

4-GALLON TUMBLE-BASKET BLAST CABINET O. M. 30169

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REVISION:

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

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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 user 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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This equipment is only one component of a cabinet blasting operation. Other products, such as air compressors, air filters and receivers, abrasives, equipment for ventilating or dehumidifying, or other equipment, even if offered by Clemco, may have been manufactured or supplied by others. The information Clemco provides is intended to support the products Clemco manufactures. Users must contact each manufacturer and supplier of products used in the blast operation for warnings, information, training, and instruction relating to the proper and safe use of their equipment.

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1.0 INTRODUCTION

1.1 Scope of Manual

1.1.1 These instructions cover setup, operation, maintenance, troubleshooting, optional accessories, and replacement parts for the 4-Gallon Tumble-Basket Blast Cabinet.

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



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

NOTICE

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

CAUTION

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

WARNING

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

DANGER

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

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1.4 General Description

1.4.1 The 4-Gallon Tumble Cabinet blasts batches of small-size to medium-size parts using two adjustable, but fixed, nozzles, and a rotating basket. The tumble system consists of two major components:

1. Cabinet enclosure
2. Power module consisting of:
 - 300 cfm reclaimer
 - 300 cfm reverse-pulse cartridge dust collector

Refer to the following figures for primary components:

Figure 1 General arrangement

Figure 2 Primary cabinet components

Figure 3 Power module components

1.4.2 The maximum capacity of the basket is 35 lbs and approximately 4-gallons by volume.

1.5 Theory of Operation

1.5.1 Blasting: Once the cabinet is correctly set up and parts are loaded into the basket, the air supply and exhauster are turned ON, and the cabinet door is closed, the cabinet is ready for operation. Begin operation by setting the timer located in the control box atop the cabinet enclosure. Setting the timer causes air to flow through the fixed, adjustable blast guns and starts the basket rotation. The partial vacuum created by air moving through the gun draws media into the blast-gun mixing chamber. Next, media mixes with the air stream and is propelled out the nozzles. As the basket rotates, the parts tumble in the blast stream ensuring that all parts and surfaces are uniformly cleaned. Some of the blast media remains in the basket to cushion the parts as they tumble.

1.5.2 Media recovery and separation: A portion of the blast media, along with fines, dust, and byproducts generated by blasting, flows through the perforated drum into the cabinet hopper. These particles are then drawn into the reclaimer for separation. Dust and fines are first separated from reusable blast media and drawn into the dust collector. Next, the media is screened of oversize particles and returned to the reclaimer hopper for reuse. Dust and fines drawn through the reclaimer are trapped on the outer surface of the dust-collector filter cartridge, discharging clean air through the exhauster. Blasting automatically stops when the timed cycle is completed.

1.5.3 Dust collector: The dust-collector filter cartridge is cleaned at regular timed intervals by a pulse of high-velocity compressed air expanding against the inner surface of the cartridge. The expanding air momentarily reverses air flow through the cartridge to release dust accumulated on the outer surface. The dust particles fall away from the cartridge and into the hopper for removal.

Pulse timing is controlled with the digital pulse timer and air pressure. The pulse sequence automatically begins when the exhauster is turned ON. There are times, such as when seasoning the filter cartridge, that pulsing should be OFF. To prevent automatic pulsing turn the pulse-pressure regulator, located on the pulse reservoir to 0 psi. Refer to Section 5.8 to set pulse pressure. If pulse pressure is set to 0 psi, the timer is still functioning but there is no pulse because pressure is turned off. Pulse pressure should be left OFF (0 psi) until the cartridge is seasoned, per Section 7.8.

NOTICE

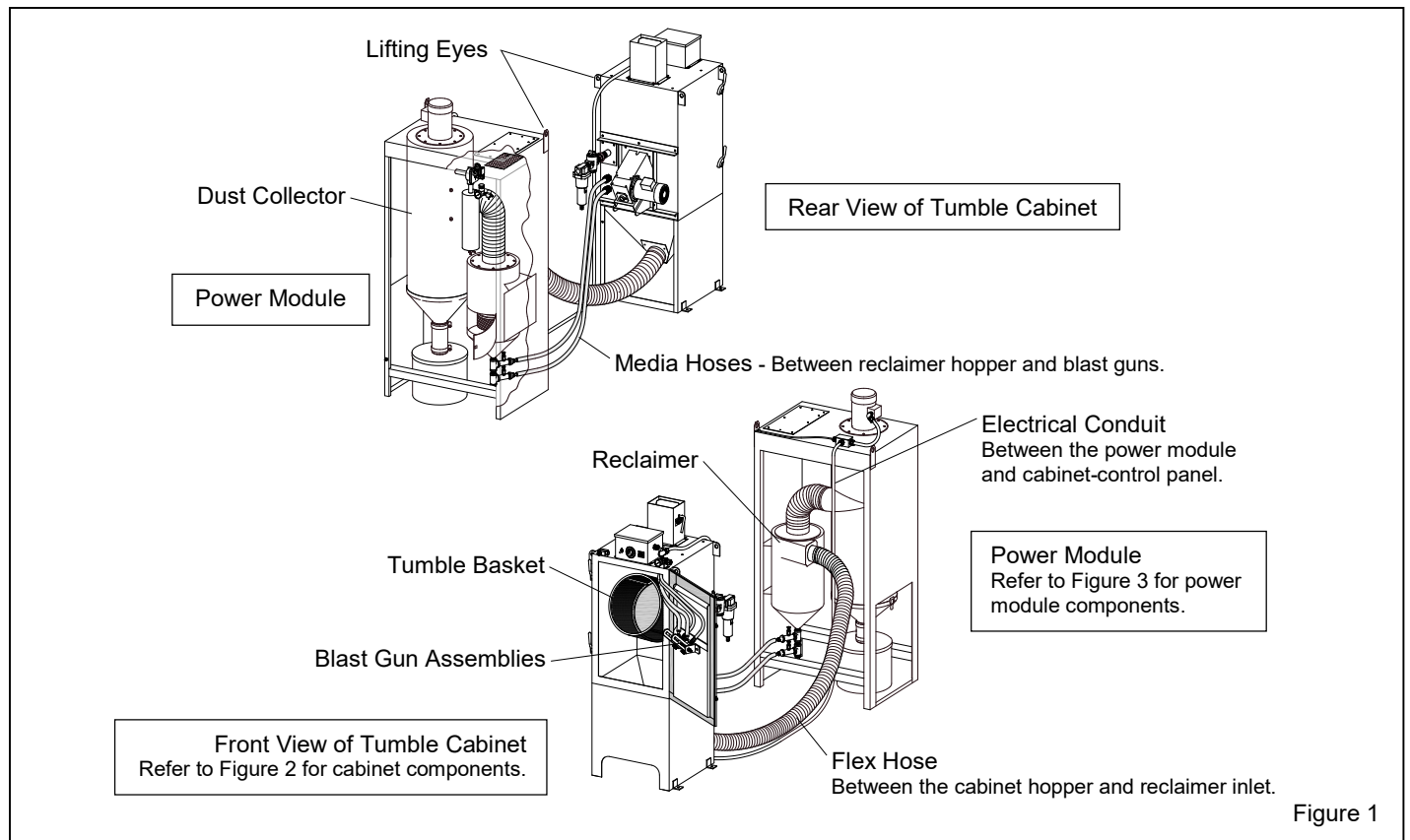
Do not pulse a new dust collector or replacement cartridge until the cartridge is properly seasoned, per Section 7.8. Pulsing an unseasoned cartridge can decrease the efficiency of the dust collector and cause premature cartridge failure.

1.6 HEPA (high-efficiency particulate air) Filter

1.6.1 The optional HEPA afterfilter provides additional filtration. A HEPA filter must be used when removing lead coatings, heavy metals, or any other toxic materials. The HEPA filter is listed in *Section 9.1: Optional Accessories*.

⚠ WARNING

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



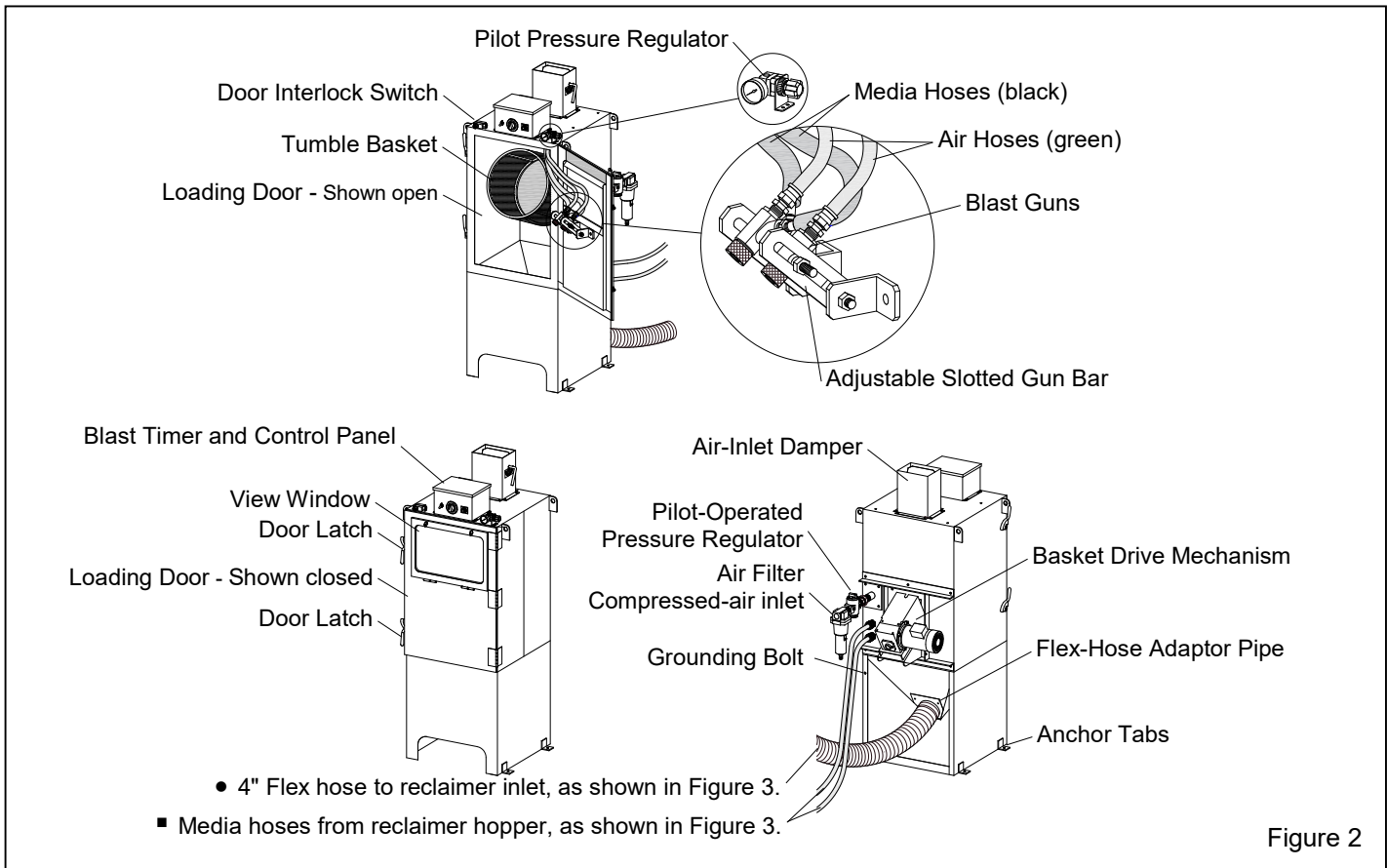


Figure 2

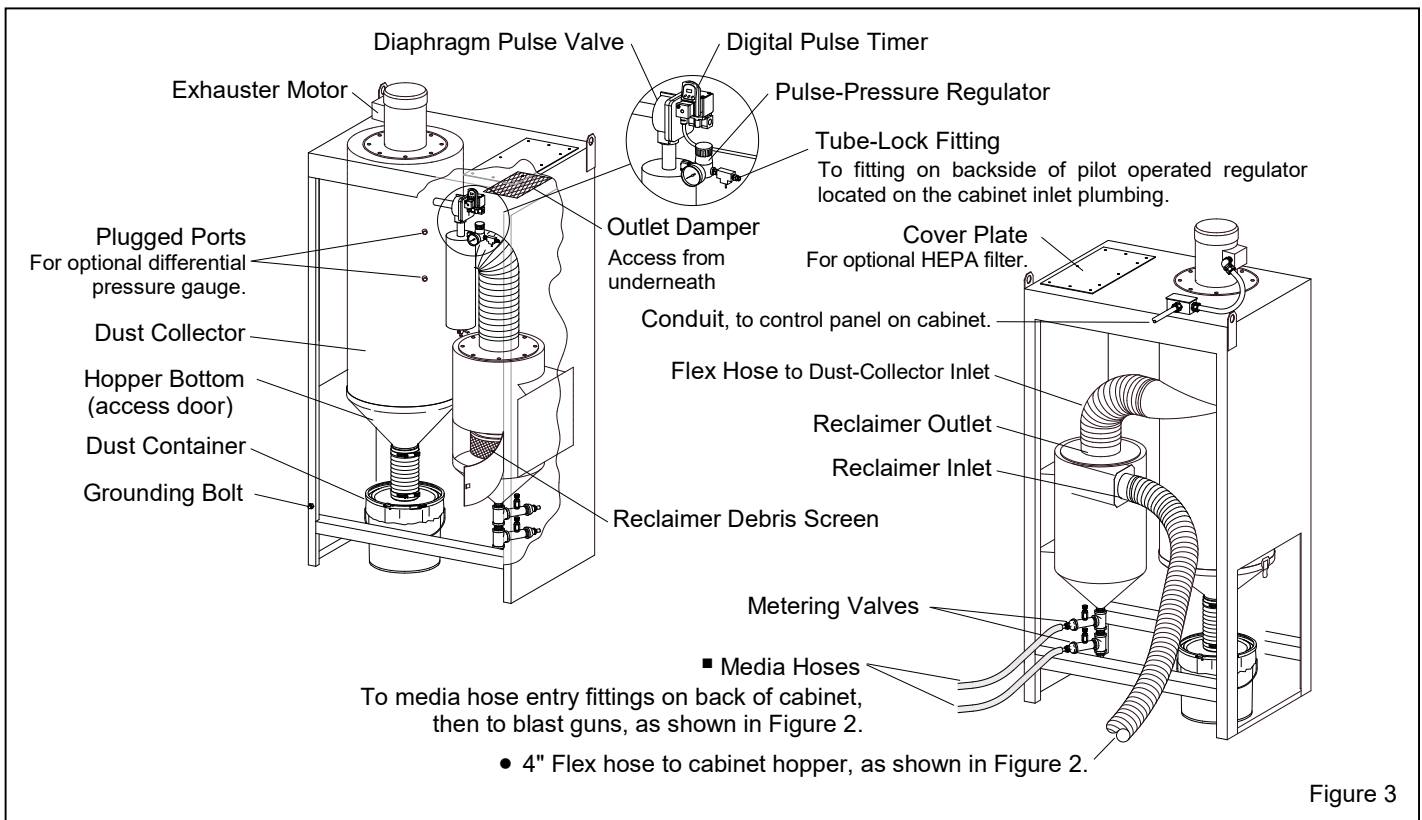


Figure 3

1.7 Control's Functions

1.7.1 Cabinet enclosure controls

1.7.1.1 ON/OFF toggle switch: The toggle switch located on the panel atop the front of the cabinet is the power-supply switch. It starts and stops the dust-collector exhauster, located on the power module. The exhauster ventilates the cabinet and draws media into the reclaimer for separation. The toggle switch also enables and disables the following functions.

- Tumble-motor timer
- Tumble-motor speed potentiometer
- Dust-collector pulse timing

1.7.1.2 Tumble-motor timer: Sets duration of the blast cycle and starts the blasting. Blasting automatically stops when the timer times out. The timer will not enable blasting unless the power-supply toggle switch is ON, as noted in Section 1.7.1.1.

1.7.1.3 Tumble-motor speed potentiometer: Controls the rotation speed of the tumble-basket motor. The timer will not enable blasting unless the power-supply toggle switch is ON, as noted in Section 1.7.1.1.

1.7.1.4 Door interlock: When the door is open, the blast guns are disabled, preventing blasting.

1.7.1.5 Blast-pressure regulator: The pilot regulator located on the upper-right side of the cabinet controls blasting pressure. Refer to Section 5.1 to adjust pressure.

1.7.2 Power module controls

1.7.2.1 Pulse-sequence ON/OFF time: Filter cartridge pulse timing is controlled by the digital timer located on the cover of the diaphragm pulse valve.

1.7.2.2 Pulse ON time: Controls the pulse duration (how long the air pulse stays on). The timer is factory set at 0.15 of a second ON time. Do not adjust pulse ON time.

1.7.2.3 Pulse OFF time: Controls pulse OFF time, the time between each pulse. The timer is factory set at 40 seconds OFF time; every 40 seconds the dust-collector filter cartridge is pulsed. Refer to Section 5.9.2 for adjustment procedure.

1.7.2.4 Pulse-pressure regulator: The regulator located on the pulse reservoir controls cartridge - cleaning pulse pressure. Refer to Section 5.8 for adjustment procedure. NOTE: Pressure should be set to zero (0 psi) until the cartridge is seasoned, per Section 7.8.

1.8 Air-Jet Options

1.8.1 Ventilation requirements limit the orifice to a No. 5 (5/32" diameter orifice) air jet. A smaller, No. 4 (1/8" diameter orifice) air jets may be used when the compressed-air supply is limited. Refer to the table in Figure 4 for compressed-air cfm requirements.

1.9 Nozzle Options

1.9.1 Unless otherwise specified at the time of order, cabinets are supplied with No. 5 ceramic nozzles. No 4 nozzles are available for use with No. 4 air jets. Optional, more durable tungsten-carbide and boron-carbide nozzles are available and are shown in *Section 9.5 Auto Blast-Gun Assembly*. Use boron-carbide nozzles when blasting with aggressive media, as shown in Section 1.10.5.

1.10 Blasting Media

1.10.1 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 the presence of any hazardous/toxic substances.

1.10.2 The tumble cabinet utilizes most common media between 60 mesh and 180 mesh that is specifically manufactured for dry blasting. The usable media mesh sizes are based on typical media flow. Rich media flow or low static pressure will reduce the mesh and nozzle size that may be used. Media sizes noted are guidelines only and are based on 5/32" orifice air jets and average conditions.

1.10.3 Steel: Steel grit or shot is too heavy to use with the tumble system.

1.10.4 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 for cabinet use because they rapidly break down and are not recyclable.

1.10.5 Silicon carbide, aluminum oxide, and garnet: These are the most aggressive of the commonly used media. Aggressive media may be used, but the service life of any components exposed to the media will be reduced. To avoid unscheduled downtime and to maximize cabinet life, periodically inspect the reclaimer

wear plate, hoses, and nozzles for abrasive wear. When using aggressive abrasive, use boron carbide nozzles to prolong service life. Refer to Section 9.5 for gun parts.

1.10.6 Glass bead: Most beads are treated to ensure free-flow operation even under moderately-high humidity conditions. Glass beads subjected to excessive moisture may be reused after thorough drying and breaking up of the clumps.

1.10.7 Lightweight media: In most cases, plastic media and most agricultural media are not recommended with the tumble cabinet. They are usually too light for suction blast applications. The media may bridge in the basket and carry over to the dust collector.

1.11 Compressed-Air Requirements

1.11.1 The size of the compressor required to operate the cabinet depends on the size of the air jets and blasting pressure. Unless specified otherwise, cabinets are supplied with two No. 5 (5/32" orifice) jets. Refer to the table in Figure 4 to determine the compressed-air cfm requirements. The cfm shown in the table is based on both air jets. Consult with a compressor supplier for a suggested compressor size based on the air consumption.

Jet Orifice	Nozzle	CFM	PSI
1/8"	5/16"	42	80
5/32"	5/16"	64	80

Compressed Air Consumption in CFM
The cfm noted in the table is based on both air jets.

Figure 4

1.11.2 The filter at the air-inlet connection reduces condensed water from the compressed air. Its use is especially important in areas of high humidity or when using fine-mesh media. Moisture causes media to clump and inhibits free flow through the feed assembly. If the filter does not remove enough moisture to keep media dry and flowing, it may be necessary to install an air dryer or aftercooler in the air-supply line.

1.12 Electrical Requirements

1.12.1 Standard cabinets require 120-VAC, 1-PH, 60 Hz, with 15-amps service.

Motor amps are the following:

Pulsar-III power module: 1/2 HP, 120/230V, 1-PH, 60 Hz, wired 120, FLA 120/7, 208/3.4, 230/3.5.

Basket drive motor: 1/4 HP, DC drive, FLA 90/2.5

2.0 INSTALLATION

Unless noted otherwise, the sequence of assembly in Sections 2.2 through 2.9 may be done in any order that is convenient for the installer.

2.1 General Installation Notes

2.1.1 Refer to Figure 1 for the general arrangement. Place the cabinet and power module in a convenient location where compressed air and electrical service are available. The cabinet location must comply with OSHA and local safety codes. Allow full access to all doors and service areas. Leave enough clearance around the power module to service the reclaimer and dust collector. Ideal placement of the power module is directly behind the cabinet, with hose connections toward the cabinet, and with as few bends as possible. Determine the best location and position the cabinet and power module before making compressed-air connections, electrical connections, and attaching hoses.

2.2 Connect Flexible Conveying Hose

2.2.1 Connect the flexible conveying hose between the cabinet-hopper adaptor pipe and 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 are removed from the inside of the hose. Use care not to damage the hose. Clamp flex hose securely in position with the 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.**

2.3 Connect Compressed-Air Supply Line Figure 5

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.

2.3.1 Install an isolation valve at the air source to enable depressurization for maintenance.

⚠ WARNING

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

2.3.2 Refer to Paragraph 2.3.3 to determine the recommended air-supply hose size, then refer to Figure 5 and install a compatible fitting to the compressed-air filter located on the back of the cabinet. The style of connection shown in Figure 5 is for reference only.

2.3.3 Connect a 3/4" ID or larger air line from the air source to the air fitting previously installed on the air filter. A smaller diameter hose may reduce blasting efficiency.

⚠ WARNING

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

2.4 Connect Interconnecting Tubing – Figure 6

2.4.1 Connect 3/8" tubing between the tube fitting on the pilot-operated pressure regulator (mounted on the back of the cabinet) and the fitting on the pulse-pressure regulator (located on the power module).

2.4.2 To reconnect the tubing to the fitting, insert it through the fitting's collar and push until it bottoms out in the fitting. Tug on the tubing to make sure it is secured. Refer to Section 7.6 for additional instructions for using tube-lock fittings.

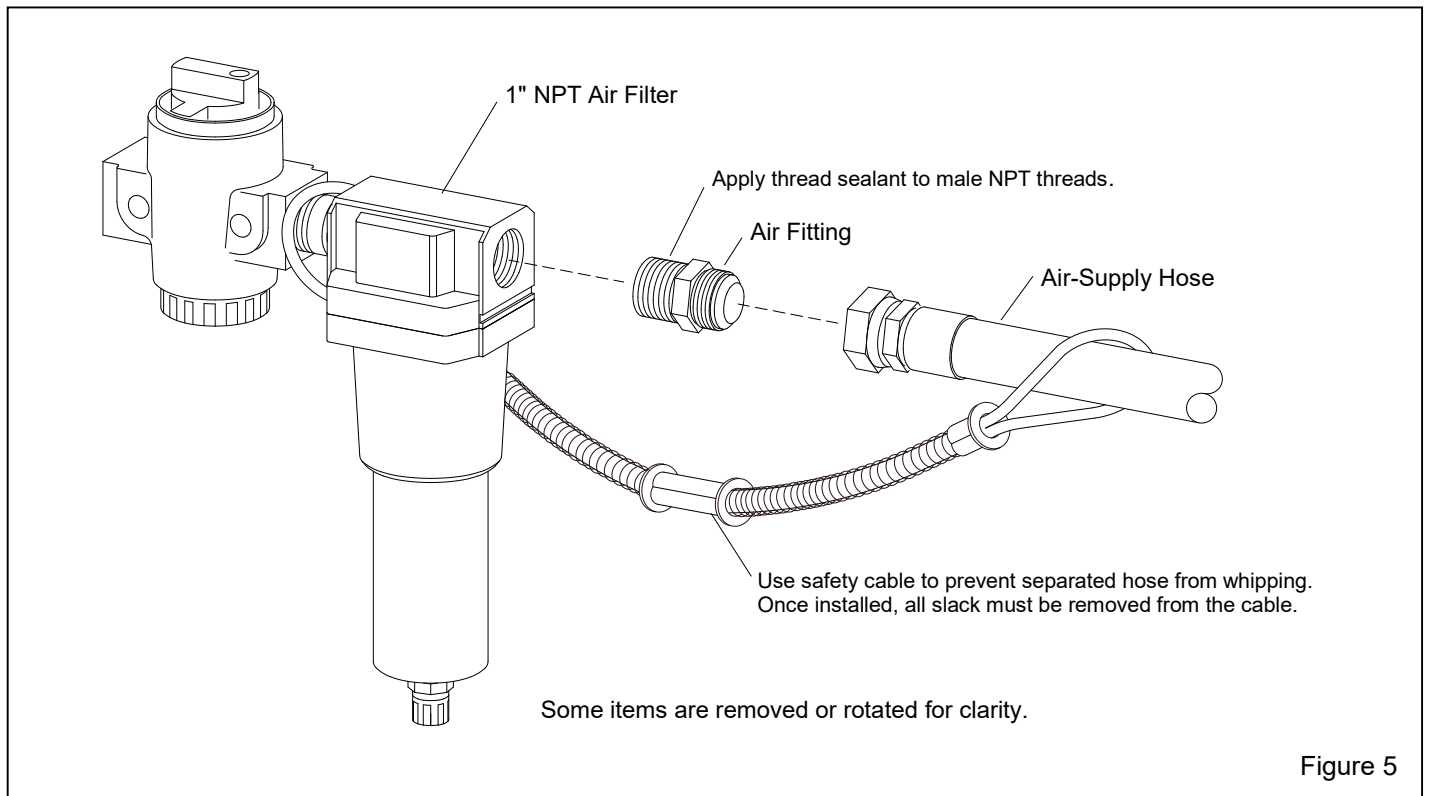


Figure 5

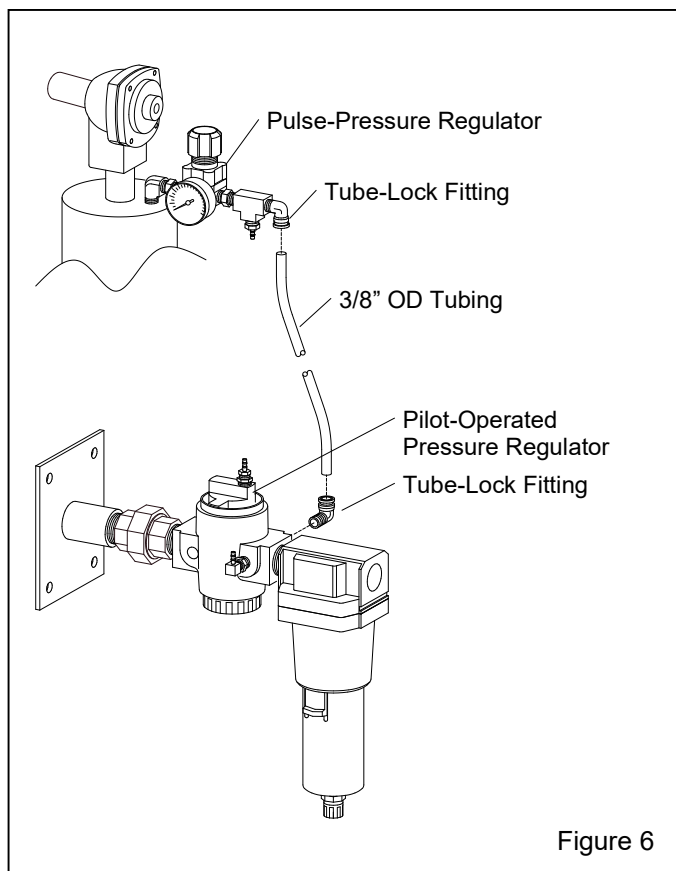


Figure 6

2.5 Connect Media Hoses – Figure 7

2.5.1 Media hoses are coiled under the cabinet. Slip the free ends of the black media hoses over the nipples on the metering valves, as shown in Figure 7. Hoses are held on by friction; it is not necessary to clamp them.

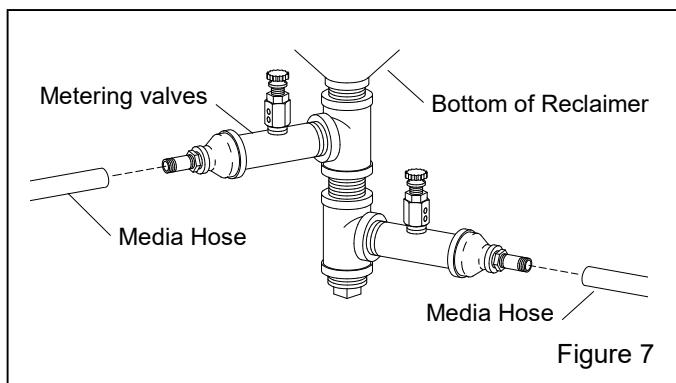


Figure 7

2.6 Ground Cabinet and Power Module

2.6.1 To prevent static electricity build up, attach externally grounded wires from an earth ground to the grounding bolt on the left rear of the cabinet and to the bolt on the left leg of the power module.

2.7 Connect Electrical Service

NOTE: 120 volt 1-phase wiring schematic is packed in the electrical panel. After wiring is completed, keep the schematic with the manual for future reference and for electrical replacement parts.

⚠ WARNING

Lockout and tagout the electrical supply before performing any electrical service. Shorting electrical components could result in death, serious injury from electrical shock, or equipment damage. All electrical work, or any work done inside an electrical panel, must be performed by qualified electricians, and comply with applicable codes.

2.7.1 Attach the conduit and wiring from the power module to the cabinet's control panel and wire the control panel per electrical drawings stowed inside the panel.

2.8 Check Motor Rotations

2.8.1 Exhauster Motor: After the wiring is completed, observe the warning below and check rotation of the exhauster motor. To check rotation, jog the starter (quickly turn switch ON and OFF), causing 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 exhauster housing. To reverse rotation, change the wires as noted on the motor plate.

⚠ WARNING

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

2.8.2 Tumble Basket Motor: Check the rotation of the tumble basket; it should rotate counterclockwise when viewed through the access window. Rotation is also indicated by the directional arrow on drive cover at the back of the cabinet. If it does not rotate in to correct direction, **lockout and tagout the power supply**, and swap the two wires in the tumble-basket motor box.

2.9 Set Air-Inlet Damper – Figure 8

2.9.1 The air-inlet damper is located on the top of the cabinet and must be set to create negative pressure inside the cabinet. The label on the damper shows the settings in degrees. The initial setting should align the handle to 30-degrees.

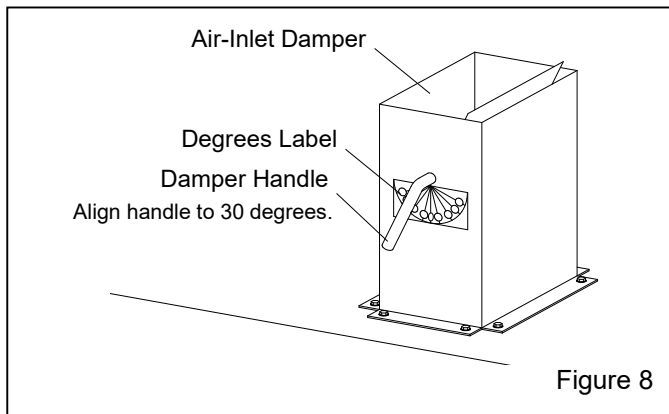


Figure 8

2.9.2 The initial setting aligns the handle to 30 degrees. Loosen the lock nuts and position the damper. When correctly positioned, tighten the lock nuts to maintain the setting.

2.10 Dust-Collector Outlet Damper

2.10.1 The outlet damper adjusts static pressure at the reclaimer. Refer Section 5.10 for adjustment procedure.

2.11 Final Assembly

2.11.1 Attach Drain Tube to Air Filter – Figure 9

2.11.1.1 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.

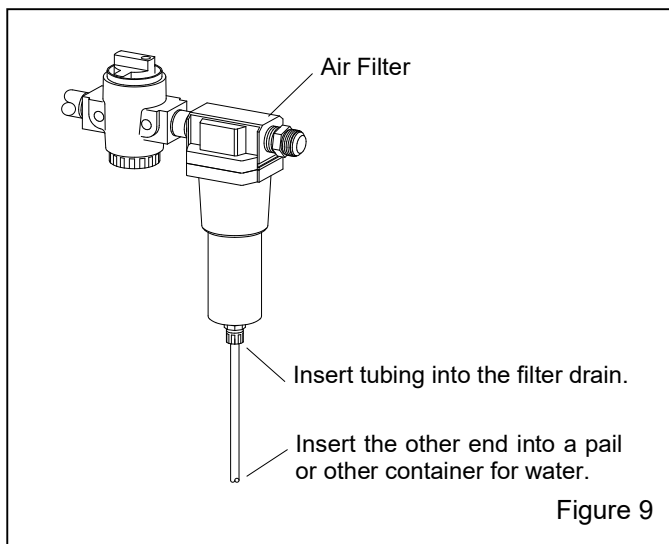


Figure 9

2.11.2 A package of five window cover lenses is supplied with the cabinet. To install a cover lens, remove the adhesive backing and apply the lens to the clean, dry, inner surface of the access window, per Section 6.7. When the cover lens becomes pitted or frosted, replace it. The view window is an access door used to inspect gun

alignment and similar services. Its translucency may or may not be useful during the blasting cycle.

3.0 FIELD INSTALLED ACCESSORIES

3.1 U-Tube Manometer

For taking periodic readings of reclaimer static pressure.

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

3.1.1 Consistent static pressure is necessary for precise media separation, as the reclaimer's efficiency is achieved by a centrifugal balance of air flow, particle weight, and size. The manometer measures static pressure. Reclaimer static pressure is set by adjusting the dust collector-damper. Refer to Section 5.10 to adjust static pressure. Refer to Section 5.11 for instructions on using the manometer.

3.2 Reclaimer Differential-Pressure Gauge Assembly – Figure 10

For continuous monitoring of reclaimer static pressure.

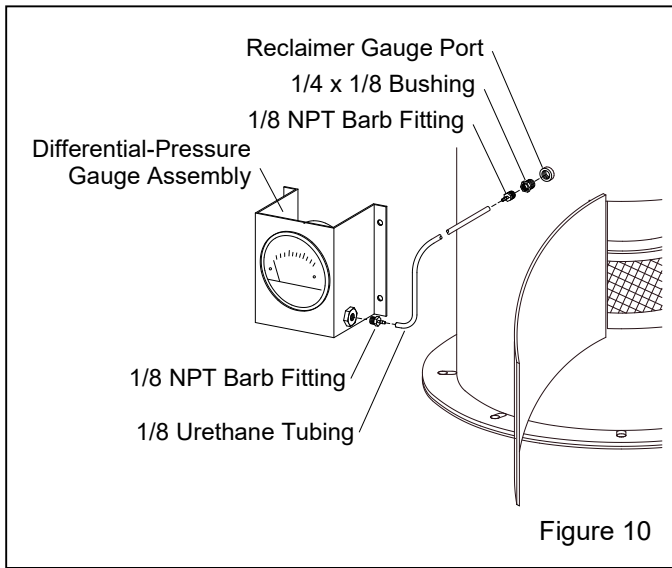
The optional reclaimer differential-pressure gauge assembly is listed in *Section 9.1: Optional Accessories*.

3.2.1 Consistent static pressure is necessary for precise media separation. As the dust-collector's filter cartridge cakes with dust, static pressure decreases, requiring an adjustment to maintain media separation. The differential-pressure gauge is the easiest and fastest way to continually-monitor reclaimer static pressure. Reclaimer static pressure is set by adjusting the dust collector-damper. Refer to Section 5.10 to adjust static pressure.

3.2.2 The gauge panel, gauge, filter, and panel fittings come fully assembled; the bushing, barb fittings, and tubing are loose. Mount the panel at a convenient location on the cabinet, power module, or wall where it can be easily monitored. A 10-foot length of tubing is included with the kit, allowing the panel to be mounted within 10 feet of the reclaimer connections, as shown in Figure 10.

3.2.3 Make sure the panel is mounted close enough to the reclaimer connection for 10 feet of tubing to reach. Mounting holes are on both sides of the gauge panel. After selecting the mounting location, match drill holes, and use nuts and cap screws to secure the panel.

3.2.4 Remove 1/4" pipe plug from the reclaimer body and install the 1/4" x 1/8" bushing and barb fittings, as shown in Figure 10.



3.2.5 Refer to Paragraph 5.10.3 to determine the static-pressure initial setting. Adjust the dust collector damper, per Section 5.10, until the differential pressure on the gauge matches the initial setting.

3.2.6 As the dust-collector filter cartridge cakes with dust, static pressure decreases and is easily noted by monitoring the gauge. When pressure drops, open the outlet damper as noted in Section 5.10 to bring the gauge to the optimum pressure setting as noted Paragraph 5.10.3.

3.2.7 Refer to the differential-pressure gauge manual provided for operation of the gauge.

3.3 Dust-Collector Differential-Pressure Gauge Assembly – Figure 11

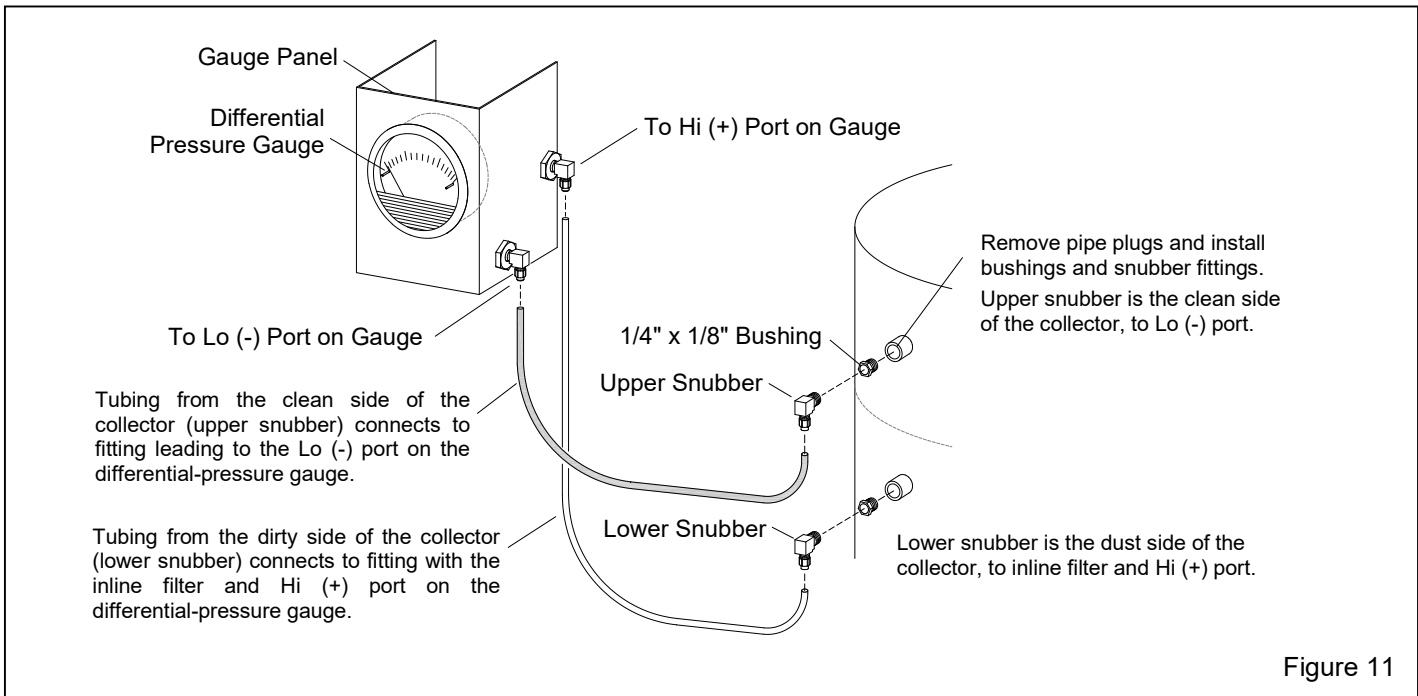
The optional differential-pressure gauge assembly is listed in *Section 9.1: Optional Accessories*.

3.3.1 The differential-pressure gauge is the best way to measure pressure drop across the filter cartridge. As the filter cakes with dust, differential pressure increases. Preset pulse pressure and pulse timing may no longer clean them. The differential-pressure gauge indicates that higher pulse pressure or more frequent pulsing is needed, or the filter cartridge needs to be replace.

3.3.2 The gauge panel, gauge, filter, and panel fittings come fully assembled; the bushings, snubber fittings, and tubing are loose. Mount the panel on the cabinet or power module at a location where it can be easily monitored. One suggestion is to mount the panel on top of the cabinet at either side of the light assembly, or choose another convenient location. A 20-foot length of tubing is included with the kit, allowing the panel to be mounted within 10 feet of the dust collector connections, as shown in Figure 11.

3.3.3 Mounting holes are on the left side and at the bottom of the gauge panel. After selecting the location, match drill holes, and use nuts and cap screws to secure the panel. Make sure the panel is within 10 feet of the dust collector for the tubing to reach.

3.3.4 Remove 1/4" pipe plugs from the dust collector body and install 1/4" x 1/8" bushings and snubber fittings, as shown in Figure 11.



3.3.5 Connect the 1/4" tubing to the snubber fittings and gauge, as shown in Figure 11, by removing the fitting's compression nut, sliding it over the end of the tubing, inserting the tubing into the fitting, and tightening the nut onto the fitting.

3.3.6 Replace filter cartridge when the maximum pulse pressure of 90 psi does not lower the differential pressure below the changeover pressure of 4". Refer to Section 5.8 for adjusting pulse pressure. **NOTE:** The changeover pressure of 4" is based on average conditions, such as media density and reclaimer static pressure. The changeover differential pressure may be higher or lower, depending on cabinet visibility and media recovery.

3.3.7 Refer to the differential-pressure gauge manual provided for operation of the gauge.

4.0 OPERATION

4.1 Season Filter Cartridge

NOTICE

Do not pulse a new dust collector or replacement filter cartridge until the cartridge is properly seasoned, per Section 7.8. Pulsing unseasoned cartridges can decrease the efficiency of the dust collector and cause premature cartridge failure.

4.2 Media Capacity

4.2.1 The approximate capacity and minimum media amount is shown below:

- Minimum media amount 10 lbs
- Media capacity 50 lbs (0.5 cuft)

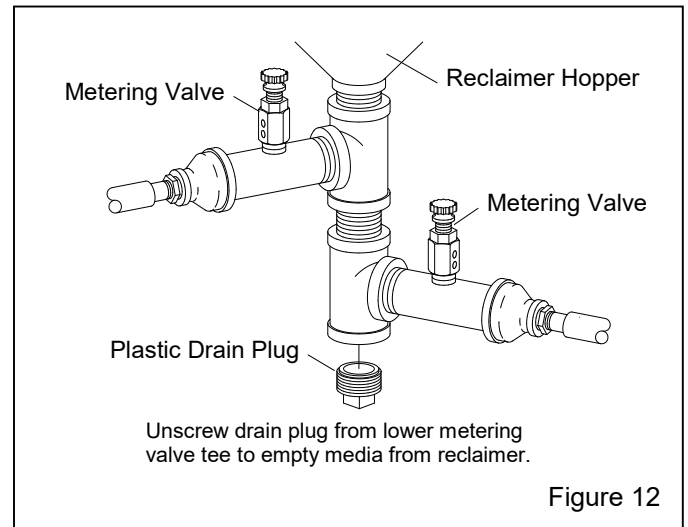
4.3 Loading Media

4.3.1 With the dust-collector exhauster OFF, add clean, dry media by pouring it through the reclaimer 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.

4.4 Unloading Media – Figure 12

4.4.1 To empty the cabinet and reclaimer of media, run the exhauster without blasting for about a minute until all media is recovered from the cabinet.

4.4.2 Turn off the exhauster and place an empty bucket or other suitable container under the metering valves. Unscrew the plastic plug from the bottom metering valve, permitting media to flow into the bucket. If media does not flow, it has caked. Open the reclaimer door and stir the media until it starts to flow. Before the container becomes too heavy to easily manage, replace the plug and empty the container. Replace the plug when the reclaimer is empty.



4.4.3 To purge the cabinet and media hoses, replace the plug and pull the media hoses off the metering valves. Turn ON the exhauster, and turn ON the timer for a couple of minutes, using the guns to blow off the basket and cabinet interior. Turn OFF the timer and exhauster, remove the plug to empty the reclaimer, and reattach the media hoses.

4.4.4 To thoroughly remove spent media, use a vacuum to remove all media from the cabinet and reclaimer. This step is especially important when changing from coarse to fine media or when changing from hard media to soft media.

4.5 Loading Parts

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

4.5.2 Unlatch and open the front door and load parts directly into the tumble basket. Do not overload the basket; maximum load should not exceed 35 lbs or rise above the bottom edge of the retainer, as shown in Figure 13.

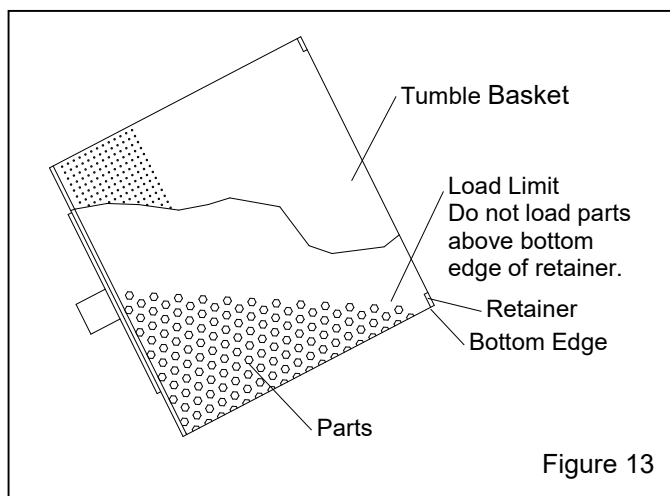


Figure 13

4.5.3 Do not underload with parts; under-loading will result in rapid wear to the tumble basket. To prevent the blast stream from blasting the basket when it has a small load, add filler material (dunnage), such as an abrasive-resistant tumble media that is compatible with the parts being blasted. Refer to Figure 14,

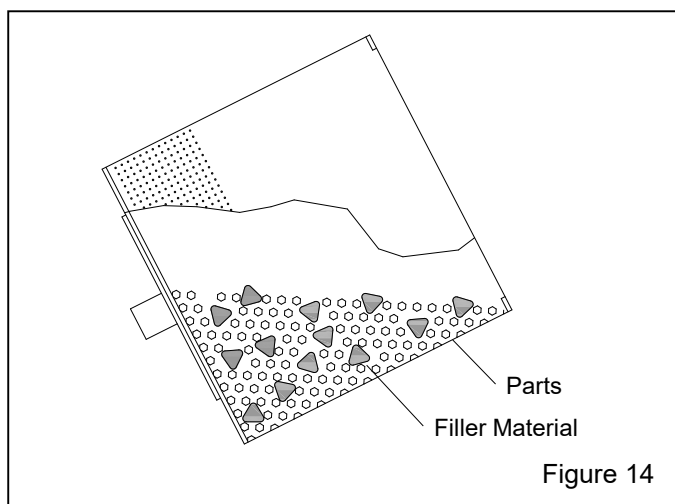


Figure 14

4.5.4 Close door and latch securely.

4.6 Unloading Parts

4.6.1 When the blasting cycle is timed out and stops, let the exhauster run for a short time to clear airborne dust. Open the door and examine parts to check blast coverage. Run parts for an additional cycle if required.

4.6.2 Unload processed parts through the door. **Do not remove the basket when loaded with parts.** The weight of the basket is approximately 35 pounds. The maximum weight capacity of the basket is 35 pounds, totaling approximately 70 pounds, plus the weight of any remaining media.

⚠ WARNING

The weight of the basket when loaded with parts may be too heavy to safely handle. When the basket is removed from the drive shaft, it is no longer supported. The weight of the loaded basket can shift and pinch limbs or cause other injury.

4.7 Blasting Operation

⚠ WARNING

- Keep door closed during blasting.
- Stop blasting immediately if dust leaks are detected.

Prolonged breathing of abrasive dust and blasting byproduct dust can result in serious lung disease or death. Short-term ingestion of toxic dust such as lead, poses an immediate danger to health.

4.7.1 Load media per Section 4.3.

4.7.2 Slowly open the air valve on the air-supply hose to the cabinet. Check for air leaks on the initial start up, and periodically thereafter.

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

4.7.4 Load parts. Note load limit in Section 4.5.

4.7.5 Inspect gun alignment and adjust as required, per Section 5.7.

4.7.6 Close the cabinet door. Make sure the door is latched securely, or the door interlock system will prevent blasting.

4.7.7 Make sure pulse pressure is set, per Section 5.8.

NOTICE

Do not turn the pulse-pressure regulator above 0 psi on until the cartridge is seasoned, per Section 7.8. Pulsing unseasoned cartridges can decrease the efficiency of dust collectors and cause premature cartridge failure.

4.7.8 Turn the power-supply toggle switch to the ON position, which starts the dust-collector exhauster.

4.7.9 Set the "Tumble Motor Speed" (basket-rotation speed) control, per Section 5.3. The basket does not begin rotating until the blast timer is set.

4.7.10 Start the blast cycle by setting the "Tumble Motor Timer" dial for the blast duration. Blasting begins as soon as the timer is set.

⚠ WARNING

Shut down the cabinet immediately if dust discharges from the cabinet or dust collector. Prolonged breathing of any dust could result in serious lung disease. 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.

4.7.11 Check media flow, per Section 5.5.

4.8 Stop Blasting

4.8.1 Blasting and basket rotation stop when the tumble-motor timer cycle is complete. To stop blasting before the time cycle is completed, turn the timer dial to 0 (zero).

4.8.2 Let the exhauster run for a short time to clear airborne dust.

4.8.3 Open the door and examine parts to check blast coverage. Run parts for an additional cycle if required.

4.8.4 Unload parts per Section 4.6.

4.9 Shutdown

4.9.1 When finished, make sure the blast timer is set to 0 (OFF position).

4.9.2 Switch the toggle switch from ON to OFF position.

4.9.3 Shut off the air-supply valve and drain the pulse reservoir, per Section 6.2.3.

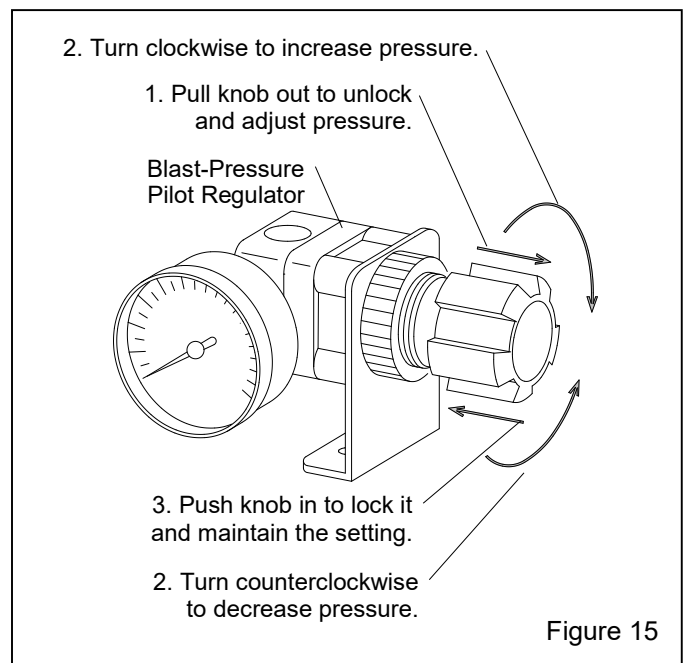
5.0 ADJUSTMENTS

5.1 Blasting Pressure (pilot regulator) – Figure 15

5.1.1 The pilot regulator, located on the top, front edge of the cabinet, enables the user to adjust blasting pressure to suit the application. The pilot regulator conveys the pressure to the main regulator on the inlet plumbing. When blasting begins, the main regulator opens to the same pressure noted on the pilot regulator. The maximum recommended pressure is 80 psi. Lower pressure may be used, but higher pressure may cause dust or media to escape from the cabinet.

5.1.2 To adjust pressure:

1. Unlock the knob by pulling it out, as shown in Figure 15.
2. Turn it clockwise to increase pressure or counterclockwise to decrease pressure. Pressure will usually drop from closed-line pressure when blasting begins.
3. Once operating pressure is set, push the knob in to lock it and maintain the setting.



5.2 Tumble-Motor Timer (blast duration)

5.2.1 Set the timer dial 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 parts are correctly processed, make a note of the total blast time for future runs of similar parts.

5.3 Tumble-Motor (basket rotation) Speed

5.3.1 Set the value of the potentiometer so the basket rotates at about two to three RPM. Adjust the speed as needed to increase or decrease blast time on parts as they rotate in the basket. The values shown below are approximate rotation speeds. Trial and error will determine the optimum speed settings. If multiple types of parts are processed using different speeds, make a note of the speed for future runs of similar parts.

Potentiometer Setting	Approximate RPM
25	1
30	2
50	4
60	6

5.4 Air Jet Adjustment – Figure 16

5.4.1 Screw the air jet 4-1/2 to 5 full turns into the gun body, which leaves 3-1/2 to 4 threads exposed past the lock nut. Refer to Figure 16. Tighten the lock nut to maintain the setting. An optional adjusting tool, which correctly positions the jet, is shown in Section 9.5. Instructions are provided with the tool.

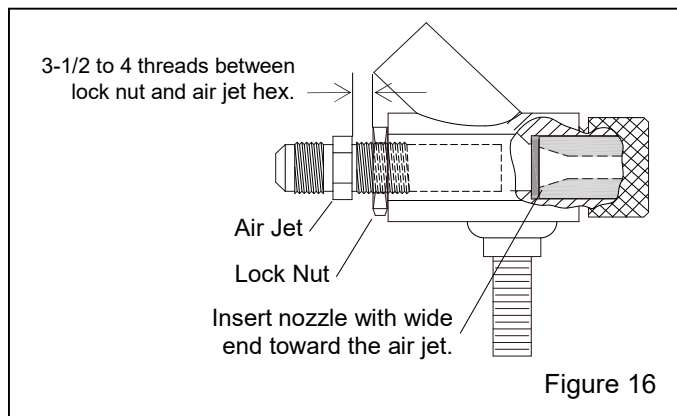


Figure 16

5.5 Media Metering (media-air mixture) – Figure 17

5.5.1 Media should flow smoothly and evenly through the hoses and guns. Flow can be observed through the view window, and the sound of the blast stream should be even and uninterrupted as the flow exits the nozzle.

5.5.2 If the air exiting the nozzles pulses or if media does not flow smoothly, the metering valve for the corresponding nozzle requires adjusting. To adjust it, first loosen the locking nut and adjust the metering screw until the holes closest to the locking nut are closed off and the holes farthest from the nut are fully open, as shown in Figure 17.

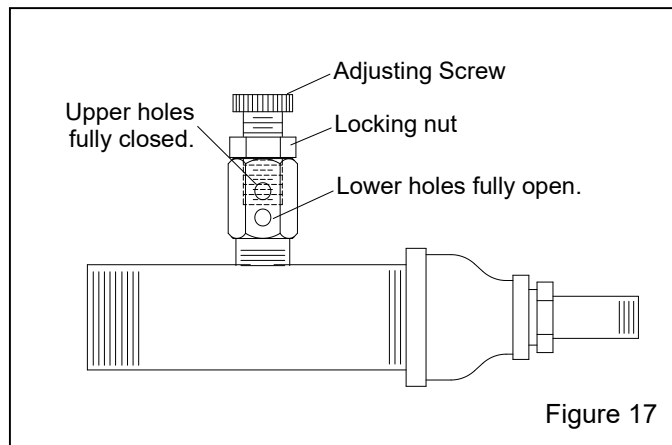


Figure 17

5.5.3 If pulsation occurs, either media is damp or not enough air is entering the media stream. While blasting, loosen the locking nut on the metering valve and slowly turn the adjusting screw out (counterclockwise when viewed from the top) until the media flows smoothly. Tighten the locking nut to maintain the setting.

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

5.6 Door Interlock – Figure 18

⚠ WARNING

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

5.6.1 Close the cabinet door.

5.6.2 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.

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

5.6.4 Test the operation with the door open and then closed. The interlocks should prevent blasting when the door is open, 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 on.

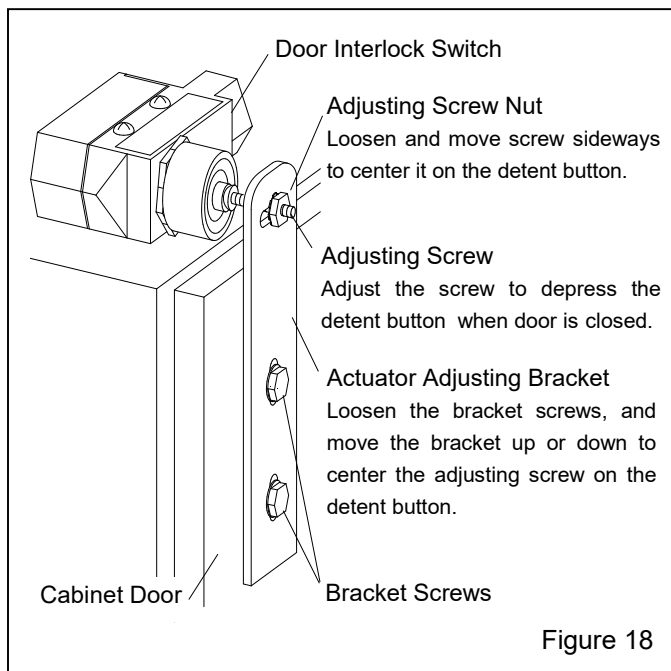


Figure 18

5.7 Gun Alignment – Figure 19

5.7.1 Load parts into the basket, close the door, and jog the basket until it has rotated one revolution. This places the parts at the angle in which they tumble.

5.7.2 Open the access window and check the alignment of the guns by eye or by placing a dowel, pencil, or similar object into the nozzles and pointing them toward the parts.

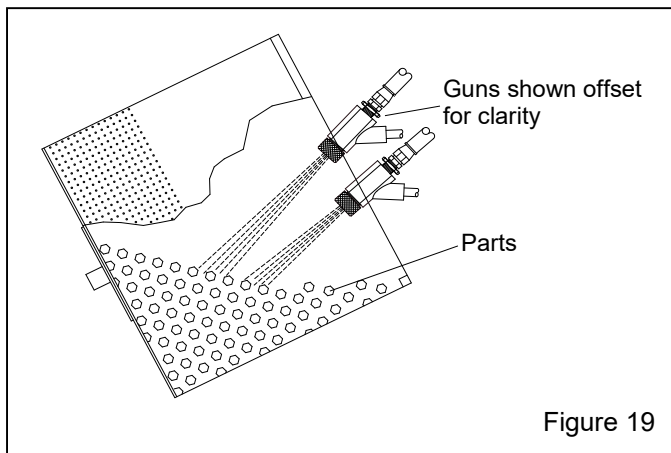


Figure 19

5.7.3 If the guns do not point toward the center of the parts, loosen the gun bodies or slotted brackets and rotate them as required to point the nozzles toward the center of the parts, but at different targets as, shown in Figure 19.

5.7.4 Remove the dowel or other object that was inserted into the gun nozzle and tighten the hold-down brackets to maintain the setting.

5.7.5 Close the window and make sure the door is securely latched.

5.8 Pulse Pressure – Figure 20

NOTICE

Do not pulse new dust collectors or replacement cartridge until the cartridge is properly seasoned, per Section 7.8. Pulsing unseasoned cartridges can decrease the efficiency of dust collectors and cause premature cartridge failure.

5.8.1 Adjust pulse pressure using the pressure regulator mounted on the pulse reservoir. Begin pulse at 60 psi. To adjust pressure, pull the knob to unlock it, as shown in Figure 20, and then turn clockwise to increase pressure or counterclockwise to decrease pressure. Once operating pressure is set, push the knob to lock it and maintain the setting.

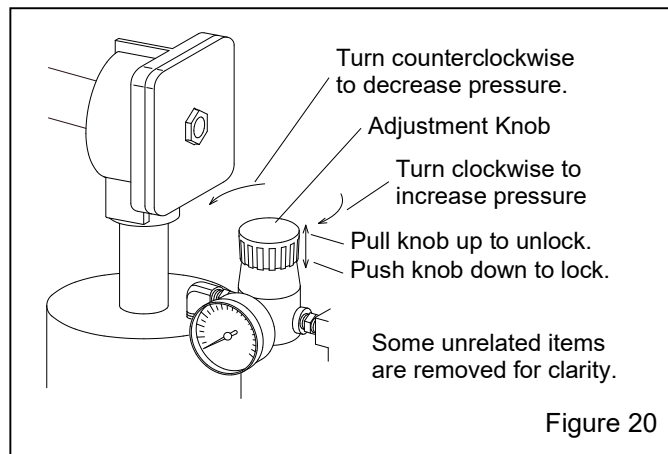


Figure 20

5.8.2 As the filter cartridge cakes with dust and pulsing does not adequately clean the cartridge (reduce differential-pressure below 4" w. c.), increase pulse pressure by increments of 10 psi, up to the maximum of 100 psi. As dust cakes on the cartridge, the differential pressure increases. Using an optional differential-pressure gauge, as noted in Section 3.3 and listed in *Section 9.1: Optional Accessories*, to measure pressure drop is an effective way to tell if the cartridge is heavily caked.

5.8.3 When the maximum pulse pressure of 100 psi is reached and pulsing does not lower differential pressure

below the changeover pressure of 4" w. c., decrease pulse off time to 20 seconds, per Section 5.9.2.

5.8.4 When differential pressure stays above 4" w. c. after increasing pulse pressure to 100 psi and decreasing off time to 20 seconds, replace the cartridge, per Section 7.7.

5.9 Digital Pulse-Control Timer – Figure 21

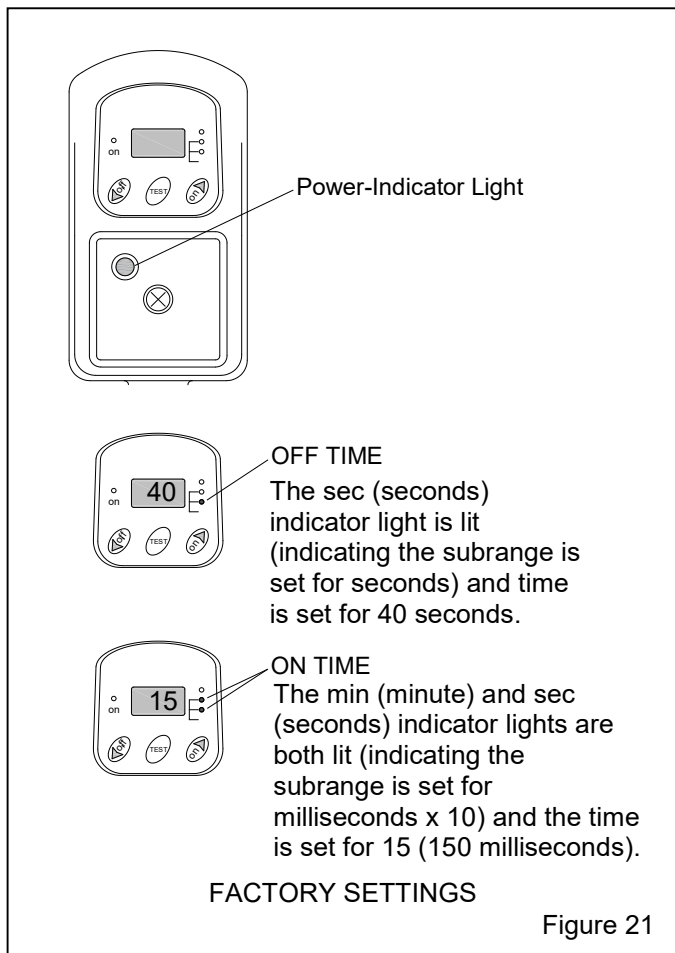
5.9.1 Operating principles

NOTE: There is no need to set the timer functions or subranges.

If timer function is accidentally changed, refer to Section 5.9.4 to reset it to Function "A".

If timer subranges are accidentally changed, refer to Section 5.9.5 to reset them to factor settings.

5.9.1.1 The red power-indicator light, located on the electrical connector, as shown in Figure 21, comes on when power is supplied to the timer.

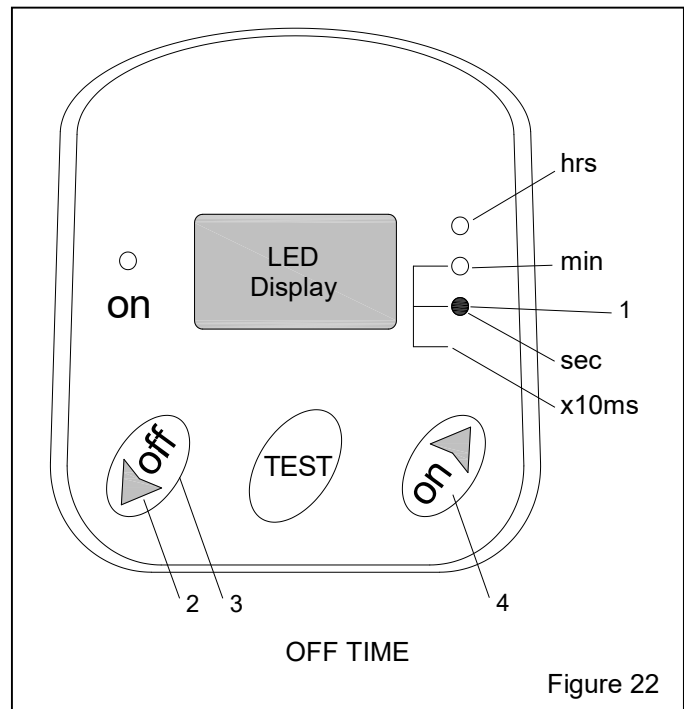


5.9.1.2 The timer is factory set at 40 seconds OFF and 150 milliseconds (0.15 second) ON, as shown in Figure 21. Every 40 seconds, the cartridge is pulsed for 0.15 second.

5.9.2 Resetting pulse OFF time (time between each pulse) – Figure 22

NOTE: The numbers shown in Figure 22 relate to the following step numbers:

1. Make sure the OFF subrange is set to seconds. The sec (seconds) indicator light should be lit, as shown in Figure 21. If the subrange is other than seconds, reset it as noted in Section 5.9.5.1.
2. Press the left "off" (arrow down) button until "OF" appears briefly on the LED display.
3. To decrease OFF time (for example, to change pulse off time from 40 seconds to 20 seconds), press the left "off" (arrow down) button until the intended time is shown on the display.
4. To increase OFF time (lengthen time between pulses from 20 seconds to 40 seconds), press the right "on/arrow up" until the intended time is shown on the display.



NOTE: Do not adjust ON time. Adjusting ON time will consume additional air but will not improve cartridge cleaning. If ON time is accidentally changed, reset it to factory settings, per Section 5.9.3.

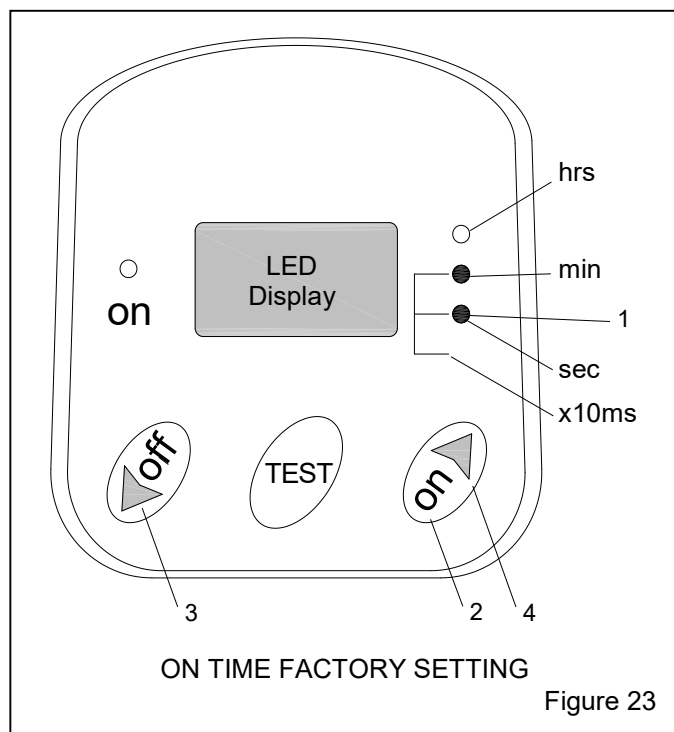
5.9.3 Reset pulse ON time to factory setting, 150 milliseconds (0.15 seconds)

NOTE: There is no need to change ON time. ON time is factory set for 150 milliseconds (0.15 second), as shown in Figure 21. If ON time is accidentally changed, reset it to 150 milliseconds as follows:

NOTE: The numbers shown in Figure 23 relate to the following step numbers.

1. Make sure the ON subrange is set to milliseconds, as noted in Section 5.9.5.2, Figure 25.
2. Press the right "on/arrow up" button and ON will appear briefly on the display.
3. If the number on the display is above 15, decrease time by pressing the left "off/arrow down" button until 15 appears.
4. If the number on the display is less than 15, increase time by pressing the right "on/arrow up" button until 15 appears.

When 15 appears on the display do not press anything; after a few seconds the display will start flashing, indicating the new time is being saved. Once the new time is saved, the unit will resume operation with the new time.



5.9.4 Reset timer function to factory "A" setting

NOTE: There is no need to change the function setting. If the function is accidentally changed, reset it to the factory setting as follows:

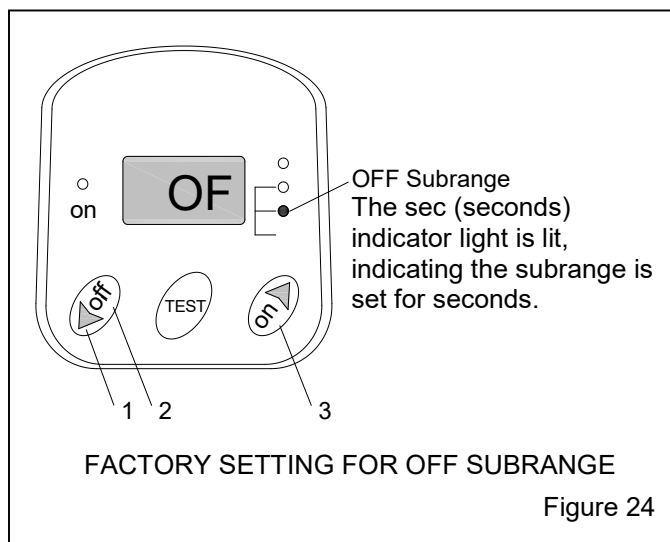
1. Turn OFF the power switch located on the cabinet control panel.
2. Press and hold down the timer "TEST" button and Switch ON the power switch.
3. Release the "TEST" button after the current timer function (A through F) appears on the display.
4. Use the "off/arrow down" or "on/arrow up" buttons to select function "A".
5. When "A" appears on the display, do not press anything; after a few seconds the unit will resume operation with the "A" function.

5.9.5 Reset timer subranges to factory settings

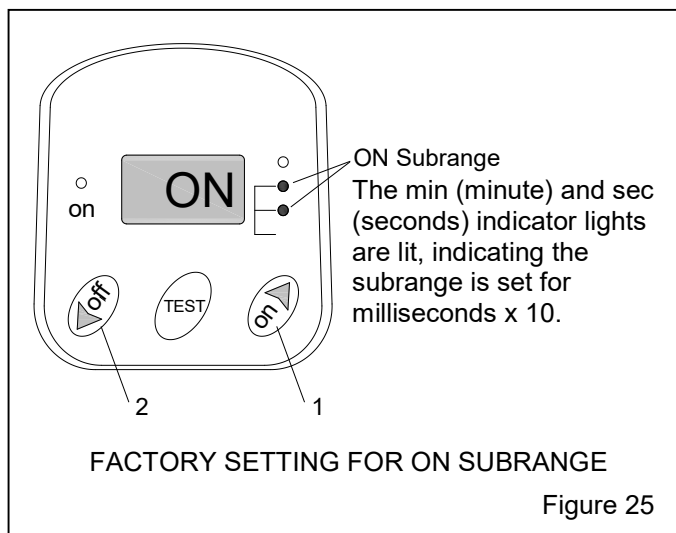
NOTE: The OFF subrange is factory set for seconds, as shown in Figure 24. The ON subrange is factory set for milliseconds. Each value shown on the LED is 10 milliseconds (1/100th of a second), as shown in Figure 25. There is no need to change subranges; if subranges are accidentally changed, reset them to factory settings, as follows:

5.9.5.1 Reset OFF (time between each pulse) subrange to factory setting of seconds, as shown in Figure 24.

1. Press the left "off/arrow down" button and OF will appear briefly on the display.
2. If the min (minute) subrange light is lit, decrease OFF subrange, by pressing the left "off/arrow down" button until the sec (seconds) light is lit.
3. If the min (minute) and sec (seconds) subrange lights are both lit, increase OFF subrange by pressing the right "on/arrow up" button until only the sec light remains lit.
4. Set OFF time to suggested time, per Section 5.9.2.



5.9.5.2 Reset ON (duration of pulse) subrange to factory setting of milliseconds, as shown in Figure 25.



1. Press the right "on/arrow up" button, and ON will appear briefly on the display.
2. To decrease ON subrange, press the left "off/arrow down" button until the min and sec indicator light are both lit, indicating that the subrange is set for milliseconds x 10. For example, if the seconds subrange light is lit, press the "off/arrow down" button past 0 seconds to lower the subrange to milliseconds.
3. Set ON time to 150 milliseconds (0.15 second), per Section 5.9.3.

5.10 Reclaimer Static Pressure (outlet damper) Figure 26

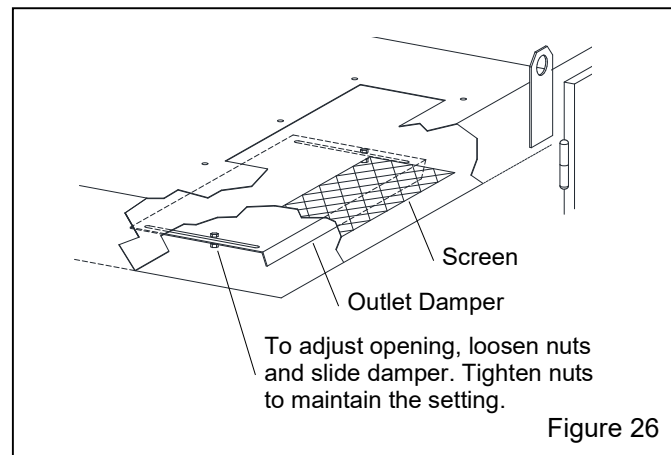
5.10.1 Static pressure requirements vary with size, weight, and type of media.

5.10.2 Adjust static pressure by opening or closing the outlet damper, which is located above the reclaimer on the underside of the power module top, as shown in Figure 26. If the damper is not opened far enough, the reclaimer will not remove fines, resulting in dusty media and poor visibility, or it will not convey media, causing media buildup in the hose between the cabinet hopper and reclaimer. If the damper is opened too far, it may cause carryover (usable media carried into the dust collector), resulting in excessive media consumption. Open only as far as necessary to obtain a balance of maximum dust removal without media carryover.

5.10.3 A manometer (flexible u-tube) or differential-pressure gauge is useful for adjusting and monitoring static pressure. The manometer kit and differential-pressure gauge are listed in *Section 9.1: Optional Accessories*. Refer to Section 5.11 for manometer operations. The following are static pressure starting points for given media. Static pressure may need to be lower with finer media and higher with coarser media.

Run the media through several blast cycles, allowing the reclaimer to function with these settings. Inspect media in the reclaimer and fines in the dust collector, as noted in Paragraph 5.10.2. Continue adjusting static pressure until optimum dust and fines removal without carryover is attained. Make a note of the optimum pressure setting, so the damper can be easily reset as pressure changes.

Glass Bead No. 6 and 7	3-1/2" – 4"
Glass Bead No. 8 to 12	3" – 3-1/2"
Aluminum oxide 60-Mesh to 80-Mesh	4" – 5"
Aluminum oxide 80-Mesh to 180-Mesh	3" – 4"



5.10.4 As dust accumulates on the outer surface of the cartridge, static pressure drops, requiring either additional pulsing (as described in Section 6.6) or an increase in pulse pressure (per Section 5.8). When pulsing no longer maintains the necessary static pressure, readjust the damper.

5.11 Optional U-Tube Manometer

NOTE: These instructions show several methods of taking static pressure readings (negative pressure) on Pulsar reclaimers by using a flexible-tube manometer. Use the method best suited for the application. The instructions explain how to take periodic readings and how to install the manometer to take frequent readings. Permanent fittings should be installed when the manometer installation is permanent. The fitting should be capable of being capped when the manometer tube is removed. This 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 readings taken above the reclaimer. The readings are reference points, so readings should be taken using the same method each time.

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

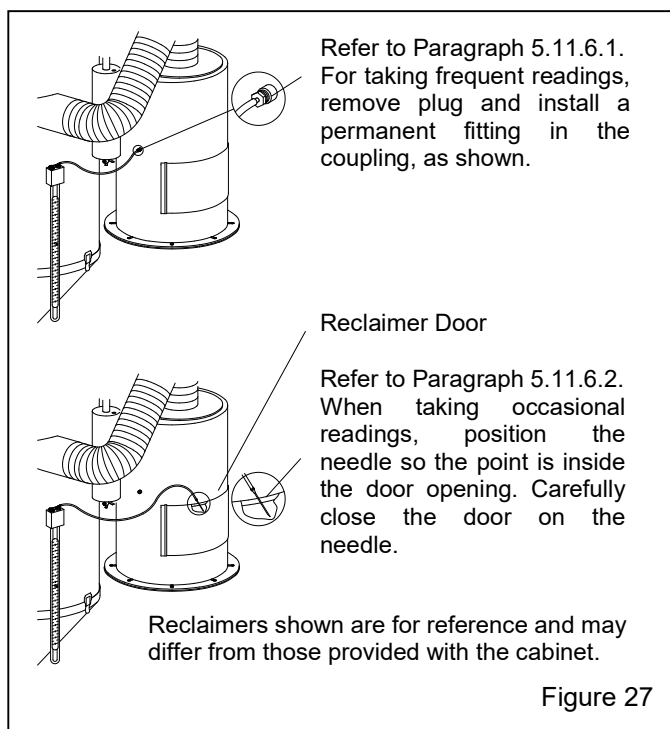
5.11.2 Connect one end of the 3/16" ID tubing to one of the tubing connectors (elbow) at the top of the manometer by pushing it over the barbed adaptor.

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

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

5.11.5 Adjust the slide rule to align the zero with the fluid level. Refer to Figure 28.

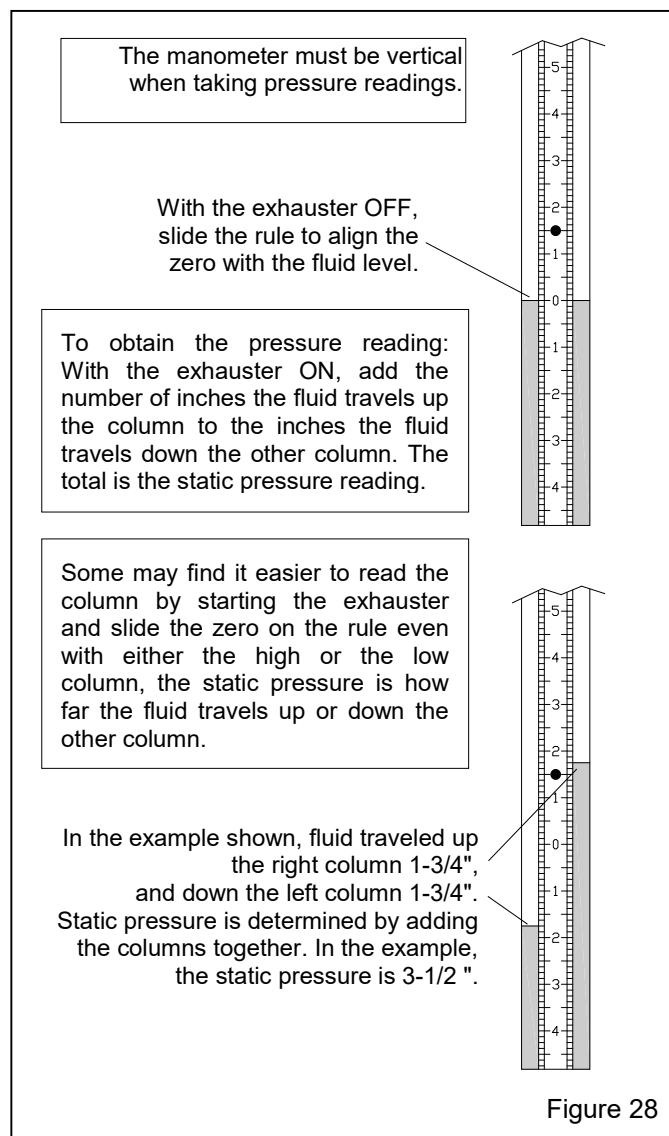
5.11.6 Needle placement: Figure 27 shows the manometer setup for taking both periodic and frequent static pressure readings.



5.11.6.1 Taking frequent readings using a permanent fitting: A permanent fitting may be installed in the reclaimer wall, as shown in Figure 27, for taking frequent static pressure readings. Permanent fittings must have a barb to accommodate the 3/16" ID tubing and have a means of sealing the fitting when the manometer is not in use. The fitting should be capable of being capped when the manometer tube is removed. Sealing the fitting will prevent leaks that alter the reclaimer's separation efficiency. Air drawn into the reclaimer will cause carryover of good media to the dust collector.

5.11.6.2 To take occasional readings: Leave the needle protector on the needle and insert the needle into the unused end of the tubing. The ends of the tubing must fit tightly on the manometer and needle; leaks will give inaccurate readings. Open the reclaimer door, remove the needle protector, and place the needle so that the point is inside the door opening. Carefully close the door on the needle. The side of the needle will embed into the rubber door gasket, creating an airtight seal.

5.11.7 Open the cabinet door and 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.**



5.11.8 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 28.

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

6.0 PREVENTIVE MAINTENANCE

⚠ WARNING

Failure to wear an approved respirator and personal protection when servicing dust-laden areas of the cabinet and dust collector, as well as when emptying the container, can result in lung disease, serious skin or eye irritation, or other health issues. Toxicity and health risks vary with the 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:** Frequently used cabinets require more maintenance and inspections than those occasionally used.
- **Type of media:** Aggressive media wears parts faster than nonaggressive media.
- **Condition of parts being blasted:** Heavily contaminated parts require more maintenance to the cabinet's media recovery system.

6.1 Daily Inspection and Maintenance Before Blasting with the Air OFF

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

6.1.2 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 parts blasted cause 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" OD 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 Dust container

NOTICE

Inspect dust level in the dust container daily. Empty the dust containers when no more than half-full and when adding new media. Failure to monitor the dust level will overfill the collector, requiring extensive cleaning.

6.1.4.1 Empty the dust container regularly. Start by checking the container at least once a day and when adding media, then adjust frequency based on usage, contamination, and friability of the media.

6.1.4.2 Turn off the exhauster and unlatch the lid's lock ring from the dust container, as shown in Figure 29.

6.1.4.3 Pry off the lid from the container (the lid's flexible inlet hose allows easy removal) and remove the container.

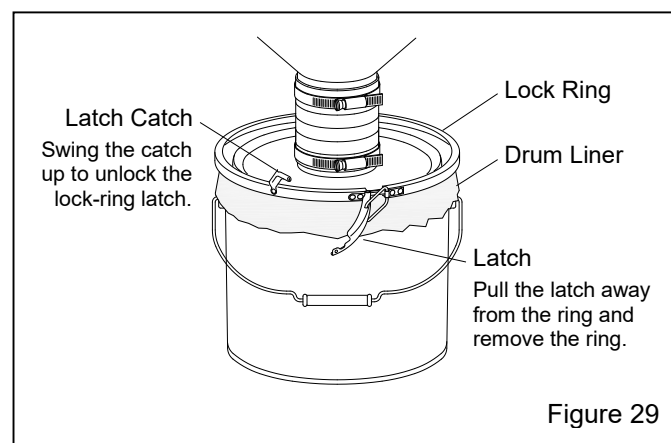


Figure 29

6.1.4.4 Tie off or otherwise seal the top of the liner and remove it from the container. Dispose of the sealed liner into a suitable disposal receptacle.

NOTE: Blasting media is usually nontoxic; however, some materials being removed by the blast process may be toxic. Obtain SDS sheets for the media and identify all material removed by the blast process. Check with proper authorities for disposal restrictions.

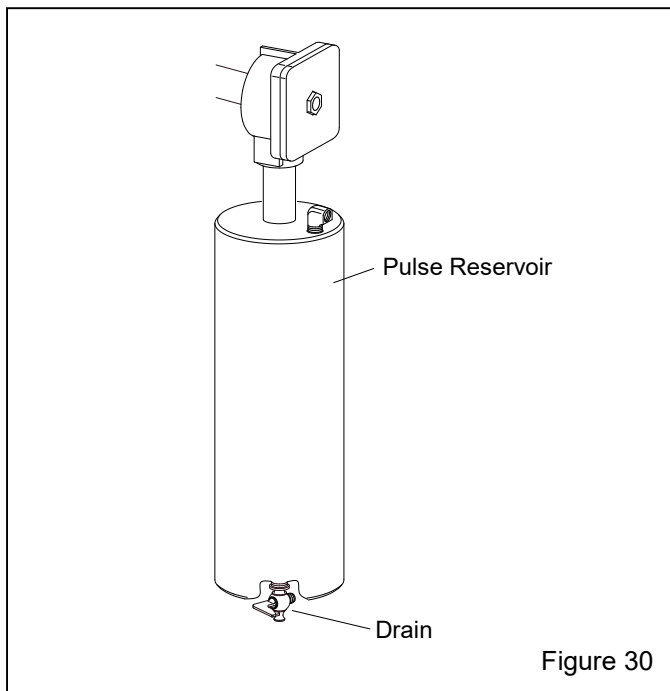
6.1.4.5 Place a new liner inside the container and drape it over the top edge. Reattach the container to the lid and latch the lock ring, making sure the lid and clamp are secure. Replacement liners are shown in Sections 9.9.

6.2 Daily Inspection During Blasting – Do the Following:

6.2.1 Check 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 a saturated filter cartridge. Refer to Section 6.6 for additional cartridge 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 – Figure 30: Open the petcock to drain the pulse reservoir at the end of each shift.



6.3 Weekly Inspection and Maintenance Before Blasting with Air OFF

6.3.1 Gun assemblies: Inspect nozzles and gun bodies for wear, as noted in Section 7.1. Replace a nozzle when its orifice diameter is worn 1/16" larger than its original size or when suction diminishes noticeably.

6.3.2 Tumble basket and bottom liner: Inspect the basket and bottom liner for wear. Replace the basket as soon as perforated metal is worn thin. Replace the liner, per Section 7.2, as soon as the liner is worn thin and before wearing through to the bottom plate.

6.3.3 Media hoses: Inspect media hoses for thin spots by pinching it every 6 to 12 inches. To avoid unscheduled downtime, replace the hose when it becomes soft.

6.3.4 Access-window cover lens: Inspect the window cover lens. Replace as needed, per Section 6.7.

6.3.5 Optional differential-pressure-gauge inline-filter: With the exhauster turned OFF, check the inline dust filter (Item 2 in Figures 40 and 41) for dust accumulation. Empty the filter as necessary.

6.4 Weekly Inspection During Blasting

6.4.1 Flex hoses: Inspect flex hoses for leaks and wear.

6.5 Monthly Inspection and Maintenance

6.5.1 Reclaimer wear plate: Remove the flex hose from the reclaimer inlet and use a light to inspect the reclaimer wear plate. If the rubber is worn through to the backing metal, replace wear plate per Section 7.10.

6.6 Additional Cartridge Pulsing: When compressed air is supplied to the pulse reservoir and, the power-supply toggle switch is ON (exhauster running), the cartridge is pulsed at regular timed intervals. If differential pressure is high, additional pulsing can be done by doing one of the following:

- Run the exhauster for a short time after the blast cycle is completed.
- With the exhauster OFF, quickly press and release the test button on the timer no more than two or three times. **NOTE: Rapid repetitive pulsing with the exhauster OFF may cause dust leakage.** Start the exhauster and wait 5 or 10 seconds for dust to clear and then repeat the process as needed.

6.7 Access-Window Cover Lens

NOTE: The view window is an access door used to inspect gun alignment and similar services. Its translucency may or may not be useful during the blasting cycle. The cover lens protects the window from frosting for those applications where visibility is useful.

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

6.7.2 Peel off the old cover lens.

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

6.8 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.

Refer to the gear reducer operations manual for lubricating schedule and recommended lubricant. The lubricant is also on the gear reducer nameplate.

6.9 Flange 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.

6.9.1 Every 160 hours of operation lubricate the flange bearing with 4.25 grams of Sealmaster® GoldPlex™ -HP, Lithium base grease, NLGI grade 2 consistency or equivalent. The grease fitting is accessible through the cutout at the top of the basket's drive shaft cover.

7.0 SERVICE MAINTENANCE

WARNING

Lockout and tagout electrical power and the compressed-air source before performing any maintenance on this machine. Failure to do so could result in severe injury due to the engagement of machinery or the release of trapped compressed air.

WARNING

Failure to wear approved respirators and eye protection when servicing dust-laden areas of the cabinet and dust collector could result in serious eye irritation, lung disease, or death. Toxicity and health risks vary with the 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.

7.1 Nozzles

7.1.1 Replace the nozzle(s) when its diameter has increased by 1/16" or when suction diminishes noticeably. To inspect or change the nozzles, proceed as follows:

7.1.2 Unscrew the holding nuts from the gun ends and pull the nozzle from the guns. 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.

7.2 Tumble Basket

7.2.1 Replace the bottom liner as soon as the liner is worn thin and before wearing through to the bottom plate.

7.2.2 The bottom liner is held to the bottom of the basket by the two support ribs; remove the liner by peeling it from the bottom and from under the ribs.

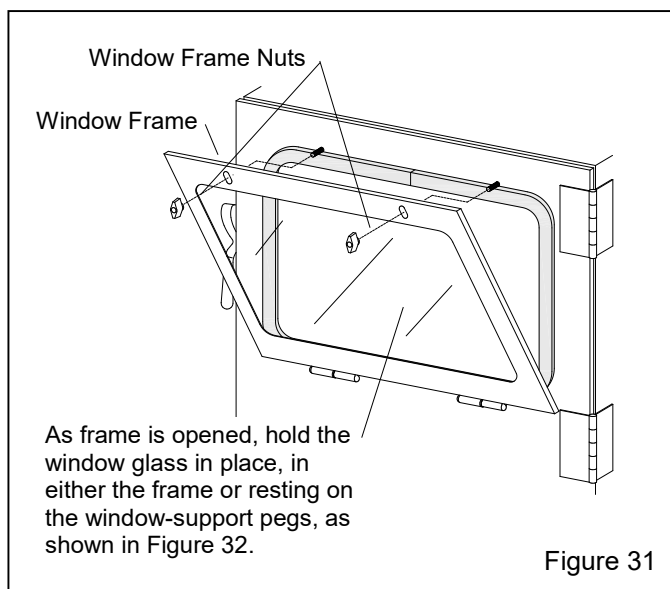
7.2.3 Replace the liner in reverse order, tucking the edge under the support ribs.

7.2.4 Replace the basket as soon as it is worn thin.

7.3 Access-Window Replacement – Figure 31**⚠ WARNING**

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

7.3.1 Refer to Figure 31 and remove the two window-frame nuts located on the upper edge of the window frame, hold the window in place, and swing the window frame open. If the frame is to remain open for cleaning to replace the gaskets or for other reasons, remove it per Section 7.4.



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 7.5.

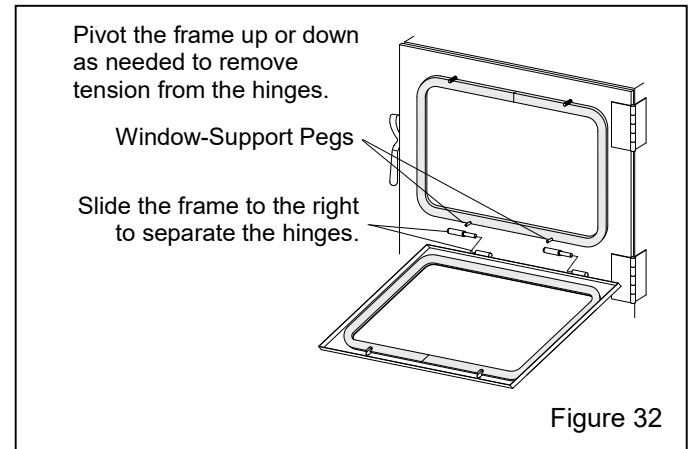
7.3.4 Install optional access-window cover lens, per Section 6.7.

7.3.5 Set the new window (cover lens facing the inside) squarely over the window opening, making sure that all edges of the window are centered and overlapping the window gasket, and that the window is resting on the window-support pegs.

7.3.6 While holding the window in position, swing the window frame into place and tighten the frame nuts.

7.4 Window-Frame Removal – Figure 32

7.4.1 Remove the two window-frame nuts located on the upper edge of the window frame, hold the window in place and swing the window frame open.



7.4.2 Remove the window to prevent breakage.

7.4.3 Pivot the window frame up or down as needed to take tension off the frame hinges.

7.4.4 To remove the frame, slide it to the right; the hinges separate, as shown in Figure 32.

7.4.5 Replace the frame in reverse order. Slide the frame as necessary to align the top bolt slots with the bolts; slide the frame as necessary.

7.4.6 Set the window squarely over the window opening, making sure that all edges of the window are centered and overlapping the window gasket, and resting on the window-support pegs.

7.4.7 Swing the window frame into place and tighten the frame nuts.

7.5 Window-Gasket Replacement – Figure 33

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

7.5.2 Remove the window and window frame, per Sections 7.4.

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

7.5.4 Peel a short section of adhesive backing from the 5/16" thick strip gasket and adhere the gasket to the center of the top edge of the window opening, as shown in Figure 33. 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.

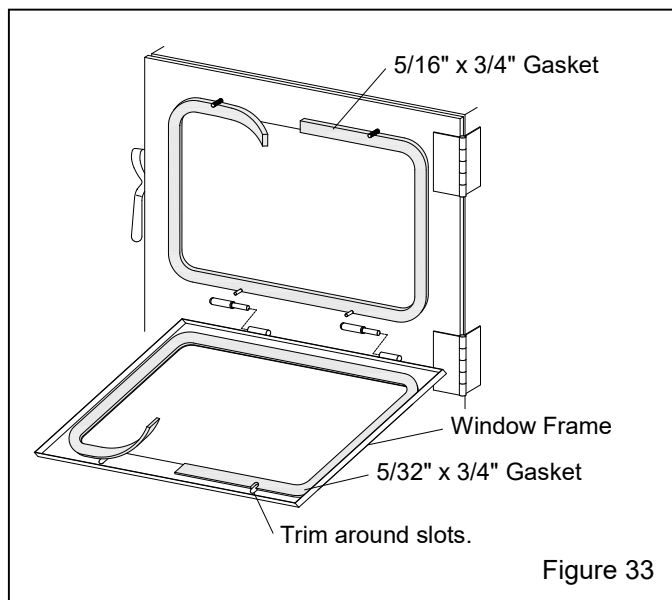


Figure 33

7.5.5 Place the window frame on a table and repeat the process using 5/32" thick strip gasket on the frame.

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

7.6 Using Tube-Lock Fittings – Figure 34

⚠ WARNING

Failure to observe the following procedure before performing any maintenance can cause injury from the sudden release of trapped compressed air:

- **Lock out and tag out the compressed-air supply.**
- **Bleed all compressed air-supply lines.**

7.6.1 To remove the tubing, push the retaining collar toward the fitting, releasing the tubing so it can be easily removed by pulling it out. Do not force it, only a slight pull on the tubing is required if the collar is pushed in correctly.

7.6.2 Reconnect the tubing by inserting it through the collar until it seats. Tug on the tubing to make sure it is secured.

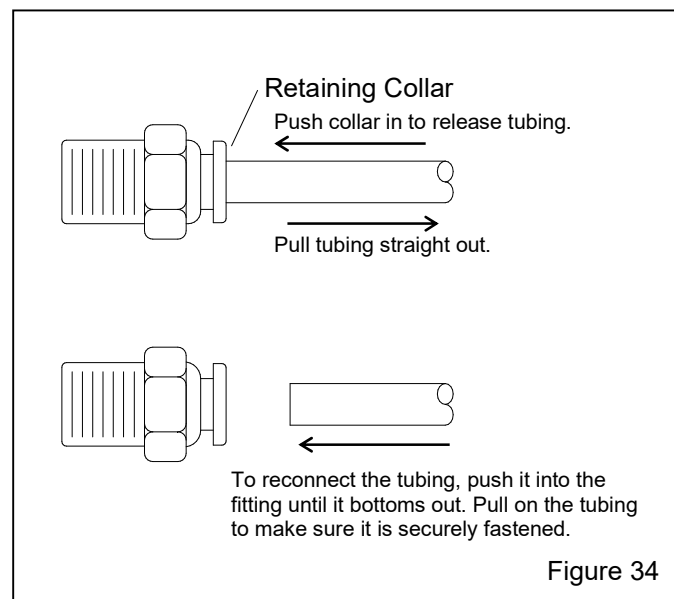


Figure 34

7.7 Filter-Cartridge Replacement – Figure 35

⚠ WARNING

Failure to wear approved respirators and eye protection when servicing dust-laden areas of the cabinet and dust collector and when changing the filter cartridge could result in serious eye irritation and lung disease, or death. Toxicity and health risks vary with the 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.

7.7.1 Close the air-supply valve and bleed air from the pulse reservoir.

7.7.2 Unlatch and remove the dust-collector hopper bottom.

7.7.3 Remove the cartridge retaining nut, washer, and gasket.

7.7.4 Slide the cartridge straight down until it clears the holding bar. A small amount of rocking may be necessary to break the gasket seal of the cartridge.

7.7.5 Clean all parts that will be reused, especially around the cartridge sealing area. Scrape off any residual gasket material from the sealing surface.

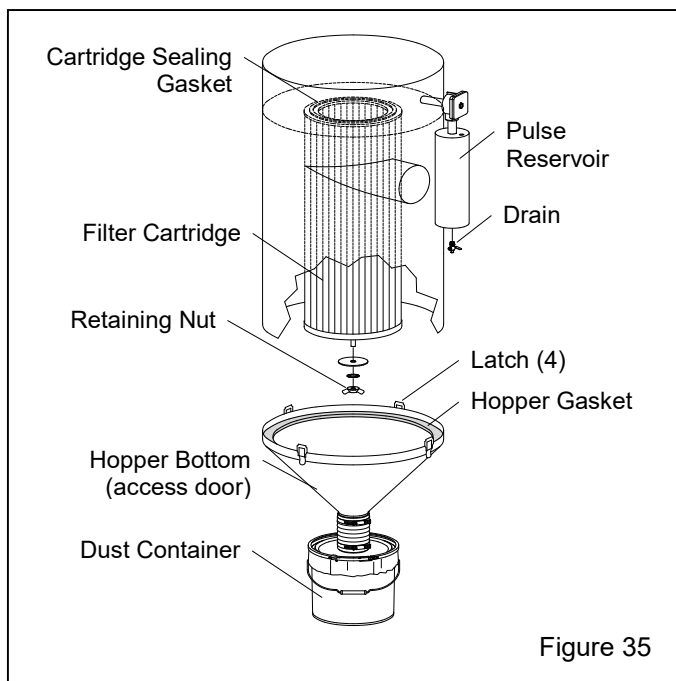


Figure 35

7.7.6 Install the new cartridge and gasket. Tighten the retaining nut until the cartridge cannot be moved by hand. Tighten the nut one additional full turn.

7.7.7 Check the collector hopper gasket for any condition that will prevent the gasket from sealing. Replace the gasket if necessary.

7.7.8 Attach the hopper bottom, and latch in place.

7.7.9 Season cartridge, per Section 7.8.

7.8 Seasoning Filter Cartridge

7.8.1 New cartridges must be seasoned. The cartridge is seasoned by letting a dust cake develop on the filter media before starting the pulsing cycle.

7.8.2 Pause the pulse cycle by turning the pulse-pressure regulator OFF (to 0 psi). NOTE: Pulse timing is controlled with the digital pulse timer and air pressure. If pulse pressure is set to any pressure other than 0 psi, the pulse automatically starts whenever the dust-collector exhauster is started from the cabinet panel. If pulse pressure is set to 0 psi, the timer is still functioning but there is no pulse because air pressure is turned off.

7.8.3 Operate the cabinet without pulsing for about two hours or when replenishing media whichever comes first. At that time, turn the pulse regulator to 60 psi, per Section 5.8, and the set pulse off time to 40 seconds,

per Section 5.9.2. Switch the power-supply toggle to ON to start the exhauster and pulse cycle.

7.8.4 When using the optional differential-pressure gauge, operate the collector without pulsing until the differential-pressure gauge reads four inches (4" w.c.). At that point, turn the pulse regulator to 60 psi, per Section 5.8, and the set pulse off time to 40 seconds, per Section 5.9.2. Switch the power toggle switch to ON to start the exhauster and pulse cycle.

7.9 Diaphragm Pulse Valve

⚠ WARNING

Before servicing the diaphragm pulse valve or pulse timer, lockout and tagout compressed air and electrical power and drain compressed air from the pulse reservoir. Failure to do so can cause injury from the release of trapped compressed air and/or electrical shock.

7.9.1 Loosen the connector screw and unplug the electrical connector from the timer, as shown in Figure 36.

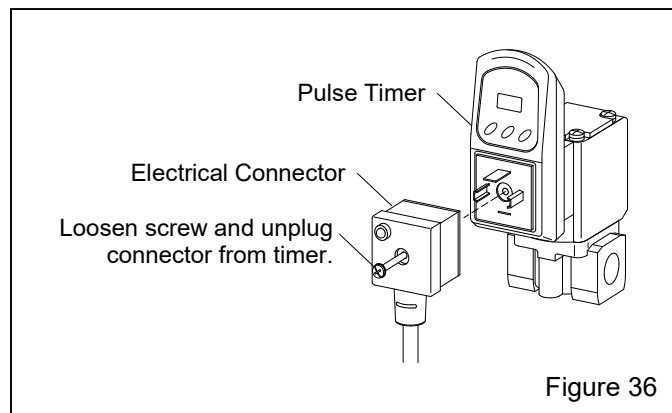


Figure 36

7.9.2 Remove the four cover screws and remove the cover, while keeping the diaphragm in place within the body. Note: Before removing the diaphragm and O-ring, note the round dimple on the upper left on the valve body and the position of the triangular shape on the upper left of the diaphragm, as shown in Figure 37. When reinstalling the diaphragm, the marks must be aligned as shown.

7.9.3 Reassemble using the new diaphragm and O-ring from the service kit, making sure the diaphragm is correctly aligned, as noted in Paragraph 7.9.2, Figures 37 and 38, and that the O-ring is seated into the groove.

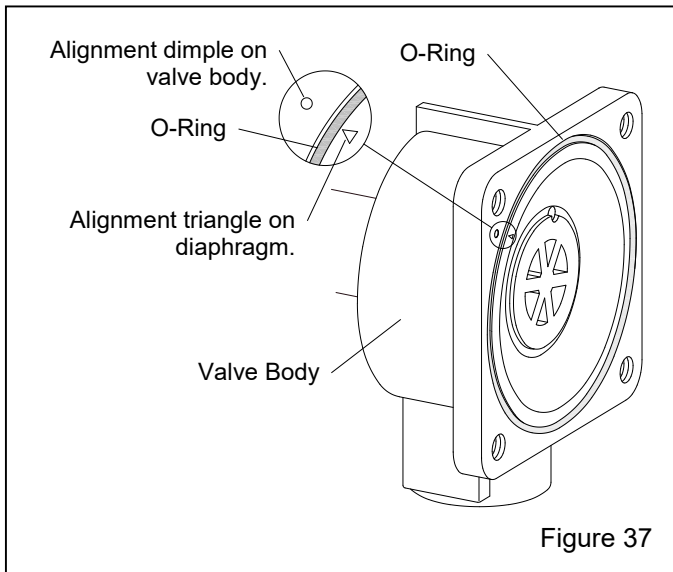


Figure 37

NOTICE

If the diaphragm or O-ring are installed incorrectly, it can cause an external leak and valve malfunction.

7.9.4 While holding the diaphragm and O-ring in position, place the cover and hold it while tighten the four screw enough to hold the cover in place.

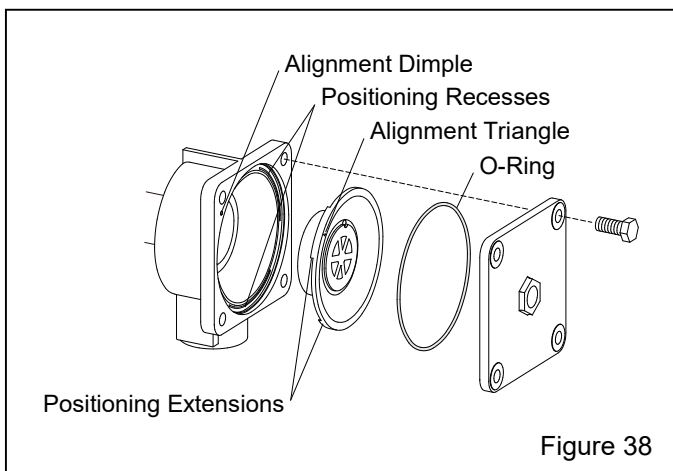


Figure 38

7.9.5 Tighten the four bolts diagonally to secure. If a torque wrench is available, tighten to 110 to 122 lbf in.

7.9.6 Reattach the electrical connector to the timer.

7.10 Replacing Reclaimer Wear Plate – Figure 39

⚠ WARNING

To access wear-plate mounting screws, the reclaimer must be removed from the power module. The reclaimers weighs about 100 lbs. When removing and installing the reclaimer, it must be adequately supported and secured to appropriate lift equipment. Failure to secure and use a proper lift device can result in injury.

7.10.1 Remove the flex hose from the reclaimer inlet.

7.10.2 Remove the media hoses from the metering valves; the hose slides off the metering valve nipple.

7.10.3 Support the reclaimer and remove the reclaimer mounting bolts, and remove the reclaimer from the power module.

7.10.4 Remove the reclaimer inlet-pipe adaptor, adaptor gasket, and old wear plate. The wear plate is held in place by screws attached from the outside of the reclaimer. Remove the screws and pull out the wear plate through the reclaimer inlet. Prying may be necessary to break the liner free from caulking.

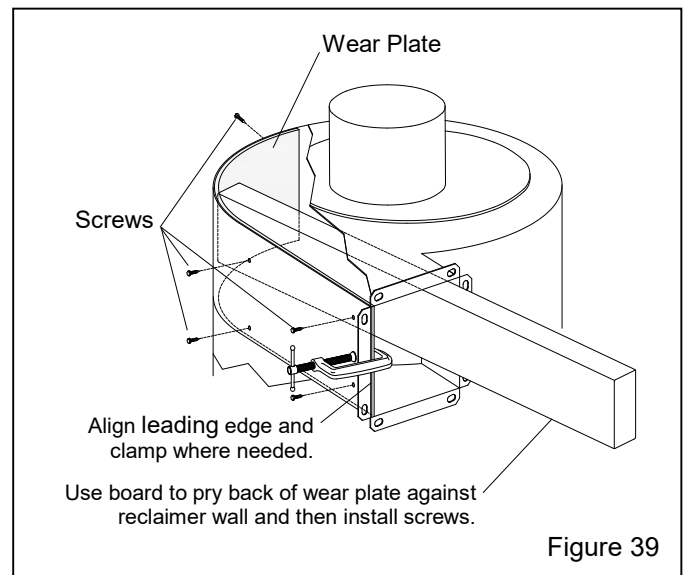


Figure 39

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

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

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

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

7.10.9 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.

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

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

7.10.12 Reinstall the reclaimer.

7.10.13 Connect the flex hose and media hose.

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

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, improper fit, 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 opened too far. Adjust static pressure, per Section 5.10.

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.

8.2 Reduction in Blast Cleaning Rate

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

8.2.2 Media-air mixture out of adjustment. Adjust per Section 5.5.

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 compressed-air filter.
- Partially closed compressed-air supply valve.
- Leaking air line, or other air tools in use.
- Inadequate air supply. Compare air supply with cfm table in Figure 4. Compare air supply size with sizes recommended in Section 2.3.

Inspect all items.

8.2.4 Blockage in media hose(s) or gun(s). Blockage may occur from:

- A damaged or missing reclaimer screen. Inspect screen.
- Heavy media flow. Adjust media flow, per Section 5.5.

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 Air jet in gun out of adjustment. Check adjustment, per Section 5.4.

8.2.8 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 the nozzle. Replace or reinstall as necessary.

8.3.2 Media mixture too rich. Adjust media-air mixture, per Section 5.5.

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.

8.5 Media Surge

8.5.1 Heavy media flow. Adjust media-air mixture per Section 5.5.

8.6 Blockage in Media Hose

8.6.1 Blockage in media hose(s) or gun(s). Blockage may occur because of:

- A damaged or missing reclaimer screen. Inspect screen.
- Heavy media flow. Adjust media flow, per Section 5.5.

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

8.7 Poor Suction in Media Hose

8.7.1 Inadequate air supply. Refer to Sections 1.11 and 2.3, and make sure cfm and air hose requirements are met.

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

8.7.3 Air jet needs adjustment. Check adjustment per Section 5.4.

8.7.4 Blockage in media hose or nozzle. Refer to Sections 8.3 and 8.4.

8.7.5 Air jet and nozzle combination may be wrong. Refer to the table in Figure 4.

8.7.6 Air jet worn: Inspect end of air jet and replace when wear reaches the orifice.

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

8.7.8 Nozzle inserted backward. The wider, tapered end of the nozzle inserts into the gun toward the air jet. Refer to Figure 16.

8.8 Neither Media nor Air Comes Out the Nozzle During Blast Cycle

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

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

8.8.3 Blocked or leaking control lines. Check all tubing and fittings for blockage or leaks.

8.8.4 Nozzle Plugged. See Section 8.3.

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

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

8.9 Air Only (no media) from Nozzle

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

8.9.2 Check for blockage in media hose; refer to Section 8.6.

8.9.3 Poor suction in media hose; refer to Section 8.7.

8.9.4 Make sure the air hose and media hose are not reversed on the gun; the green air hose attaches to the back of the gun and the black media hose attaches to the pipe nipple. Refer to Page 33, Figure 45.

8.10 Blow-back Through Media Hose

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

8.10.2 Nozzle in backward. Make sure nozzle is inserted in gun correctly. The wider, tapered end of the nozzle inserts into the gun toward the air jet. Refer to Figure 16.

8.10.3 Air jet may be too large for nozzle. Refer to the table in Figure 4.

8.11 Static Shocks

8.11.1 Cabinet and/or power module not grounded. Abrasive blasting generates static electricity. The cabinet and power module must be grounded to prevent static buildup. Refer to Sections 2.2 and 2.6.

8.12 Media Buildup in Cabinet Hopper; Media Does Not Convey to Reclaimer

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

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

8.12.2 Dust-collector damper closed too far, restricting air movement through cabinet. Adjust static pressure, per Section 5.10.

8.12.3 Dust-collector filter cartridge clogged. Refer to Section 5.8 to adjust pulse pressure; refer to Section 6.6 for additional cartridge pulsing.

8.12.4 Hole worn in flex hose between cabinet hopper and reclaimer inlet or between the reclaimer outlet and dust-collector inlet. Inspect hoses and replace them as needed.

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

8.12.6 Obstruction in flex hose. Remove hose and check for blockage.

8.13 Dust Leaking From Cabinet Enclosure

WARNING

Shut down the cabinet and dust collector immediately if dust discharges from the cabinet or collector. Prolonged breathing of abrasive dust and blasting byproduct dust can result in serious lung disease or death. Short-term ingestion of toxic dust such as lead, poses an immediate danger to health. Identify all materials to be removed by blasting and obtain a safety data sheet (SDS) for the blast media.

8.13.1 Dust-collector filter cartridge clogged. Refer to Section 5.8 to adjust pulse pressure; 5.9 to decrease pulse off time, and Section 6.6 for additional cartridge pulsing.

8.13.2 Damaged door gaskets. Inspect and replace damaged gaskets.

8.13.3 Blast pressure too high. Maximum blast pressure is 80 psi.

8.13.4 Motor rotating backward. The motor should rotate as indicated by the arrow on the housing. If it does not rotate in the proper direction, lockout and tagout electrical power and switch the motor leads, as shown on the motor plate.

8.13.5 Outlet damper closed too far, restricting air movement in cabinet. Adjust static pressure, per Section 5.10.

8.13.6 Inlet damper requires opening. Restrictions at the inlet damper reduce air movement in the cabinet. Open damper.

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

8.13.8 Reclaimer door open.

8.13.9 Obstruction in flex hose between the cabinet hopper and reclaimer inlet. Check hose for obstruction.

8.14 Dust Leaking from Dust Collector

8.14.1 Cartridge not seasoned; season cartridge, per Section 7.8.

8.14.2 Damaged or loose cartridge. Inspect filter cartridge and tighten or replace as needed.

8.14.3 Faulty seal on the dust collector cone. Inspect seal and replace if damaged.

8.15 Dust Collector Does Not Pulse

NOTE: Unless noted otherwise, tests are performed with compressed air supplied to the pulse reservoir and power to the digital pulse timer.

8.15.1 Make sure the pulse reservoir is pressurized. Open the drain on the pulse reservoir. If air flows from the drain, proceed to Section 8.15.2. If air does not flow through the drain, proceed with Section 8.15.3.

8.15.2 Make sure the red power-indicator light located on the timer, as shown in Figure 21, is lit indicating power is reaching the timer.

- If the indicator light is not lit, do the following:
 1. Make sure the power-supply toggle switch is on (exhauster running); the timer does not receive power unless the switch is ON.
 2. Make sure the power cord is connected and that power is supplied to the outlet.
 3. If indicator the light is not lit after checking the above, have the electrical system checked by a qualified electrician.

- If the indicator light is lit observe the LED display. If the display counts down OFF time to 0, the diaphragm pulse valve is malfunctioning, inspect the pulse valve's diaphragm (main valve) and O-ring for damage.

8.15.3 Check the pulse-pressure gauge:

- If the reading is low, adjust pulse pressure, per Section 5.8. If pressure does not increase after adjusting the regulator, check the compressed-air supply; look for a closed supply valve.
- If certain the air supply is open and at full pressure, and pressure does not increase in the pulse reservoir, the pressure regulator is faulty. Replace the pressure regulator.

8.16 Dust-Collector Pulse is Steady Stream of Air Instead of Quick Pulse

8.16.1 The pulse valve diaphragm may be damaged. Continuous air flow into the dust collector typically means the diaphragm is leaking; remove the four cap screws on the diaphragm pulse valve and inspect the diaphragm and O-ring. If damaged, replace them with a service kit listed in Section 9.9.

8.16.2 The pulse-timer or valve may be stuck in the open position. Remove the muffler (Figure 49, Item 30) and listen for a stream of air escaping from the timer valve. If air continually bleeds from the valve, replace the timer assembly.

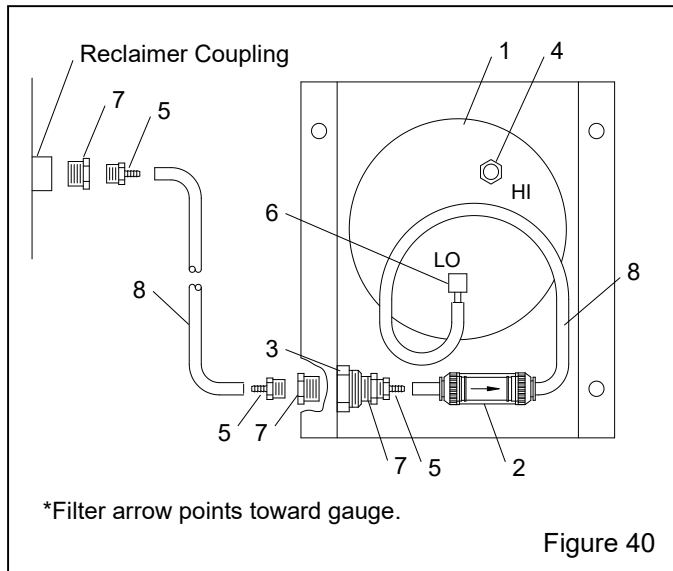
9.0 ACCESSORIES AND REPLACEMENT PARTS

9.1 Optional Accessories

- HEPA filter assembly, top mount 22807
- Manometer kit, flexible U-tube
Used to periodically measure reclaimer
static pressure 12528
- Differential-pressure gauge assemblies
for reclaimer, continuously monitors
static pressure. Ref Fig. 36 for parts 23355
for dust collector, to measure pressure drop
through the filter cartridge. Ref Fig. 37
for parts 23356
- Lock pins (pkg. of 25)
For twist-on hose couplings 11203
- Safety cable, for 1/2" to 1-1/4" OD hose
Prevents disconnected air hose from whipping .. 15012

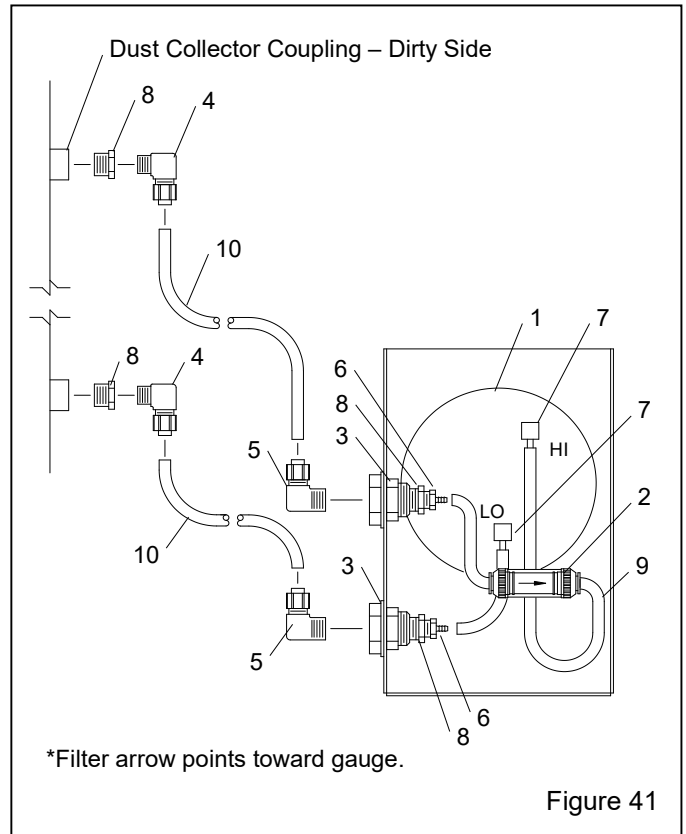
Differential-Pressure Gauge, Reclaimer – Figure 40

Item	Description	Stock No.
(-)	Differential-pressure gauge assembly	23355
1.	Differential-pressure gauge	10188
2.*	Filter, 1/4" inline	23415
3.	Fitting, 1/4 NPT bulkhead	05605
4.	Muffler, 1/8 NPT breather	07657
5.	Fitting, 1/8 NPT straight x 1/8" barb	11732
6.	Fitting, 1/8-NPT elbow x 1/8" barb	11733
7.	Bushing, 1/4 NPT x 1/8 NPT	02010
8.	Tubing, 1/8" urethane, specify ft required	12475



Differential-Pressure Gauge, Dust Collector – Figure 41

Item	Description	Stock No.
(-)	Differential-pressure gauge assembly	23356
1.	Differential-pressure gauge	10188
2.*	Filter, 1/4" inline	23415
3.	Fitting, 1/4 NPT bulkhead	05605
4.	Fitting, snubber	15786
5.	Fitting, elbow 1/4 NPT x 1/4 tube	03428
6.	Fitting, 1/8-NPT straight x 1/8" barb	11732
7.	Fitting, 1/8-NPT elbow x 1/8" barb	11733
8.	Bushing, 1/4-NPT x 1/8 NPT	02010
9.	Tubing, 1/8" urethane, specify ft required	12475
10.	Tubing, 1/4 OD Nylon	15892



9.2 Cabinet Enclosure – Figure 42

Quantity is each unless noted otherwise

Item	Description	Stock No.
1.	Latch, door	11875
2.	Screw, Shoulder, 3/8" x 1-1/4"	13896
3.	Gun bar, 6"	17211
4.	Gasket, door, 5/8" x 2-1/2", per foot, 10 ft required	21236
5.	Gasket, 5/16" x 1" adhesive backed, per foot, 3 ft required	00187
6.	Connector, media hose entry	11632
7.	Nut, 1" lock	11917
8.	Regulator, 1/8-NPT pilot	12715
9.	Gauge, 1/8-NPT CBM pressure	11829
10.	Fitting, 1/8-NPT straight 1/8" barb	11732

11.	Fitting, 1/8-NPT elbow x 1/8" barb	11733
12.	Gasket, flex hose adaptor pipe, 4"	23258
13.	Adaptor pipe universal, flex hose, 4"	23295
14.	Switch, door limit (interlock)	12117
15.	Screw, #10-24 x 1" RH machine	03891
16.	Washer, #10 star	11554
17.	Nut, #10-24 hex	12760
18.	Screw, #10 self-tap	12722
19.	Bracket, door interlock actuator	19152
20.	Hose, 4" ID light lined flex, per foot, 9 ft required	12466
21.	Clamp, 4" flex hose	11577
22.	Support, inlet-plumbing	29149
23.	Damper, air inlet	23156
24.	Control panel Refer to Section 9.6 or electrical drawing for parts	29152

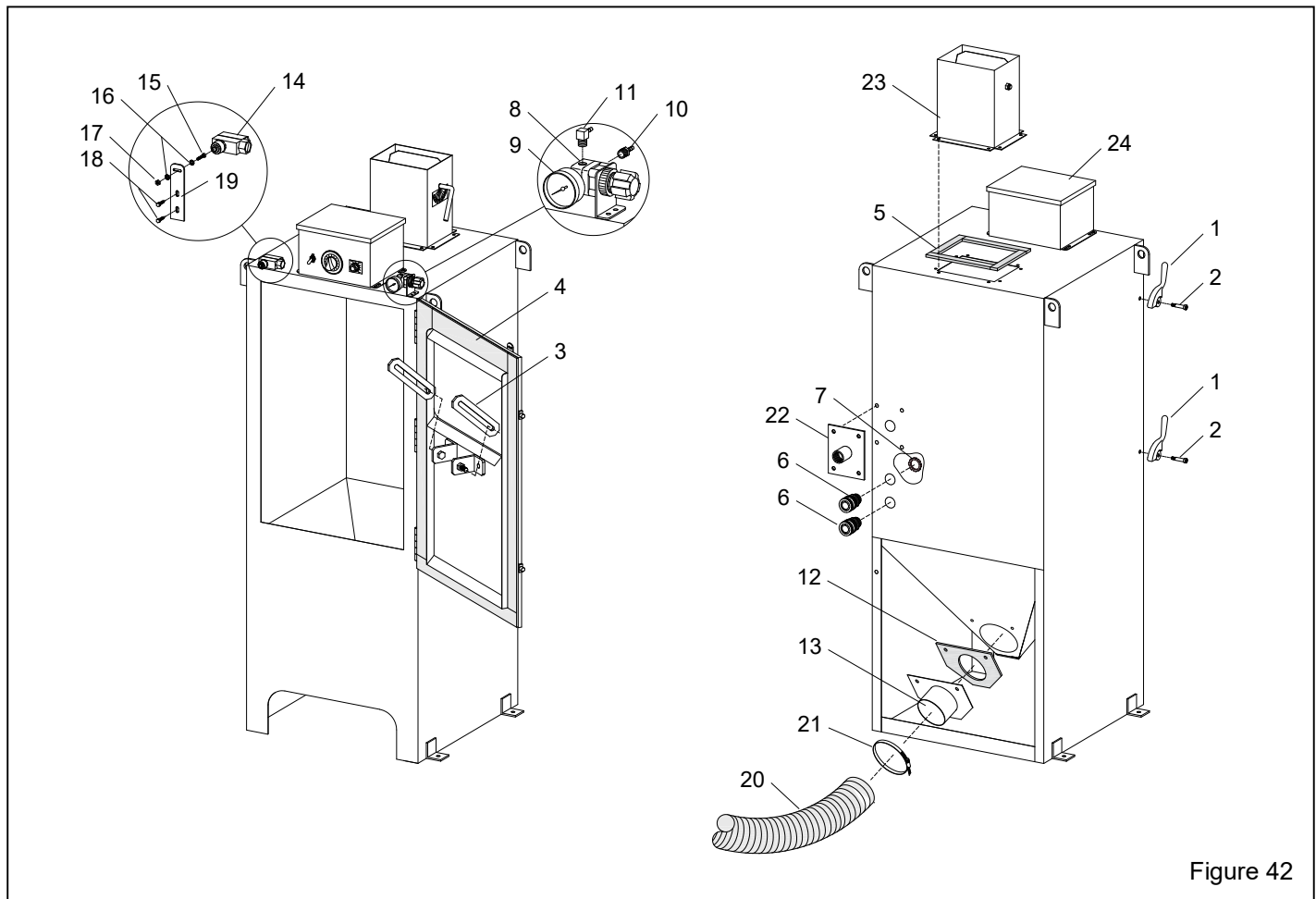


Figure 42

9.3 Access Window Assembly – Figure 43

Item	Description	Stock No.
1.	Window glass, 12.5" x 19.5" laminated	12212
2.	Gasket, 5/16" x 3/4", applied to cabinet, per foot, 6 ft required	00189
3.	Gasket, 5/32" x 3/4", applied to window Frame, per foot, 6 ft required	00192
4.	Cover lens, 12.5 x 19.5 window, pkg. of 5	23232
5.	Nut, plastic, window frame, 2 required	23035
6.	Window frame, quick change	22826

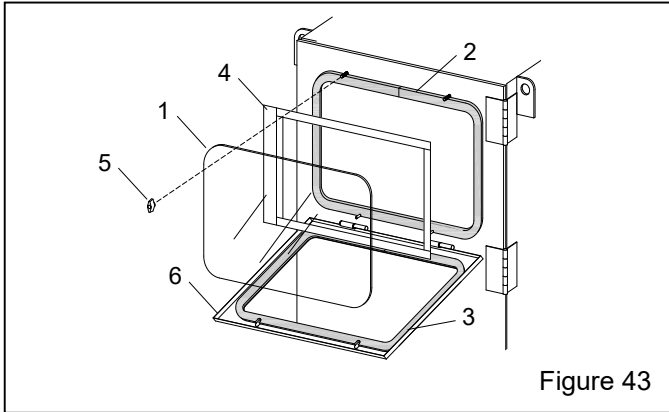


Figure 43

9.4 Basket and Drive Assembly – Figure 44

Item	Description	Stock No.
1.	Gear reducer, 100:1	29151
2.	Motor, 1/4 HP, DC drive	11900
3.	Basket	29145
4.	Shaft, basket drive	29143
5.	Pin, 3/8" x 2" spring	29142
6.	Seal, 1-1/2" bore shaft	29140
7.	Bearing, 1-1/2" bore flange	11527
8.	Urethane bottom liner	29146

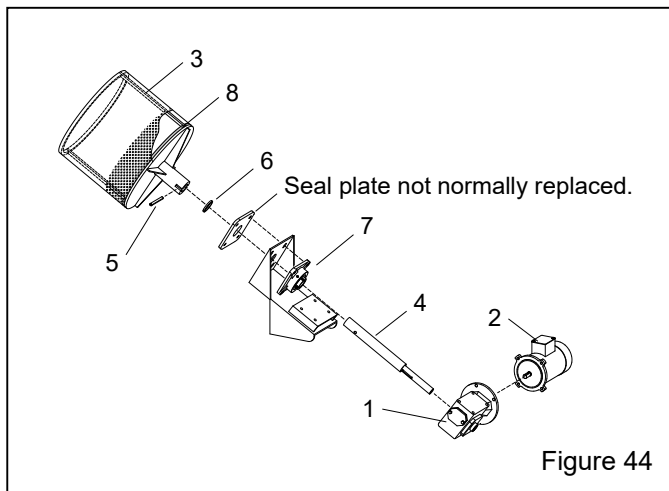


Figure 44

9.5 Auto Blast Gun Assembly – Figure 45

The air jet should be screwed into the gun body, leaving 3-1/2 to 4 threads exposed past the lock nut. Tighten the lock nut to hold the jet in place. Item 14 is an optional adjusting tool, which correctly positions the jet.

NOTE: Shaded boxes show the items originally supplied with the cabinet unless specified otherwise.

Item	Description	Stock No.
1.	Hose, 1/2" black media, per foot 16.5 ft required per gun	12471
2.	Nipple, 1/4" pipe	11911
3.	Bushing, 3/8" x 1/4"	12818
4.	Hose, 1/2" ID green air, per foot 10 ft required per gun	12472
5.	Hose end, 1/2" female swivel x 1/2" barb	15002
6.	Air jet, auto gun <input type="checkbox"/> No. 4, 1/8" diameter	11959
	<input checked="" type="checkbox"/> No. 5, 5/32" diameter	11960
7.	Lock nut, jet	11918
8.	O-ring	08975
9.	Nut, brass	11914
10.	Gun housing, center mount stud	12276
11.	Nozzle, ceramic is standard <input type="checkbox"/> Ceramic No. 5, 5/16", green tip	11930
	<input checked="" type="checkbox"/> Tungsten carbide No. 5, 5/16"	13118
	<input type="checkbox"/> Boron carbide No. 5, 5/16"	11935
12.	Gun bar, 6 inch slotted	17211

Optional Accessories

13.	Swivel connector, 90°	19188
14.	Orifice adjustment tool	16893

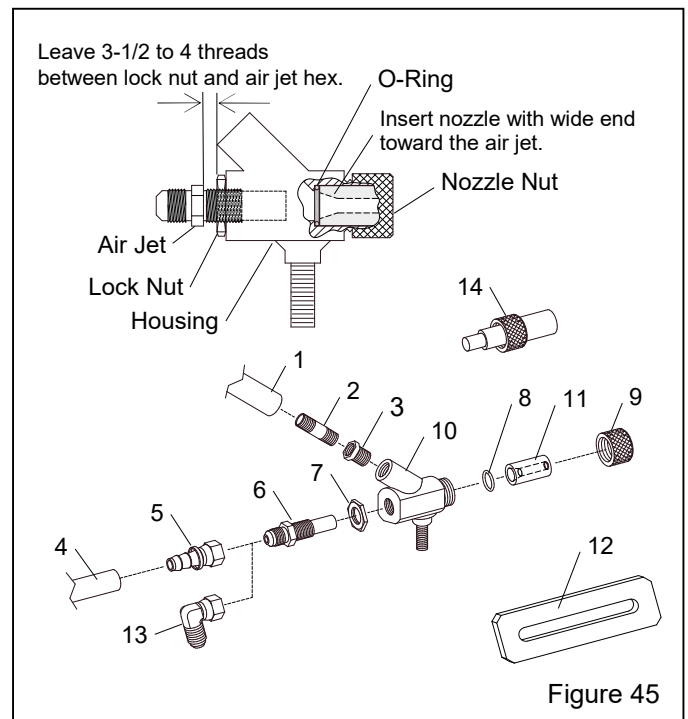


Figure 45

9.6 Pneumatic and Electric Controls – Figure 46

Item	Description	Stock No,
1.	Regulator, 1" NPT pilot operated w/gauge	12052
2.	Regulator, 1/8" pilot without gauge	12715
3.	Solenoid, 1/8" 3-way	20739
4.	Filter, 1" NPT auto drain	22425
5.	Tubing, 1/8" urethane, specify ft required	12475
6.	Tubing, 3/8" OD, 10 ft required	12478
7.	Adaptor, 1/4" NPT elbow x 3/8" tube	11685
8.	Adaptor, 1/8" NPT elbow x 1/8" barb	11733
9.	Fitting, 1/8" NPT straight x 1/8" barb	11732
10.	Gauge, Pressure, 1/8" cbm	11829
11.	Bushing 1/4" x 1/8" NPT	02010
12.	Adaptor, 1/2"-NPT x 1/2"- flare	11351
13.	Hose end, 1/2" swivel x 1/2" barb	15002
14.	Bracket, pilot-regulator mount	12915
15.	Breaker, 15 amp mini	28980
16.	Breaker, 5 amp mini	27593

17.	Regulator, 1/4" pilot with gauge	12050
18.	Timer, 60 min., basket and blast control	12180
19.	Pulse valve, 1" NPT	30168
20.	Nipple, 1/4" NPT hex	02808
21.	Timer, digital pulse	30161
22.	Muffler, 1/4"-NPT bronze	03988
23.	Elbow, 1/4" brass st	02027
24.	Gauge, 1/4" cbm	11830
25.	Hose, 1/2" ID air, per foot	
	10 ft required per gun	12472
26.	Support, inlet-plumbing	29149
27.	Union, 1" NPT	01824
28.	Tee, 1" NPT	01789
29.	Switch, toggle	12127
30.	Boot, toggle switch rubber	14228
31.	Drive, DC, basket-speed control	21453
32.	Nipple, 1" NPT x close	01701
33.	Bushing, 1" NPT x 1/2" NPT	01803

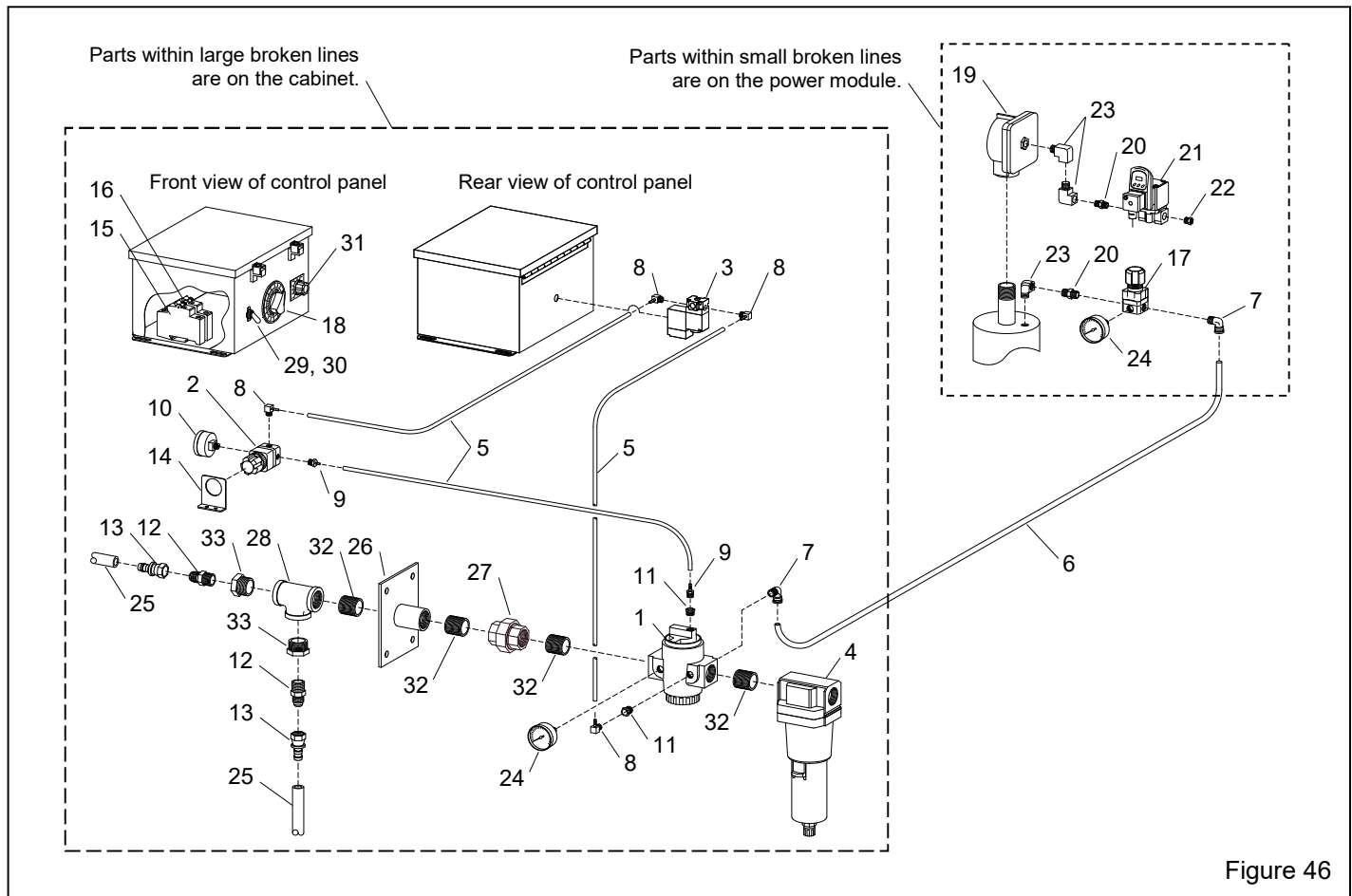


Figure 46

9.7 Media Metering-Valve Assemblies – Figure 47

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.	Tee, 1" pipe	01789
8.	Body, Lexan metering valve	11534
9.	Metering stem assembly	23889
10.	Nipple, 1/4-NPT x 1-1/2" Galvanized	11911
11.	Reducer, 1" x 3/8" bell	12024
12.	Bushing, 3/8" x 1/4"	12818

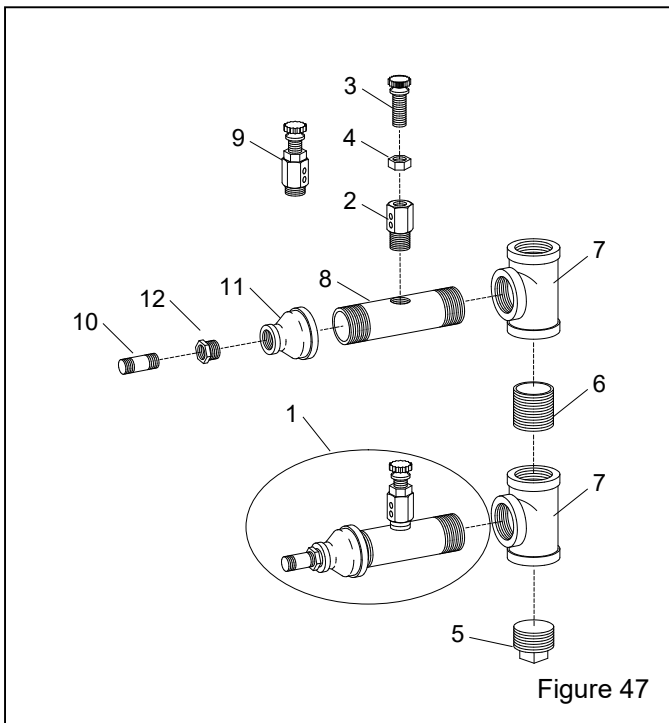
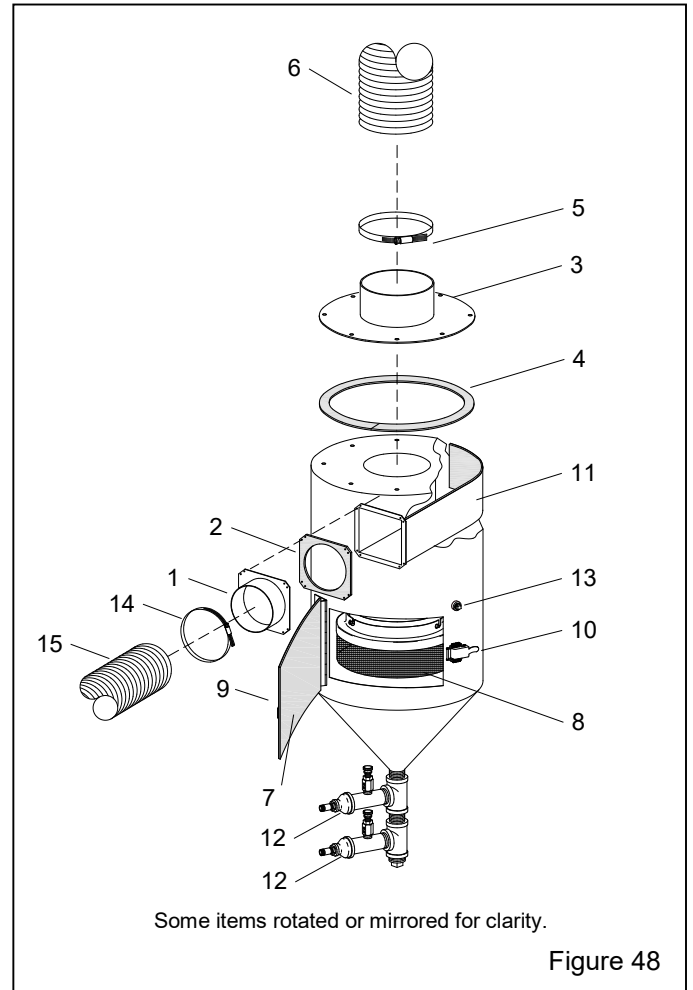


Figure 47

9.8 300 CFM Reclaimer – Figure 48

Item	Description	Stock No.
1.	Inlet-pipe adaptor, 4" - 300 cfm	12365
2.	Gasket, inlet pipe, 4" - 300 cfm	11746
3.	Outlet plate with 6" pipe - 300 cfm	20343
4.	Gasket, 5/16" x 1" adhesive-backed, per foot, 4-feet required	00187
5.	Clamp, 6" hose	00750
6.	Hose, 6" unlined flex, 3 feet required	12452
7.	Gasket, door	11745
8.	Debris screen, 8-mesh	21265
9.	Door assembly, access	14271
10.	Latch assembly, door	12263
11.	Wear plate w/mounting screws	14060
12.	Metering valve, Lexan, See Figure 47	12420
13.	Plug, 1/4-NPT pipe	01950
14.	Clamp, 4" hose	11577
15.	Hose, 4" light-lined flex, 9 feet required	12466



Some items rotated or mirrored for clarity.

Figure 48

9.9 300 CFM Power Module and Dust Collector
Figure 49

Item	Description	Stock No.
1.	Valve, 1" diaphragm pulse	30168
2.	Timer, digital pulse	30161
3.	Gasket, cover plate/HEPA filter	22808
4.	Cover plate, exhauster	22926
5.	Tubing, 3/8" OD, 10 ft required	12478
6.	Adaptor, 1/4" NPT elbow x 3/8" tube	11685
7.	Petcock	01993
8.	Filter cartridge, 9" x 26"	19122
9.	Hopper assembly, incl. items 10 & 11	27047
10.	Gasket, 5/16" x 1" adhesive-backed, per foot, 5-feet required	00187
11.	Latch assembly	11876
12.	Hose, 4" flex, (1 ft minimum order)	12447
13.	Clamp, 4" hose	11577
14.	Dust container, includes 12, 13, 15, & 16	23411

15.	Pail, 3.5 gallon	23417
16.	Lid and lock ring, dust container	23419
17.	Elbow, 1/4" brass st.	02027
18.	Washer, 1/2" ID x 1-1/16" OD	03515
19.	Washer, 1/2" lock	03516
20.	Nut, 1/2"-NC wing	20108
21.	Nipple, 1/4" brass hex	02808
22.	Regulator w/gauge, 1/4"	12050
23.	Liners, dust container, pack of 5	28621
24.	Plug, 1/4"-NPT pipe	01950
25.	Motor, exhauster, 1/2 hp	12308
26.	Paddle wheel, 300 cfm	19232
27.	Motor plate, 300 cfm	20229
28.	Gasket, 5/16" x 1" adhesive-backed, per foot, 4-feet required	00187
29.	Gauge, 1/4" cbm	11830
30.	Muffler, 1/4"-NPT bronze	03988
31.	Clamp, 6" hose	00750
32.	Hose, 6" flex, 2 ft. required	12452
33.	Service kit, pulse valve	30173

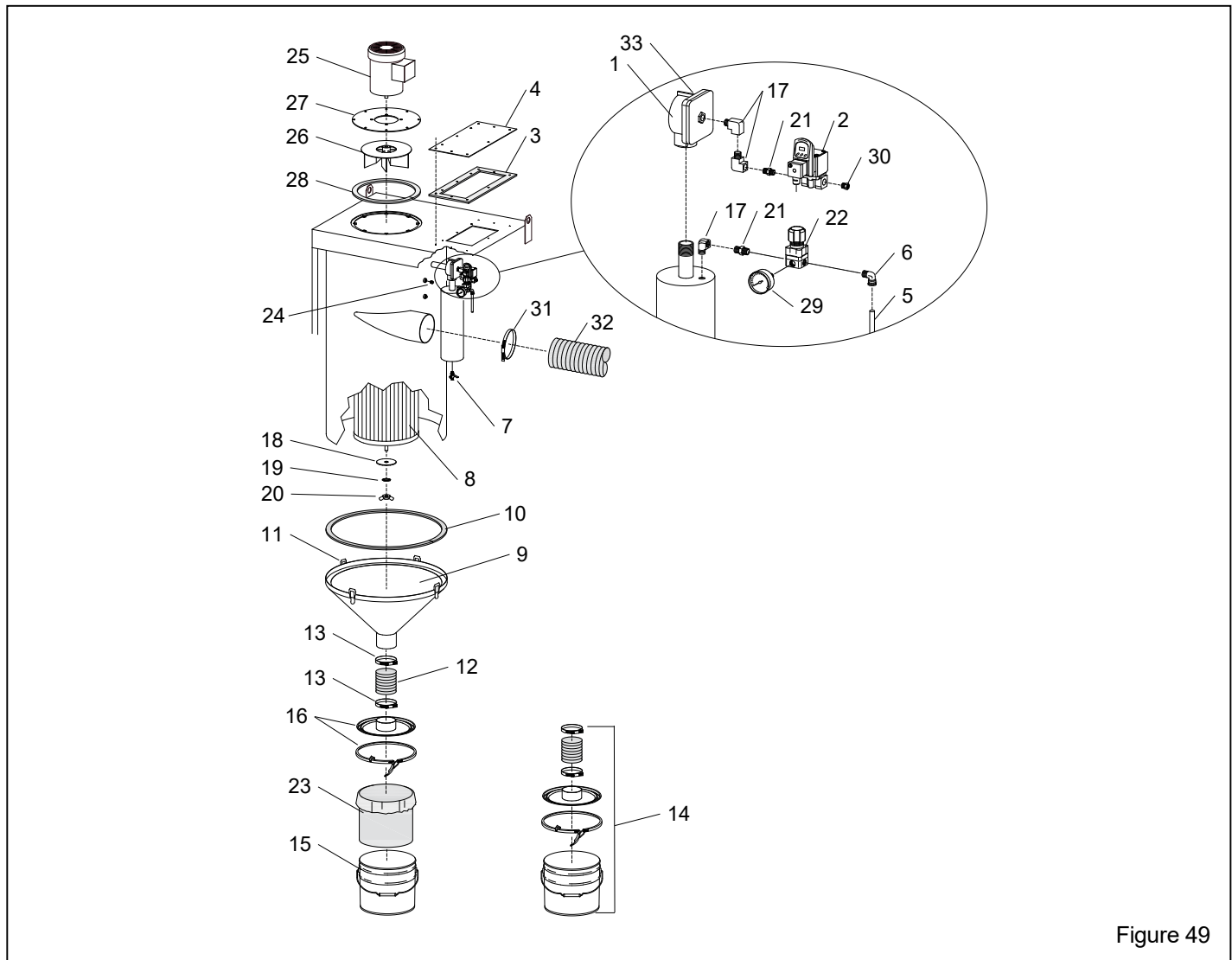


Figure 49