

# BNP 600 and 720 Suction Blast Cabinets



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It is the responsibility of the user to insure that proper training of operators has been performed and a safe work environment is provided.

Our company is proud to provide a variety of products to the abrasive blasting industry, and we have confidence that the professionals in our industry will utilize their knowledge and expertise in the safe efficient use of these products.

## OWNER'S MANUAL

## 1.0 INTRODUCTION

### 1.1 Scope of Manual

1.1.1 These instructions cover set-up, operation, maintenance, troubleshooting, optional accessories, and replacement parts for BNP 600 and 720 series suction blast cabinets with all reclaimer, dry filter and dust collector options. A supplemental manual is provided for the optional reverse pulse (RP) dust collector.

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

### 1.2 Safety Alerts

1.2.1 Clemco uses safety alert signal words, based on ANSI Z535.4-1998, 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 the user of this equipment of potential personal injury hazards.

Obey all safety messages that follow this symbol to avoid possible injury or death.

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## CAUTION

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Caution used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

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## CAUTION

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Caution indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

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## WARNING

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

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## DANGER

**Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.**

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### 1.3 General Description

1.3.1 Abrasive blast cabinets enclose the blasting environment to provide efficient blast cleaning while maintaining a clean surrounding work area. Production rates are influenced by size of nozzle, compressor output, working pressure, type and size of media, angle and distance of the nozzle from the blast surface. See Figure 1 for arrangement of components with a dry filter. Figure 2 shows the arrangement with a reverse pulse dust collector. BNP suction cabinets consist of three major components:

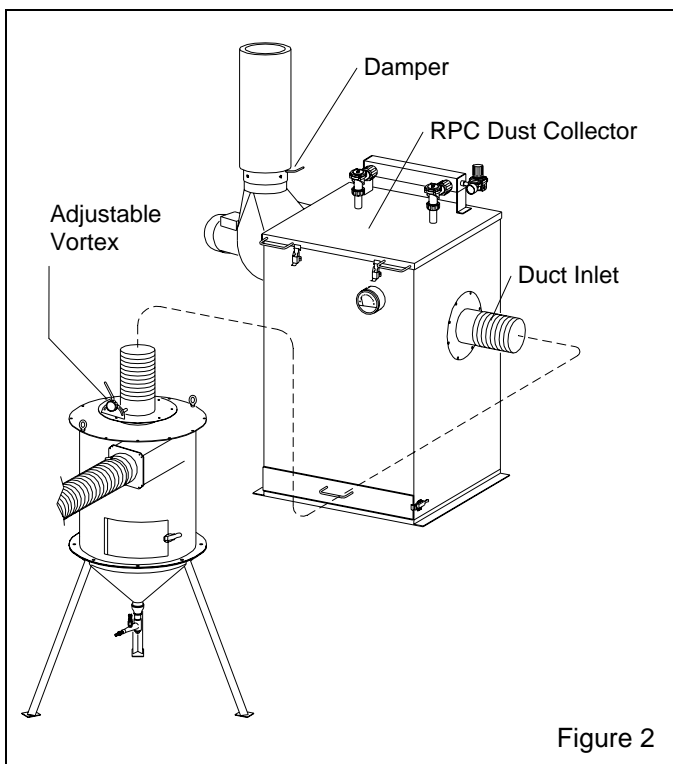
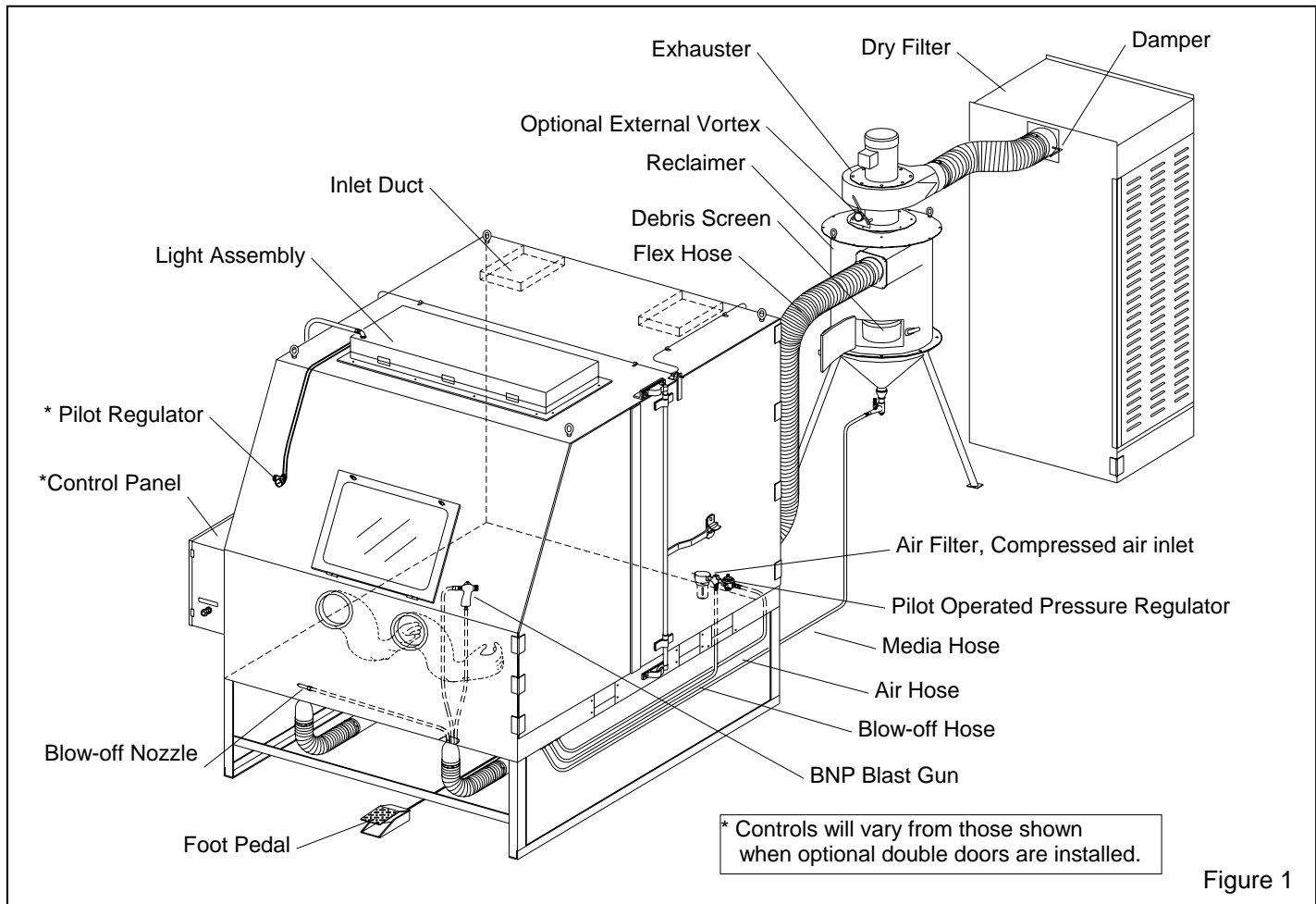
1. Cabinet Enclosure
2. Reclaimer
3. Dust Collector

### 1.4 Theory of Operation

1.4.1 When the air supply is on, and the cabinet doors are closed, the cabinet is ready for operation by actuation of the foot pedal. Fully depressing the foot pedal causes air to flow through the blast gun. The vacuum created by air moving through the gun draws media into the blast gun mixing chamber. The media mixes with the air and is propelled out the nozzle. After striking the object being blasted, the blast media, along with fines, dust, and by-products generated by blasting, fall through the mesh work table into the cabinet hopper. These particles are drawn into the reclaimer for separation. Dust and fines are first separated from the reusable blast media. Next the media is screened of oversize particles, and returned to the reclaimer hopper for reuse. Dust and fines are drawn through the reclaimer into the dry filter or dust collector, which traps the dust and discharges clean air. When the foot pedal is released, blasting stops.

### 1.5 Nozzle Options

1.5.1 Unless otherwise specified at the time of order, cabinets are shipped with a No. 5 (5/32" orifice) air jet and 5/16" orifice ceramic nozzle. More durable tungsten carbide and boron carbide nozzles are available and are shown under Optional Accessories in Section 9.1. Use boron carbide nozzles when blasting with aggressive media.



## 1.6 Dust Collector Options

### **⚠ WARNING**

**Prolonged exposure to any dust could result in serious lung disease and death. Short term ingestion of toxic materials, such as lead dust or dust from other heavy metals and corrosives, could cause serious respiratory injury or death. Identify all materials that are to be removed by blasting. Use reverse pulse dust collectors with HEPA after-filters if lead coating or any other toxic materials are being removed by the blasting process. Do not use dust collectors with simple cloth filters for those applications.**

**1.6.1 Dry Filter:** A push-through dry filter uses tubular filters which trap dust on their inner surfaces. A dry filter is efficient for moderate dust contamination. The filters must be manually shaken every two hours and the dust drawer emptied regularly. This type of dust collection must never be used in applications which generate toxic dust.

This chart is a guide to media selection appropriate for given reclaimer models. The data are based on standard 5/16" orifice nozzle (5/32" air jet) and average conditions, such as air pressure, media/air mixture, visibility, contamination of parts being cleaned, humidity, media breakdown, reclaimer cleaning rate, etc. As a rule, larger nozzles deliver more media, thus requiring more of the reclaimer. Therefore larger nozzles decrease the maximum size of media from those recommended. Media finer than those recommended may decrease visibility, and at some point carryover to the dust collector. Media coarser than those recommended may be too dense for the reclaimer to recover from the cabinet hopper.

RECLAIMER SIZE	MEDIA TYPE				
	STEEL GRIT	STEEL SHOT	PLASTIC	GLASS BEAD	ALUM. OXIDE
900 cfm with 6" inlet	Do not use	Do not use	All sizes	#6 to #12	46 to 200 mesh
1200 cfm with 6" inlet	40 & finer	170 and finer	Do not use	Do not use	16 to 60 mesh
1200 cfm with 7" inlet	Do not use	Do not use	All sizes	All sizes	46 mesh & finer
1800 cfm with 7" inlet	25 & finer	330 & finer	Do not use	Do not use	16 to 60 mesh
1800 cfm with 8" inlet	Do not use	Do not use	All sizes	All sizes	46 mesh & finer

Figure 3

**1.6.2 Reverse Pulse Dust Collector:** The pull-through reverse pulse dust collector is the most efficient dust collector option, and must be used with 1200 and 1800 cfm reclaimers. This type of dust collector used with the optional HEPA filter must be used in applications in which toxic dust is generated. Cartridge filters are cleaned by a periodic pulse of air. See separate manual for operation of reverse pulse dust collectors.

**1.6.3 HEPA Filter:** Optional HEPA after-filters provide additional filtration, and are available for use with reverse-pulse collector only. HEPA filters must be used when removing lead coatings or any other toxic materials.

## 1.7 Media

**1.7.1 BNP 600 and 720 Suction Cabinets** utilize most common reusable media specifically manufactured for dry blasting. The usable media size range depends on the nozzle orifice size and reclaimer cleaning rate. Several factors affecting the reclaimer cleaning rate include: reclaimer size, air pressure, media/air mixture, media friability, contamination of parts being cleaned, and humidity. Media sizes shown under the media headings and in Figure 3, are guidelines only, based on standard 5/32" jet, 5/16" nozzle and average conditions. Rich media flow or low static pressure will affect the mesh and nozzle size that may be used. Using media 200 mesh and finer will usually require the addition of the optional, vortex cylinder. See Section 1.7.6 and 5.5.

**1.7.2 Steel:** Steel shot and steel grit are not recommended for use with reclaimers having standard

size inlet. 1200 cfm and 1800 reclaimers may be used with steel media if the inlet hose diameter is reduced as shown in Figure 3. Conveying hose on cabinets using steel media should have a smooth, durable lining, and be reduced one size from standard. Cabinets can be supplied from the factory with reduced diameter conveying hose, if specified at the time of order. Field conversion requires extensive welding.

**1.7.3 Sand and Slag:** Sand should never be used because of the hazards of using media containing free silica. Slags are not recommended because they rapidly breakdown.

**1.7.4 Silicon Carbide, Aluminum Oxide, and Garnet:** These are the most aggressive, high volume abrasive in the blasting industry. Aggressive media such as these may be used with the reclaimer, but the service life will be reduced on any equipment components which come in contact with the abrasive. To avoid unscheduled down time, periodically inspect the reclaimer wear plate, reclaimer booster exhaust, hoses, and nozzle for abrasive wear.

When using aggressive abrasive occasionally, use an optional aluminum oxide kit. When these abrasives are used extensively, use a full rubber lined reclaimer and a reverse pulse dust collector. Interior rubber lining on cabinet is suggested. Nozzles lined with boron carbide are recommended to extend nozzle wear life. See Optional Accessories in Section 9.1.

**1.7.5 Glass Bead:** Most beads are treated to ensure free-flow even under moderately high humid conditions. Glass beads subjected to excessive moisture may be reused after thorough drying and breaking up of lumps.

**1.7.6 Fine-mesh Media:** An optional, adjustable vortex cylinder is available and should be installed when using 200-mesh, and finer, media. NOTE: The vortex cylinder is standard on pull-through systems (cabinets with reverse pulse dust collectors).

**1.7.7 Lightweight Media:** An optional adjustable vortex cylinder is available and should be installed when using plastic media, and most agricultural media. NOTE: The vortex cylinder is standard on pull-through systems.

## 2.0 INSTALLATION

### 2.1 General Installation Notes

**2.1.1** To avoid damage to the light assembly, it is shipped inside the cabinet. Install the light assembly on the outside top of the cabinet, using the mastic seal and fasteners provided. Install the light conduit and wiring to the control panel, and wire it per the wiring schematic packed in the panel. See Section 2.7.

**2.1.2** The cabinet must be placed on a flat surface. If the surface is not flat the cabinet could flex, causing the door alignment to shift. If that occurs, shim the leg(s) as required to realign the doors.

**2.1.3** See Figure 1 (and 2 for optional reverse pulse collector) for the general arrangement and Figure 4 for control line schematic. Select a location where compressed air and electrical services are available. The cabinet location must comply with OSHA and local safety codes. Allow for full access to all doors and service areas, and for efficient handling of large parts. Provide enough clearance in front of the dust collector to remove the dust drawer without tipping. Ideally, locate the reclaimers directly behind the cabinet with the media hose connection toward the cabinet with as few bends as possible. Determine the best location, and position all units before final assembly.

**2.1.4** Use the eyebolts on the four top corners to maneuver the cabinet. Do not lift the cabinet from the hopper or lower frame.

## CAUTION

**Do not use a forklift to lift the cabinet from the hoppers or lower frame. The cabinet hopper is not designed to support the weight of the cabinet. The lower frame is designed to support distributed weight. Using a forklift on the hoppers or frame may cause damage.**

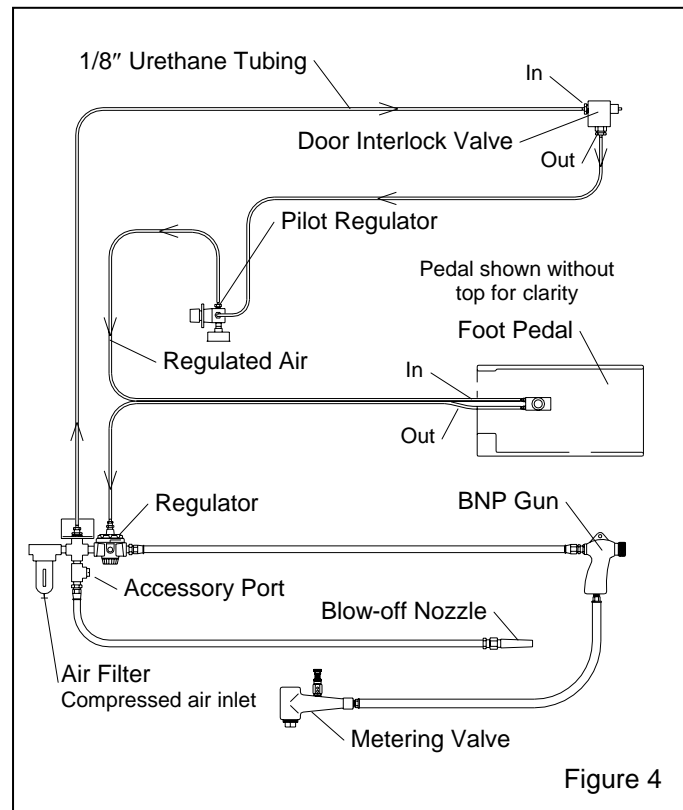


Figure 4

### 2.2 Air Requirements

**2.2.1** The size of the compressor required to operate the cabinet depends on the size of the air jet and blasting pressure. Unless specified otherwise, cabinets are supplied with a No. 5 (5/32" orifice) jet. See Air Jet/cfm chart in Figure 5 to determine cfm requirements. Check with a compressor supplier for a suggested compressor size based on the air consumption.

BNP Gun	Jet	Nozzle	CFM	PSI
No. 4	1/8"	5/16"	21	80
No. 5	5/32"	5/16"	32	80
No. 6	3/16"	3/8"	47	80
*No. 7	7/32"	7/16"	62	80
*No. 8	1/4"	1/2"	86	80

Air Consumption in cfm

\* Using this combination of jet and nozzle in applications that produce excessive dust may cause poor visibility.

Figure 5

**2.2.2** The air filter at the air inlet connection, reduces condensed water from the compressed air. Its use is especially important in areas of high humidity, or when fine-mesh media are used. Moisture causes media to clot and inhibits free flow through the feed assembly. If moisture problems persist, an air dryer may be required.

**2.2.3** Check the table in Figure 6 to determine the minimum ID of air supply line to the cabinet air inlet.

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

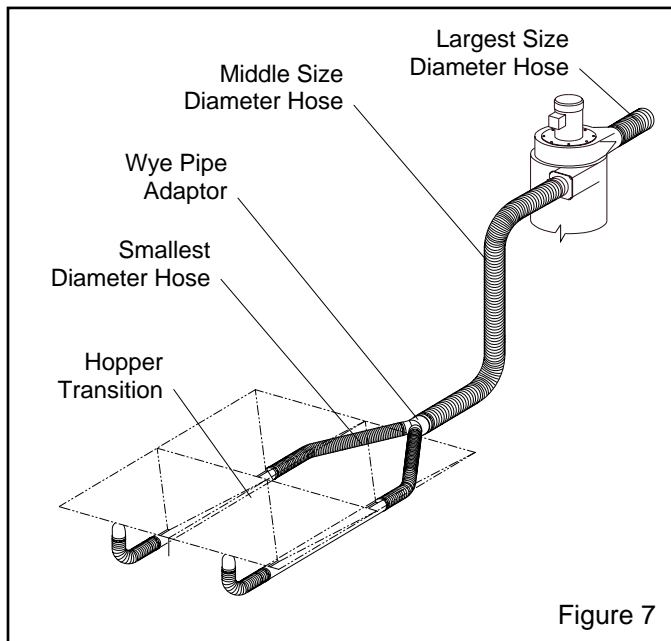
Air Line Length	Jet Size		
	No. 4	No. 5	No. 6
25 feet	3/4"	3/4"	1"
50 feet	3/4"	3/4"	1"
75 feet	3/4"	1"	1"
100 feet	3/4"	1"	1"
Minimum compressed air line ID			

Figure 6

## 2.3 Electrical Requirements

**2.3.1** All 600 and 720 reclaimer motors are 230/460 Volt, 60 Hz, 3-Phase. A magnetic starter is mounted in the control panel. Power from the user's disconnect has to be wired to it. Additional wiring information is in Section 2.7.

## 2.4 Connect Conveying Hose, Figure 7



**2.4.1** Connect two of the smaller diameter flexible conveying hoses between the cabinet hopper transition and wye pipe adaptor. Connect the middle diameter flex hose (the largest diameter hose attaches to the reclaimer outlet, that connection will be made later) between the center leg on the wye pipe to the reclaimer inlet adaptor. It is easier to slip the hose over the adaptors and create a tighter seal, if the first two or three inches of wire is removed from the inside of the hose. Use care not to damage the hose. NOTE: The hose wire helps dissipate static in the conveying hose, and also

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

**2.4.2** Clamp the flex hose securely in position with worm clamps provided.

## 2.5 Connect Compressed Air Supply Line(s)

**2.5.1** Install an isolation valve at the air source to enable depressurization for service. Connect an air line, sized as recommended in Figure 6, from the air source to the air filter inlet on the cabinet. A smaller diameter hose may reduce blasting efficiency. NOTE: A separate air line is required for the optional RP dust collector.

## ⚠ WARNING

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

## 2.6 Ground Cabinet

**2.6.1** To prevent static electricity build up, attach an external grounded wire to the grounding lug on the rear leg.

## 2.7 Connect Electrical Power

NOTE: A wiring schematic is supplied with the cabinet, and is packed in the control panel. After wiring is completed, keep a copy of the schematic with the manual for service and electrical replacement parts.

## ⚠ WARNING

**Shorting electrical components could result in serious electrical shocks, or equipment damage. All electrical work must be performed by a qualified electrician, and comply with applicable codes.**

NOTE: Conduit and wire are supplied from the cabinet control panel for wiring 900 cfm reclaimer motors when used with dry filter collectors. Reverse pulse collectors are usually too far from the cabinet to use flex. Conduit and wiring for RP Collectors must be provided by the user. Wiring from the user's disconnect to the cabinet control panel must also be provided by the user.

**2.7.1** Where possible, all wiring has been completed at the factory. The electrician only needs to provide

service to the motor starter in the control panel mounted on the side of the cabinet, connect the light leads, and connect the conduit and wiring from the starter to the motor. Refer to the schematic packed in the cabinet. NOTE: The user must provide conduit and wiring from the starter to the motor for reverse pulse dust collectors.

**2.7.2** Whether voltage is 230 or 460 is determined at time of order. A wiring schematic for the cabinet and accessories is included in the control panel mounted on the side of the cabinet.

**2.7.3** Connect flex conduit, and wire the motor per instruction on the motor plate.

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## **WARNING**

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**Electrical power must be locked out and tagged out before continuing. Failure to do so could result in serious injury or death from electrical shock.**

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**2.7.4** Open the control panel cover.

**2.7.5** Supply service from the user's disconnect to the control panel.

**2.7.6** Connect 3-phase power to terminals 1, 2, and 3 on the motor starter as shown on the schematic.

**2.7.7** Connect the ground wire to grounding lug as shown in the schematic.

**2.7.8** After the wiring is completed, observe the subsequent warning, and check the motor rotation. To check rotation, jog the 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 is indicated by the arrow on the exhaust housing. The fan should rotate toward the exhaust outlet.

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## **WARNING**

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

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**2.7.9** Check the amperage on initial start up. 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 dry filters, and on the exhaust outlet of reverse-pulse collectors.

**2.8 Dry Filter Dust Collector (900 cfm only). See separate manual for reverse pulse dust collector.**

**2.8.1** Dry filters can be converted to left or right hand inlet. If it is more convenient to have the inlet on the opposite side, switch the inlet adaptor for the blank cover.

**2.8.2** Connect the flexible exhaust hose between the reclaimer outlet and dry filter inlet adaptor. It may be easier to slip the hose over the adaptors, and create a tighter seal, if the first two or three inches of wire is removed from the inside of the hose. Use care not to damage the hose. Secure the hose with worm clamps.

## **2.9 Final Assembly**

**2.9.1** Place the foot pedal on the floor in front of cabinet.

**2.9.2** A package of 5 cover lenses is supplied with the cabinet. To install a cover lens, remove the adhesive backing and apply the lens to the clean, dry, inner surface of the view window per Section 6.3. When the cover lens becomes pitted or frosted, replace it.

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## **3.0 FIELD INSTALLED ACCESSORIES**

### **3.1 Alox Kit**

**3.1.1** An optional aluminum oxide kit is available factory installed or may be field installed at a later date. The Alox Kit consist of rubber curtains with eyelets and curtain hardware for front, back, left side, and door, boron carbide nozzle, and lined flex hose. Refer to Section 3.2 for curtain installation.

### **3.2 Curtain Installation, Figure 8**

**3.2.1** Match the curtains to the corresponding wall and door as shown in Figure 8. Hook the curtains to the J-Hooks welded along the top of the front, back, and side walls. Cut openings for the hoses on the lower left rear wall.

**3.2.2** Using protectors against the curtains and outer doors, clamp the door curtains in place. The upper edges of the door curtains should be even with the outer edges of the sound proofing panel. Insert a #10 self-drilling screw with an 11/16" OD flat washer through the grommet holes. Use a screw gun with a 5/16" socket to attach the door curtains.

**3.2.3** For front walls, place the batten strip over the curtain, and clamp it in position on the front slope above the break as shown in Figure 8. Match drill .187" (3/16") diameter holes through the rubber and cabinet front at each batten hole. To install the batten insert #10-24 x 1" round head machine screws through the cabinet front, curtain and batten. Install lock washers and nuts from inside the cabinet and tighten securely.

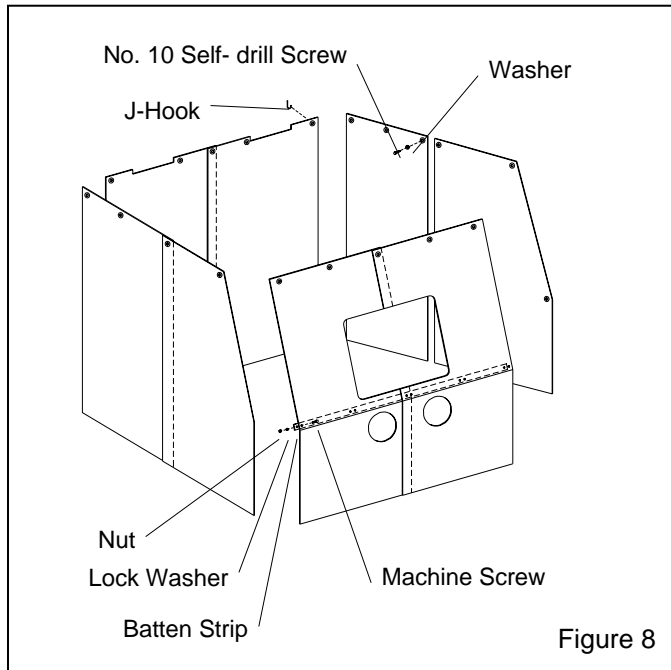


Figure 8

### 3.3 Manometer

**3.3.1** Constant static pressure balance is necessary for precise separation, as the reclaimers efficiency is accomplished by a centrifugal balance of particle weight and size. The air balance and static pressure are set by adjusting the outlet damper. The manometer measures static pressure. Use the instruction sheet provided with the manometer, for installation and operation instructions. The optional manometer kit is listed in Section 9.1.

## 3.4 Track and Extension

### 3.4.1 Description

**3.4.1.1** These instructions cover field installation for 500 lb. capacity workcar and track assemblies. If the track was ordered with the cabinet, it is partially assembled at the factory. Disregard the instructions that do not apply. See Figure 9 for arrangement of the major components.

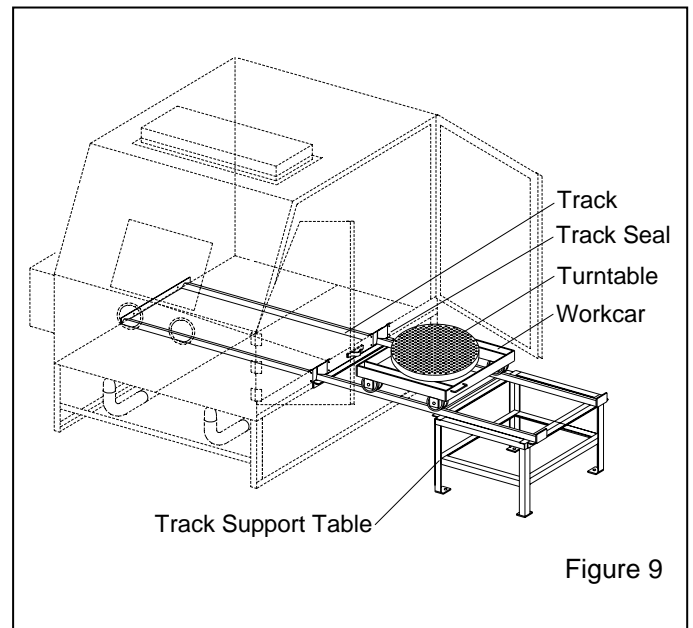


Figure 9

### 3.4.2 Track Seals

**3.4.2.1** Remove both track opening cover plates, and replace them with track seals as shown in Figure 10.

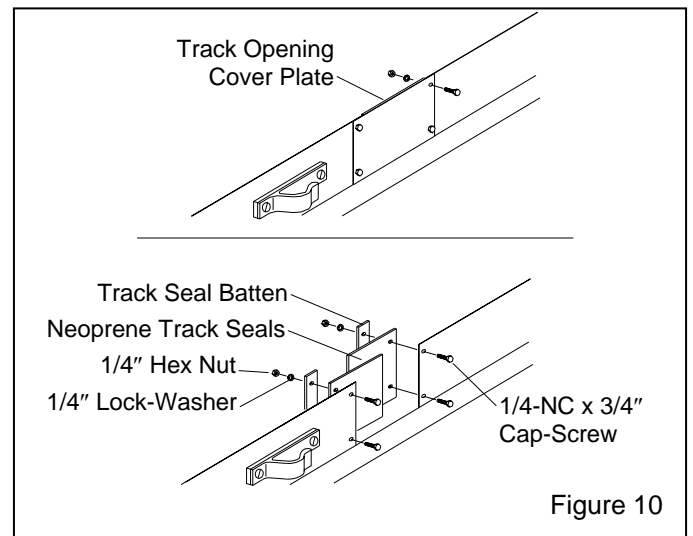


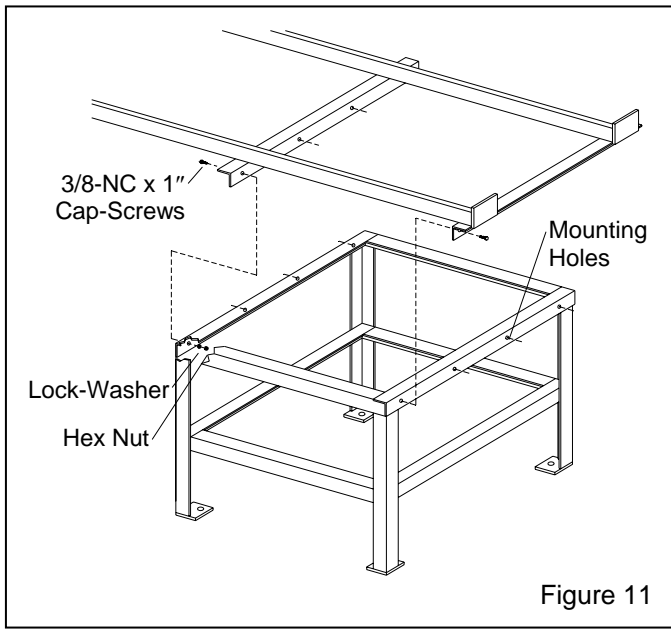
Figure 10

### 3.4.3 Track Assembly

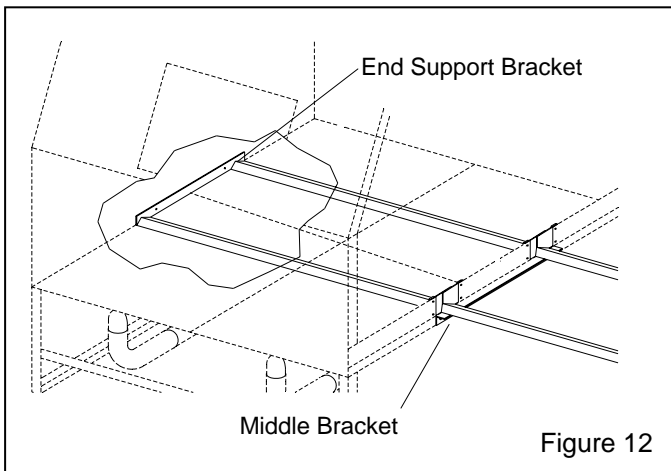
**3.4.3.1** Position the track support table so that one side with mounting holes faces the cabinet. The sides with holes are identical, so it does not matter which side is toward the cabinet.

**3.4.3.2** Being careful not to damage the track seals, lay the track assembly in the cabinet as shown in Figure 9. Align the mounting holes in the track support table with the track cross supports as shown in Figure 11, Secure with 3/8-NC x 1" cap-screws, lock-washers, and nuts.





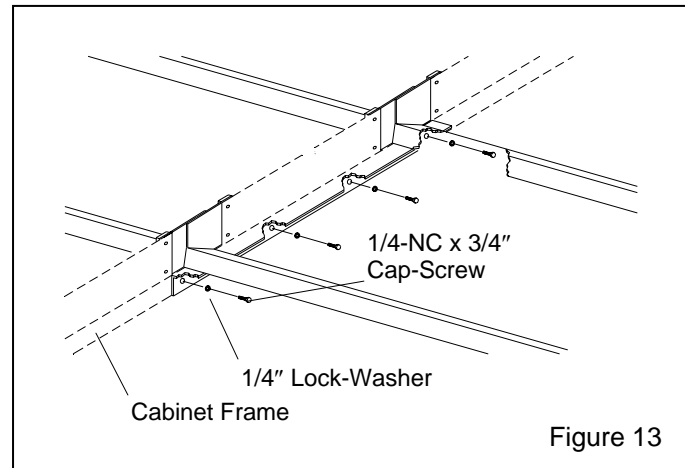
**3.4.3.3** Push the track assembly to its final position; the end support bracket should be against the inside cabinet wall, and the middle bracket against the outside wall under the door opening, as shown in Figure 12.



**3.4.3.4** Match drill 9/32" holes through the cabinet wall, at the two holes in the end support bracket. If necessary, mark the hole locations and move the track for drilling.

**3.4.3.5** Match drill 13/64" holes through the cabinet frame, at the four holes in the middle support bracket. Use a 1/4-NC tap to thread the four holes in the cabinet. If necessary, mark the hole locations and move the track for drilling.

**3.4.3.6** Realign the track assembly. Secure the end bracket with 1/4-NC x 3/4" cap-screws, lock-washers, and hex nuts. Secure the middle bracket using 1/4-NC x 3/4" cap-screws and lock-washers through the bracket, and into the cabinet frame as shown in Figure 13.



**3.4.3.7** Trim the track seals as necessary to attain tight seal against the track rails.

#### 3.4.4 Turntable and Workcar

**3.4.4.1** Set the workcar on the track; the grooves in the wheels are designed to ride on the track rails.

**3.4.4.2** Slide the turntable shaft through the rubber bearing protector, bearing collar and bearing. When the turntable shaft is fully seated in the bearing, use a hex key to tighten the collar on the shaft.

## 4.0 OPERATION

### 4.1 Media Loading and Unloading

**4.1.1 Media Capacity:** Media capacity depends on the reclaimers size. Full capacity is when media level is at the top of the reclaimers cone. Do not fill past the cone, as overfilling will occur. Overfilling will result in media carryover to the dust collector and possibly blockage in the conveying hose. Not enough media will allow air to draw through the metering valve and feed assembly, and interfere with media flow. The minimum amount of media to charge the system is approximately as follows:

900 cfm reclaimer	40 lbs. media
1200 cfm reclaimer	75 lbs. media
1800 cfm reclaimer	100 lbs. media

**4.1.2 Loading:** With the exhauster off, add clean dry media, by pouring it into the reclaimers hopper through the reclaimers door. **Do not pour media directly into the cabinet hopper**, as over filling or blockage may occur. Refill only after all media has been recovered from the cabinet.

**4.1.3 Unloading:** To empty the hopper of old media, the exhauster must be off. Place an empty container under the metering valve. Unscrew the plastic plug from the metering valve to permit media to flow into container. If media doesn't flow, it has caked. Open the reclaimer door and stir media until it starts to flow. Replace the metering valve plug when the hopper is empty.

## 4.2 Loading and Unloading Parts

### WARNING

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

**4.2.1** Load and unload parts through the side door.

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

**4.2.3** When blasting very small parts, place a screen over the grate to prevent parts from falling into the hopper. If an object should fall through the grate, stop blasting immediately and retrieve it.

**4.2.4** Close doors. Be certain doors are sealed securely, or door interlock system will prevent blasting.

## 4.3 Blasting Operation

### CAUTION

- **All doors must be closed when the unit is on. Never blast with doors on the cabinet, reclaimer or dust collector open.**
- **Never blast without gloves.**
- **Never point the blast nozzle toward the view window.**
- **Use the blow-off nozzle to blow media off parts before the doors are opened, or exhauster is switched off.**
- **After blasting, do not open doors, or switch off exhauster until the cabinet is clear of airborne dust.**
- **Do not blast if the dust collector is leaking.**

**4.3.1** Slowly open the air valve on the air supply hose to the cabinet and optional RP dust collector. (On the initial start up check for air leaks).

**4.3.2** Turn on the lights and exhauster. The push-button switch located on the face of the control panel performs both functions.

**4.3.3** Adjust the pilot pressure regulator, to the required operating pressure per Section 5.1.

**4.3.4** Insert hands into rubber gloves.

### WARNING

**Shut down the cabinet immediately if dust discharges from the collector. Check that filters are correctly seated and not worn or damaged. Prolonged breathing of any dust could result in serious lung disease or death. Short term ingestion of toxic dust such as lead, poses an immediate danger to health. Toxicity and health risk vary with type of media and dust generated by blasting. Identify all material being removed by blasting, and obtain a material safety data sheet for the blast media.**

**4.3.5** To blast; hold the gun firmly and apply pressure to the foot pedal, blasting will begin almost immediately.

NOTE: When blasting small parts, use a solid back rest for the part. Without this assist, especially with longer blasting operations, the operator will tire from resisting blast pressure. Whenever possible avoid holding small parts that require blasting into the glove.

**4.3.6** To stop blasting, remove pressure on the foot pedal.

**4.3.7** Use the blow-off nozzle to blow media off cleaned parts before opening the door.

**4.3.8** When finished blasting, allow the exhauster to clear the cabinet of airborne dust before turning the lights and exhauster off.

**4.3.9** Unload part, shut off the air supply valve, and drain the air filter.

## 4.4 Blasting Technique

**4.4.1** Generally, blasting technique is similar to spray painting. Smooth continuous strokes are most effective. The distance from the part affects size of blast pattern. Normal practice places the nozzle approximately 6" from the surface of the part.

## 5.0 ADJUSTMENTS

### 5.1 Blasting Pressure

**5.1.1** The pilot pressure regulator, located on the face of the cabinet, to the left of the view window, enables the user to adjust blasting pressure to suit the application. The suitable pressure for most purposes is around 80 psi. Higher pressure may be required for difficult blasting jobs on durable substrates, but will increase media break down. In all cases, highest production can only be achieved when pressure is carefully monitored.

**5.1.2** To adjust, unlock the knob, and turn it clockwise to increase pressure or counter-clockwise to decrease pressure. Pressure will usually drop from closed-line pressure when blasting is started. Once operating pressure is set, lock the knob to maintain the setting.

### 5.2 Air Jet Adjustment

**5.2.1** The air jet should be screwed 4-1/2 to 5 full turns into the gun body. Doing so will leave 3-1/2 to 4 threads exposed past the lock nut. Tighten the lock nut to hold the jet in place. See Section 9.1 or 9.4 Figure 23, for optional adjusting tool.

### 5.3 Media/Air Mixture, Figure 14

**5.3.1** Check the media stream for correct media/air mixture; media flow is smooth and appears as a light mist coming from the nozzle.

**5.3.2** If media does not flow smoothly, loosen the locking nut, and adjust the metering screw until the upper holes in the metering stem are closed-off, and the lower holes are fully open. See Figure 8. This adjustment is a starting point.

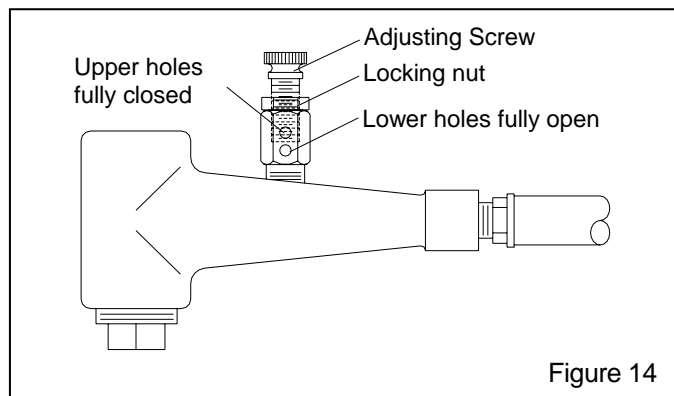


Figure 14

**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 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 horizontal) or closing (handle vertical) the damper. The damper is located on the dust collector inlet on dry filters, and on the outlet of reverse pulse dust collectors. If the damper is not opened enough, the reclaimer will not remove fines, resulting in dusty media, poor visibility, and possible media blockage in the conveying hose. If the damper is opened too far, it may cause carryover (usable media carried into the dust collector) and result in excessive media consumption. Open only as far as necessary to obtain a balance of dust removal without media carryover.

**5.4.3** A manometer is useful when adjusting or monitoring static pressure. The Manometer kit is listed under Optional Accessories in Section 9.1. The following are static pressure starting points for given media. Pressure may need to be lower with finer media, higher with coarser media.

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

**5.4.4** If the damper has been adjusted and carryover or excessive dust in the media continues to be a problem, the optional adjustable vortex cylinder, which is standard on pull through reclaimers, may help retain media. The vortex cylinder is usually required only when using 200 mesh and finer media, or lightweight media. See Section 5.5, and Optional Accessories in Section 9.1.

### 5.5 Optional Externally Adjustable Vortex Cylinder (standard on pull-through reclaimers). For use with fine-mesh or lightweight media.

**5.5.1** The adjusting lever for the vortex cylinder is mounted on the spacer between the reclaimer body and exhauster housing. Start with the lever in the vertical position. Before adjusting the vortex cylinder, adjust the damper on the dust collector to increase or decrease static pressure per Section 5.4. Once the damper has been adjusted, adjust the cylinder as follows.

**5.5.2 Dusty Media:** If the reclaimer is not removing sufficient quantities of dust, raise the cylinder by moving the lever counter-clockwise by 1/4" increments at the indicator plate. Do not adjust again until the media has gone through several cycles, to be certain further adjustment is required.

**5.5.3 Media Carryover:** If too much usable media is being carried to the dust collector, lower the vortex cylinder by moving the lever clockwise by 1/4" increments at the indicator plate. NOTE: If the cylinder is lowered too far, the reclaimer will again begin to allow usable media to be carried over, and cause abnormally high static pressure.

**5.5.4** When using very fine media (200 mesh and finer), the inlet baffle of the reclaimer may also need to be removed. Consult the factory before proceeding with this option.

## 5.6 Door Interlocks, Figure 15

### **⚠ WARNING**

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

**5.6.1** The door interlocks disable the blasting control circuit when the door is open. To enable blasting, the door interlock switch must be engaged when the doors are 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 doors.

**5.6.3** Loosen the actuator bracket screws and adjusting screw nut. Move the actuator adjusting bracket up or down, and the adjusting screw sideways, to center the adjusting screw on the over-travel stop. 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.

**5.6.5** Test the operation with the door both open and closed. Point the nozzle away from the door during the test, and only open the door enough to disengage the interlock switch. The interlock should stop the blasting when the door is opened, and permit blasting when the door is closed.

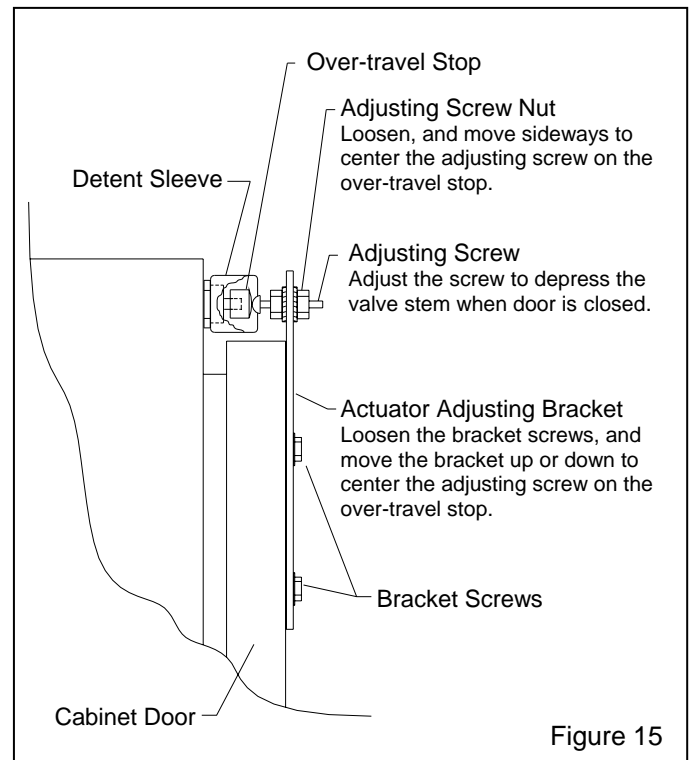


Figure 15

## 6.0 PREVENTIVE MAINTENANCE

NOTE: To avoid unscheduled downtime, establish a weekly inspection schedule. Inspect all parts subjected to media contact, including; nozzle, media hose, flex hose, and reclaimer wear plate, plus all items covered in this section.

### **⚠ WARNING**

**Failure to wear approved respirators and eye protection when servicing dust-laden areas of the cabinet and dust collector, and when emptying the dust bag or collector could result in serious eye irritation and lung disease or death. Toxicity and health risk vary with type of media and dust generated by blasting. Identify all material being removed by blasting, and obtain a material safety data sheet for the blast media.**

## 6.1 Dry Filter Dust Collector

**Refer the Reverse Pulse Dust Collector Manual for maintenance of the RP Collector**

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## CAUTION

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**Do not shake the filters while the exhauster is on. Doing so will accelerate wear on the filters around the shaker assembly, but not loosen the dust.**

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**6.1.1** The dry filter uses tubular filters which collect dust on their inner surfaces. With the exhauster off, use the shaker arm extending to the outside of the collector to vigorously shake the bags every two hours.

**6.1.2** Empty the dust collector drawer regularly. Begin by checking the drawer daily and adjust frequency based on usage and break down rate of media. Dump the contents into a suitable disposal container.

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## CAUTION

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**Do not open the dust drawer door while the exhauster is on. The drawer chamber is under positive pressure when the exhauster is on. Opening the dust door while the exhauster is operating or the paddle wheel rotating, will allow dust to escape.**

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NOTE: Blast media is not usually toxic, however, some materials removed by the process may be. Check with proper authorities for disposal restrictions.

### 6.2 Air Inlet Ducts

**6.2.1** Air inlet ducts, located on the back of the cabinet toward the top, allow air to be drawn into the cabinet. The air is required for ventilation, conveying media, and visibility. The ducts must be kept open and free of obstruction at all times.

### 6.3 View Window Cover Lens

**6.3.1** Rapid frosting of the view window can be avoided by directing ricocheting media away from the window, and by installing a cover lens on the inside surface of the window.

**6.3.2** The best way to install a cover lens is to remove the window from the cabinet, per Section 7.3. If, for some reason, it is not helpful to remove the window, the lens may be applied with it in place.

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

### 6.4 Reclaimer Debris Screen

**6.4.1** 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 parts being blasted cause excessive debris. Do not operate the machine without the screen in place.

### 6.5 Air Filter

**6.5.1** The cabinet is equipped with a manual drain air filter. Drain the filter at least once a day, and more often if water is present. Moist air inhibits the flow of media. If moisture continues to be a problem, a dryer or after cooler may be required in the air supply line.

### 6.6 BNP Gun Assembly

**6.6.1** Periodically inspect the BNP Gun for wear. Inspection and replacement of the air jet cover before it wears through will prolong the life of the jet.

### 6.7 Media Hose

**6.7.1** To avoid unscheduled down-time, periodically inspect the media hose for thin spots, by pinching it every 6 to 12 inches.

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## 7.0 SERVICE MAINTENANCE

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## WARNING

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**Failure to wear approved respirators and eye protection when servicing dust-laden areas of the cabinet and dust collector, and when emptying the dust bag or collector could result in serious eye irritation and lung disease or death. Toxicity and health risk vary with type of media and dust generated by blasting. Identify all material being removed by blasting, and obtain a material safety data sheet for the blast media.**

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### 7.1 Gloves

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

**7.1.2** Gloves are held in place by metal bands on the inside of the cabinet. To replace, loosen the bands with a screwdriver, replace the gloves, and tighten the bands.

## 7.2 Nozzle

**7.2.1** Replace the nozzle when its diameter has increased by 1/16", or when suction diminishes noticeably. To change the nozzle, unscrew the holding nut from the gun end, and pull the nozzle from the gun. Inspect the nozzle O-ring and replace if worn or damaged. Insert a new nozzle, placing the tapered end toward the jet. Screw the holding nut onto the gun.

## 7.3 View Window Replacement

### **⚠ WARNING**

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

**7.3.1** Remove the two window frame nuts located on the upper edge of the window frame, and swing the window frame open. NOTE: If the frame is to remain open, for cleaning or other reasons, remove it per Section 7.5.

**7.3.2** Remove the old window.

**7.3.3** Inspect the window frame gaskets, both on the window frame and on the cabinet. If either gasket is damaged, replace it per section 7.4.

**7.3.4** Install optional view window cover lens per Section 6.3.

**7.3.5** Set the new window (cover lens down) squarely over the window opening, ensuring that all edges of the window are centered and overlapping the window gasket, and that the window is resting on the lower locators.

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

## 7.4 Window Gasket Replacement, Figure 16

**7.4.1** Replace the window frame gasket and cabinet window opening gasket at the first sign of media leakage around the view window, or if gaskets appear damaged. Check the gaskets when changing the view window.

**7.4.2** Remove the window and window frame per Section 7.5.

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

**7.4.4** Peel a short section of adhesive backing from the 5/16" thick strip gasket, and adhere the gasket to the center of the top edge of the window opening as shown in Figure 16. Peel additional backing as needed, and work the strip around the radius of each corner, pressing it tightly to bond. Trim the gasket to fit and compress the ends to seal.

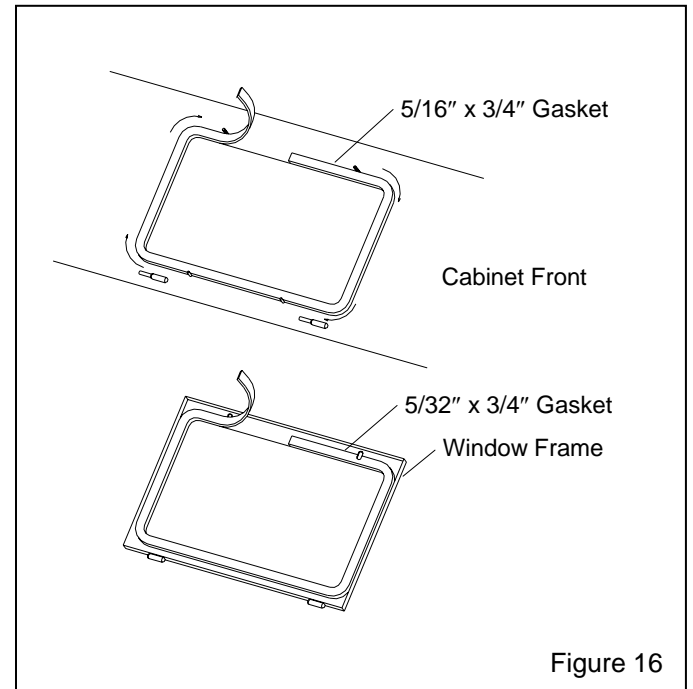


Figure 16

**7.4.5** Using 5/32" thick strip gasket, repeat the process on the window frame.

**7.4.6** Trim around the window frame bolts slots, as needed.

## 7.5 Window Frame Removal, Figure 17

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

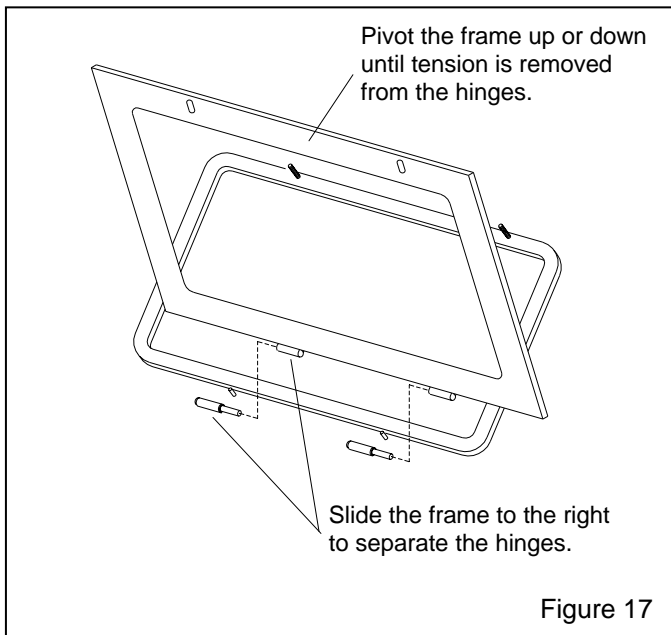
**7.5.2** Remove the window to prevent breakage.

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

**7.5.4** Slide the frame to the right, to remove. The hinges separate as shown in Figure 17.

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

**7.5.6** Set the window squarely over the window opening, ensuring that all edges of the window are centered and overlapping the window gasket, and resting on the lower locators.



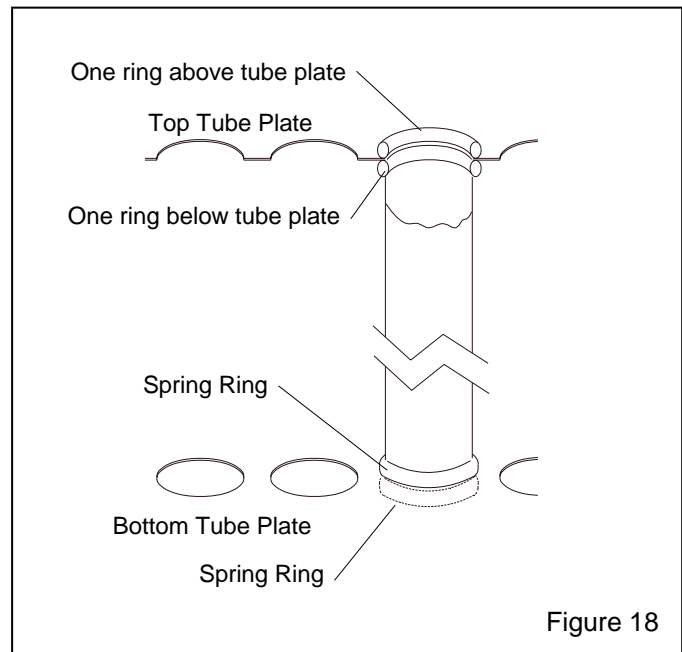
**7.5.7** Swing the window frame into place and tighten the frame nuts.

## 7.6 Dry Filter Tube Replacement

### **CAUTION**

- Do not bend spring ends tight enough to cause ends to kink.
- Do not use a sharp instrument to force spring rings into the opening. This could damage the filter and seriously impair the function of the dust collector.
- Install one filter at a time. Check the seating of the top and bottom spring rings, and that tube is not twisted, before proceeding to the next.

**7.6.1** Replace damaged filters immediately. Remove the old filters by pulling the spring rings off the bottom and top tube plates. Working from the back to the front, install one filter at a time. To install new filters, form the end of the spring ringed tubular filter into a shallow "c" shape, push the filter far enough into the hole of the top plate to allow one spring ring to snap into place above the tube plate and the other to snap into place below it. See the illustration in Figure 18.



**7.6.2** The tubular filter is held firmly by a spring ring above and below the perimeter of the hole in the plate. The other end of the filter is similarly installed in the lower plate. The filters fit tight to prevent dust leakage. To ensure a tight seal, some force may be required by the installer. Check for proper seating at both ends, and remove any twist in the tube before proceeding to the next filter.

## 7.7 Reclaimer Wear-Plate Replacement

**7.7.1** Remove reclaimer inlet adaptor and old wear plate.

**7.7.2** Angle the wear plate into reclaimer inlet until it is in position with the straight end at the reclaimer inlet. Using a board or similar object for leverage, pry the wear plate against the inner wall of the reclaimer and install sheet metal screws to hold in place. Caulk gaps around the wear plate to prevent rapid wear in those areas.

## 7.8 Reverse Pulse Dust Collector

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

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## 8.0 TROUBLESHOOTING

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### WARNING

To avoid serious injury, observe the following when troubleshooting.

- Turn off the air, and lock out and tag out the air supply.
  - If checking the controls requires air, always enlist the aid of another person to: Hold the nozzle securely. Operate the foot pedal.
  - Never bypass the foot pedal or wedge it in the operating position.
  - Never override the door interlock system.
- 

### 8.1 Poor Visibility

**8.1.1** Exhauster motor not operating. Exhauster must be on operation before blasting begins.

**8.1.2** Dirty tube filters or filter cartridge. Shake tube filters, and empty dust drawer regularly. Ref. RP Dust Collector Manual for pulse pressure and sequence.

**8.1.3** Check motor rotation. The motor should rotate as indicated by the arrow on the housing. See Section 2.7.

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

**8.1.5** Blocked air intake. A blocked air intake restricts incoming air and reduces air movement in the cabinet below the minimum level.

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

**8.1.7** Reclaimer door open.

**8.1.8** Outlet damper closed too far restricting air movement in cabinet. Adjust per Section 5.4.

**8.1.9** Check for obstruction in flex hose between the cabinet hopper and reclaimer inlet.

**8.1.10** Paddle wheel worn. Check wheel for wear.

### 8.2 Abnormally High Media Consumption

**8.2.1** Access door on reclaimer not in place, improper fit or worn gasket. Air entering reclaimer at this point will

cause media to be carried into the dust collector. DO NOT operate system unless the door is closed.

**8.2.2** Dust collector damper open too far. See Adjusting Static Pressure in Section 5.4.

**8.2.3** Media may be too fine or worn-out.

**8.2.4** Using friable media that rapidly breaks down.

**8.2.5** Nozzle pressure too high for media.

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

**8.2.7** Optional externally adjustable vortex cylinder out of adjustment. See Section 5.5.

**8.2.8** If using very fine media (200 mesh and finer), the inlet baffle of the reclaimer may need to be removed. Consult the factory before proceeding with this option.

### 8.3 Reduction in Blast Cleaning Rate

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

**8.3.2** Incorrect metering valve adjustment. See 5.3.

**8.3.3** Reduced air pressure. This may be caused by a malfunctioning regulator, a dirty filter element in the air filter, ruptured or leaking air line, or other air tools in use.

**8.3.4** Blockage in media line or gun: Blockage may occur as a result of a missing debris screen, incorrect metering valve adjustment permitting heavy media flow. Check metering valve adjustment per Section 5.3.

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

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

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

**8.3.8** Moist media: Frequent blockage in the area of the metering valve can be caused by moisture. See 6.5.

### 8.4 Plugged Nozzle

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



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

### **8.5 Media Bridging**

**8.5.1** Frequent bridging or blockage in the media metering valve can be caused by damp media. Media becomes damp by blasting parts that are slightly oily, from moisture in the compressed air line, or from absorption.

**8.5.2** To avoid contaminating media from the workpiece, all parts put into the cabinet should be clean and dry. If parts are oily or greasy, degrease and dry them prior to blasting.

**8.5.3** Moist compressed air may be due to a faulty compressor that overheats, or pumps oil or moisture into the air line, too long an air line permitting moisture to condense on the inside, and from high humidity. Drain the air filter and receiver tank regularly. If the problem persists, it may be necessary to change media more often, or install an aftercooler or air dryer.

**8.5.4** 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.

**8.5.5** A vibrator attached to the reclaiming cone or media metering valve may help prevent bridging of fine-mesh media.

### **8.6 Poor Suction In Media Hose**

**8.6.1** Inadequate air supply. Refer to the charts in Figures 5 and 6.

**8.6.2** Air jet may need adjustment. Check adjustment per Section 5.2.

**8.6.3** Nozzle worn. Replace if worn 1/16" or more.

**8.6.4** Check media hose and nozzle for blockage.

**8.6.5** Air jet and nozzle combination may be wrong. See chart in Figure 5.

**8.6.6** Air jet sleeve may extend past end of air jet. Cut the sleeve to align with the air jet.

### **8.7 Blow-Back Through Media Hose**

**8.7.1** Remove the nozzle and check for blockage.

**8.7.2** Air jet may be too large for nozzle. See table in Figure 5.

### **8.8 No Blasting When The Foot Pedal Is Pressed**

**8.8.1** Door interlocks not engaging. Check adjustment per Section 5.6.

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

**8.8.3** Foot pedal valve defective or not engaging. Check foot pedal alignment, and inlet and outlet lines for pressure.

**8.8.4** Check that lines are not reversed on the foot pedal or pilot regulator. See schematic in Figure 4.

**8.8.5** Pressure regulator may be turned too low. Check pressure on pilot regulator.

**8.8.6** Check that the air compressor is on and air supply valves are open.

**8.8.7** Check the nozzle to see if it is plugged.

### **8.9 Blasting Does Not Stop When The Foot Pedal Is Released**

**8.9.1** Check that the foot pedal exhausts air when the pedal is released. If it does not, check the line for blockage, and check the switch for defect.

### **8.10 Static Shocks**

**8.10.1** Cabinet and/or operator not grounded. Abrasive blasting generates static electricity. The cabinet must be grounded to prevent static buildup. See Section 2.4.1 and 2.6. If shocks persist, the operator may be building up static. Attach a small ground wire such as a wrist strap, from the operator to the cabinet.

**8.10.2** Avoid holding parts off the grating. Static will build-up in the part if not dissipated through the metal cabinet.

### **8.11 Dust Leaking From Dust Collector**

Refer to RP Dust Collector Manual for service of reverse pulse dust collectors.

**8.11.1** Check for damaged or loose filters.

**8.11.2** Check for a faulty seal on the dust drawer.

**8.11.3** Check that upper and lower tube sheets are sealed on both sides, front, and rear.

### **8.12 Media Surge**

**8.12.1** Heavy media flow. Adjust per Section 5.3.

9.0 ACCESSORIES AND REPLACEMENT PARTS

9.1 Optional Accessories

Turntables and Tracks

**WARNING**

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

Stationary Turntable with Bearing, Figure 19

Item Description	Stock No.
Stationary Turntable Assembly, 500 lb Capacity	
(-) 30" diameter.....	14138
(-) 40" diameter .....	24042
(-) 48" diameter, for BNP 720 only .....	13845
1. Turntable, replacement	
30" diameter 500 lb. capacity .....	21390
40" diameter 500 lb. capacity .....	23879
48" diameter 500 lb. capacity .....	21400
2. Bearing, 1-1/2" bore (48" table requires 2) ...	11517
3. Protector, bearing .....	13479
4. Screw, 1/2-NC x 1-1/2" cap .....	03454
5. Lock-washer, 1/2" .....	03516
6. Nut, 1/2-NC hex .....	03511

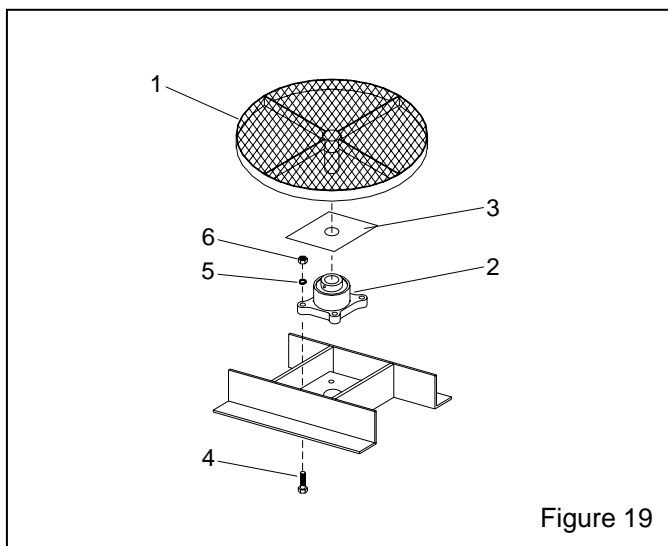


Figure 19

Turntable with Workcart and Track

500 lb. capacity turntable mounted on workcart with 6 ft. track extension

30" diameter for BNP 600 .....	12524
30" diameter for BNP 720 .....	14139
48" diameter for BNP 720 .....	12523

Turntable with Workcart, Figure 20

Item Description	Stock No.
1. Turntable, replacement	
30" diameter .....	21390
48" diameter for BNP-720 .....	21400
2. Bearing, 1-1/2" bore (48" table requires 2) ...	11517
3. Protector, bearing .....	13479
4. Wheel, 6" V groove .....	12220
5. Bolt, 1/2" shoulder .....	13477
6. Lock-washer, 1/2" .....	03516
7. Nut, 1/2" hex .....	03511

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

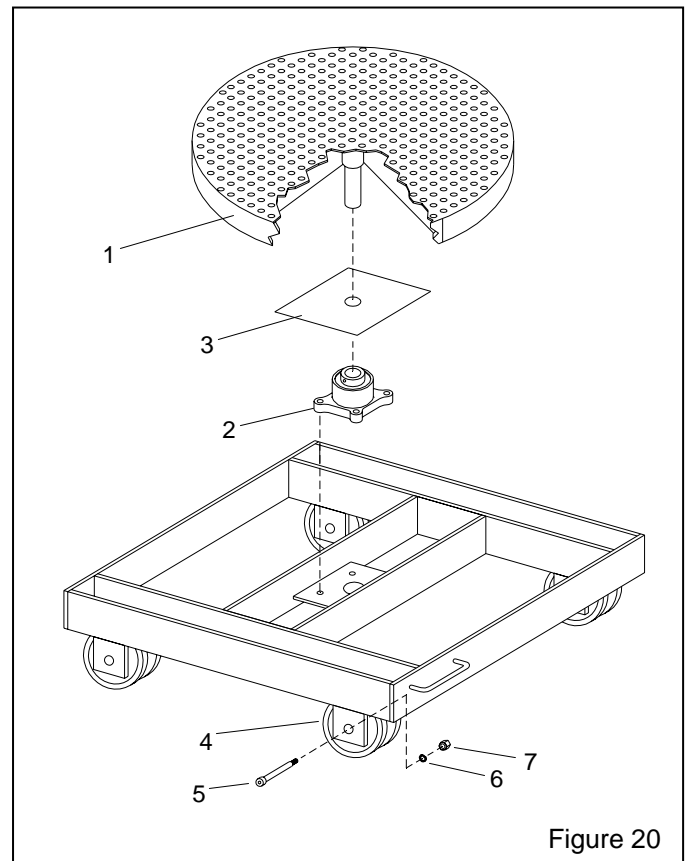


Figure 20

Tungsten carbide nozzle	
No. 5 .....	13118
No. 7 .....	12882
No. 8 .....	11942

Boron carbide nozzle	
No. 5 .....	11935
No. 6 .....	11936
No. 7 .....	11937
No. 8 .....	12894

Wide spray nozzle	
Tungsten carbide	
No. 6 .....	11947

Boron carbide	
No. 6 .....	11934
No. 8 .....	11944

NOTE: Wide spray nozzles require the following accessories:

Wide spray nozzle nut .....	11916
Wide spray retaining ring .....	12038
Wide spray nozzle guard .....	12295

Rubber curtain set, black	
for 600 .....	22373
for 720 .....	22374

Rubber curtain set, white	
for 600 .....	23528
for 720 .....	23529

Flex hose, heavy lined, for heavy usage with aluminum oxide. Available in 15' lengths only	
4" ID. for 900 cfm .....	12473
5" ID. for 1200 cfm .....	12465
6" ID. for 900 cfm .....	12457
7" ID. for 1200 cfm .....	12459

Aluminum oxide kit: Includes No. 5 boron carbide nozzle, heavy lined flex hose, black rubber curtains with eyelets and curtain hardware. NOTE: Reclaimer wear plates are standard on current reclaimers. If the aluminum oxide kit is for an old cabinet or if the wear plate is worn, order a separate wear plate listed under this section.

600 w/ 900 cfm .....	12534
600 w/ 1200 cfm .....	21810
720 w/ 900 cfm .....	12531
720 w/ 1200 cfm .....	21812

Wear plate kit, field installation	
for 900 cfm reclaimer .....	14055
for 1200 cfm reclaimer .....	19223
for 1800 cfm reclaimer .....	23028

Rubber lined reclaimer body (does not include exhauster or top plate)	
900 cfm .....	18326
1200 cfm .....	21222
1800 cfm .....	21221

Orifice adjusting tool .....19041

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

Manometer kit .....12528

**Extension Nozzles, Figure 21**

Item	Description	Stock No.
1.	3" Straight extension nozzle	
	No. 5, 5/16" orifice .....	11921
	No. 6, 3/8" orifice .....	11922
	No. 7, 7/16" orifice .....	11923
2.	6" Straight extension nozzle	
	No. 5, 5/16" orifice .....	11927
	No. 6, 3/8" orifice .....	11928
	No. 7, 7/16" orifice .....	11929
3.	9" Straight extension nozzle	
	No. 5, 5/16" orifice .....	11924
	No. 6, 3/8" orifice .....	11925
	No. 7, 7/16" orifice .....	11926
4.	4" Side angle extension nozzle, complete	
	5/16" orifice, includes item 6, 7 & 8 .....	21311
5.	6" Side angle extension nozzle, complete	
	5/16" orifice, includes item 6, 7 & 8 .....	12374
6.	9" Side angle extension nozzle complete,	
	5/16" orifice, includes item 6, 7 & 8 .....	12373
7.	Tip, side angle extension .....	12173
8.	Snap ring, side angle extension .....	12040
9.	O-Ring, side angle extension .....	08977

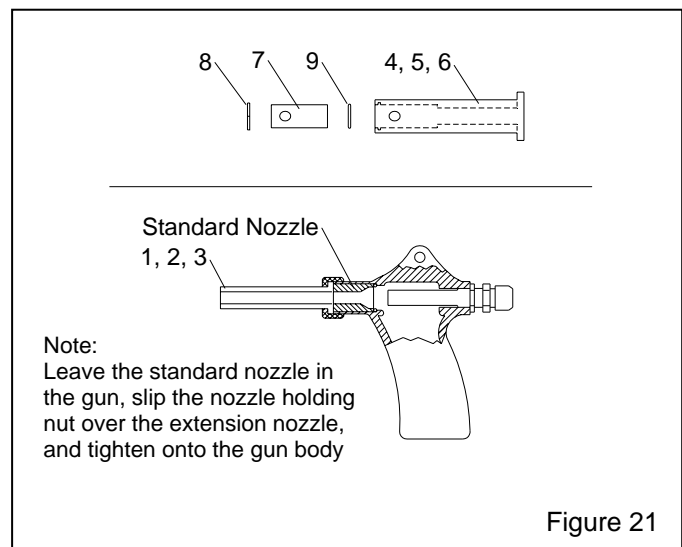


Figure 21

9.2 Cabinet Replacement Parts, Figure 22

Item	Description	Stock No.
1.	Gasket, door, adhesive backed 600 requires 21 ft., 720 requires 25 ft. ....	21236
2.	Light assembly .....	22670
3.	Window glass, 20" x 30" .....	12213
4.	Gasket, 5/16" x 3/4", applied to cabinet per foot, 9 feet required .....	00189
5.	Gasket, 5/32" x 3/4", applied to window frame per foot, 9 feet required .....	00192
6.	Cover lens, 20" x 30", pkg. of 5 .....	23232
7.	Grate, slotted front for 600 .....	11824
	for 720 .....	12971
8.	Grate, unslotted for 600 .....	11825
	for 720 (3 required) .....	12970

9.	Nut, plastic, window frame, 2 required .....	23035
10.	Glove set .....	11215
11.	Glove, left hand only .....	12710
12.	Glove, right hand only .....	12711
13.	Clamp .....	11576
14.	Grommet, media and air hose .....	11798
15.	Regulator, 1/2" pilot operated .....	11345
16.	Foot pedal assembly, less tubing .....	20483
17.	Filter, 1/2" manual drain .....	01308
18.	Actuator bracket, door interlock .....	19152
19.	Over-travel stop, door interlock .....	20004
20.	Detent sleeve, door interlock .....	15042
21.	Air valve, 1/8", 3-way, door interlock .....	12202
22.	Eyebolt, 5/8" .....	13421
23.	Cover, track opening .....	12972
24.	Regulator 1/8", pilot, with gauge .....	12715
25.	Gauge, pressure .....	01908
26.	Mastic seal, 11 ft. required .....	06105

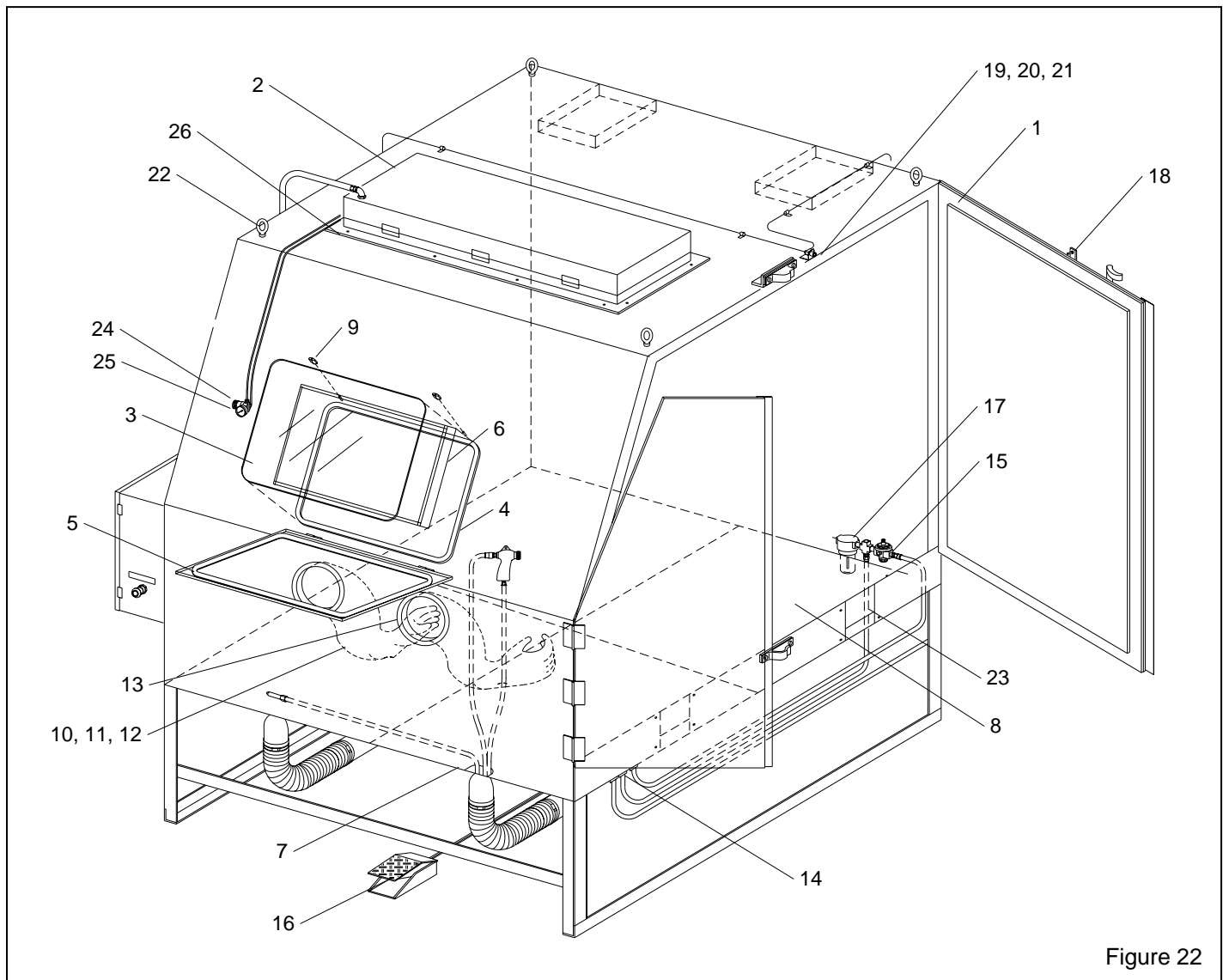


Figure 22

9.3 Cabinet Plumbing assembly, Figure 23

Item	Description	Stock No.
1.	Valve, 3-way	12202
2.	Adaptor, 1/8" NPT x 1/8" barb	11732
3.	Tubing, 1/8" urethane, specify ft required	12475
4.	Tubing, urethane twinline, specify ft. reqd.	19577
5.	Foot pedal assembly, less tubing	20483
6.	Bushing 1/2"x 1/8" NPT	11350
7.	Bushing 1/4"x 1/8" NPT	02010
8.	Bracket, mounting	19231
9.	Filter, 1/2" manual drain	01308

10.	Adaptor, 1/2" NPT x 1/2" flare	11351
11.	Hose end, 1/2" barb x 1/2" female swivel	15002
12.	Hose end, 1/2" barb x 3/8" male NPT	06369
13.	Blow-off nozzle	13116
14.	Hose, 1/2" air, specify ft. required	12472
15.	Gun assembly, BNP no. 5	12302
16.	Hose, media, clear urethane, specify ft reqd.	12476
17.	Regulator, 1/2" pilot operated	11345
18.	Regulator, 1/8" pilot	12715
19.	Gauge pressure	01908
20.	Cross, 1/2"	10254
21.	Metering valve assembly	12417
22.	Fitting, 1/8" NPT elbow x 1/8" barb	11733

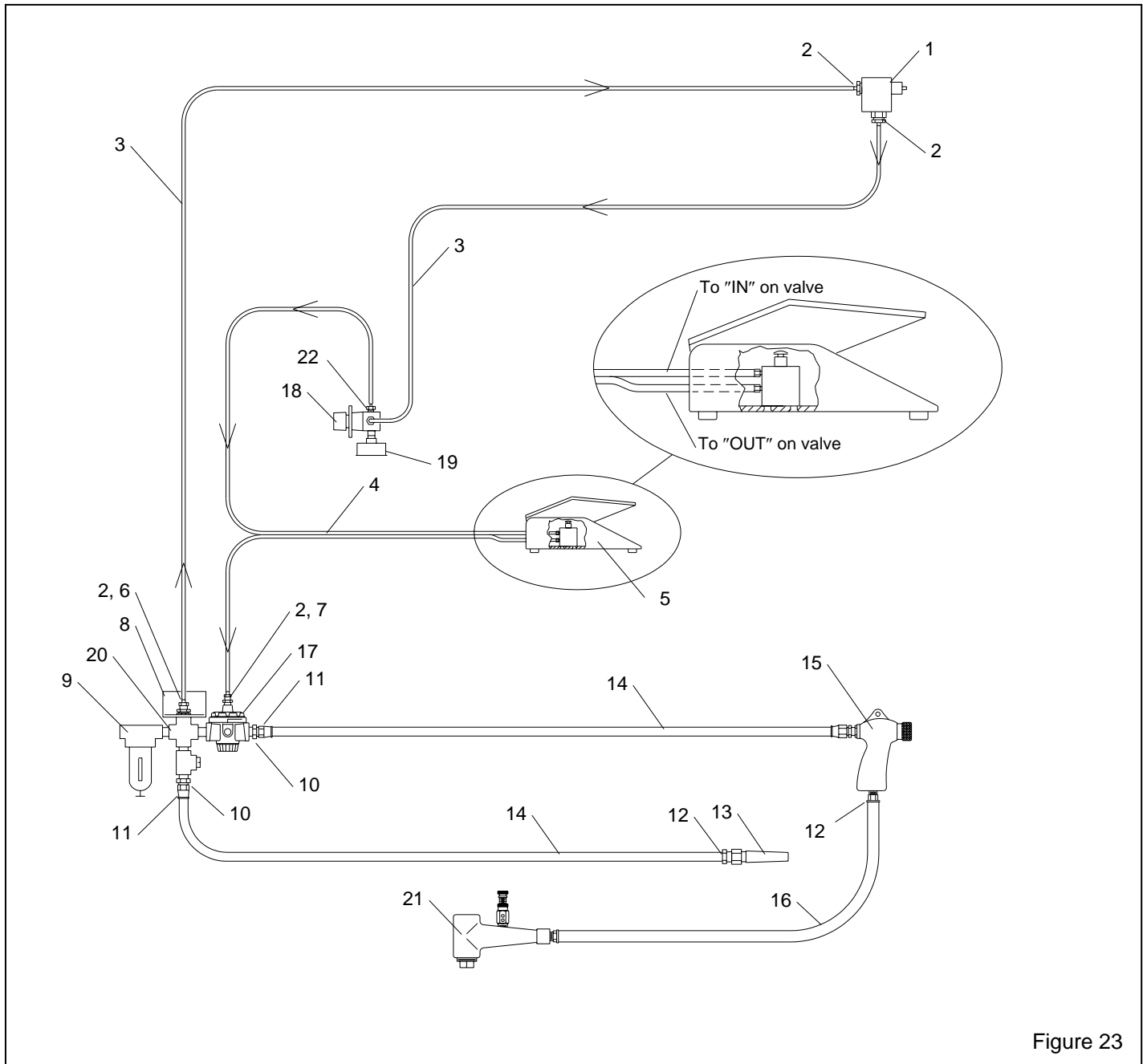


Figure 23

9.4 BNP Gun and Feed Assembly, Figure 24

Item	Description	Stock No.
(-)	BNP Gun assemblies less nozzle, includes items 1 (brass) through 7	
	No. 4 Gun	12301
	No. 5 Gun	12302
	No. 6 Gun	12303
	No. 7 Gun	12304
	No. 8 Gun	12305
1.	Nut, nozzle holding	
	Standard, knurled brass	11914
	Urethane covered	11574
2.	O-Ring	08975
3.	Gun body	11802
4.	Lock nut, air jet	11913
5.	Rubber sleeve	12097
6.	Air jet assembly w/ Item 5	
	No. 4	12342
	No. 5	12343
	No. 6	12344
	No. 7	12345
	No. 8	12346
7.	Fitting, hose, 3/8" NPT x 1/2" barb	06369
8.	Hose end, 1/2" barb x 1/2" fem. swivel	15002

9.	Nozzle, ceramic	
	No. 5	11930
	No. 6	11931
	No. 7	11932
	Nozzle, boron carbide	
	No. 5	11935
	No. 6	11936
	No. 7	11937
	No. 8	12894
	Nozzle, tungsten carbide	
	No. 5	13118
	No. 7	12882
	No. 8	11942
10.	Hose, 1/2" air, specify ft. required	12472
11.	Hose, media, clear urethane, specify ft. required	12476
12.	Wide spray nozzle	
	Tungsten carbide, No. 6	11947
	Boron carbide	
	No. 6	11934
	No. 8	11944
13.	Wide spray nozzle nut	
	Knurled brass	11916
	Urethane covered	12906
14.	Wide spray retaining ring	12038
15.	Wide spray nozzle guard	12295
16.	Orifice adjusting tool	19041

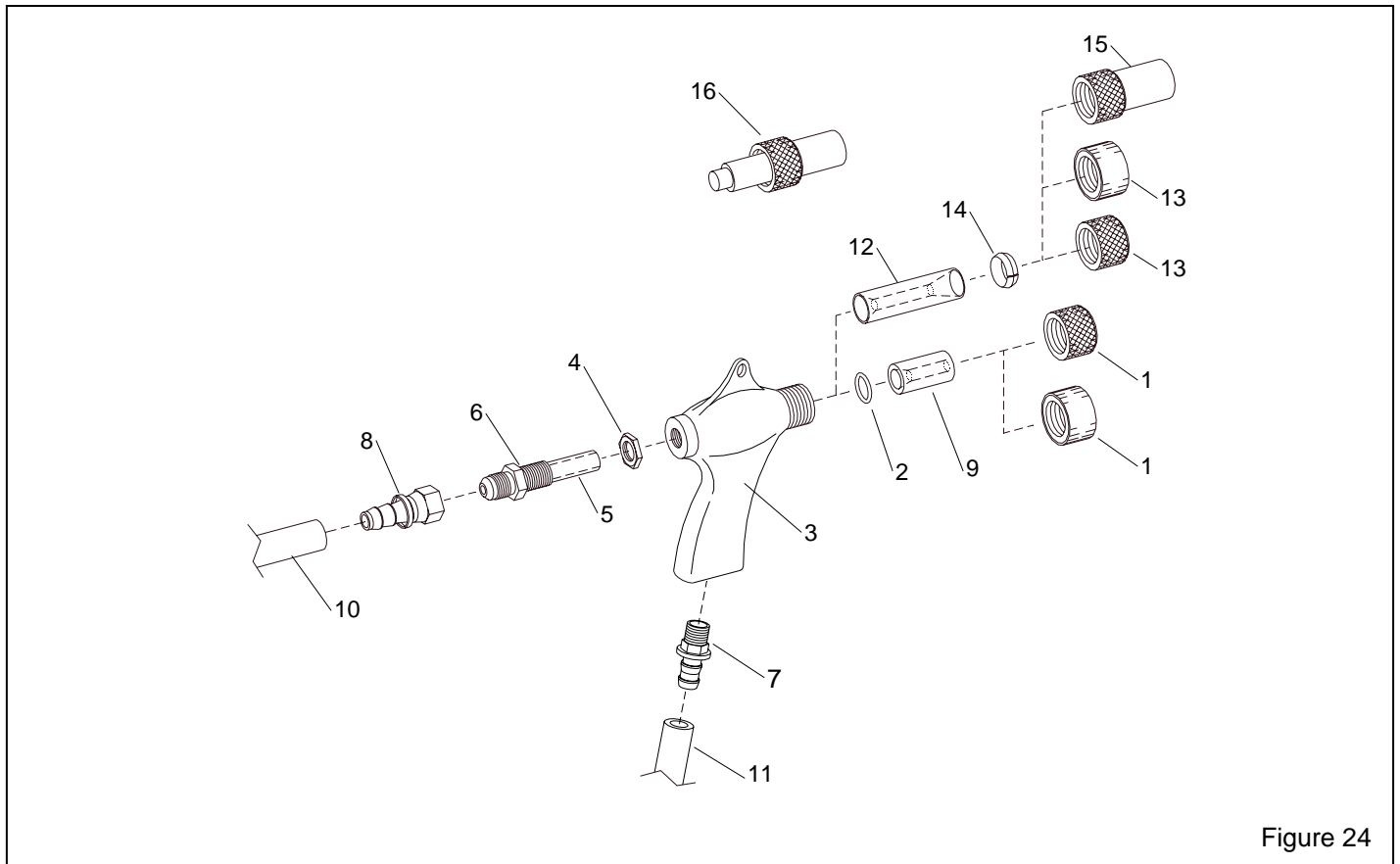


Figure 24

9.5 Foot Pedal Assembly, Figure 25

Item	Description	Stock No.
(-)	Foot pedal assembly, less tubing .....	20483
1.	Top, foot pedal .....	20017
2.	Base, foot pedal .....	19991
3.	Valve, 10-32, 3 way n/c .....	20026
4.	Drive pin, grooved .....	20109
5.	Screw, sh 1/4 NF x 3/4" .....	03086
6.	Screw, 10-32 x 1/2" fh .....	19571
7.	Adaptor, 10-32 thrd. x 1/8 barb .....	11731
8.	Spring, 1-1/4" x 3-1/2" .....	20121
9.	Screw, 8-32 x 3/8" thread cutting .....	11389
10.	Bumper, rubber (feet) .....	21522

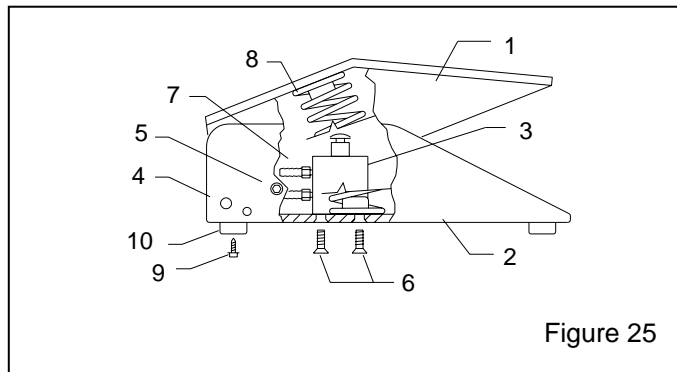


Figure 25

9.6 Metering valve assembly, Figure 26

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

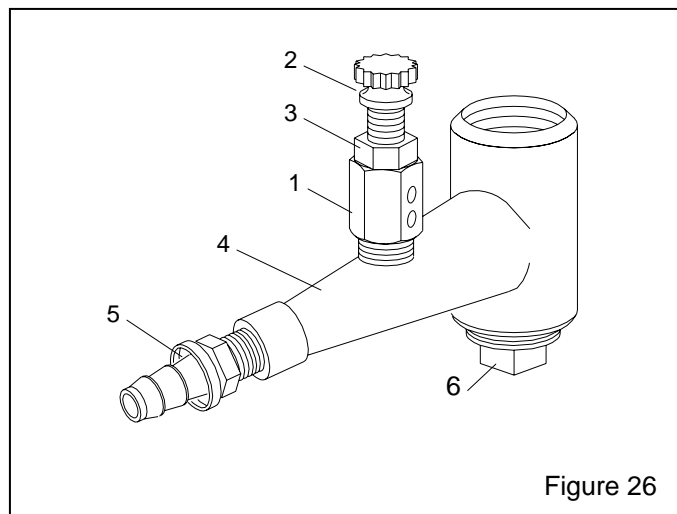


Figure 26

9.7 Flex Hose & Wye Adaptor, Figure 27

Item	Description	Stock No.
1.	Hose, light lined flex, specify length required.	
	4" ID .....	12466
	5" ID .....	12467
	6" ID .....	12468
	7" ID .....	12469
	8" ID .....	12470
2.	Clamp, hose	
	for 4" hose .....	11577
	for 5" hose .....	11578
	for 6" hose .....	00750
	for 7" and 8" hose .....	11576
3.	Wye Pipe adaptor	
	two 4" x one 6" .....	12379
	two 5" x one 7" .....	16939
	Consult local distributor for larger sizes	

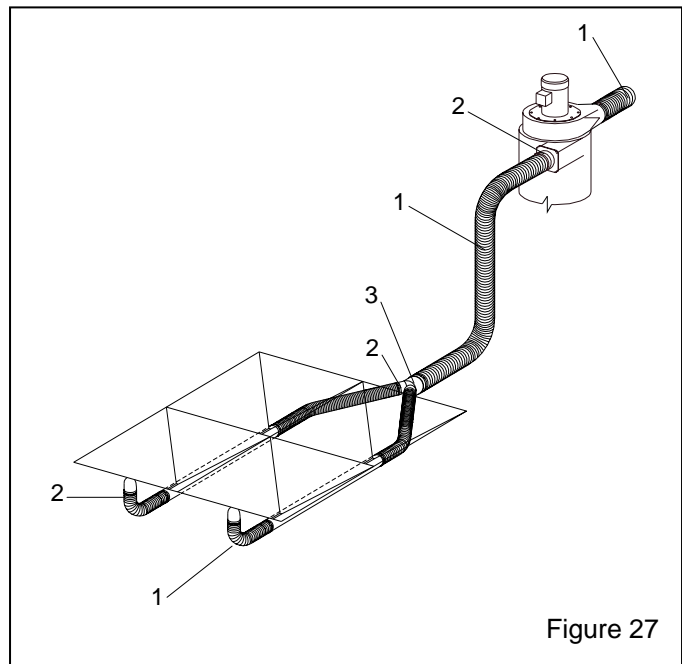


Figure 27

9.8 Reclaimer, Figure 28

NOTE: Exhauster components, Items 1 - 4, are not shown for 1200 and 1800 cfm reclaimers, because exhauster equipped RP dust collectors are recommended for those reclaimers.

Item	Description	Stock No.
(-)	Reclaimer body assembly, less exhauster 900 cfm, .....	12399
(-)	Reclaimer assembly, w/ exhauster 900 cfm, .....	12398
(-)	Reclaimer assembly, pull-through type with adjustable vortex	
	900 cfm .....	21305
	1200 cfm .....	21306
	1800 cfm .....	21307
1.	Motor, 900 cfm reclaimer, 2 HP, 3-PH .....	12309
2.	Plate, motor mount, 900 cfm .....	12005
3.	Housing, 900 cfm exhauster .....	12271
4.	Paddle wheel, 900 cfm .....	12335
5.	Gasket, 5/16" x 1" adhesive backed, specify ft. required .....	00187
6.	Inlet pipe adaptor 900 cfm, 6" .....	12363

7.	Gasket, inlet adaptor	
	900 cfm .....	11759
	1200 cfm .....	11767
	1800 cfm .....	11765
8.	Wear plate	
	900 cfm .....	14055
	1200 cfm .....	19223
	1800 cfm .....	23028
9.	Screen assembly .....	21265
10.	Gasket, door	
	900 cfm .....	11745
	1200 cfm and 1800 cfm .....	11766
11.	Spring latch assembly .....	12263
12.	Hose support, inlet	
	900 cfm, 6", optional .....	16887
	1200 cfm 7" .....	20596
	1800 cfm, 8" .....	20597
13.	Vortex cylinder assembly, adjustable, for exhauster mounted reclaimer (optional)	
	900 cfm .....	23047
14.	Vortex cylinder assembly, adjustable, standard with pull-through reclaimer	
	900 cfm .....	23046
	1200 cfm .....	19087
	1800 cfm .....	19090
15.	Gasket, 2" adhesive backed, specify feet required .....	13089

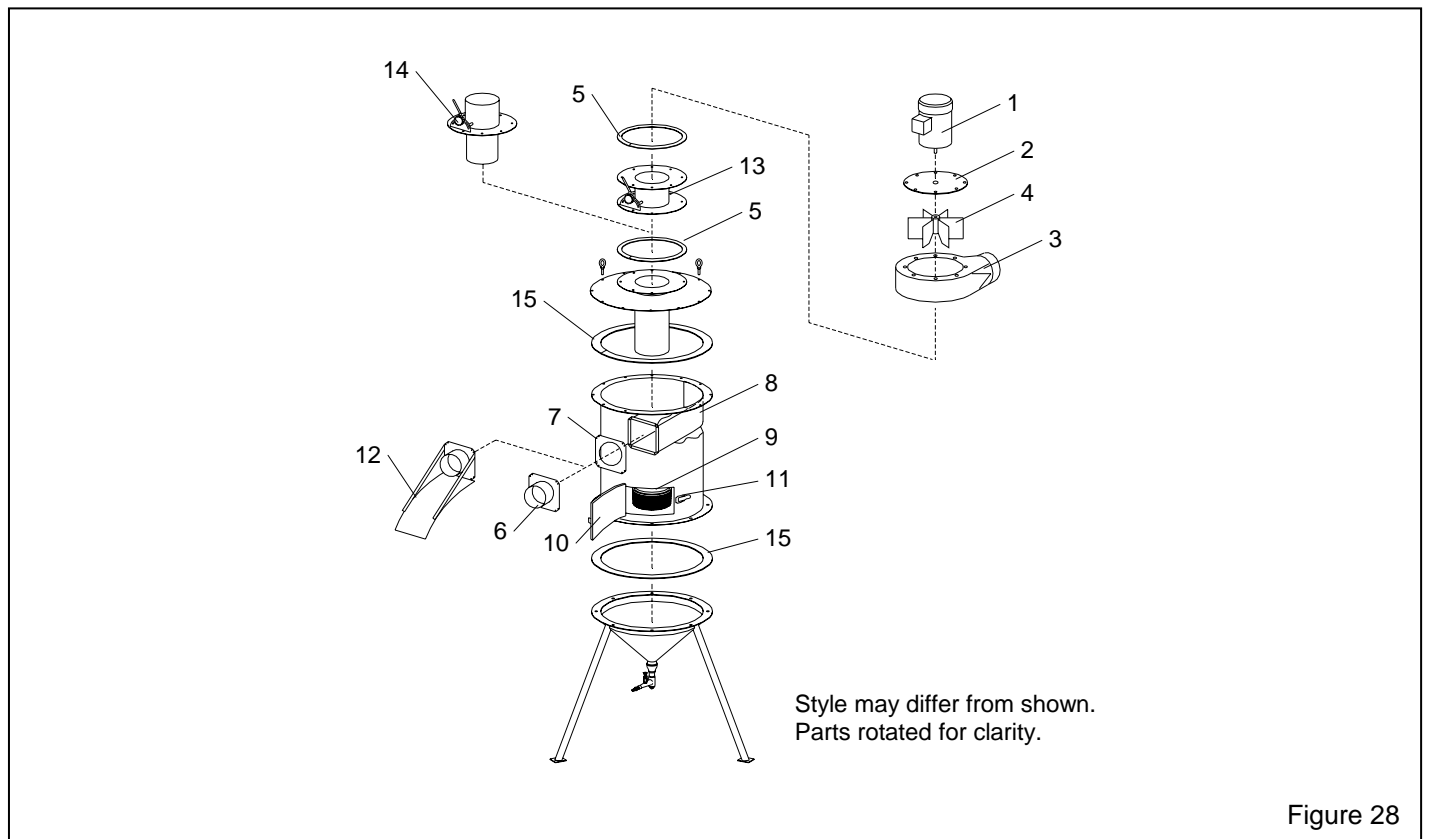


Figure 28



**9.9 Rubber Liners, Figure 29**  
Reclaimer must be designed for liners and have a removable top.

Item	Description	Stock No.
(-)	Rubber liner sets	
	900 cfm .....	23151
	1200 cfm .....	23152
	1800 cfm .....	23153
1.	Top liner	
	900 cfm .....	23059
	1200 cfm .....	22689
	1800 cfm .....	22695
2.	Baffle, lined	
	900 cfm .....	23416
	1200 cfm .....	22691
	1800 cfm .....	22696
3.	Side liner, reclaimer body	
	900 cfm .....	17008
	1200 cfm .....	22692
	1800 cfm .....	22697
4.	Inlet side liner	
	900 cfm .....	12830
	1200 cfm .....	22693
	1800 cfm .....	22698
5.	Sump liner	
	900 cfm .....	16070
	1200 cfm .....	22694
	1800 cfm .....	22699
6.	Inlet top	
	900 cfm .....	22827
	1200 cfm .....	24031
	1800 cfm .....	24032
7.	Screw, self drilling, 10-16 x 3/4" .....	12722

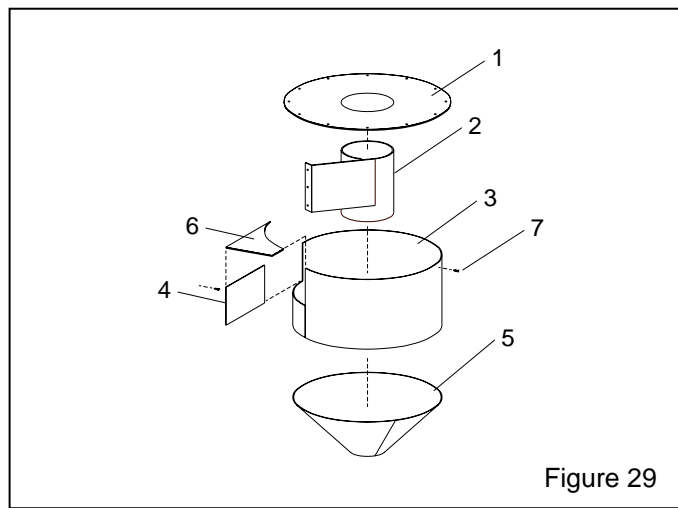


Figure 29

**9.10 Dry Filter Dust Collector, Figure 30**

Item	Description	Stock No.
(-)	Dry filter, complete 900 cfm .....	12701
1.	Inlet adaptor w/ damper, 7" for 900 cfm .....	14273
2.	Gasket, inlet adaptor, 900 cfm .....	11763
3.	Gasket, dust drawer .....	11771
4.	Spring latch assembly .....	12263
5.	Drawer, dust, 900 cfm .....	14276
6.	Plate, inlet cover, for 900 cfm .....	14278
7.	Tubular filter, each, 900 cfm requires 40 .....	11503
8.	Shaker, tube filter, 900 cfm .....	12415
9.	Handle, shaker .....	12899

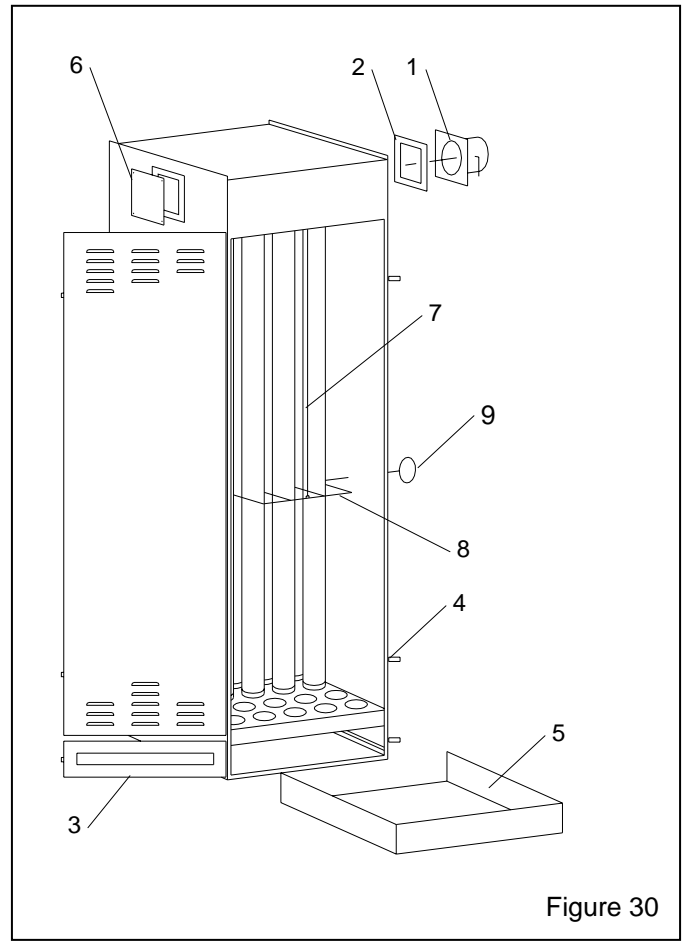


Figure 30