BNP® 162, 164, and 166
Tumble Blast Cabinets
O. M. 14429

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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.

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ZERO Blast Cabinets ®

1.0 INTRODUCTION

1.1 Scope of Manual

1.1.1 These instructions cover setup, operation, maintenance, troubleshooting, optional accessories, and replacement parts for BNP® 162, 164, and 166 suction-type tumble blast cabinets. The instructions cover the operation of all pull-thru reclaimers and the installation of the dust collector. One of the following supplemental manuals is provided with the dust collector; refer to the appropriate manual for operation and maintenance of the collector:

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

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

1.2 Safety Alerts

1.2.1 Clemco uses safety alert signal words, based on ANSI Z535.4-2011, to alert the user of a potentially hazardous situation that may be encountered while operating this equipment. ANSI's definitions of the signal words are as follows:

This is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

NOTICE

Notice indicates information that is considered important, but not hazard-related, if not avoided, could result in property damage.

⚠ CAUTION

Caution indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

⚠ WARNING

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

⚠ DANGER

Danger indicates a hazardous situation that, if not avoided, will result in death or serious injury.

1.3 Table of Contents

1.4 General Description

1.4.1 BNP Tumble Blast Cabinets are intended for blasting batches of small parts, using fixed nozzles and a rotating barrel. The cabinet system consist of three major components:

- Cabinet Enclosure
- Reclaimer
- Dust Collector

1.4.2 Cabinet Enclosure: This manual covers the three standard BNP Tumble Cabinet sizes.

The load capacity of the barrel depends on the model. Standard cabinets are supplied as follows:

MODEL	BNP-162	BNP-164	BNP-166
No. of Guns	two	four	six
Max. volume	1 cuft	2 cuft	3 cuft
Max. weight	100 lbs	200 lbs	300 lbs
Reclaimer cfm	300 or 600	600 or 900	900

1.4.3 Reclaimer: The reclaimer is a pull-thru style, adjustable, cyclone separator, into which air, dust, fines, and byproducts generated by the blasting process are drawn from cabinet enclosure for separation. The reclaimer size is determined by the cabinet size; therefore, reclaimer sizes are not interchangeable. 300 cfm and 600 cfm reclaimers are attached to the back of the cabinet enclosure; 900 cfm reclaimers are freestanding.

1.4.4 Dust collector: All dust collectors used with these tumble cabinets are pull-thru, reverse-pulse type cartridge collectors. Dust and fines drawn from the reclaimer are collected on the outer surface of the filter cartridge. Refer to dust collector options in Section 1.6.

1.4.4.1 Refer to Figure 1 for arrangement of components with a CDC-1 Dust Collector. The model shown is a 164 with a 600 cfm reclaimer. Figure 2 shows a freestanding 900 cfm reclaimer connected to an RPC-2 reverse-pulse dust collector. 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 the RPH-2 is approximately 10.5 ft and 12 ft when the top access door is open. An upgraded, RPC or RPH collector may be added at any time.

1.5 Theory of Operation

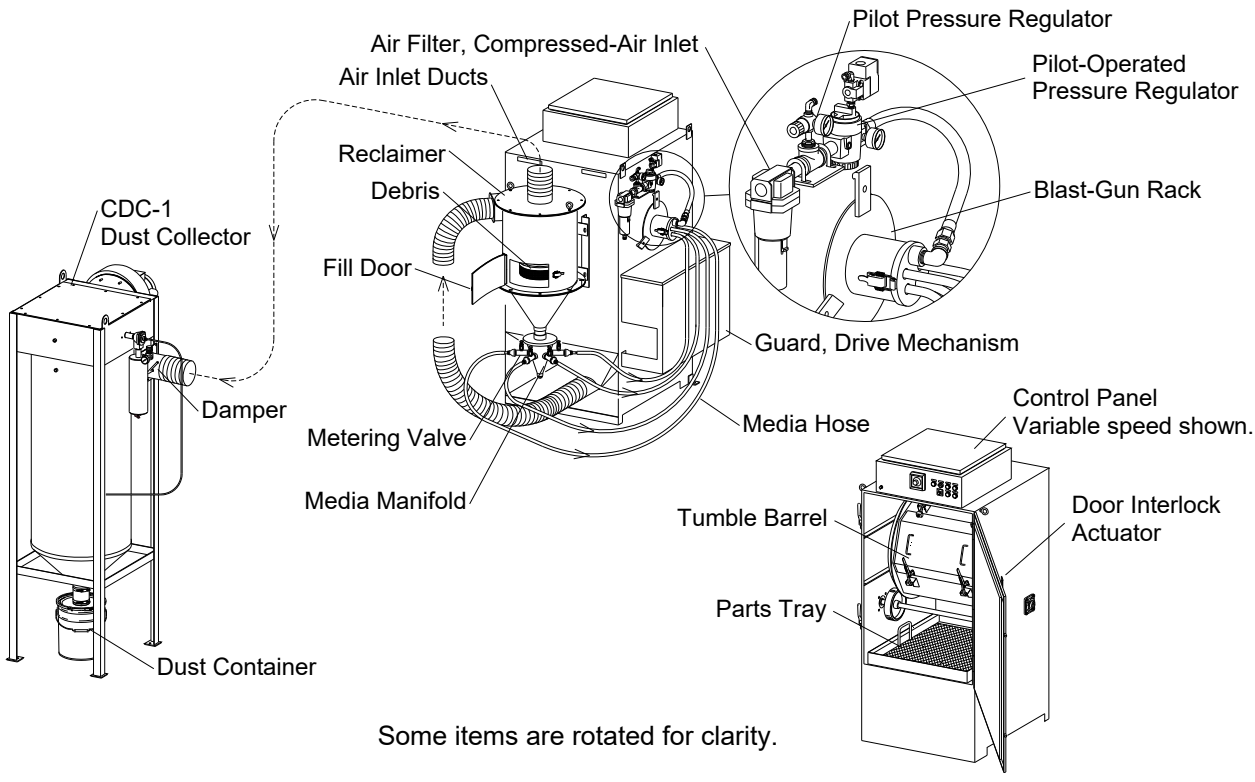
1.5.1 Once the components are correctly set up and parts are loaded into the barrel, the air supply and exhauster are turned ON and the cabinet door is closed. The cabinet is readied for operation by setting the timer on a constant-speed control panel or by pulling the sequence switch on a variable-speed control panel. Starting the timer causes air to flow through the blast guns. Air moving through the guns draws media into the blast-gun mixing chamber. The media mixes with the air and propels out the nozzles. As the barrel rotates, the parts tumble in the blast stream until all parts and surfaces are uniformly cleaned. Some of the blast media remains in the barrel to cushion the parts as they tumble. A portion of the blast media, along with fines, dust, and byproducts generated by blasting, flows through the adjustable slide gates into the cabinet hopper. These particles are then drawn into the reclaimer for separation. Lightweight dust and fines are drawn out to the dust collector. Heavier reusable media fall through the screen into the reclaimer hopper for reuse. The dust collector traps dust and fines and discharges clean air. Blasting automatically stops when the timed cycle is completed.

1.6 Dust Collector Options

⚠ WARNING

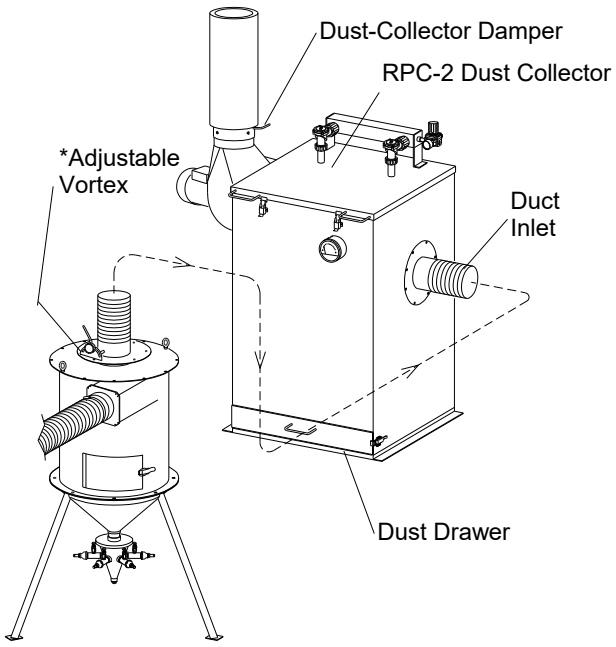
All dust is hazardous to breathe. Emissions can occur from the dust collection system. Identify all materials that are to be removed by blasting; if any toxic materials such as lead dust or dust from other heavy metals and corrosives, or <u>any</u> other toxic materials are being removed, use a HEPA afterfilter to assist in maintaining inhalation hazards below the permissible exposure limits (PEL). 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 assure 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. Refer to manual number 28225.



Some items are rotated for clarity.

Figure 1



* Vortex is standard when cabinet is provided with RPC-2 or RPH-2 Dust Collector.

Figure 2

1.6.2 RPC-2 Dust Collectors: Shown in Figure 2, 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 operates the same as the RPC-2, as shown in Figure 2, but instead of a dust drawer the collector sits atop a hopper, which provides additional dust storage and empties into a 30-gallon drum. Refer to manual number 21449.

1.6.4 HEPA (high-efficiency particulate air) Filter: HEPA afterfilters provide additional filtration and must be used with a reverse-pulse cartridge collector when removing lead coatings or any other toxic materials.

1.7 Nozzle Options

1.7.1 Ventilation requirements limit standard cabinets to 5/16" nozzle and No. 5 (5/32" orifice) air jets. In some applications, where compressed air is limited, No. 4 (1/8" orifice) air jets may be used, but blasting rates will decrease accordingly. Refer to Section 1.10 for compressed-air requirements. Unless otherwise specified at the time of order, cabinets are supplied with durable boron carbide nozzles. Optional ceramic and tungsten carbide nozzles are available for use with nonaggressive media, and are shown in *Section 9.4: Gun and Rack Assembly*. Use boron carbide nozzles when blasting with aggressive media, such as those listed 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 29 **–** Figure 28.

1.8.2 Externally adjustable vortex option: Not available for 300 cfm reclaimer**.** The vortex is available for 600 cfm and 900 cfm reclaimers. 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. Refer to Section 5.5 for additional information.

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.

ZERO tumble blast cabinets utilize most common reusable media 30-mesh to 180-mesh that is specifically manufactured for dry blasting (glass bead and aluminum oxide are most commonly used). Media sizes shown (listed under media headings) are for guidelines only. The guidelines are based on standard nozzle size and average conditions, with variables such as blast pressure, media/air mixture, humidity, and reclaimer cleaning rate.

Several variables affecting 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).

Media finer than those recommended may increase carryover 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 grit or shot should not be used with standard tumble cabinets. Steel is too heavy to recover large amounts of media delivered from multiple blast guns.

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, periodically inspect the reclaimer wear plate, blast hose, and nozzle for wear.

When using aggressive media, use 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 9.4.

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 thorough 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 (between 120-mesh and 180-mesh.) media, the optional adjustable vortex cylinder may help retain media. NOTE: The adjustable vortex cylinder is standard on systems using an RPC-2 or RPH-2 Dust Collector.

When using lightweight (such as agricultural) media or fine mesh (finer than 180-mesh) 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 7.7. 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 or nonaggressive media are generally not recommended for suction-style cabinets because the lower blast velocity of suction blasting combined with the softer and lighter weight media do not provide the media impact for productive blasting. Best performance from plastic media is achieved with pressure blasting, requiring a pressure vessel with a 60-degree conical bottom. Refer to Clemco's Aerolyte cabinet line.

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

1.10 Compressed-Air Requirements

1.10.1 The size of the compressor required to operate the cabinet depends on the size of air jet*, the number of guns, and blasting pressure. Refer to the table in Figure 3 to determine cfm requirements. 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.

Compressed-Air Consumption in CFM

Model	Jet	Nozzles	CFM	PSI
162	*1/8"	2	42	80
162	5/32"	2	66	80
164	*1/8"	4	84	80
164	5/32"	4	132	80
166	*1/8"	6	126	80
166	5/32	6	198	80

*1/8" jets decrease blast rates by approximately 30%.

Figure 3

1.10.2 The air filter at the air-inlet connection reduces condensed water from the compressed air. The filter automatically drains when moisture fills the bowl to a certain level. Its use is especially important in areas of high humidity or when using fine-mesh media. Moisture causes media to clot 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 to 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 and barrel drive motor. Refer to the electrical schematic stowed in the control panel for wiring and amps.

Refer to Section 2.6 to connect electrical service.

2.0 INSTALLATION

2.1 General Installation Notes

2.1.1 Refer to Figure 1 (and Figure 2 for optional RPC-2 Dust Collector) for the general arrangement. 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 parts. Provide enough clearance at the dust collector to do maintenance and to remove the dust container. Place freestanding reclaimers directly behind the cabinet with flex-hose connections and metering valves facing toward the cabinet with as few bends as possible. Determine the best location for all components and position them before making compressed-air connections, electrical connections, and attaching flex hose.

2.2 Level Cabinet Enclosure

2.2.1 Level the cabinet by using shims as necessary under cabinet corners. A cabinet that is not level may have problems with door closing and barrel tracking.

2.3 Connect Conveying (flex) Hose

2.3.1 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 helps ground each segment. In order for the hose wire to dissipate static electricity, the wire must touch the metal of each segment.

2.4 Connect Compressed-Air Supply Line(s)

⚠ 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.

2.4.1 Refer to Paragraph 2.4.2 to determine the recommended size for the air-supply hose, then refer to Figure 4 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 air filter located on the side of the cabinet. **NOTE: the style of connection shown in Figure 4 is for reference only. Size the couplings and fittings no smaller than the ID of the air hose.**

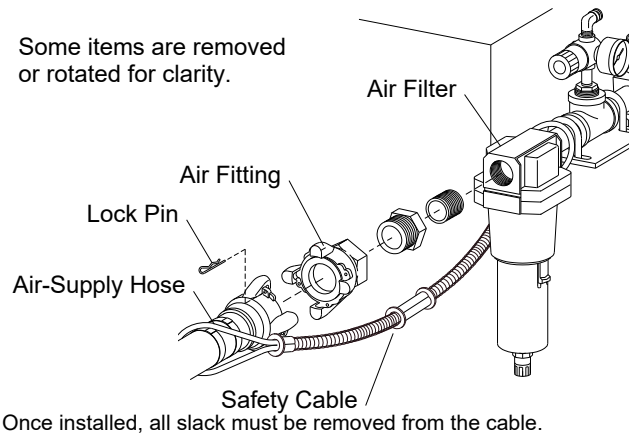


Figure 4

2.4.2 Connect an air line from the air source to the air-filter inlet. For best blasting performance, size the air line as follows:

BNP-162 .....1" ID or larger
BNP-164 .....1-1/4" ID or larger
BNP-166 ..... 1-1/2" or larger

NOTE: A separate air line is required for the optional reverse-pulse dust collector.

⚠ 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.*

2.5 Ground Cabinet

2.5.1 To prevent static electricity buildup, attach an external grounded wire from an earth ground to the grounding lug on the rear of the cabinet.

2.6 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 to the cabinet is provided by the user to comply with local electrical codes.

2.6.1 Electrical requirements depend on the size and phase of the dust-collector exhauster motor and barrel drive motor. Refer to the electrical schematic stowed inside the control panel for wiring and amps. After wiring is completed, keep a copy of the schematic with the manual for future reference and for electrical replacement parts.

2.6.2 Voltage (230 or 460) is determined at time of order. Panels are supplied with 230-volt controls unless 460-volt is specified at the time of purchase.

2.6.3 The electrician provides service from the user's disconnect to the electrical panel mounted on the cabinet and from the panel to the motor on the dust collectors.

2.6.4 Observe the warning that follows and check the rotation of the motors. To check, jog the exhauster starter (momentarily turn switch ON and OFF). This will cause the motor to rotate slowly. Look through the slots in the fan housing on top of the motor where rotation of the fan can easily be observed. Proper rotation of the exhauster is indicated by the arrow on the exhauster housing. The fan should rotate toward the scroll outlet. The tumble barrel should rotate clockwise when viewed from the gear reducer side.

⚠ WARNING

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

2.6.5 Check the dust-collector motor amperage on initial startup. If the motor draws excessive amperage, gradually close the damper until the amperage is within the specifications shown on the motor plate. The damper is located on the inlet of CDC-1 Dust Collectors and on the exhauster outlet of RPC-2 and RPH-2 Dust Collectors.

2.7 Connect Media Hoses (900 reclaimer only)

2.7.1 Media hoses are curled up under the cabinet. Slip the free ends of the hoses over the nipples on the metering valves, located on the manifold at the bottom of the reclaimer, as shown in Figure 5. Hoses are held on by friction; it is not necessary to clamp them.

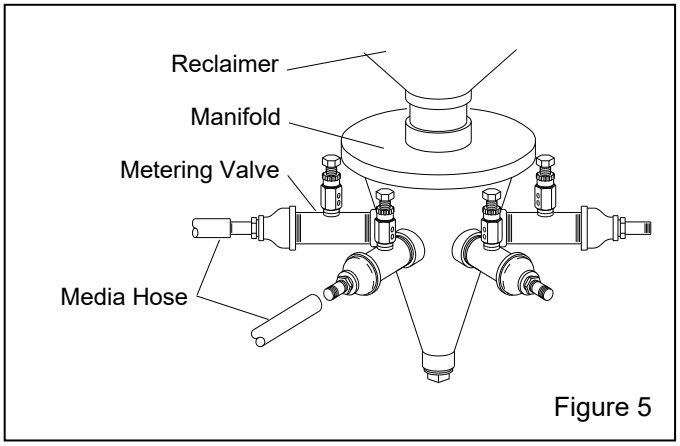


Figure 5

2.8 Attach Drain Tube to Air Filter – Figure 6

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

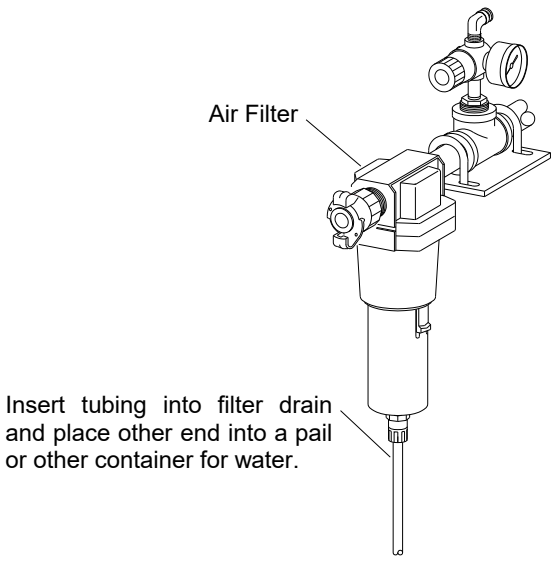


Figure 6

3.0 FIELD INSTALLED ACCESSORIES

3.1 Manometer

The optional manometer kit is listed in *Section 9.1: Optional Accessories.*

3.1.1 Constant static pressure is necessary for precise media separation, as the reclaimer's efficiency is accomplished by a centrifugal balance of 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 5.10 for instructions on using the manometer.

3.2 Barrel Divider Kit for BNP-164 and 166

3.2.1 Barrel dividers split the barrel chamber into separate compartments. This permits simultaneous blasting of different parts. Barrels should not be divided into compartments containing less than two nozzles. Barrel dividers are listed in *Section 9.1: Optional Accessories.*

3.3 Optional Externally-Adjustable Vortex Cylinder

Not available for 300 cfm reclaimer.

3.3.1 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 cause premature cartridge failure and decrease the efficiency of the dust collector.

4.1. Control Panel Operation

4.1.1 Constant-speed controls – Figure 7

Refer to Section 4.1.2 for variable-speed controls.

1. System Start: Pushing the button starts the exhauster and tumble barrel. Other controls will not operate unless the exhauster is running.

2. System Stop: Pushing in the button stops the exhauster and all other controls.

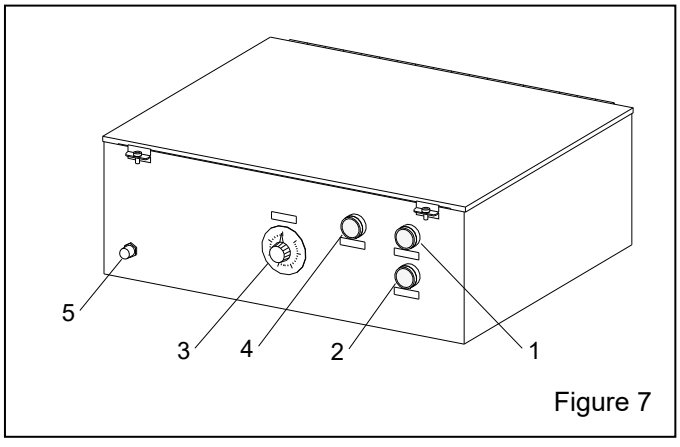


Figure 7

3. Timer: Sets duration of the blast cycle. Turn the dial to set the blast duration between 1 minute and 60 minutes. Once the timer is set, begin blasting by pushing the "System Start" button. Blasting automatically stops

when the timer times out. The time must be reset after every blast cycle.

4. Barrel Jog: The exhauster must be on to enable the switch. Pressing the momentary switch rotates the barrel. Use it to empty the barrel of residual media that remains in the barrel after blasting and to position the barrel door to the front of the cabinet for loading and unloading parts. The barrel continues to rotate as long as pressure is maintained on the switch.

5. Door Interlock: The door interlock disables blasting when the door is open. To enable blasting, the door must be closed and the door interlock switch engaged.

4.1.2 Variable-speed controls – Figure 8

Refer to Section 4.1.1 for constant-speed controls.

1. System Start: Pushing the button starts the exhauster and tumble barrel. Other controls will not operate unless the exhauster is running.

2. System Stop: Pushing in the button stops the exhauster and all other controls.

3. Timer: Turn the dial to set the blast duration between 1 minute and 60 minutes. Once the timer is set, begin blasting by pushing the "Sequence Start" button. Blasting automatically stops when the timer times out. Once the timer is set it does not require resetting after blasting, unless the blasting duration changes.

4. Barrel Jog: The exhauster must be on before engaging the switch. Pressing the momentary switch rotates the barrel. The barrel continues to rotate as long as pressure is maintained on the switch.

5. Door Interlock: The door interlock disables blasting when the door is open. To enable blasting, the door must be closed and the door interlock switch engaged.

6. Sequence Start: Once the timer is set (the timer does not require resetting unless the blasting duration changes) and the gun switch is ON, blasting starts when the switch is pushed in. If the gun switch is OFF, all tumble operations except blasting starts when the system switch is engaged.

7. Sequence Stop: Pushing the button stops the blast and tumble cycle. If the timed cycle was not completed, the blast cycle will continue for the remaining time if the sequence start button is pressed.

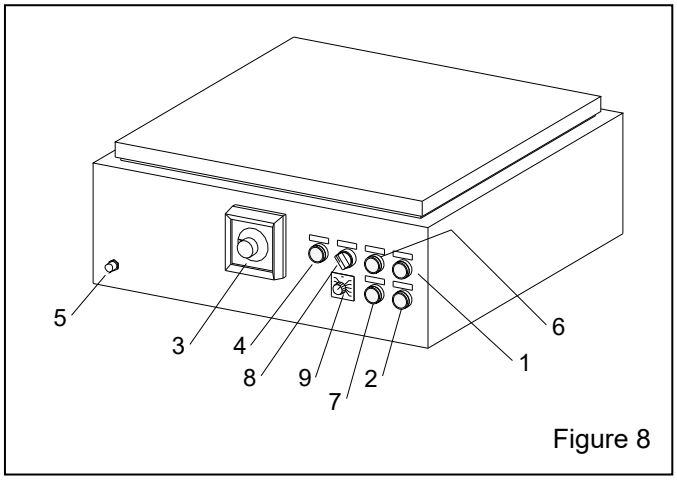


Figure 8

8. Blast Guns Switch: The switch engages and disengages the blast guns. If the switch is toward ON, blasting starts when the system start button is pressed. If the switch is OFF, all tumble operations except blasting are ON. NOTE: The barrel with continue to rotate, which will empty media from within the barrel. **Do not turn the blast guns OFF during the blast cycle if it will cause part-on-part damage occurring while tumbling.**

9. Speed Control: Controls the rotation speed of the tumble barrel.

Optional Media Blow-off: A blow-off timer is situated inside the variable speed panel, but it does not operate any controls unless the blow-off option was requested when the cabinet was ordered. If the cabinet includes the option, blow-off automatically begins at the end of the blast cycle. Adjust the timer to the length of time the blow-off is to remain ON. Blow-off automatically stops at the end of the timed cycle. If media remains in the barrel or on the parts after the cycle, increase blow-off time. **NOTE: If the blow-off option was not requested, set the timer to 0 and leave it there.** Because the timer is included and wired into the circuit, the blow-off option may be added later. Refer to the wiring schematic stowed inside the panel.

4.2 Media Loading

4.2.1 Media capacity

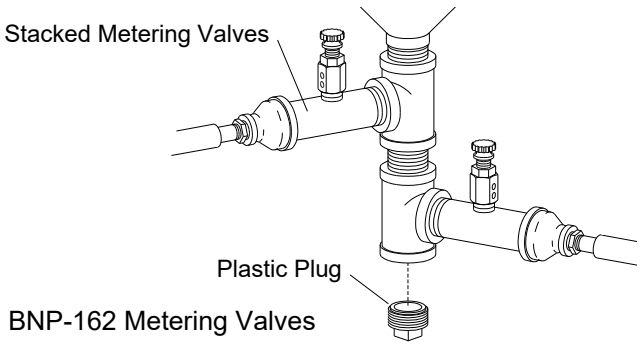
The approximate amount of media to charge the system are as follows:

300 CFM Reclaimer ..... 50 lbs (0.5 cuft) media
600 CFM Reclaimer ..... 75 lbs (0.75 cuft) media
900 CFM Reclaimer ..... 100 lbs (1 cuft) media

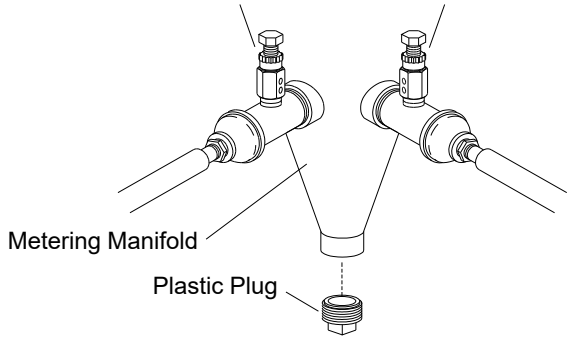
4.2.2 Media loading: With the exhauster OFF, add clean, dry media by pouring it through the reclaimer fill door. Do not fill above the cone on the reclaimer. **Do not pour media directly into the cabinet hopper, as overfilling may occur.** Overfilling will result in media carryover to the dust collector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

4.3 Media Unloading – Figure 9

4.3.1 To empty the cabinet and reclaimer of media, recover all media from the cabinet, turn OFF the exhauster and place an empty container under the metering valve manifold (or metering valves on 162 units). Unscrew the plastic plug, permitting media to flow into the container. If media does not flow, it has caked. Open the fill door and stir media until it starts to flow. Replace the plug when the reclaimer is empty.



BNP-162 Metering Valves



BNP-164/166 Metering Manifold

Figure 9

4.4 Loading and Unloading Parts

4.4.1 Loading parts

4.4.1.1 Open the cabinet door and pull the exhauster button switch to start the exhauster. Press the Barrel Jog button until the barrel-loading door is facing forward.

4.4.1.2 Unlatch the barrel-door clamps and remove the door.

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

4.4.1.4 Load parts through the barrel door. Do not overload the barrel. The following table shows maximum load capacity in weight and cubic feet.

MODEL	BNP-162	BNP-164	BNP-166
Max. volume	1 cuft	2 cuft	3 cuft
Max. weight	100 lbs	200 lbs	300 lbs

4.4.1.5 Check gun-rack blast angle, per Section 5.2.

4.4.1.6 Close the barrel door and latch it securely.

4.4.1.7 Close the cabinet door and make sure it is latched securely. Door interlock system will prevent blasting if door is not closed.

4.4.1.8 Start blasting, per Section 4.5.

4.4.2 Unloading parts

4.4.2.1 Blasting and barrel rotation stop when the timer cycle is complete.

4.4.2.2 Allow exhauster to run awhile before opening the door; do not turn off exhauster until parts are unloaded.

4.4.2.3 Press the Barrel Jog button until the barrel-loading door is facing forward, then completely remove the barrel door.

4.4.2.4 Unload parts through the barrel door or jog the barrel until parts empty into the parts tray.

4.4.2.5 Remove parts from the tray. The parts tray may be installed with the open end toward the front or back; place it to most easily handle the parts.

4.4.2.6 Reload the barrel or shut down the cabinet, per Section 4.6.

4.5 Blasting Operation

⚠ WARNING

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

- **Always close cabinet, reclaimer, and dust-collector doors before blasting. Keep all doors closed during blasting.**
- **After blasting, keep doors closed and exhauster on until the cabinet is clear of all airborne dust.**
- **Stop blasting immediately if dust leaks are detected.**

4.5.1 Slowly open the air supply to the cabinet. Check for air leaks on the initial startup and periodically thereafter.

4.5.2 Turn ON the exhauster by pulling the exhauster button.

4.5.3 Adjust the pilot-pressure regulator located on the upper-left side of the cabinet to the required blast pressure, per Section 5.1.

4.5.4 For variable speed electrical package only, set timer blast duration.

4.5.5 Start the blast cycle as follows:

Constant-Speed Electrical Package

1. Set timer for blast duration. Blasting begins when timer is set.

Variable-Speed Electrical Package

1. Set speed control.
2. Pull gun switch ON.
3. Pull sequence switch ON.

⚠ WARNING

Shut down the cabinet immediately if dust discharges from the cabinet or dust collector. Make sure that the dust-collector filter cartridge(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 risk vary with type of media and dust generated by blasting. Identify all material being removed by blasting and obtain a safety data sheet (SDS) for the blast media.

4.5.6 Check media flow, per Section 5.3.

4.6 Shutdown

4.6.1 Blasting and barrel rotation stop when the timer cycle is complete.

4.6.2 Unload parts, per Section 4.4.2.

4.6.3 Shut off the air-supply valve, bleed the air-supply line, drain the air filter and dust-collector pulse reservoir, and switch OFF the exhauster.

5.0 ADJUSTMENTS

5.1 Blasting Pressure (pilot regulator) – Figure 10

5.1.1 The pilot regulator, located on the upper-left side of the cabinet, enables the user to adjust blast pressure to suit the application. The suitable pressure for most purposes is about 80 psi. Lower pressures may be required on delicate substrates and will reduce media breakdown. Higher pressure may be required for difficult blasting jobs on durable substrates but will increase media breakdown. If pressure is too high, suction in media hose will decrease, and if high enough, cause blowback in the hose. In all cases, optimal production can only be achieved when pressure is carefully monitored.

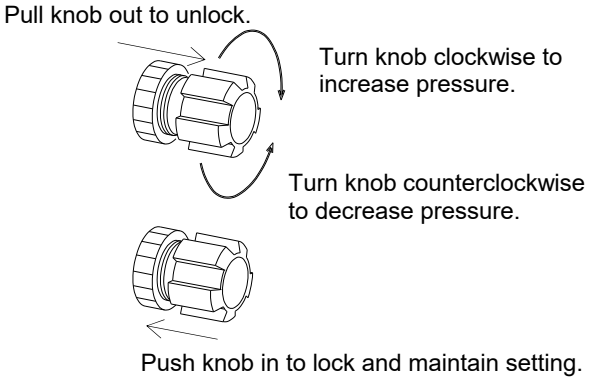


Figure 10

5.1.2 To adjust pressure, unlock the knob by pulling it out, as shown Figure 10, and then turn it clockwise to increase pressure or counterclockwise to decrease pressure. Pressure will usually drop from closed-line pressure when blasting starts. Once operating pressure is set, push the knob in to lock it and maintain the setting.

5.2 Gun-Rack Blast Angle – Figure 11

NOTICE

The gun rack must be adjusted to direct the blast stream toward the parts. If the rack is not correctly adjusted, the tumble barrel will wear prematurely and parts will require longer blast cycles.

5.2.1 Load parts into the barrel; close the barrel door; and jog the barrel until it has rotated one revolution. This places the parts at the angle in which they tumble.

5.2.2 Open the door and check the alignment of the guns by placing a dowel, pencil, or similar object into a nozzle.

5.2.3 If the guns do not point toward the center of the parts, loosen the three gun-rack hold-down brackets and rotate the rack until the nozzles point to the center of the parts.

5.2.4 Remove the dowel and tighten the hold-down brackets to maintain the setting.

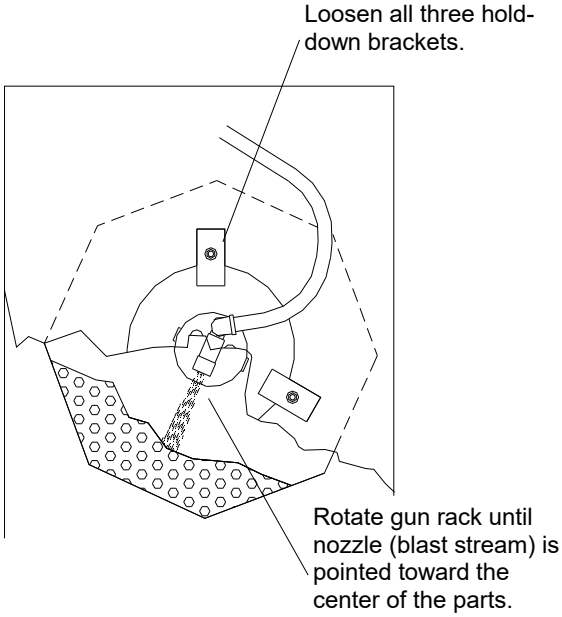


Figure 11

5.3 Media/Air Mixture – Figure 12

5.3.1 Media should flow smoothly and evenly through the hoses. Flow can be observed through the clear metering valve body.

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 12. This adjustment is a starting point.

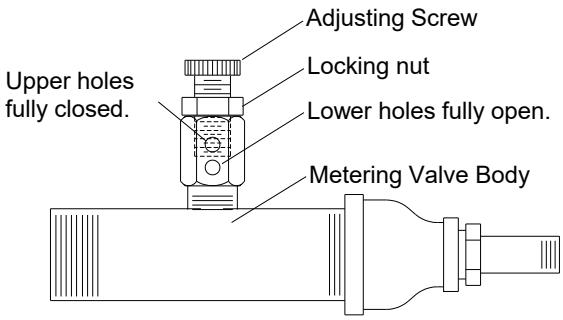


Figure 12

5.3.3 If pulsation occurs in the media hose, either media is damp and caked, or not enough air is entering the media stream. While blasting, loosen the locking nut and slowly turn the adjusting screw out (counterclockwise when viewed from the top) until the media flows smoothly. Tighten the locking nut finger-tight to maintain the setting.

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

5.4 Reclaimer Static Pressure

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 inline 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 RPH-2 Dust Collectors. If the damper is not opened far enough, the reclaimer will not remove fines, resulting in dusty media 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 5.10 for manometer operation. The following are static pressure starting points for given media. Static pressure may need to be lower with finer media, higher with coarser media. Run the media through several blast cycles allowing the reclaimer to function with these settings. Inspect the media in the reclaimer and fines in the dust collector, as noted in Paragraph 5.4.2. Continue adjusting static pressure until optimum media cleaning without carryover is attained.

Glass Bead No. 4 to 7 ..... 3" – 3-1/2"
Glass Bead No. 8 to 13 ..... 2-1/2" – 3"
Aluminum oxide 60 & coarser .....4" – 5"
Aluminum oxide 80 & finer ..... 2-1/2" – 3"

5.4.4 If the damper has been adjusted and carryover or excessive dust in the media continues, an optional adjustable vortex cylinder, (standard on pull-thru reclaimers), may help retain media. This option is usually required only when using media 180-mesh and finer media, or lightweight media. See Section 5.5 and reclaimer accessories in Section 9.11 (600 cfm) or 9.12 (900 cfm).

5.5 Optional Externally-Adjustable Vortex Cylinder Figure 13 – 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 13) 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 this causes abnormally high static pressure.

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

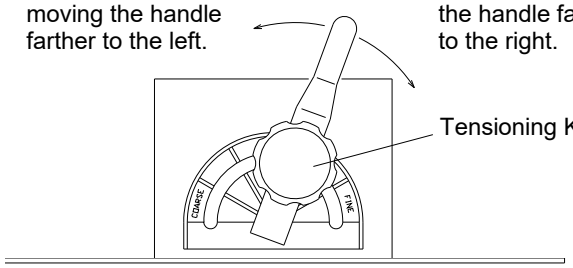


Figure 13

5.6 Door Interlocks – Figure 14

⚠ WARNING

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

5.6.1 The door interlock disables the blasting control circuit when the door is open. To enable blasting, the door-interlock switch must be engaged when the door is closed. The interlock is set at the factory and does not usually require field adjustment unless parts are replaced. When adjustment is required, proceed as follows.

5.6.2 Close cabinet door.

5.6.3 Loosen the actuator bracket screws and adjusting screw nut. Move the actuator bracket up or down, and the adjusting screw sideways, to center the adjusting screw on the switch button. Tighten the bracket screws.

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

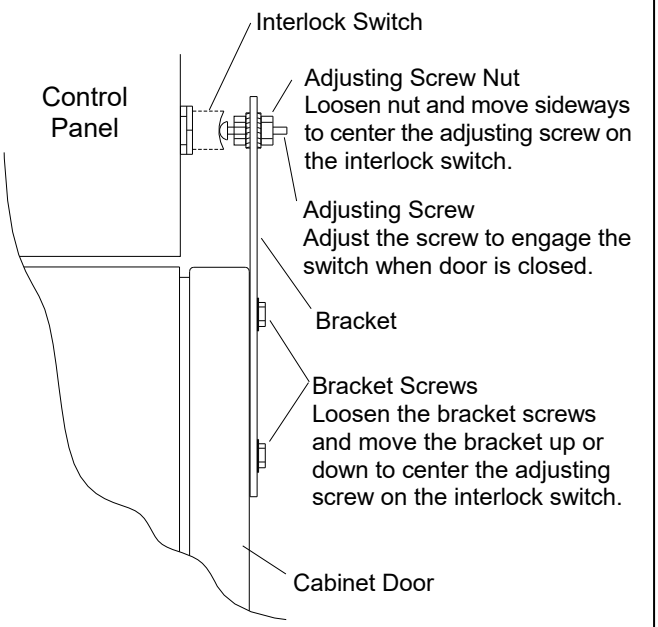


Figure 14

5.6.5 Test the operation with the door open only enough to disengage the interlock switch and then with the door closed. The interlock should stop the blasting when the door is opened and permit blasting when the door is closed. NOTE: Negative pressure inside the cabinet may cause the door to flex inward. Tests should be performed with the exhauster running.

5.7 Tumble-Barrel Slide Doors – Figure 15

5.7.1 The barrel must retain an amount of media to cushion parts as they tumble. The two slide doors control the amount of media retained in the barrel.

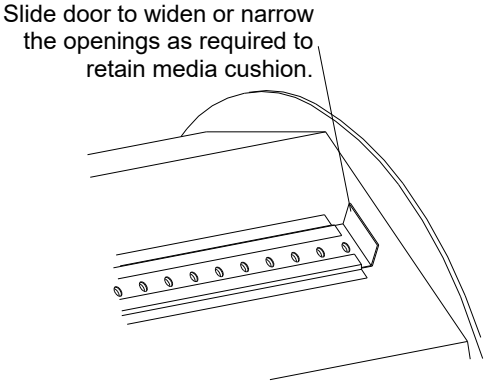


Figure 15

5.7.2 How far the slide doors are open depends on the parts and media size. Begin with the door set to allow a small amount of media to fall through the holes as the barrel turns.

5.7.3 After a short blast cycle, open the barrel-loading door to see how much media is retained in the barrel and if the parts are nicked from part-on-part impingement. Adjust the opening size accordingly.

5.8 Timer – Blast Duration

Refer to Section 4.1.1 for constant-speed controls.

Refer to Section 4.1.2 for variable-speed controls.

5.8.1 Set the timer for the duration of the blast cycle. Blasting automatically stops when the timer times out. Trial and error will determine the timer setting for the most favorable results. After the part is correctly processed, make a note of the total blast time for future runs of similar parts.

5.8.2 Timers in constant-speed electrical panels require resetting after each cycle. The variable-speed timer does not require resetting unless the blasting duration changes.

5.9 Speed Control, **Barrel**: Refer to Section 4.1.2. Available with variable-speed electrical package only.

5.9.1 Set the speed control to rotate the barrel for optimum speed for processing the parts. Trial and error will determine the optimum speed setting. If multiple types of parts are processed using different speeds, make a note of the speed for future runs of similar parts.

5.10 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 5.10.6.3. 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.

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

5.10.2 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.

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

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

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

5.10.6 Needle placement: Figure 16 shows the manometer setup for taking both periodic and frequent static pressure readings.

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

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

5.10.6.3 Taking frequent readings using a permanent fitting: For taking frequent static pressure readings a permanent fitting may be installed in the reclaimer wall, as shown in Figure 16. 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.

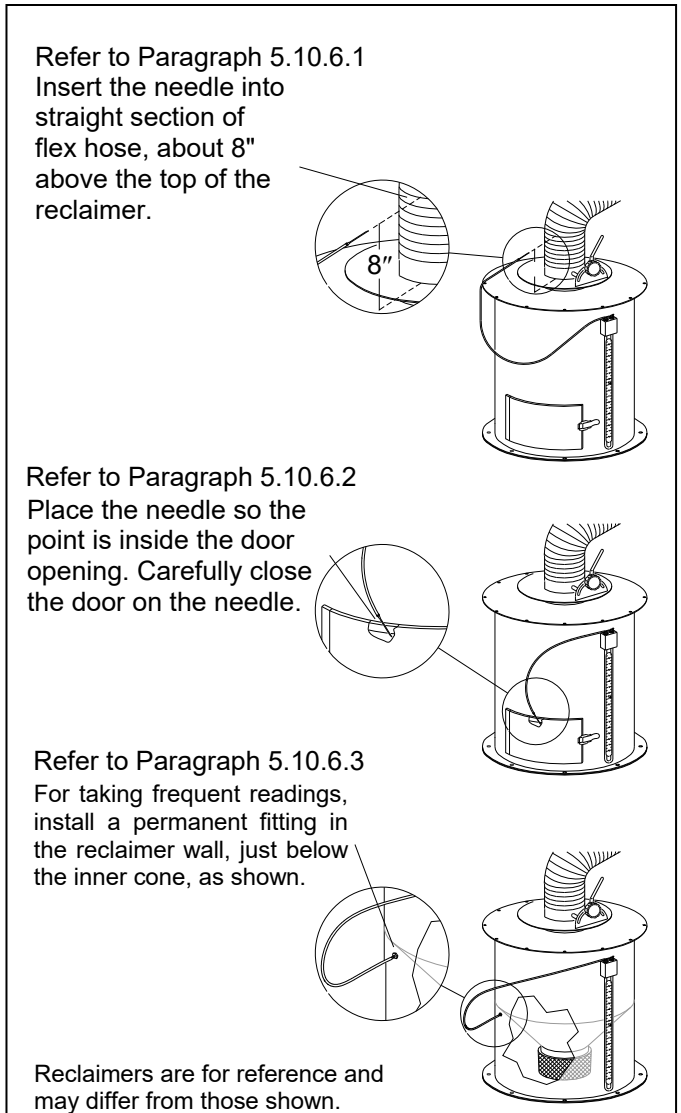


Figure 16

5.10.7 Adjust the slide rule to align the zero with the fluid level. Refer to Figure 17.

5.10.8 Turn the exhauster ON. The negative (static) pressure will move fluid in the tube.
NOTE: Readings must be taken with the cabinet door open and with the exhauster running.

5.10.9 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 17.

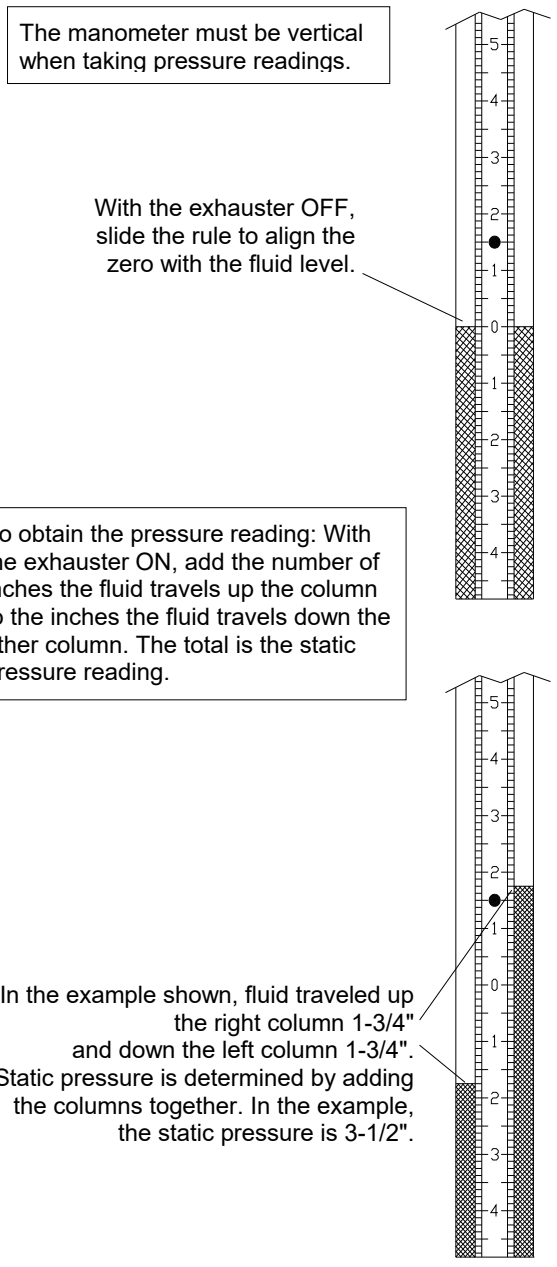


Figure 17

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

6.0 PREVENTIVE MAINTENANCE

⚠ WARNING

Failure to wear an approved respirator and personal protection when servicing dust-laden areas of the cabinet and dust collector, as well as when emptying the container, can result in lung disease, serious skin or eye irritation, or other health issues. Toxicity and health 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 guns and nozzles, media hose, flex hose, wear plate, and all items covered in this section. Adjust frequency of inspections as needed, based on:

- Usage: Cabinets often used 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.

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 Compressed-air filter: Empty the compressed-air filter drain container. The cabinet is equipped with an auto-drain air filter. By inserting a short length of 3/8" O.D. tubing into the automatic drain at the bottom of the filter and placing the other end into a pail, the filter automatically drains the water into the pail. Empty the

pail at least daily and while it is manageable. 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 intervals based on filling rate.

6.2 Daily Inspection During Blasting – 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 Section 6.2.4 for additional pulsing.

6.2.2 Check exhaust air for dust: Dust discharge at the 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 Additional 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 gun assembly: Inspect nozzles and gun bodies for wear, as noted in Section 7.1, Replace nozzle when orifice diameter is worn 1/16" larger than original size or when suction diminishes noticeably.

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

6.4 Weekly Inspection During Blasting – 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 wear plate per Section 7.5 or rubber liners per Section 7.6, as necessary.

6.5.2 Barrel liners: Inspect the barrel liners for wear. Replace the liners as soon as the rubber is worn to the metal substrate

6.6 Reverse-Pulse Dust Collector

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

7.0 SERVICE MAINTENANCE

⚠ WARNING

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

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

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

7.1 Gun and Nozzle Assembly – Figure 18
Refer to Section 9.4 for replacement parts.

7.1.1 Remove the air-supply hose from the gun rack by unscrewing the swivel fitting from the adaptor.

7.1.2 Release the two gun-rack latches and pull the manifold and gun assembly out of the gun chamber.

7.1.3 Remove the media hose from the gun by pulling the hose off the 1/4" NPT nipple.

7.1.4 Unscrew the gun assembly from the manifold. Be careful not to misplace the O-ring and orifice, as they may be loose when the gun is removed.

7.1.5 Remove the orifice and O-ring if they are still in the gun body.

7.1.6 Unscrew the nozzle-holding nut from the gun and pull the nozzle from the gun.

7.1.7 Inspect the gun body, nozzle, orifice, O-ring, and 1/4" NPT nipple for wear. Replace any that are worn or damaged. Replace the nozzle when its diameter has increased by 1/16" or when suction diminishes noticeably in the media hose.

7.1.8 Insert a new nozzle, making sure the tapered end faces toward the orifice, as shown Figure 18. Screw the holding nut onto the gun to secure the nozzle.

7.1.9 To prevent thread galling, make sure the manifold and gun-body threads are clean before reassembling in reverse order and connecting the gun assembly to the manifold.

7.1.10 Slide the manifold assembly into the gun chamber and secure both latches.

7.1.11 Reconnect the air hose to the rack.

7.2 Media Hoses

7.2.1 To avoid unscheduled downtime, periodically inspect the media hose for thin spots by pinching it every 6 to 12 inches.

7.2.2 Remove the manifold and gun assembly, per Section 7.1, to replace media hose.

7.3 Gear Reducer

⚠ WARNING

Lockout and tagout electrical power before continuing. Risk of severe injury to limbs and body is present when the drive guard is removed and the drive mechanism unexpectedly starts.

7.3.1 Inspect lubricant level monthly as follows.

7.3.2 Lockout and tagout electrical power and remove the drive guard.

7.3.3 Unless stated otherwise in the instructions supplied with the gear reducer, and included with the cabinet, the lubricant should be changed after the first 100 hours of operation. Thereafter, lubricant should be changed at least every 6 months or 2500 hours of operation, whichever occurs first.

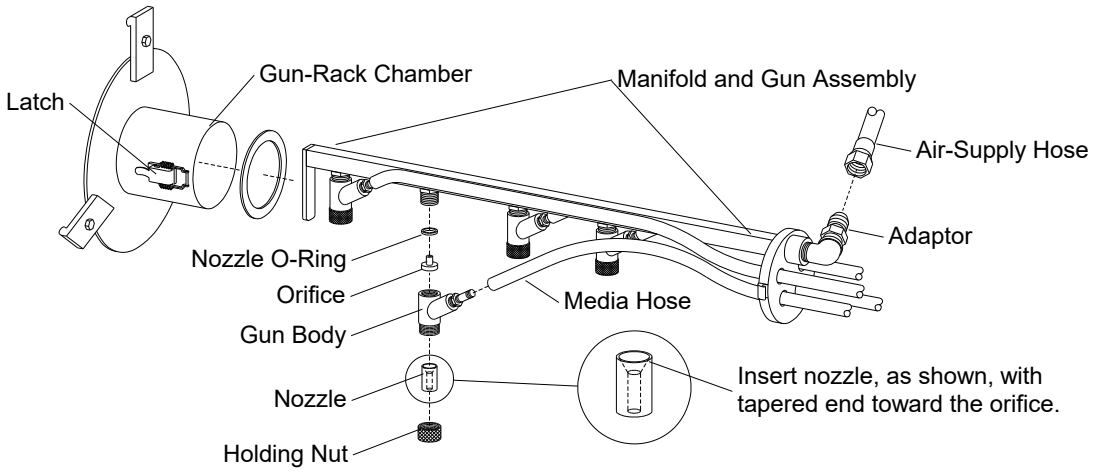


Figure 18

7.3.4 Recommended lubricant

7.3.4.1 Follow the instructions supplied with the gear reducer. Reducers are initially filled with Chevron Ultra Lubricant ISO 460. After flushing, refill with equivalent or synthetic, as noted in the instructions supplied with the gear reducer.

7.3.5 Changing Lubricant

7.3.5.1 Drain initial oil and flush the gear case with an approved nonflammable, nontoxic solvent, such as Whitmore's Flushing Oil 06802030, Medallion Flushing Oil Kosher 06812010, or equal. Refill with an approved lubricant.

7.4 Bearing Lubrication

⚠ WARNING

Lockout and tagout electrical power before continuing. Risk of severe injury to limbs and body is present when the drive guard is removed and the drive mechanism unexpectedly starts.

7.4.1 Every 40 hours of operation, lubricate the four flange bearings with a good quality general purpose bearing grease.

7.5 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 cfm 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.

7.5.1 Replace wear plate in reclaimer with welded-on, nonremovable top, 300 cfm – Figure 19

Refer to Section 7.5.2 to replace the wear plate in reclaimer with bolt-on, removable top.

7.5.1.1 Remove the reclaimer inlet-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 from the reclaimer inlet.

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

7.5.1.3 Angle the new wear plate into the reclaimer inlet until it is in position with the straight end at 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 and that the top edge is even with the top of the reclaimer.

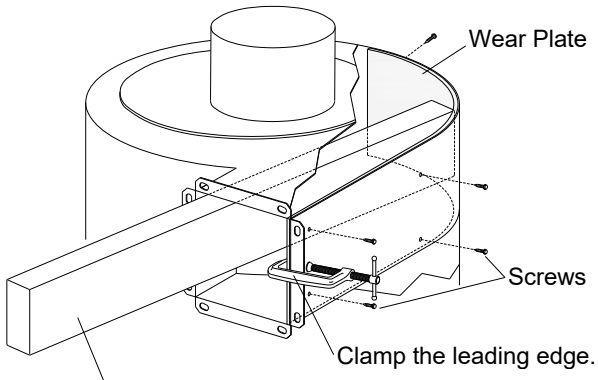


Figure 19

7.5.1.4 Install the front two sheet metal screws through the old screw holes to secure.

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

7.5.1.6 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.

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

7.5.1.8 Reattach the inlet adaptor pipe, replacing the gasket if worn, compressed, or otherwise damaged.

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

7.5.2 Replace wear plate in reclaimer with bolt-on, removable top, 600 cfm and 900 cfm – Figure 20

Refer to Section 7.5.1 to replace the wear plate in reclaimer with welded-on, nonremovable top.

7.5.2.1 Unbolt the reclaimer top and then remove the top, the inlet 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 from the reclaimer inlet.

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

7.5.2.3 Insert the new wear plate into reclaimer inlet until it is in position with the straight end at the reclaimer 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.

7.5.2.4 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 screws through the old holes.

7.5.2.5 Reattach the reclaimer top.

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

7.5.2.7 Reattach the inlet adaptor pipe, replacing the gasket if worn, compressed, or otherwise damaged.

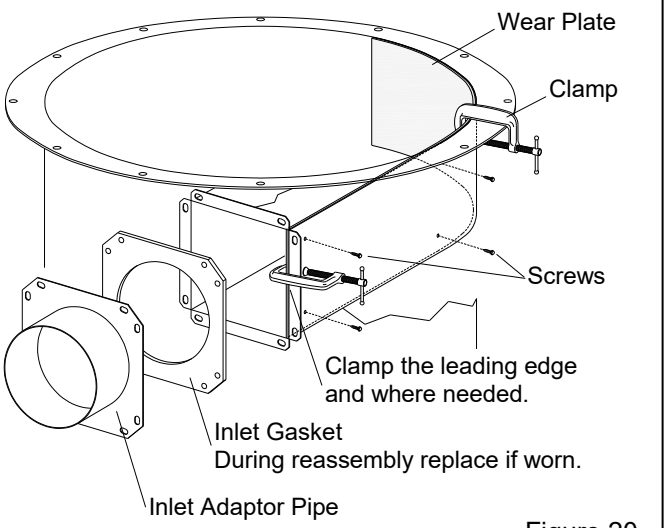


Figure 20

7.6 Replacing or Field Installing Optional Rubber Reclaimer Liners – Figure 21

Not available for 300 cfm reclaimers.

The reclaimer must be designed to accept liners and have a removable top, as shown in Figure 21. **NOTE: The following instructions are to replace existing liners or field installing new liners into modular style 600 cfm and 900 cfm reclaimers only. Modular reclaimers have an upper and lower flange and have a removable top and bottom hopper. 600 cfm modular reclaimers are provided since 09/01/2018 and are mounted to the back of the cabinet using two angle brackets, as shown in Figure 30 – 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 N0. 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.

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

⚠ 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.

7.6.2 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. Set the hopper aside.

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.

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

7.6.4 Remove the reclaimer inlet-pipe adaptor.

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

7.6.6 If the reclaimer is currently unlined, begin at the installation note preceding Paragraph 7.6.12.

7.6.7 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, and then slide the cylinder liner and top liner off the inner tube.

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

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

7.6.10 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.

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

7.6.12 Remove all old caulking and adhesive from the weldment.

Installation Note: The numbers in parentheses (-) shown in Figure 21 and 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.

7.6.13 (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 N0. 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.

7.6.14 (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.

7.6.15 (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.

7.6.16 (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.

7.6.17 (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.

7.6.18 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.

7.6.19 (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.

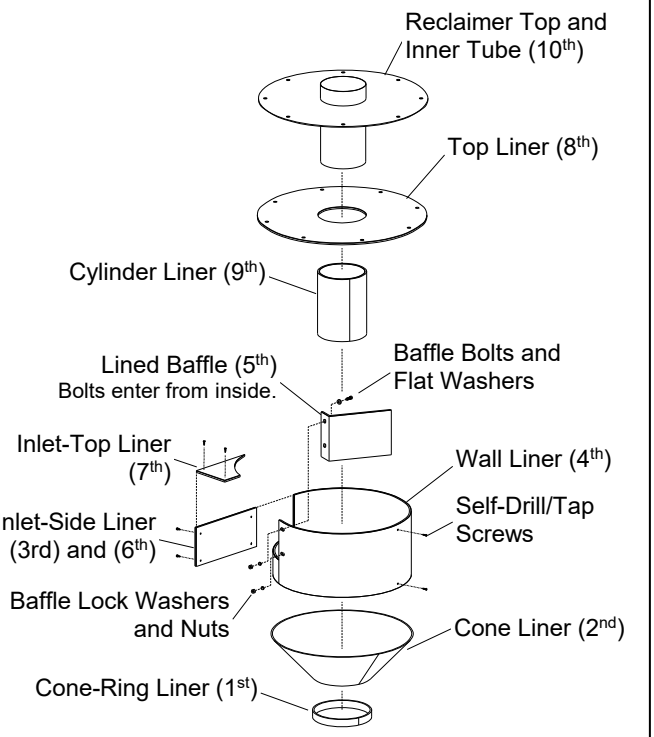


Figure 21

7.6.20 (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.

7.6.21 (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.

7.6.22 (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.

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

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

7.6.25 (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.

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

7.6.27 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.

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

7.6.29 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.

7.6.30 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

7.6.31 Install flex hoses.

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

7.7 Removing or Replacing the Reclaimer Inlet Baffle – Figure 22

600 and 900 cfm reclaimers only with bolt-on tops; 300 cfm baffle is not removable.

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).
- 600 cfm requires 6 feet for each flange.
- 900 cfm requires 7 feet 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).

7.7.1 Remove the flex hose from the reclaimer top.

7.7.2 Remove the fasteners securing the reclaimer top and remove the top.

7.7.3 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.

7.7.4 Remove all caulking residue.

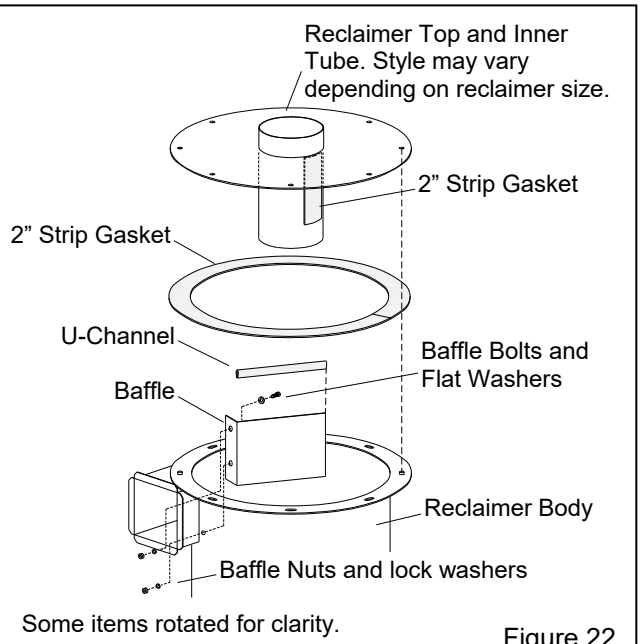


Figure 22

7.7.5 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 7.7.6.

7.7.6 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.

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

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

7.8 Reverse-Pulse Dust Collector

Optional reverse-pulse dust collectors are covered by a separate manual.

8.0 TROUBLESHOOTING

⚠ WARNING

To avoid serious injury, observe the following when troubleshooting.

- **Turn off the compressed-air supply and electrical power, and lockout and tagout the air and power supply:**
- **When checking the controls require air or power, always enlist the aid of another person to:**
  - **Man the air and power supply. Immediately shut off air and power in case of emergency.**
  - **All electrical work and any work done inside a control panel must be done by a licensed electrician and comply with codes.**
- **Follow all OSHA regulations, including lockout and tagout procedures.**

8.1 Abnormally high media consumption

8.1.1 Door on reclaimer open, or improperly fitted or worn door gasket. Air entering the reclaimer at this point will cause media to be carried into the dust collector. DO NOT operate unless all doors are closed.

8.1.2 Dust-collector outlet damper open too far. Adjust static pressure, per Section 5.4.

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

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

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

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

8.1.7 If using media finer than 180-mesh, the inlet baffle of the reclaimer may need to be removed. Refer to Section 1.9.6.

8.1.8 Optional externally-adjustable vortex cylinder out of adjustment. Adjust per Section 5.5.

8.2 Reduction in blast cleaning rate

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

8.2.2 Media/air mixture out of adjustment. Adjust metering valve, per Section 5.3.

8.2.3 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.

8.2.4 Blockage in media hose(s) or gun(s). 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.

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

8.2.6 Worn media hose. Check hoses for leaks and soft spots. Replace worn or damaged hose.

8.2.7 Moist media. Frequent bridges or blockage in the area of the metering valve can be caused by moisture. See Section 8.4.

8.3 Plugged nozzle

8.3.1 A damaged or missing reclaimer screen will allow large particles to pass and block nozzles. Replace or reinstall screen as necessary.

8.3.2 Media mixture too rich. Adjust media/air mixture, per Section 5.3.

8.4 Media bridging

8.4.1 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 line, or from absorption from ambient air.

8.4.2 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.

8.4.3 Moist compressed air may be due to a faulty compressor that overheats or that 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.

8.4.4 Absorption. Some media tends to absorb moisture from the air, especially fine-mesh media in high humidity areas. Empty the media and store it in an airtight container when cabinet is not in use.

8.4.5 A vibrator attached to the reclaimer cone or media metering valve may help prevent bridging of fine-mesh media. NOTE: To avoid the possibility of compressing media, a vibrator should be set up to start only during the blast cycle.

8.5 No media or air comes out the nozzle during blast cycle

8.5.1 Door interlocks not engaging. Check adjustment, per Section 5.6.

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

8.5.3 Make sure that the air compressor is on and air-supply valves are open.

8.5.4 Blast gun switch turned OFF (variable-speed controls only). Check position of blast gun switch.

8.5.5 Electrical malfunction: Check of electrical functions by qualified electrician. Refer to the schematic stowed inside the electrical panel.

8.6 Blockage in media hose

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

8.6.2 Wet or damp media. Refer to Section 8.4.

8.7 Media surge

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

8.8 Poor suction in media hose

8.8.1 Inadequate air supply. Compare air supply with cfm table in Figures 4. Compare size of air-supply line with sizes recommended in Section 2.4.

8.8.2 Nozzles worn. Replace if worn 1/16" or more.

8.8.3 Blockage in media hose or nozzle. Refer to Section 8.4.

8.8.4 Blast pressure too high. Adjust blast pressure, per to Section 5.1.

8.8.5 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.

8.10 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.

8.10.1 Exhauster motor not operating. Check voltage to motor and motor wiring.

8.10.2 Exhauster motor rotating backwards. The motor should rotate, as indicated by the arrow on the exhauster housing. If it does not rotate in the proper direction, **lockout** and **tagout** electrical power and switch the motor leads, as shown on the motor plate. Refer to Section 2.6.4 and the system's wiring schematic.

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

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

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

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

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

8.11 Static shocks

8.11.1 Cabinet not grounded. Abrasive blasting generates static electricity. The cabinet must be grounded to prevent static build up. Refer to Section 2.5.

8.12 Dust leaking from the cabinet enclosure

8.12.1 Damaged door gaskets. Inspect and replace damaged gaskets.

8.12.2 Refer to Section 8.10.

8.13 Dust leaking from dust collector

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

8.13.2 Damaged or loose filter cartridge(s). Inspect filters and tighten or replace as needed.

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

9.0 ACCESSORIES and REPLACEMENT PARTS

9.1 Optional Accessories

Lock pins (pkg. of 25) for twist-on hose couplings . 11203

Safety cable,
- for 1-1/2" to 3" OD hose 15013
- for 1-1/2" to 4" OD hose 27405

Manometer kit 12528

Rubber reclaimer liners, reclaimer must be designed to accept liners and have a bolt-on removable top plate.
- 600 cfm reclaimer 29541
- 900 cfm reclaimer 23151

Nozzles
- ceramic No. 5, ... 11930
- tungsten carbide, No. 5 13118
- boron carbide, No. 5 (standard) 11935

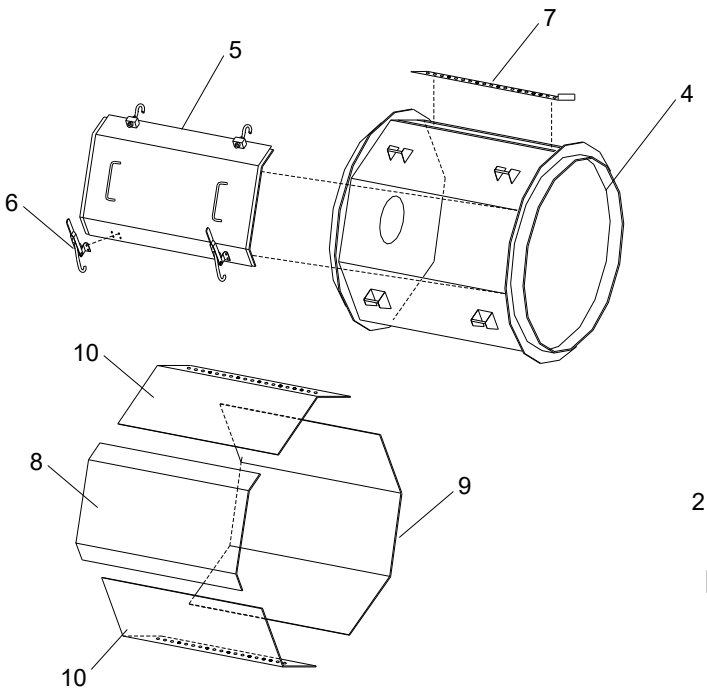
Barrel divider kit, field installed 22332

9.2 Electrical Components

Refer to the electrical schematic packed in the control panel for electrical replacement parts.

9.3 Cabinet and Barrel Assembly – Figure 23

Item	Description	Stock No.
1.	Gasket, door, 5/16" x 1" adhesive backed	
	162, 24 feet required	00187
	164, 26 feet required	00187
	166, 30 feet required	00187
2.	Parts tray	
	for 162	14422
	for 164	14417
	for 166	14423
3.	Latch, door	11875
4.	Barrel assembly w/inserts, includes items 9 and 10, does not include item 8 or door	
	for 162	13010
	for 164	12228
	for 166	12229
5.	Door assembly, tumble barrel w/clamps	
	for 162	12246
	for 164	12247
	for 166	12248
6.	Clamp, barrel door	11580
7.	Slide door kit	
	for 162	20593
	for 164	20594
	for 166	20595
8.	Insert, door liner	
	for 162	11681
	for 164	11680
	for 166	11682
9.	Insert, 3-panel liner	
	for 162	11857
	for 164	11860
	for 166	11861
10.	Insert, 2-panel w/slide holes, 2 required	
	for 162	11858
	for 164	11859
	for 166	11862



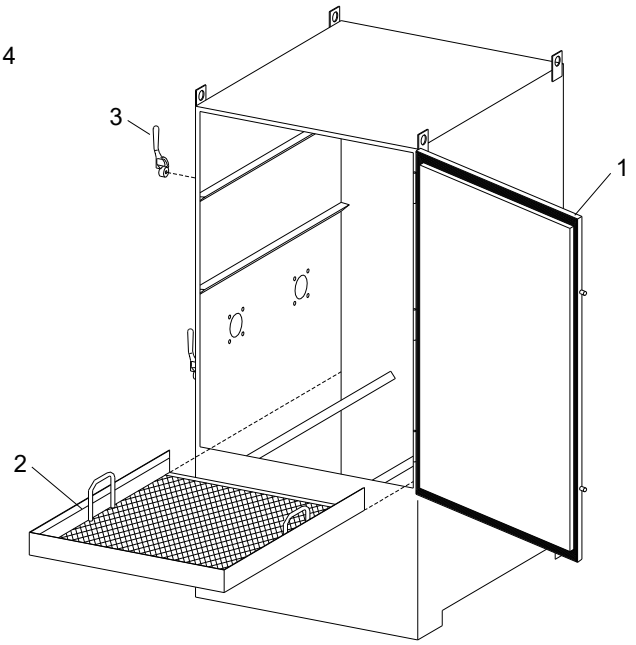


Figure 23

9.4 Gun and Rack Assembly – Figure 24

Item	Description	Stock No.
1.	Nut, nozzle holding, knurled brass	11914
2.	Body, gun	12267
3.	Air jet	
	No. 4, 1/8" orifice (use with limited air)	11951
	No. 5, 5/32" orifice (standard)	11952
4.	Nozzle	
	ceramic No. 5,	11930
	tungsten carbide, No. 5	13118
	boron carbide, No. 5 (standard)	11935
5.	Washer	04396
6.	Bushing, 3/8" x 1/4"	12818
7.	Nipple, 1/4" x 1" toe	11912
8.	Hose, 1/2" black media,	
	10 ft required per gun	12471
9.	Chamber, gun rack	
	for 162	13861
	for 164	13062
	for 166	14420
10.	Gasket, gun-rack chamber	23479
11.	Air manifold, gun rack	
	for 162	13862
	for 164	14419
	for 166	14421
12.	Gasket, air manifold	11744
13.	Adaptor, 1" male NPT x 1" male flare	11720
14.	Latch assembly, spring	12263
15.	Hose assembly, 1" x 32" coupled	22864

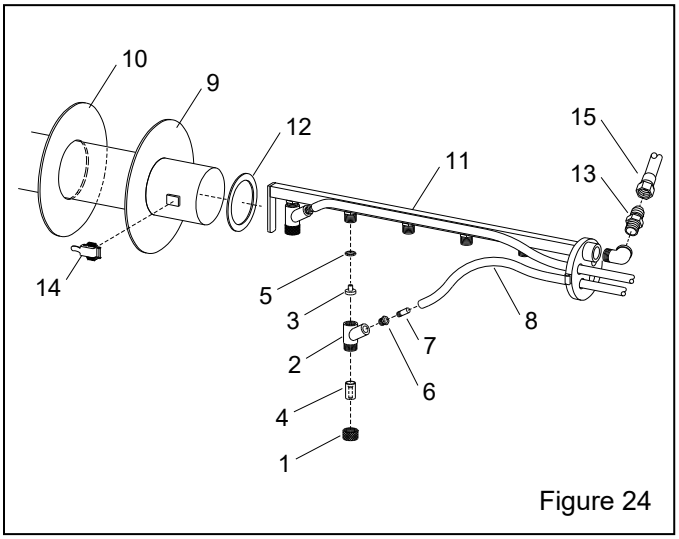


Figure 24

9.5 Drive Mechanism – Figure 25

Item	Description	Stock No.
1.	Wheel, barrel drive	12217
2.	Bearing, flange	11519
3.	Chain, #40 roller	
	7 feet required, cut to fit	12430
4.	Shaft, wheel	
	for 162	12075
	for 164	12076
	for 166	12077
5.	Sprocket, 15 tooth, used on gear drive	12101
6.	Gear reducer	12026
7.	Sprocket, 24 tooth (for variable speed)	13090
8.	Bushing, constant speed sprocket	11556
9.	Sprocket, 60 tooth (for constant speed)	12102
10.	Motor, 3/4 HP variable speed DC	11903
11.	Motor, constant speed	
	1/2-HP, 3-PH, for 162	12311
	3/4-HP, 3-PH, for 164 and 166	13373

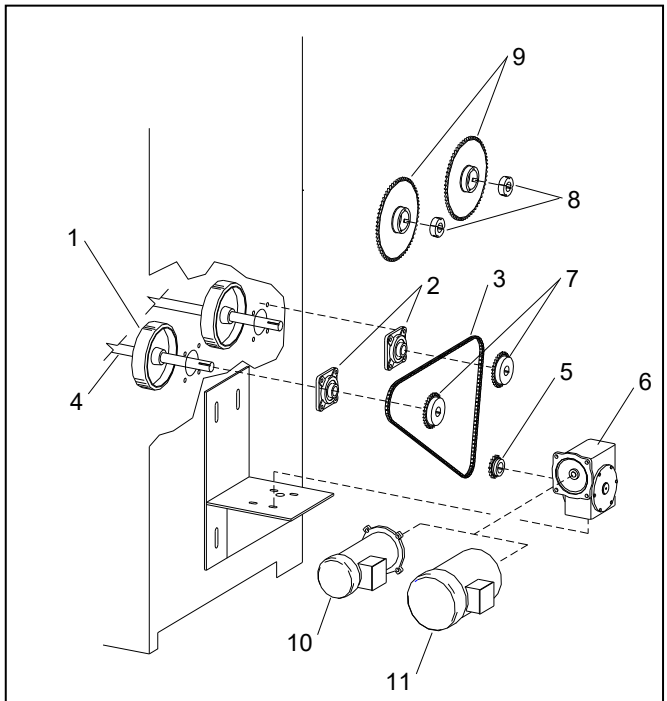
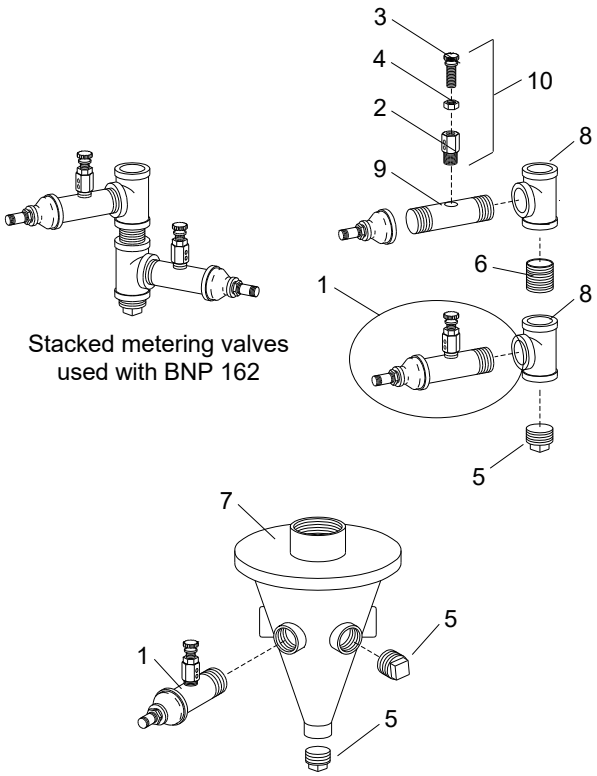


Figure 25

9.6 Media-Metering Assemblies – Figure 26

Item	Description	Stock No.
1.	Metering valve assembly, Lexan	12420
2.	Stem, metering adjusting	23097
3.	Screw, adjusting	23098
4.	Nut, adjusting stem lock	23099
5.	Plug, 1" plastic	12011
6.	Nipple, 1" x close	01701
7.	Manifold, six outlet metering valve	12322
8.	Tee, 1" pipe	01789
9.	Body, Lexan metering valve	11534
10.	Metering stem assembly	23889



Stacked metering valves used with BNP 162

Manifold used with BNP 164 and 166. Plug unused ports.

Figure 26

9.7 Plumbing Assembly – Figure 27

Item	Description	Stock No.
1.	Filter, air with auto drain	
	1" for 162 and 164	22425
	1-1/2" for 166	22364
2.	Regulator, 1/4" pilot w/gauge	12050
3.	Gauge, 1/8" cbm, replacement	01908
4.	Bushing, 1/4" x 1/8" brass	02010
5.	Adaptor, elbow, 1/4" MNPT x 1/4 tube	11738
6.	Tubing, 1/4", 1 ft required	12480
7.	Solenoid, 1/4", 3-way	12199
8.	Regulator, pilot operated with gauge	
	1", for 162 and 164	12052
	1-1/2", for 166	12051
9.	Hose assembly, 1" x 32" coupled	22864
10.	Adaptor, 1" male NPT x 1" male flare	11720
11.	U-bolt with nuts	
	5/16" x 1-3/4" for 162 and 164,	11530
	3/8" x 2" for 166,	10205
12.	Nipple, 1/4" brass hex	02808

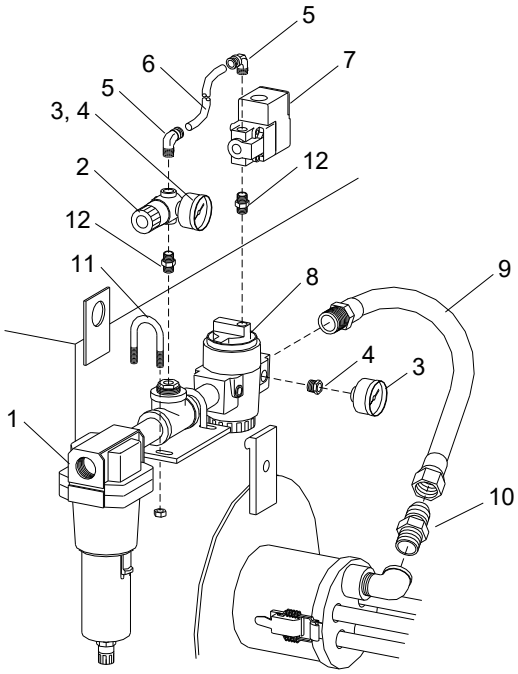


Figure 27

9.8 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.

NOTE: An externally-adjustable vortex cylinder is optional when cabinet is provided with a CDC-1 Dust Collector; it is standard when cabinet is provided with an RPC-2 or RPH-2 Dust Collector.

Reclaimer Assemblies for BNP-162

	Description	Stock No.
(-)	300 cfm pull-thru reclaimer with outlet pipe adaptor	28965
	600 cfm pull-thru reclaimer w/ 1" cone outlet	
	with outlet pipe adaptor	29506
	with external adjustable vortex	29500

Reclaimer Assemblies for BNP-164

	Description	Stock No.
(-)	600 cfm pull-thru reclaimer w/ 2" cone outlet	
	with exhauster outlet pipe adaptor	29027
	w/external adjustable vortex	29028
(-)	900 cfm pull-thru reclaimer	
	with outlet pipe adaptor	28967
	with external adjustable vortex	21305

Reclaimer Assemblies for BNP-166

Reclaimer for BNP-166 is the same as the 900 cfm reclaimer used with the BNP-164, except **reclaimers used with a 166 must use a 24030 extension.** If an extension is needed, refer to Page 32 – Figure 31, Item 24, and order the extension and 14 ft of 1/8" x 2" adhesive backed gasket, Stock No. 13089, in addition to the reclaimer.

	Description	Stock No.
(-)	900 cfm pull-thru reclaimer	
	with outlet pipe adaptor	28967
	with external adjustable vortex	21305

9.9 Reclaimer Liners – Figure 28

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

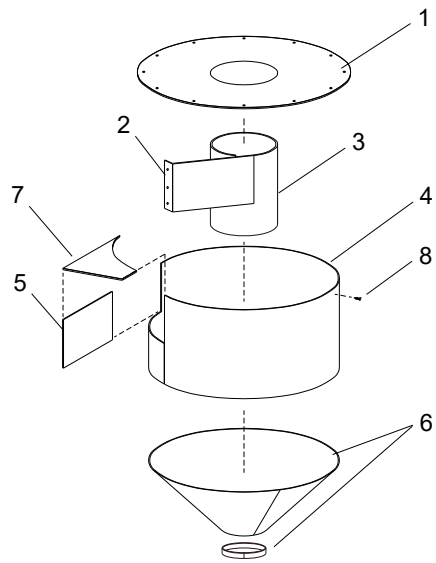
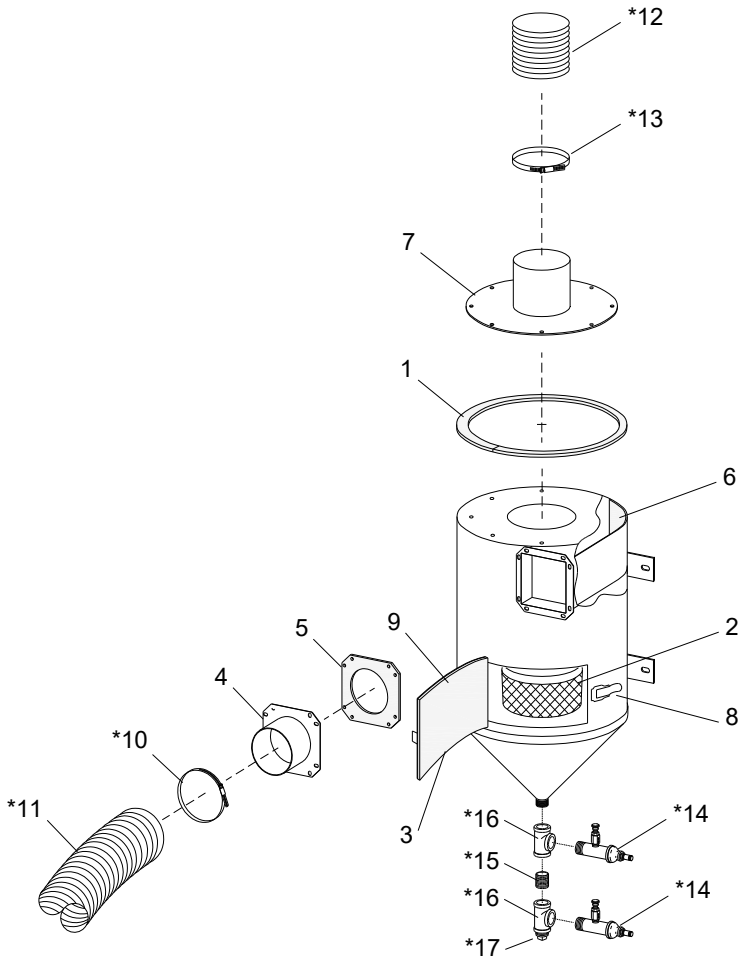


Figure 28

9.10 300 CFM Reclaimer Replacement Parts Figure 29

Item	Description	Stock No.
1.	Gasket, 5/16" x 1" adhesive-backed, per foot, 3- ft feet required	00187
2.	Screen assembly, 8-mesh	21265
3.	Gasket, reclaimer door	11745
4.	Inlet-pipe adaptor, 4"	12365
5.	Gasket, inlet adaptor, 300 cfm 4"	11746
6.	Wear plate, 300 cfm w/mounting screws	14060
7.	Adaptor, outlet pipe, 5" - 300 cfm	18475
8.	Spring latch assembly	12263
9.	Door assembly, w/gasket and latch	14271
*10.	Clamp, 4-1/2" for 4" hose	11577
*11.	Hose, 4" ID heavy lined flex, 15 ft lengths only	12473
*12.	Hose, unlined flex, per foot, specify length 5" ID	12449
*13.	Clamp, 5-1/2", for 5" ID hose	11578
*14.	Metering valve assembly, Lexan	12420
*15.	Nipple, 1" x close	01701
*16.	Tee, 1" pipe	01789
*17.	Plug, 1" plastic	12011



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

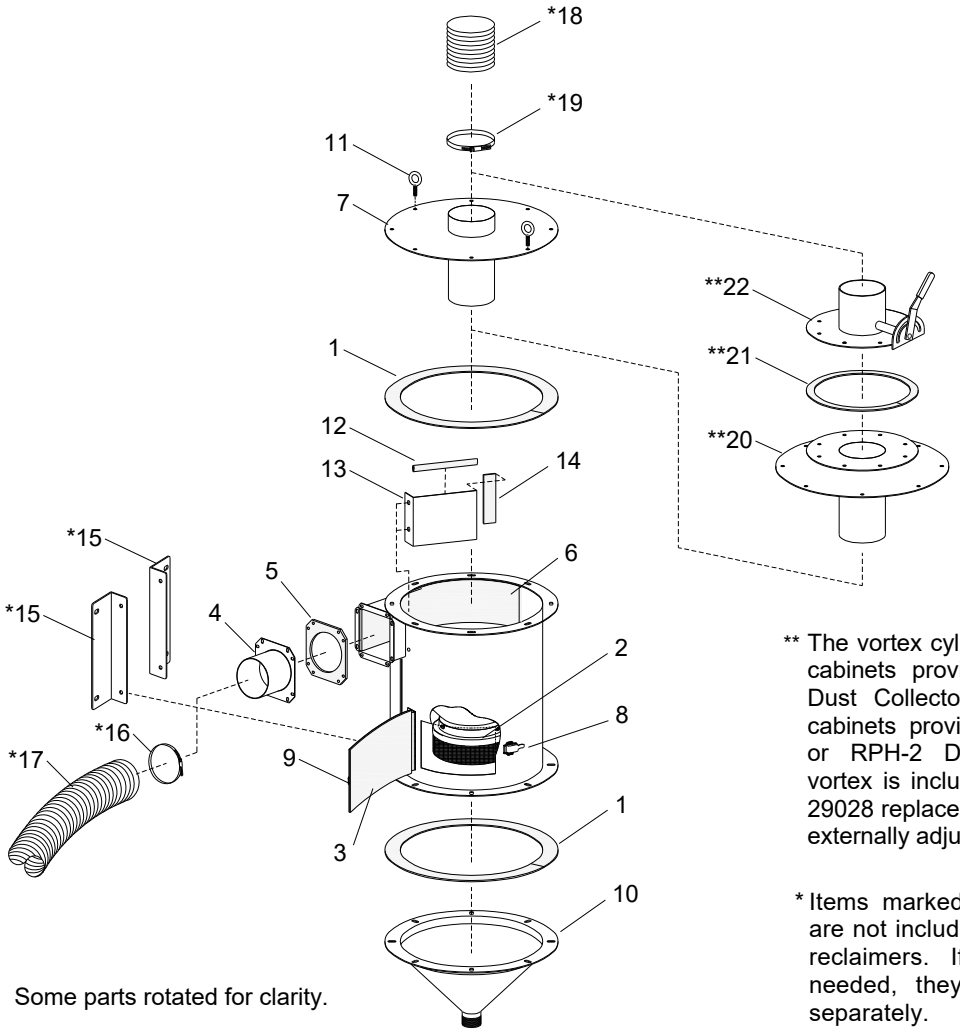
Some parts rotated for clarity.

300 CFM RECLAIMER

Figure 29

9.11 600 CFM Modular Reclaimer Replacement Parts – Figure 30

Item	Description	Stock No.
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"	12361
5.	Gasket, inlet adaptor, 5" 600 cfm, all current modular reclaimers and nonlined prior to 09/2018	11779
	600 rubber lined recl prior to 09/2018	29631
6.	Wear plate, 600 cfm w/mounting screws	29542
7.	Top plate, modular pull thru w/outlet pipe	29538
8.	Spring latch assembly	12263
9.	Door assembly, w/gasket and latch	14271
10.	Hopper, 600 cfm modular suction with 1" outlet, used with BNP-162	21650
	with 2" outlet, used with BNP-164	29509
11.	Eyebolt 3/8-NC	00430
12.	U-channel, 3/8, 1-foot required	04076
13.	Baffle, 600 modular	29524
14.	Gasket, 1/8" x 2" adhesive-backed, per foot, 1 foot required at this location	13089
*15.	Bracket, modular reclaimer mount, each	29529
`*16	Clamp, hose 5-1/2", for 5" ID hose	11578
*17.	Hose, 5" ID heavy lined flex, 15 ft lengths only	12465
*18.	Hose, unlined flex, per foot, specify length 6" ID for 600 cfm	12452
*19.	Clamp, 6-1/2", for 6" ID hose	00750
**20.	Top plate, modular w/exhaust /flange	29487
**21	Gasket, 5/16" x 1" adhesive-backed, per foot 4-feet required.	00187
**22.	Vortex cylinder, pull thru 600 modular	29510



Some parts rotated for clarity.

** The vortex cylinder is optional with cabinets provided with a CDC-1 Dust Collector, but standard on cabinets provided with an RPC-2 or RPH-2 Dust Collector. The vortex is included with 29500 and 29028 replacement reclaimers with externally adjustable vortex.

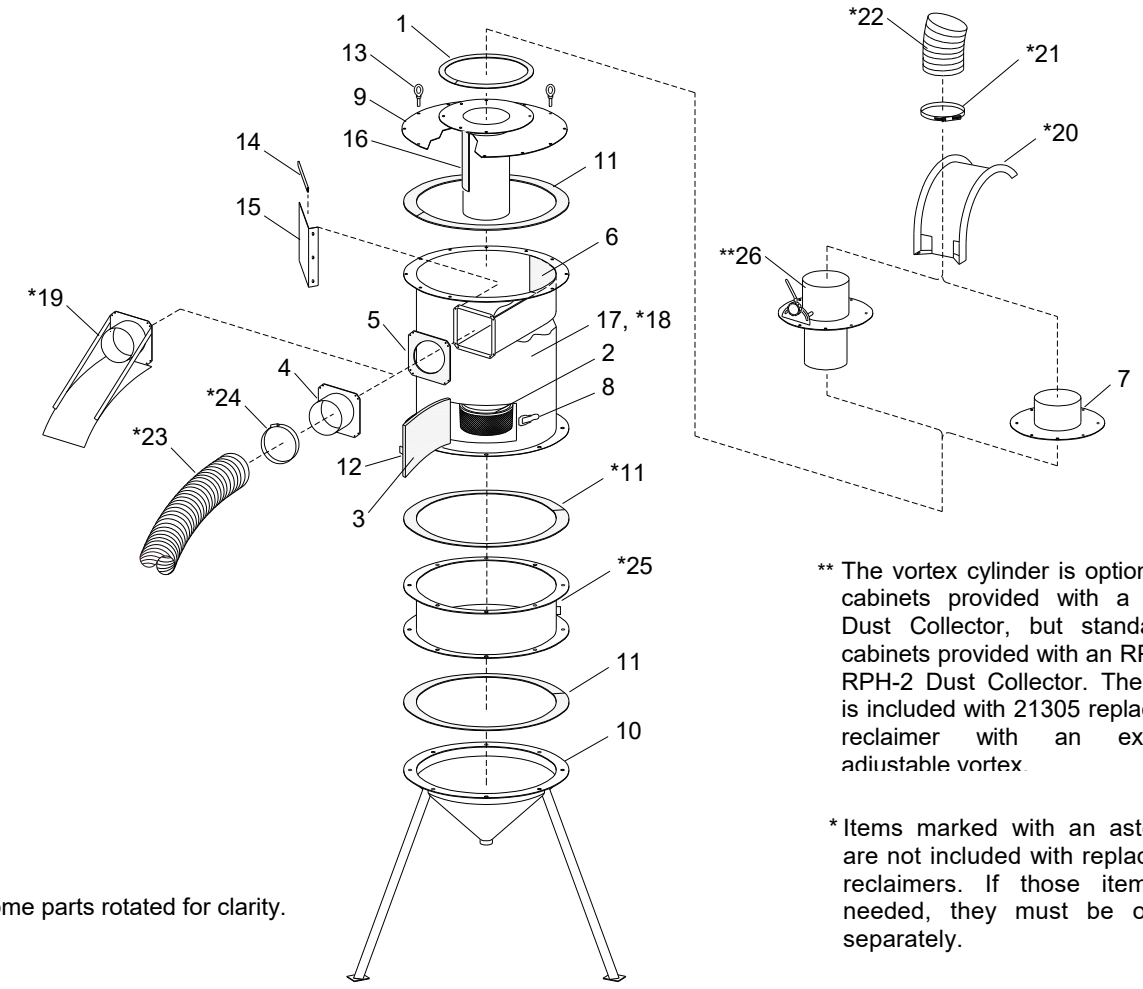
* Items marked with an asterisk * are not included with replacement reclaimers. If those items are needed, they must be ordered separately.

600 CFM RECLAIMER

Figure 30

9.12 900 CFM Modular Reclaimer Replacement Parts - Figure 31

Item	Description	Stock No.
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"	12363
5.	Gasket, 900 cfm inlet adaptor	11759
6.	Wear plate, rubber-lined w/mounting screws 900 cfm for reclaimers with bolt-on top	25071
7.	Adaptor, outlet pipe, 900 cfm, 7"	16832
8.	Spring latch assembly	12263
9.	Top plate, 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 and wear plate for reclaimers with bolt-on top only	27465
*18.	Body section with rubber liners and bolt on top	27466
*19.	Hose support, 6" inlet, optional	16887
*20.	Hose support, 7" outlet, optional	20619
*21.	Clamp, hose, 8"	11576
*22.	Hose, 7" ID unlined flex, specify length	12448
*23.	Hose, 6" heavy lined flex, 15 ft lengths only	12457
*24.	Clamp, 6-1/2", for 6" ID hose	00750
*25.	Extension, 8", 900 cfm reclaimer body	24030
**26.	Vortex cylinder assembly, pull thru 900	23046



** The vortex cylinder is optional with cabinets provided with a CDC-1 Dust Collector, but standard on cabinets provided with an RPC-2 or RPH-2 Dust Collector. The vortex is included with 21305 replacement reclaimer with an externally adjustable vortex.

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

Some parts rotated for clarity.

900 CFM RECLAIMER

Figure 31