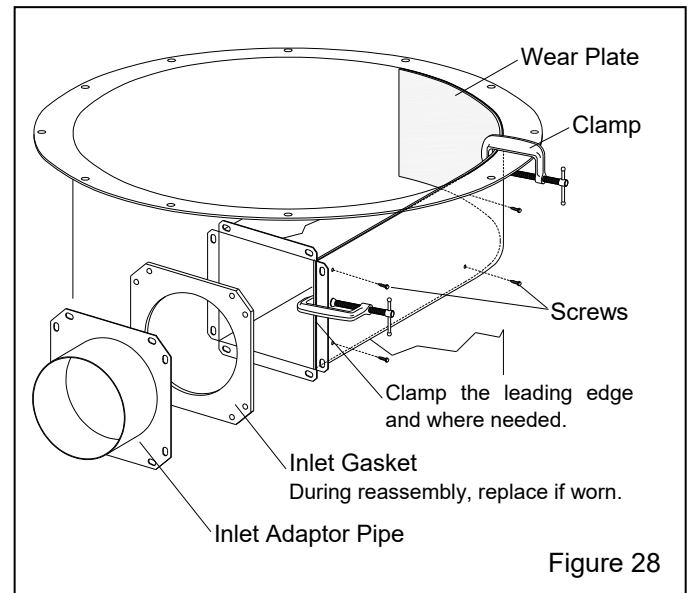


Figure 28

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

### 7.9    Replacing or Field Installing Optional Rubber Reclaimer Liners – Figure 29

Not available for 300 cfm reclaimers.

The reclaimer must be designed to accept liners and have a removable top, as shown in Figure 29. **NOTE: The following instructions are to replace existing liners or to field install new liners into modular-style 600 cfm and 900 cfm reclaimers. Modular reclaimers have an upper and lower flange and have a removable top and bottom hopper. 600 cfm modular reclaimers are provided as of 09/2018 and are mounted to the back of the cabinet using two angle brackets, as shown in Figure 45, Item 17. Modular 900 cfm reclaimers are freestanding.**

**Installation Notes:** Make sure enough 13089 - 2" adhesive-backed gasket is available to replace the compressed or damaged gasket on the reclaimer lower flange.
- 600 cfm requires 6 feet.
- 900 cfm requires 7 feet.

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

It is easier to replace or install liners if the 600 reclaimer is detached from the cabinet and the 900 reclaimer is

detached from the hopper and leg assembly. Doing so provides a flat surface for the reclaimer to sit.

# ⚠ WARNING

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

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

**7.9.2** Remove the reclaimer

- 600 reclaimer: Remove the hopper from the bottom of the reclaimer. First remove the rear, hard to reach bolts making it easier to support the hopper while removing the easily accessible bolts.

  Remove the reclaimer side-mount bolts and remove the reclaimer from the back of the cabinet.

- 900 reclaimer: 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 reclaimer.

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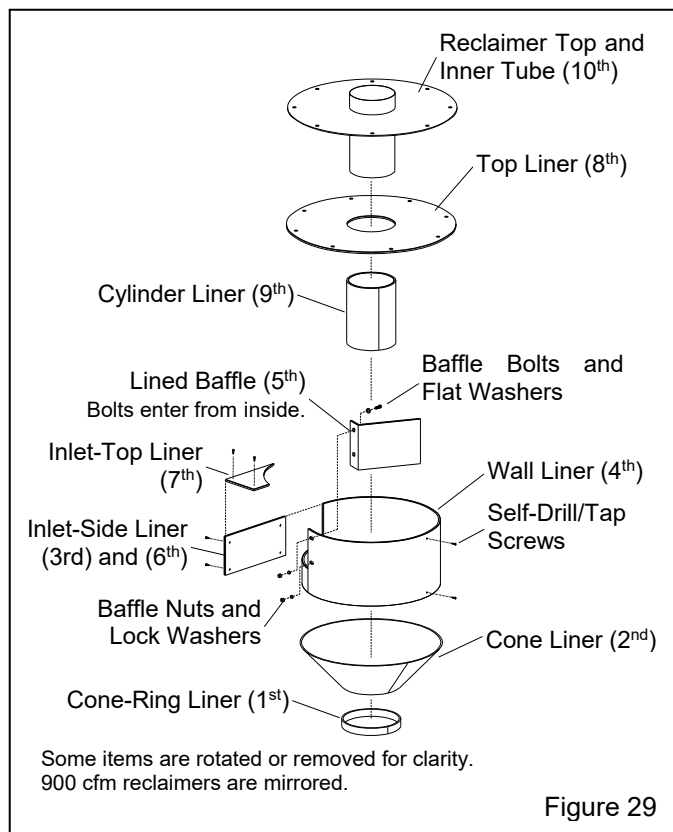
**7.9.17**  (5th) Remove the temporary baffle bolts and install the inlet baffle by inserting bolts and flat washers from the inside of the reclaimer and then attach lock washers and nuts from the outside, leaving the baffle slightly loose.

**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.**

**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.



Reclaimer Top and Inner Tube (10th)

Top Liner (8th)

Cylinder Liner (9th)

Lined Baffle (5th)
Bolts enter from inside.

Baffle Bolts and Flat Washers

Inlet-Top Liner (7th)

Wall Liner (4th)

Inlet-Side Liner (3rd) and (6th)

Self-Drill/Tap Screws

Baffle Nuts and Lock Washers

Cone Liner (2nd)

Cone-Ring Liner (1st)

Some items are rotated or removed for clarity.
900 cfm reclaimers are mirrored.

Figure 29

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

**7.9.26**  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:
- 600 cfm: Attach the reclaimer to the cabinet and attach hopper to lower flange
- 900 cfm: Attach reclaimer to 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 30

600 and 900 cfm reclaimers only with bolt-on tops.

When using lightweight media such as agricultural media or very fine media (180 and finer), as noted in Paragraph 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).

- 300 cfm none required. Baffle is not removable.
- 600 cfm requires 6 ft for each flange.
- 900 cfm requires 7 ft for 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 cabinet (hopper/stand on 900 reclaimers).

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



Figure 30
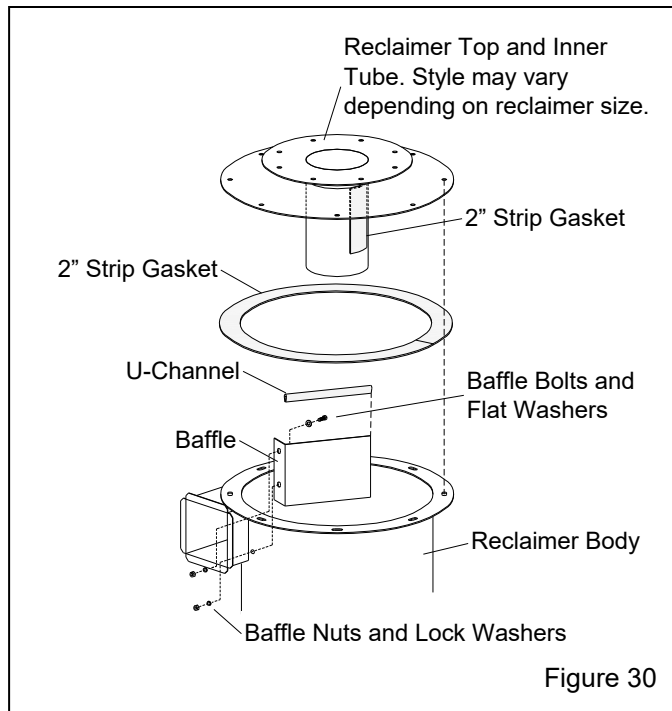
**7.10.2** Remove the fasteners securing the reclaimer top and remove the top.

**7.10.3** Remove the two bolts (three on 900 reclaimer) 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.

### 7.11 Reverse-Pulse Dust Collector

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

## 8.0 TROUBLESHOOTING

# ⚠ WARNING

**To avoid serious injury, observe the following when troubleshooting:**
- **Turn OFF the compressed-air supply, bleed the supply line, and lockout and tagout the air supply.**
- **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 damper closed too far, restricting air movement through the cabinet. Adjust damper, 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 reclaimer inlet or between the reclaimer and dust collector. Replace hose and route it with as few bends as possible to prevent wear.

**8.1.9** Obstruction in flex hose between the cabinet hopper and reclaimer inlet. Inspect flex hose for blockage.

### 8.2 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 (600 and 900 cfm only) 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.

**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 Page 34, Figure 37.

**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 on Page 36, Figure 43.

**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 2.5.1 and 2.5.2.

**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 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 8.13.

**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 31**

| 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 |



Turntable top design varies with turntable size.
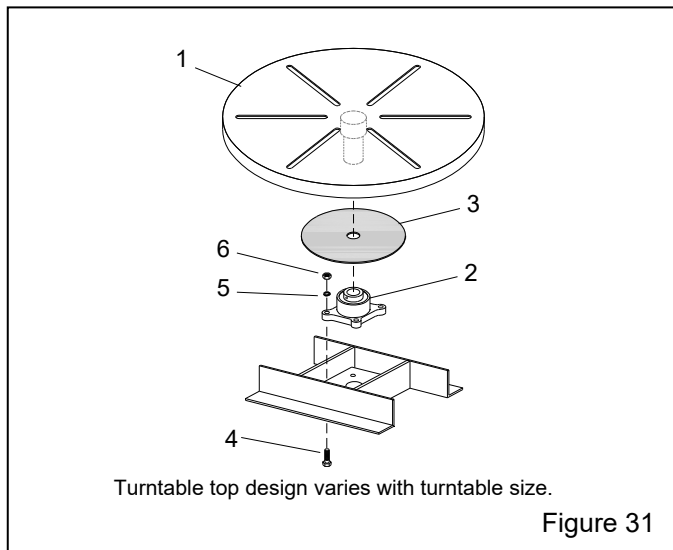
Figure 31

**Turntable with Workcar and Track, 500 lb Capacity Figure 32**

| Item | Description | Stock No. |
| --- | --- | --- |
| (-) | 20" dia. turntable and track assembly | |
| | for 65 series | 13530 |
| | for 220 series | 12835 |
| (-) | 30" turntable and track assembly | |
| | for 220 series | 24045 |
| (-) | Turntable & workcar assembly, replacement Items shown in Figure 32, less track | |
| | 20" diameter | 24205 |
| | 30" diameter | 24086 |
| 1. | Turntable, replacement | |
| | 20" diameter | 18329 |
| | 30" diameter | 21390 |
| 2. | Bearing, 1-1/2" bore | 11517 |
| 3. | Protector, bearing | 13479 |
| 4. | Screw, 1/2-NC x 1-1/2" cap | 03454 |
| 5. | Washer, 1/2" lock | 03516 |
| 6. | Nut, 1/2-NC hex | 03511 |
| 7. | Caster, 4" V groove | 11594 |

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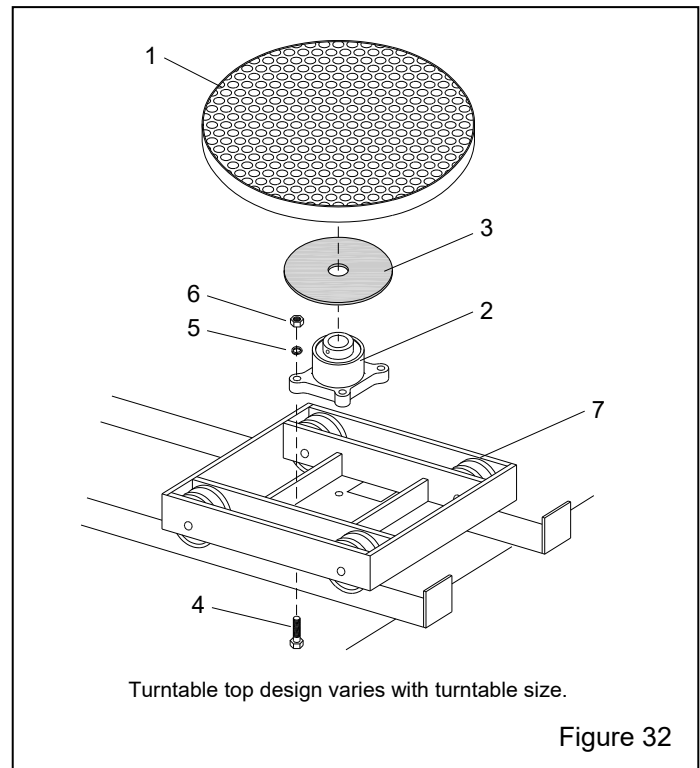


Turntable top design varies with turntable size.

Figure 32

Time-delay door locks ...........................................24163
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 ............................24900
Armrest assembly, replacement ............................24899
Anti-fatigue floor-mat, 2 ft x 3 ft, for front of cab.,......24744

Aluminum oxide kit, <u>factory-installed</u>, includes #5 boron carbide nozzle, black-rubber cabinet curtains with grommets and curtain hardware. Does <u>not</u> include rubber reclaimer liners.
　　for BNP-65 Convent'l w/300 or 600 reclaimer ......13310
　　for BNP-65 Ergo w/300 or 600 reclaimer ...........25073
　　for BNP-220 Convent'l w/600 or 900 reclaimer ..12942
　　for BNP-220 Ergo w/600 or 900 reclaimer .........25075

Aluminum oxide kit, <u>field-installed</u>, includes light-lined flex hose, #5 boron carbide nozzle, black-rubber cabinet curtains with grommets and curtain hardware. Does <u>not</u> include rubber reclaimer liners.
　　for BNP-65 Convent'l with 300 reclaimer ............14241
　　for BNP-65 Ergo model with 300 reclaimer ........28890
　　for BNP-65 Convent'l with 600 reclaimer ...........13924
　　for BNP-65 Ergo model with 600 reclaimer ........28891
　　for BNP-220 Convent'l with 600 reclaimer ..........14133
　　for BNP-220 Ergo model with 600 reclaimer .....28892
　　for BNP-220 Convent'l with 900 reclaimer ..........13949
　　for BNP-220 Ergo model with 900 reclaimer ......28893

Rubber cabinet curtains, black
　Curtain set, w/mounting hardware
　　for BNP-65 Conventional model ......................23531
　　for BNP-220 Conventional model.....................23532
　　for BNP-65 Ergo model ..................................25086
　　for BNP-220 Ergo model ................................25087
　Back curtain
　　for BNP-65 ....................................................14243
　　for BNP-220 ..................................................14247
　Front curtain
　　for BNP-65 ....................................................14242
　　for BNP-220 ..................................................14246
　Door curtain, each (2 required)
　　for BNP-65 ....................................................14244
　　for BNP-220 ..................................................14245
　Ergo side extension curtain, each (2 required)
　　for BNP-65 ....................................................24682
　　for BNP-220 ..................................................24683

Rubber cabinet curtains, white
　Curtain set, w/mounting hardware
　　for BNP-65 Conventional model ..................23541
　　for BNP-220 Conventional model ................23542
　　for BNP-65 Ergo model ..............................25088
　　for BNP-220 Ergo model .............................25089

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

**Foot-Shelf Assembly – Figure 33**
**Used on ergonomic models only**

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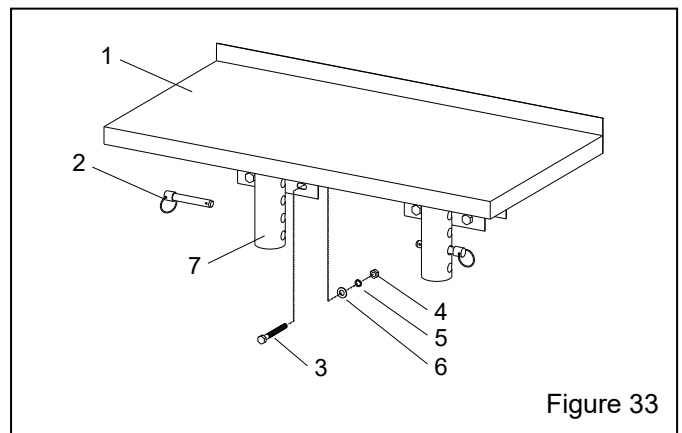


Figure 33

## Extension Nozzles – Figure 34

| 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 |



Straight extension nozzle

Side-angle extension nozzle

Standard Nozzle

Extension Nozzle

Nozzle-Holding Nut

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

BNP® Gun shown for reference

Figure 34

## Reclaimer Liners – Figure 35

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

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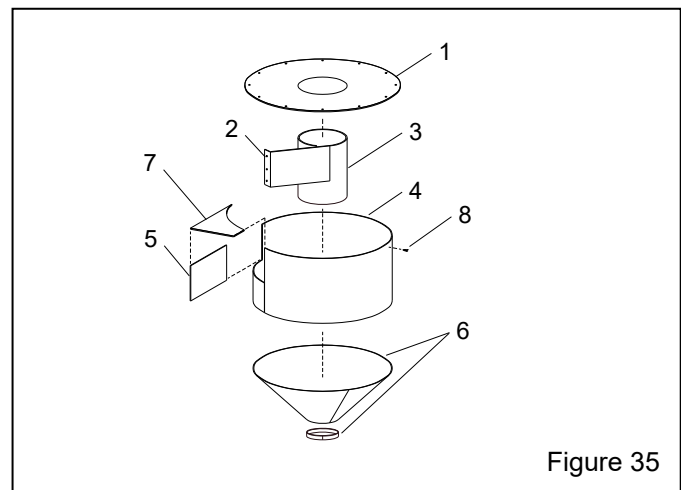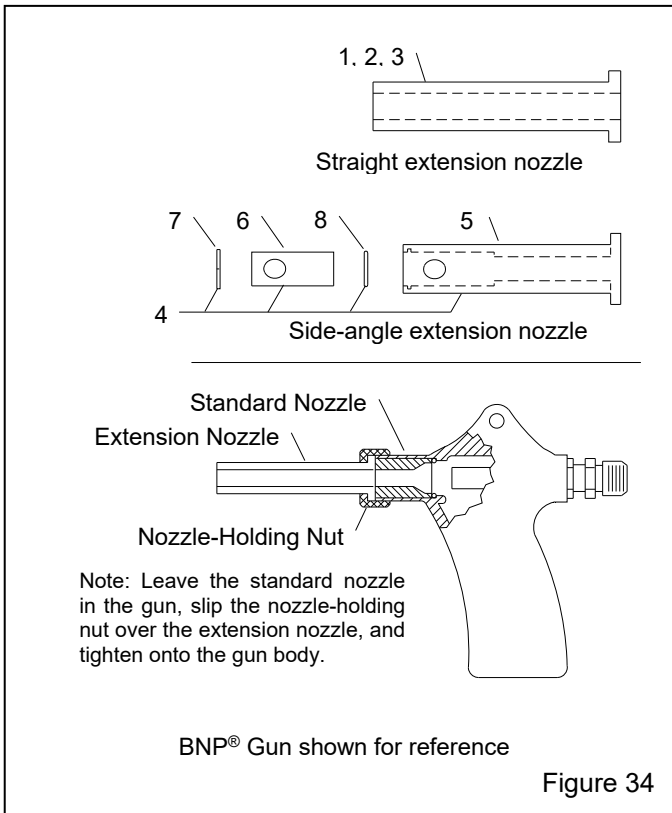


Figure 35

## 9.2  Cabinet Replacement Parts – Figure 36

| Item | Description | Stock No. |
|---|---|---|
| 1. | Gasket, 5/16" x 1" adhesive-backed, per foot, specify feet required | |
| | BNP-65 door, 11 ft. required per door | 00187 |
| | BNP-220 door, 13 ft. required per door | 00187 |
| | Air-inlet damper, 3 ft. required | 00187 |
| | BNP-65 Ergo front, 13 ft. required | 00187 |
| | BNP-220 Ergo front, 16 ft. required | 00187 |
| 2. | Damper, air-inlet | 23156 |
| 3. | Door assembly, left | |
| | for 65 series | 20070 |
| | for 220 series | 20074 |
| 4. | Door assembly, right | |
| | for 65 series | 20071 |
| | for 220 series | 20075 |
| 5. | Grate | |
| | for 65 series | 11811 |
| | for 220 series | 11810 |
| 6. | Latch kit, door | 20064 |
| 7. | Glove set | |
| | Band-clamp attachment | 11215 |
| | Quick-Change (clampless) attachment | 28820 |
| 8. | Glove, left hand only | |
| | Band-clamp attachment | 12710 |
| | Quick-Change (clampless) attachment | 28638 |
| 9. | Glove, right hand only | |
| | Band-clamp attachment | 12711 |
| | Quick-Change (clampless) attachment | 28639 |
| 10. | Clamp, for clamp-attached glove | 11576 |
| 11. | Grommet, media/air hose, 3/4" ID | 11798 |
| 12. | Plate, hopper hose | 21656 |
| 13. | Gasket, hopper plate | 20247 |

| Item | Description | Stock No. |
|---|---|---|
| 14. | Hose, light-lined flex, specify ft. required | |
| | 4" ID for 300 cfm, 7 ft. required | 12466 |
| | 5" ID for 600 cfm, 7 ft. required | 12467 |
| | 6" ID for 900 cfm, 9 ft. required | 12468 |
| 15. | Clamp, flex hose | |
| | for 4" hose | 11577 |
| | for 5" hose | 11578 |
| | for 6" hose | 00750 |
| 16. | Adaptor pipe universal, flex hose | |
| | 4" for 300 cfm | 23295 |
| | 5" for 600 or 900 cfm w/steel media | 23296 |
| | 6" for 900 cfm | 23297 |
| 17. | Gasket, flex hose adaptor pipe | |
| | 4" for 300 cfm | 23258 |
| | 5" for 600 or 900 cfm w/steel media | 23259 |
| | 6" for 900 cfm | 23291 |
| 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, 1/8" NPT cbm pressure | 01908 |
| 24. | Fitting, 1/8" NPT elbow x 1/8" barb | 11733 |
| 25. | Switch, toggle (single-phase only) | 12127 |
| 26. | Grommet, 1/4 ID | 12762 |
| 27. | Foot-pedal assembly, | |
| | less tubing | 20483 |
| | with tubing, 14 feet | 20195 |
| 28. | Brace, back leg | |
| | BNP-65 | 24443 |
| | BNP-220 | 24445 |
| 29. | Gasket, 5/32" x 3/4", 3 ft required | 00192 |



* Light assembly shown for reference. Refer to Figure 40 for parts.

Some items removed or rotated for clarity.
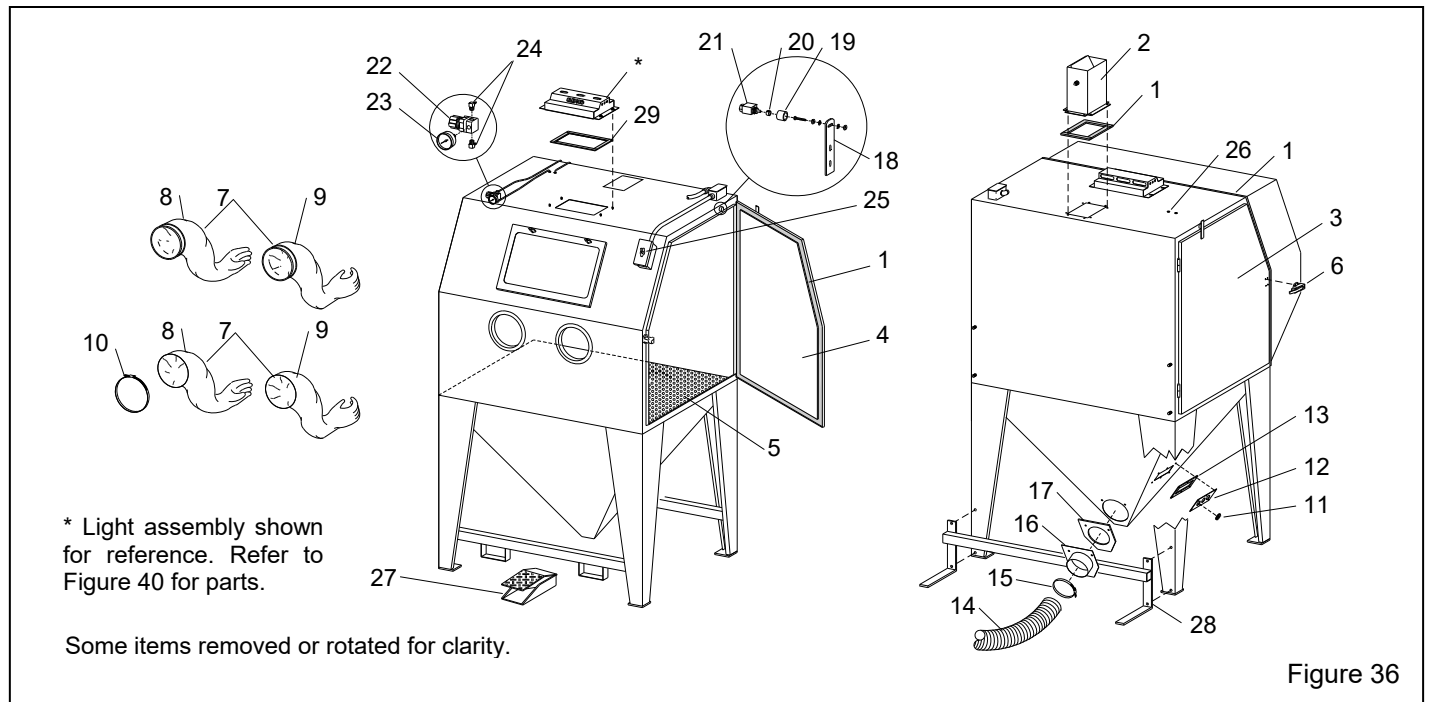
Figure 36

## 9.3 BNP® Gun and Hose Assembly – Figure 37

| 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 |



Green air hose

Clear media hose
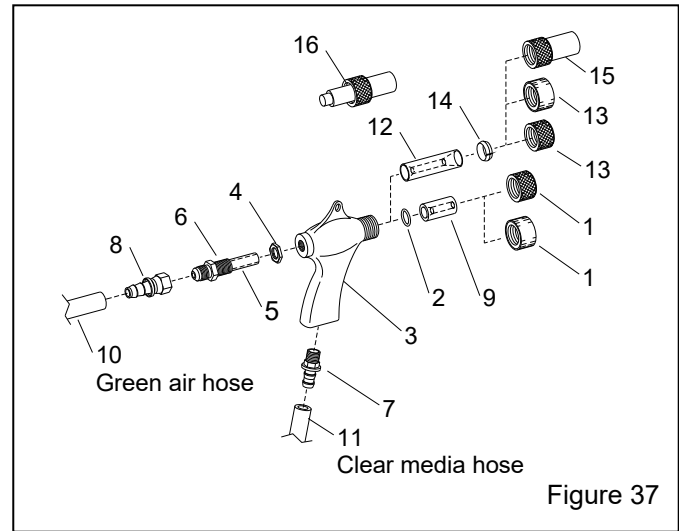
Figure 37

## 9.4 Inlet Air-Regulator Assembly – Figure 38

| Item | Description | Stock No. |
|---|---|---|
| (-) | BNP Suction Regulator 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 |
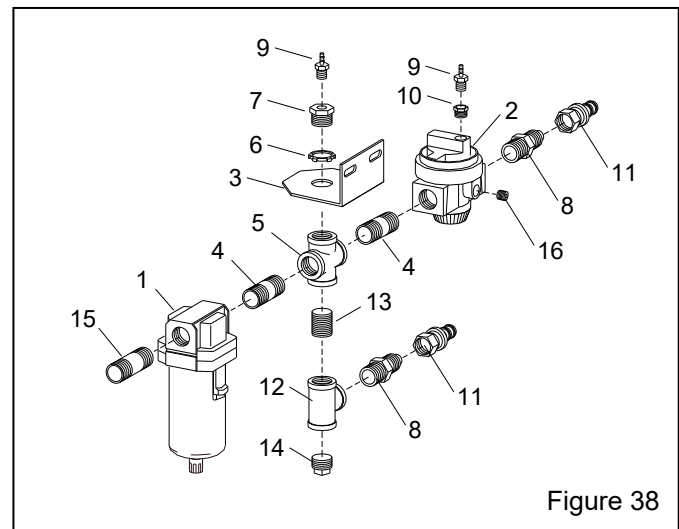


Figure 38

## 9.5  View-Window Assembly – Figure 39

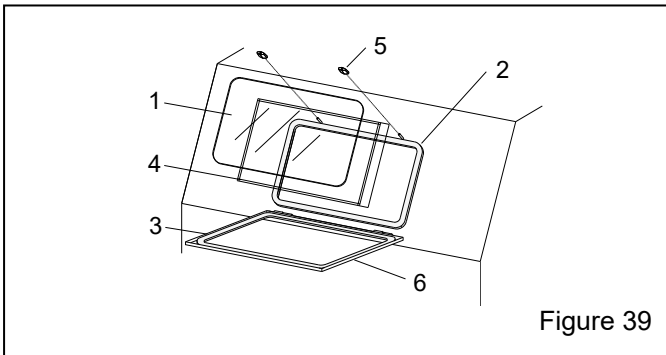| Item | Description | Stock No. |
|---|---|---|
| 1. | Window glass, 12.5" x 19.5" laminated | 12212 |
| 2. | Gasket, 5/16" x 3/4", applied to cabinet per foot, 6-feet required | 00189 |
| 3. | Gasket, 5/32" x 3/4", applied to window frame per foot, 6-feet required | 00192 |
| 4. | Cover lens, pkg.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



Figure 39

## 9.6  LED Light Assembly – Figure 40

| 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 |
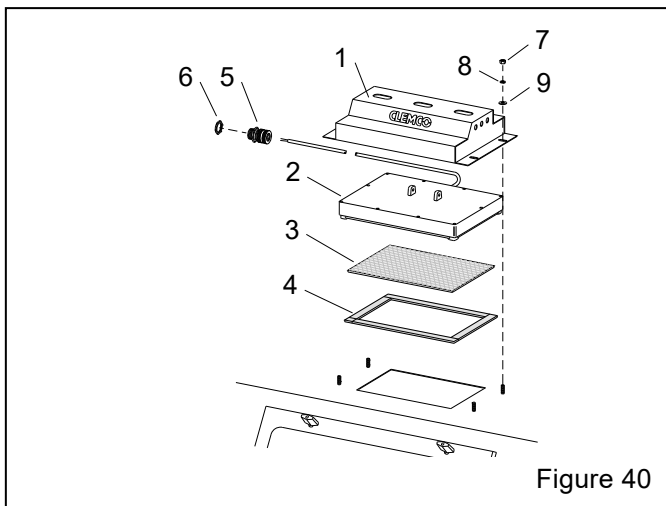


Figure 40

## 9.7  Foot-Pedal Assembly – Figure 41

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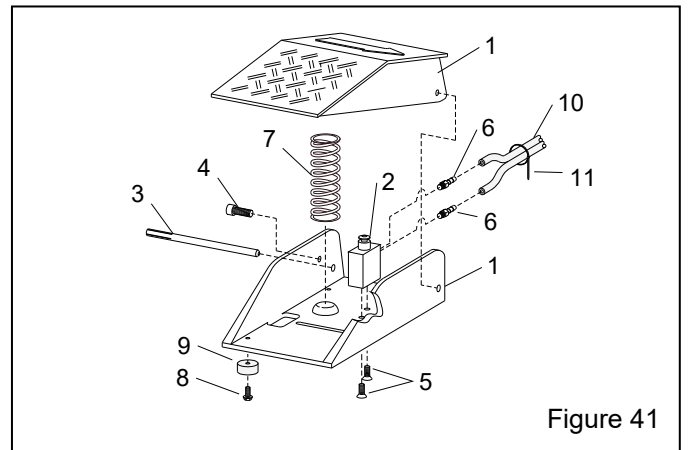


Figure 41

## 9.8  Metering Valve Assembly, BNP – Figure 42

| 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 |
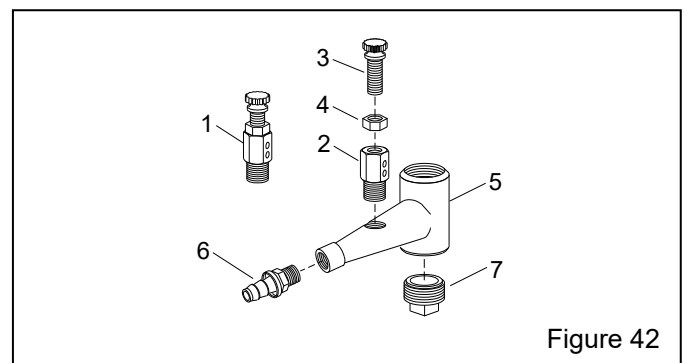


Figure 42

### 9.9    Cabinet Controls and Plumbing – Figure 43

| 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. | Fitting, 1/8" NPT elbow x 1/8" barb | 11733 |
| 7. | Bushing 1/2"x 1/8" NPT | 11350 |
| 8. | Bushing 1/4"x 1/8" NPT | 02010 |
| 9. | Bracket, mounting | 19231 |
| 10. | Filter, 1/2" manual drain air | 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 | 12302 |
| 17. | Hose, media, clear, specify ft. required | 12476 |
| 18. | Regulator, 1/2" pilot-operated pressure | 11345 |
| 19. | Regulator, 1/8" pilot pressure | 12715 |
| 20. | Gauge, 1/8" NPT cbm pressure | 01908 |
| 21. | Metering valve assembly, BNP | 12417 |



Figure 43

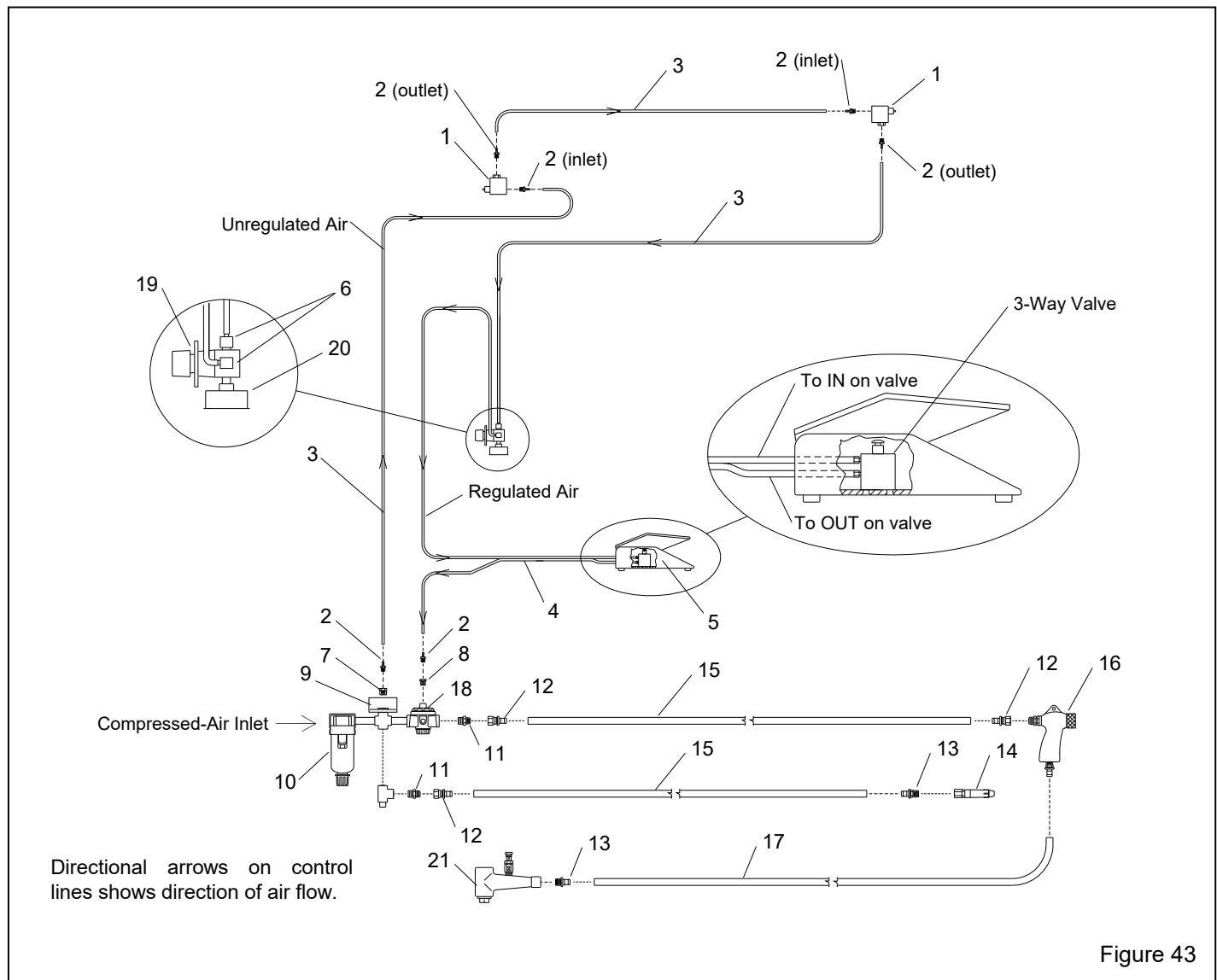Directional arrows on control lines shows direction of air flow.

## 9.10    Replacement Reclaimer Assemblies

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

| Description | Stock No. |
|---|---|
| 300 cfm reclaimer with 5" outlet plate | 28965 |
| 600 cfm reclaimer with 6" outlet plate | 29506 |
| 600 cfm reclaimer w/external adjustable vortex | 29500 |
| 900 cfm reclaimer with 7" outlet plate | 28967 |
| 900 cfm reclaimer w/external adjustable vortex | 21305 |

NOTE: The externally adjustable vortex cylinder is an option when cabinets are provided with CDC-1 Dust Collector; it is standard when cabinets are provided with an RPC-2 or RPH-2 Dust Collector.

## 9.11    300 CFM Reclaimer Replacement Parts Figure 44

Refer to Page 38 for 600 cfm reclaimer replacement parts and Page 39 for 900 cfm reclaimer replacement parts.

| Item | Description | Stock No. |
|---|---|---|
| (-) | 300 cfm reclaimer with 5" outlet plate | 28965 |
| 1. | Gasket, 5/16" x 1" adhesive-backed, per foot 3 ft. required for 300 cfm | 00187 |
| 2. | Screen assembly, 8-mesh | 21265 |
| 3. | Gasket, reclaimer door | 11745 |
| 4. | Inlet-pipe adaptor, 4" - 300 cfm | 12365 |
| 5. | Gasket, inlet adaptor 4" - 300 cfm | 11746 |
| 6. | Wear plate, rubber-lined with mounting screws | 14060 |
| 7. | Outlet plate, 5" pipe - 300 cfm | 18475 |
| 8. | Latch assembly, door | 12263 |
| 9. | Door assembly, w/gasket and latch | 14271 |
| *10. | Clamp, hose, 4--1/2", for 4" ID hose | 11577 |
| *11. | Hose, 4" ID light-lined flex, per foot, 7 feet required | 12466 |
| *12. | Hose, 5" ID unlined flex, per foot, specify length required | 12449 |
| *13. | Clamp, hose 5-1/2", for 5" ID hose | 11578 |
| *14. | Bracket, reclaimer mount, each for BNP-65 | 12766 |
|  | for BNP-220 | 12782 |
| *15. | Metering valve assembly, BNP | 12417 |



300 CFM RECLAIMER

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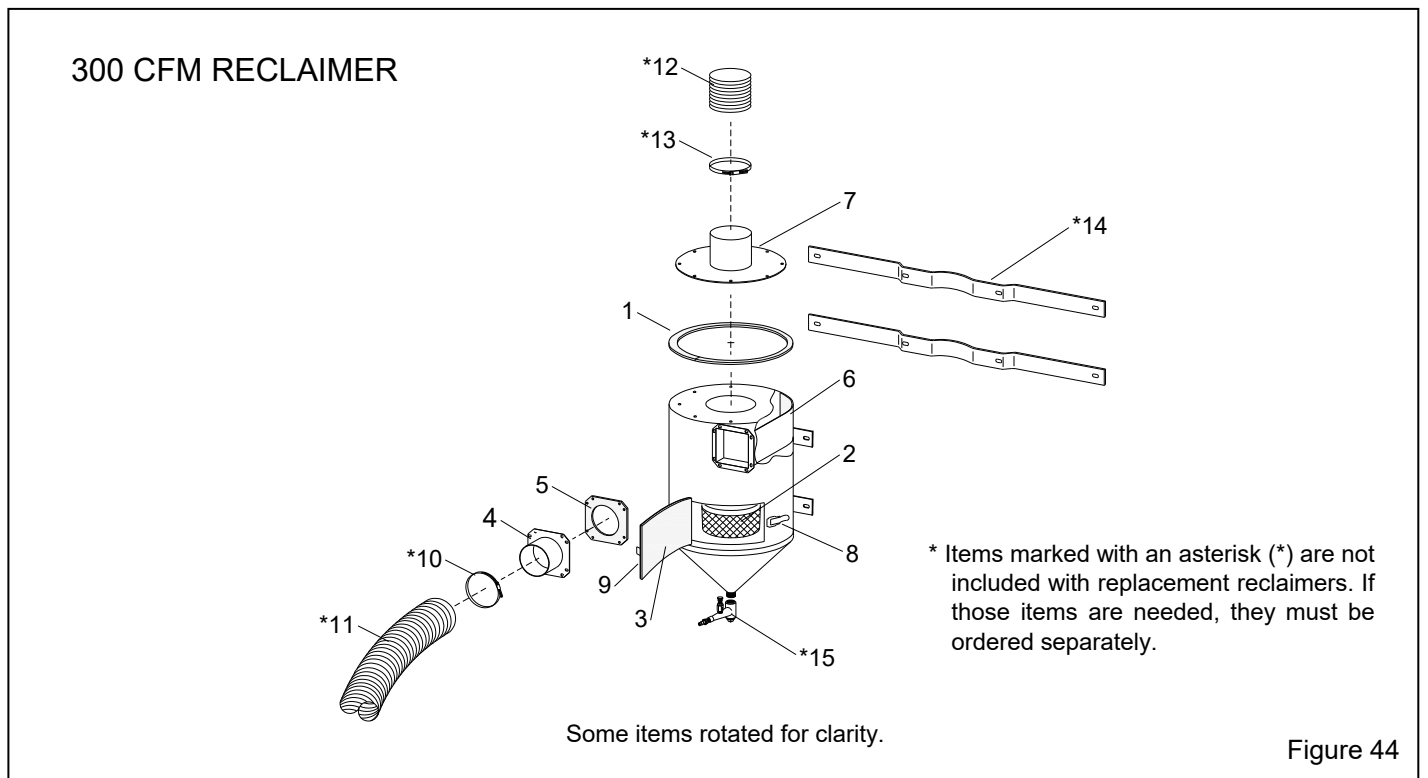
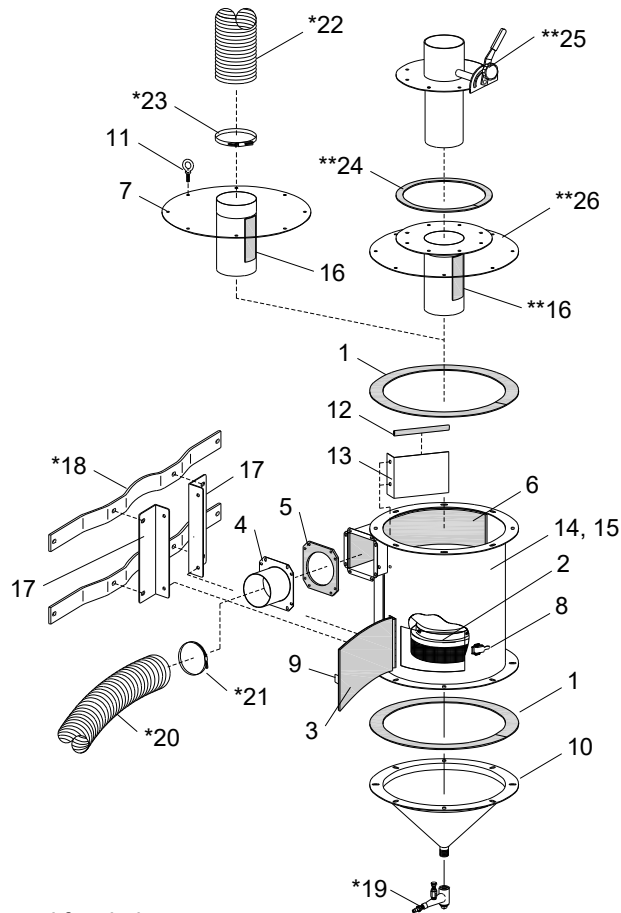Some items rotated for clarity.

Figure 44

### 9.12 600 CFM Modular Reclaimer Replacement Parts – Figure 45

Refer to Page 37 for 300 cfm reclaimer replacement parts and Page 39 for 900 cfm reclaimer replacement parts.

| Item | Description | Stock No. |
|---|---|---|
| (-) | 600 cfm reclaimer with 6" outlet plate | 29506 |
| (-) | 600 cfm reclaimer w/external adj. vortex | 29500 |
| 1. | Gasket, 1/8" x 2" adhesive backed, per foot 6 feet required at each location | 13089 |
| 2. | Screen assembly, 8-mesh | 21265 |
| 3. | Gasket, reclaimer door | 11745 |
| 4. | Inlet-pipe adaptor, 5" - 600 cfm | 12361 |
| 5. | Gasket, inlet adaptor current modular and all unlined models | 11779 |
| | 600 rubber-lined recl prior to 09/2018 | 29631 |
| 6. | Wear plate, rubber-lined w/mounting screws | 29542 |
| 7. | Top plate, 600 cfm modular w/6" pipe | 29538 |
| 8. | Latch assembly, door | 12263 |
| 9. | Door assembly, w/gasket and latch | 14271 |
| 10. | Hopper, 600 cfm modular suction | 21650 |
| 11. | Eyebolt 3/8-NC | 00430 |
| 12. | U-channel, 3/8, 1-foot required | 04076 |
| 13. | Baffle, 600 modular | 29524 |
| 14. | Body section, modular, with door, wear plate, and baffle | 29486 |
| 15. | Body section, modular, with door, rubber liners, and Item 26 top plate | 29495 |
| 16. | Gasket, 1/8" x 2" adhesive-backed, per foot, 1 foot required at this location | 13089 |
| 17. | Bracket, modular reclaimer mount, each | 29529 |
| *18. | Bracket, reclaimer mount, each for BNP-65 | 12766 |
| | for BNP-220 | 12782 |
| *19. | Metering valve assembly, BNP | 12417 |
| *20. | Hose, 5" ID light-lined flex, per foot, 9 feet required | 12467 |
| *21. | Clamp, 5-1/2", for 5" ID hose | 11578 |
| *22. | Hose, 6" ID unlined flex, per foot, specify length required | 12452 |
| *23. | Clamp, hose, 6-1/2", for 6" ID hose | 00750 |
| **24. | Gasket, 5/16" x 1" adhesive-backed, per foot, 4 ft. required | 00187 |
| **25. | Vortex cylinder, pull thru 600 modular | 29510 |
| **26. | Top plate, modular w/exhaust /flange | 29487 |

## 600 CFM MODULAR RECLAIMER

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

**The vortex cylinder and related items are 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 45

### 9.13 900 CFM Modular Reclaimer Replacement Parts – Figure 46

Refer to Page 37 for 300 cfm reclaimer replacement parts and Page 38 for 600 cfm reclaimer replacement parts.

| Item | Description | Stock No. |
|---|---|---|
| (-) | 900 cfm reclaimer with 7" outlet plate | 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 | |
| | 900 cfm, 6" standard use | 12363 |
| | 900 cfm, 5" for steel grit | 14411 |
| 5. | Gasket, inlet adaptor | |
| | 900 cfm, 6" standard use | 11759 |
| | 900 cfm, 5" for steel media | 11779 |
| 6. | Wear plate, rubber-lined w/mounting screws | |
| | 900 cfm for reclaimers with bolt-on top | 25071 |
| 7. | Outlet plate, 7" pipe - 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 feet 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-foot required | 04076 |
| 15. | Baffle, 900 modular | 23051 |
| 16. | Gasket, 1/8" x 2" adhesive-backed, per foot, 1 foot required at this location | 13089 |
| 17. | Body section with door, wear plate, and baffle | 27465 |
| 18. | Body section with door, rubber liners and item 9 bolt on top | 27466 |
| *19. | Clamp, hose, 6-1/2" | 00750 |
| *20. | Hose, light-lined flex, specify length | |
| | 6" ID, standard use | 12468 |
| | 5" ID, for use with steel media | 12467 |
| *21. | Hose support inlet, optional | |
| | 6", standard use | 16887 |
| | 5", for 5" hose | 22324 |
| *22. | Hose support, 7" outlet, optional | 20619 |
| *23. | Clamp, hose, 8" for 7" hose | 11576 |
| *24. | Hose, 7" ID unlined flex, specify length | 12448 |
| *25. | Metering valve assembly, BNP | 12417 |
| **26. | 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.
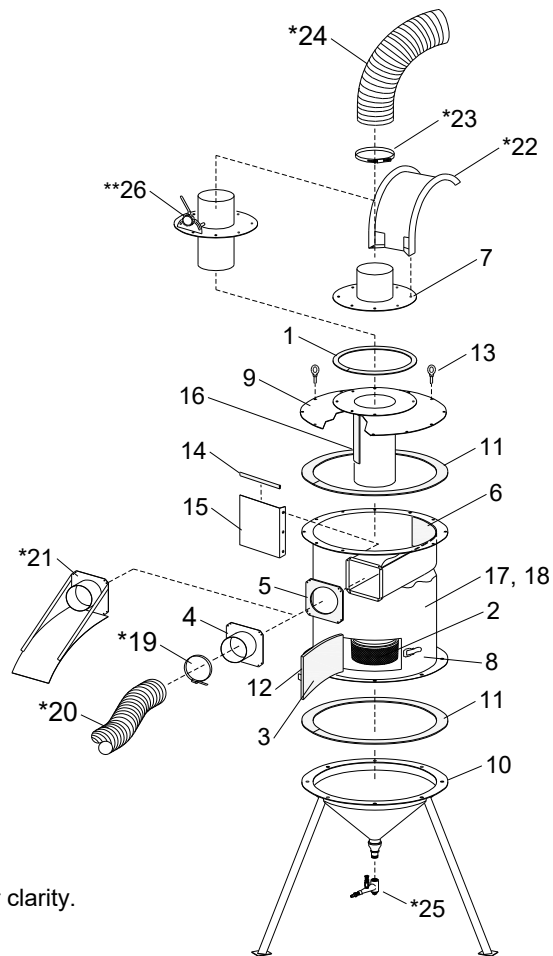
Some items rotated for clarity.

Figure 46