

SUPER COMET

PRESSURE BLAST and VACUUM SYSTEM

O. M. 23437

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REVISION:

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

The products described in this material, and the information relating to those products, is intended for knowledgeable, experienced users of abrasive blasting equipment.

No representation is intended or made as to the suitability of the products described herein for any particular purpose of application. No representations are intended or made as to the efficiency, production rate, or the useful life of the products described herein. Any estimate regarding production rates or production finishes are the responsibility of the user and must be derived solely from the user's experience and expertise, and must not be based on information in this material.

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It is the responsibility of the knowledgeable, experienced users of the products mentioned in this material to familiarize themselves with the appropriate laws, regulations and safe practices that apply to these products, equipment that is connected to these products, and materials that may be used with these products.

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

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

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1.0 INTRODUCTION

1.1 Scope of manual

1.1.1 These instructions cover the set-up, operation, maintenance, troubleshooting, and replacement parts for the Super-Comet blast and recovery machine.

1.1.2 These instructions also contain important information required for safe operation. All blast operator(s) must be trained in the safe operation of the blast machine system and all blasting accessories. The operators and all personnel associated with the abrasive blasting process must know about the hazards associated with abrasive blasting. Before using the machine, all personnel associated with the blast machine operation must read this entire manual, including the orange cover, and all accessory manuals.

1.2 Safety Alerts

1.2.1 Clemco uses safety alert signal words, based on ANSI Z535.4-1998, to alert the user of a potentially hazardous situation that may be encountered while operating this equipment. ANSI's definitions of the signal words are as follows:



This is the safety alert symbol. It is used to alert the user of this equipment of potential personal injury hazards.

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

CAUTION

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

CAUTION

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

WARNING

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

DANGER

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

1.3 Components and Theory of Operation

1.3.1 Components, Figure 1

1.3.1.1 The primary components of the Super-Comet are:

1. Blast machine with controls and blast hose
2. Blast head assembly with brushes for inside corner, outside corner and flat surfaces.
3. Reclaimer and recovery hose
4. Dust collector and exhauster
5. Cart

1.3.2 Blast Machine

1.3.2.1 The blast machine pressure vessel is manufactured to American Society of Mechanical Engineers (ASME) standards, as described in Section VII, Div. 1, and carry a National Board certification. It is the owners responsibility to maintain the integrity of the vessel as may be required by some states. This may include regular inspection and hydrostatic testing as described in National Board Inspection Code and Jurisdictional Regulations and /or Laws.

WARNING

Welding, grinding, or drilling on the blast machine could weaken the vessel. Compressed air pressure could cause a weakened vessel to rupture, resulting in death or serious injury. Welding, grinding, or drilling on the blast machine vessel, without a National Board "R" stamp voids the ASME and National Board certification.

1.3.2.2 All welding repairs done on the vessel must be performed by certified welders, at shops holding a National Board "R" Stamp. Welding performed by any welder not properly qualified per the ASME Code voids ASME and National Board certification of the vessel.

1.3.2.3 The vessel is rated for a maximum of 125 psi (pounds per square inch); do not exceed rated pressure.

WARNING

Excessive air pressure could cause the blast machine to rupture. To prevent serious injury or death, do not exceed the rated pressure of the blast machine vessel.

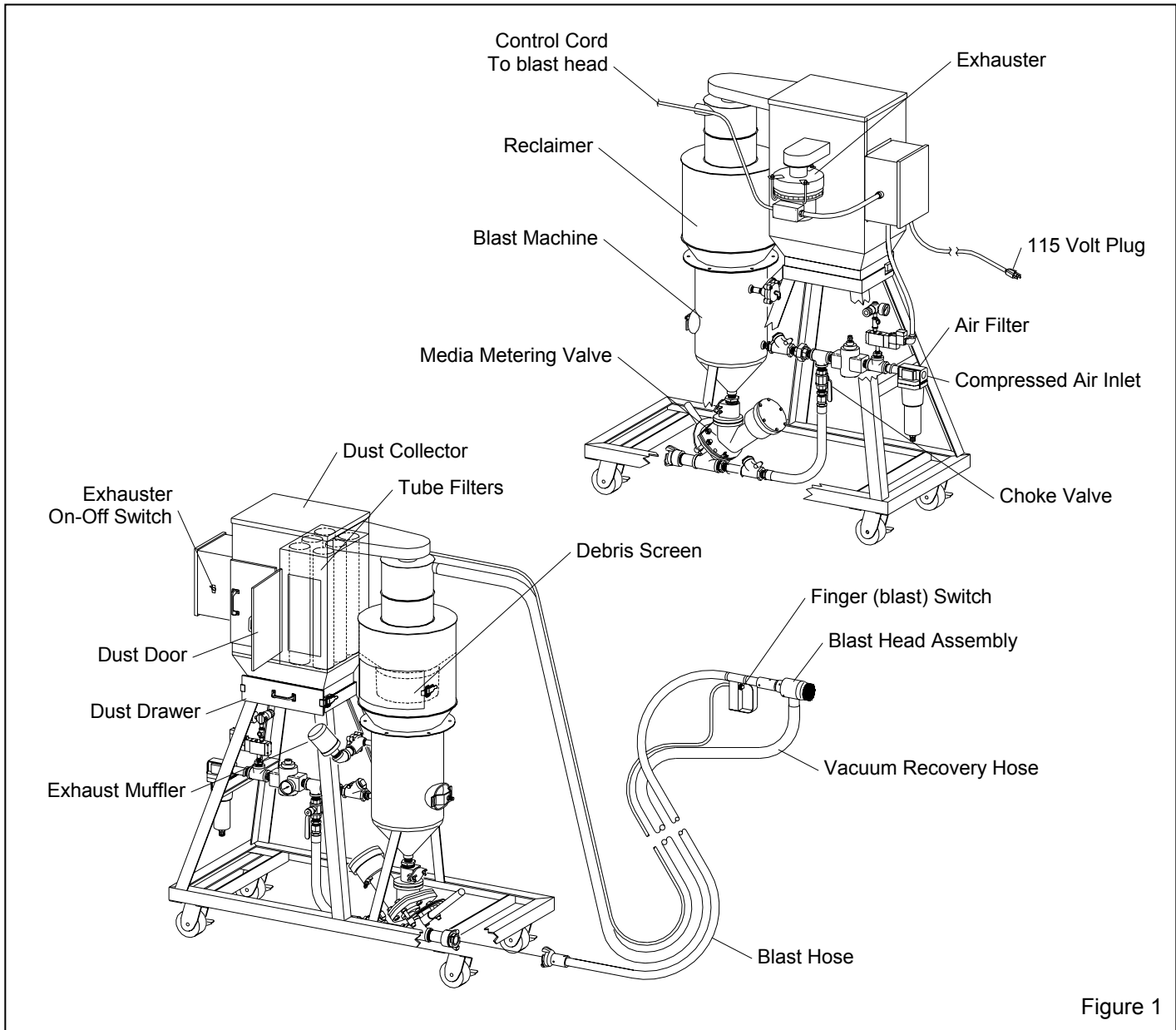


Figure 1

1.3.2.4 OSHA does not require pressure relief valves on blast machines when air compressors supplying air to the blast machines are built to ASME⁽¹⁾ specifications and comply with OSHA⁽²⁾ regulations. ASME Manual section VIII, Division 1, UG-125, paragraph A90 (g) states that pressure relief valves or protective devices **"...need not be installed directly on a pressure vessel when the source of pressure is external to the vessel and is under such positive control that the pressure in the vessel cannot exceed the maximum allowable working pressure at the operating temperature..."**. OSHA regulation 1910.169 refers to the above ASME code when describing the necessity of pressure relief valves on compressed air equipment. **DO NOT** operate blast machines with air compressors that are not equipped with properly functioning pressure relief valves.

(1) American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, 1989

(2) Occupational Safety and Health Administration, 29 CFR 1910, Subpart M - Compressed Gas and Compressed Air Equipment.

1.3.3 Theory of Operation

1.3.3.1 When the air supply is on, and electrical power is connected, the blast machine is ready for actuation by the switch mounted on the blast hose hand grip assembly. Pressing the finger switch activate the electrical solenoid, which pneumatically opens the normally closed main inlet regulator, and closes the normally open outlet valve. The incoming air pressurizes the blast machine, and blasting begins. When pressure on the switch is released, the blast machine depressurizes, and blasting stops.

1.3.3.2 During operation the abrasive metering valve, installed at the bottom of the pressure vessel, meters a controlled quantity of abrasive into the air stream. The air and abrasive travels through the blast hose to the blast gun. Blasting is contained entirely within the hand held gun assembly. A brush at the end of the assembly, confines the abrasive and draws in atmospheric air, sweeping the blast area clean.

1.3.3.3 Spent abrasive and by-products are conveyed from the blast surface to the reclaimer. At the reclaimer, the reusable abrasive material drops out of suspension due to the cyclonic action, passes through a screen and collects in a hopper located above the blast machine.

1.3.3.4 Air, dust and fine by-products leave the reclaimer and are drawn through the dust collector. Dust collects in the cloth filter, and the cleaned air passes through the exhaust fan and is discharged into the atmosphere. Dust particles trapped by the filter bags are removed by a mechanical bag shaking mechanism; dust released from the bags collects in a pan for disposal.

1.3.3.5 When the operator releases the control switch, stopping the blast action, the blast machine depressurizes, and automatically refills with abrasive collected in the reclaimer hopper.

1.4 Nozzle Options

1.4.1 Super-Comets are shipped with a 3/16" orifice tungsten carbide nozzle. Use an optional boron carbide nozzle (and tube insert) when blasting with aggressive abrasive. See Section 8.1.

1.5 Abrasive

1.5.1 Super-Comets are designed to utilize most common recyclable abrasives, between 60 and 280 mesh that are specifically manufactured for blasting. Suitable abrasive mesh sizes are based on typical abrasive flow.

1.5.2 Glass Bead: Glass bead No. 6 to 13 may be used. Most beads are treated to ensure free-flow operation even with moderately high humidity. Glass beads subjected to moisture may be reused only after thorough drying and breaking up of the lumps.

1.5.3 Aluminum Oxide, Silicon Carbide, and Garnet: Aggressive abrasives such as these may be used, but consideration must be given to the rapid wear on all parts of the system (reclaimer, nozzle, or hoses etc.) which come in contact with the abrasive. Optional boron nozzles are required when any of these abrasives are used. See Section 8.1.

1.5.4 Steel: Steel grit or shot is too heavy for the system to recover. Do not use metallic abrasive.

1.5.5 Sand and Slag: Sand should never be used because of the respiratory hazards associated with abrasives containing free silica. Slags are not recommended because they rapidly break down.

2.0 SET-UP

2.1 Compressed Air Requirements

2.1.1 Minimum air supply requirements are 70 cfm (45 cfm when nozzle is new, 70 cfm when nozzle is worn) at 80 psi.

2.1.2 The air supply line from the compressor to the blast machine inlet should have a minimum ID of 3/4".

2.1.3 Install an air supply hose fitting to air filter, that is compatible with the compressed-air supply hose.

2.1.4 Install an isolation valve at the air source to enable depressurization for service, and connect an air line from the air source to the air filter inlet located at the blast machine inlet.

WARNING

If 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 could cause serious injury.

2.1.5 The air filter removes condensed water from the compressed air. Its use is especially important in areas of high humidity, or when fine-mesh abrasive is used. Moisture causes abrasive to clot and inhibits free flow. If moisture problems persist, an air dryer may be required.

2.2 Electrical Requirements

2.2.1 115-VAC, 1-Ph, 60-Hz, with 15 Amps. A power cord is supplied. No additional wiring is required. **SEE FOLLOWING IMPORTANT WARNING.**

WARNING

Do not use electrical adaptors that eliminate the ground prong on 115 volt plugs. Doing so can cause electric shock and equipment damage.

3.0 OPERATION

3.1 Inspection

3.1.1 Make sure the coupling gaskets are in place and in good condition before connecting the blast hose to the quick coupling on the blast machine. Use safety lock-pins or safety wire to lock the couplings together, to prevent accidental separation during blasting.

3.1.2 Make sure that all compressed-air supply hose connections are secured with safety lock pins and safety cables to prevent accidental separation or disconnection. Lock pins and safety cables are listed in Section 8.5.

WARNING

Hose disconnection while under pressure could cause serious injury or death. Use safety lock-pins and safety cables on all coupling connections to help prevent hose couplings from accidental disconnection.

3.1.3 Make sure that all air fittings are secure. Leaks will cause the system to malfunction.

3.1.4 Check that the choke valve is open (handle in-line with the piping).

3.1.5 Close the abrasive metering valve. The closed position for the Sentinel valve is fully right.

3.2 Loading the Machine with Abrasive

3.2.1 Capacity: Abrasive capacity is approximately .5 cu. ft (1/2 cubic foot). The machine is full when abrasive reaches the level of the pop-up valve. Overfilling will result in abrasive carryover to the dust collector and possible blockage in the conveying hose.

3.2.2 Abrasive Loading: With the exhauster off, pour clean, dry abrasive into the reclaimer hopper through the reclaimer door.

3.3 Emptying the Machine of Abrasive

3.3.1 When working in environments subject to extreme temperature changes, or very humid conditions, condensation may develop inside the machine. Condensation wets abrasive and causes flow problems. To prevent this, empty the machine of all abrasive when shutting down for the day. This will eliminate trouble from moist abrasive when starting a new day's blasting.

3.3.2 With the blast machine off, turn the blast pressure down to approximately 40 psi, close the choke valve and set the abrasive metering valve at full open.

3.3.3 Point the nozzle into a drum or suitable container, or in the direction the abrasive is to be disposed.

3.3.4 Hold the hose securely and pressurize the machine by activating the control switch. Be prepared for surging, or recoil of the hose, which can be severe.

3.3.5 When the machine is empty, release the control switch, open the choke valve, and reset the abrasive metering valve.

3.4 Select Brush

3.4.1 Three containment brushes are supplied: One for flat surfaces, one for inside corners, and one for outside corners.

3.4.2 Using the elastic brush retainer, attach the appropriate brush to the blast head.

3.5 Blasting Operation

CAUTION

All parts to be blasted must be free of oil, water, and other contaminants. If not clean, the abrasive may contaminate the blast surface, and may clog abrasive, resulting in equipment malfunction.

3.5.1 Operators must wear operator safety equipment. A NIOSH-approved, supplied-air respirator protects against inhalation of dust. Heavy gloves and clothing will help prevent serious injury from the abrasive blast if the closed brushes are accidentally lifted off the surface.

3.5.2 The machine is ready for operation when compressed air and electrical power are supplied to the machine, and the machine contains abrasive.

3.5.3 Adjust the pressure regulator, located on the blast machine piping, to the required blasting pressure per Section 4.1.

3.5.4 Start the exhauster by flipping the toggle switch located on the electrical panel.

3.5.5 Hold the blast head brushes against the surface to be blasted, depress the finger switch, blasting (air only at this time) will begin within a couple of seconds. Adjust the abrasive flow per Section 4.2

3.5.6 To stop blasting, release the pressure on the finger switch. Leave the brush against the surface for several seconds after blasting stops, to ensure that all abrasive is recovered from the surface.

3.6 Operating Technique

3.6.1 To achieve full abrasive and dust recovery the brush must be in contact with the surface at all times.

3.6.2 Keep the brush flat against the surface. Keep the blasting head perpendicular to the surface.

3.6.3 Do not apply excessive pressure that would cause the brush to bend into the blast stream.

3.6.4 Make straight, even passes over the blast surface. The blast pattern should barely overlap the pattern from the previous pass.

3.6.5 When reversing direction, move the gun and brush in a small radius, allowing the brush bristles to roll evenly.

3.7 Shut-down

3.7.1 After blasting is complete, run the exhauster for several seconds to clear the hoses.

3.7.2 When shutting down for the day, empty the machine of abrasive per section 3.3.

3.7.3 Close the compressed-air supply valve.

3.7.4 Drain receiver tank, filters, and water collecting devices, and bleed the compressed-air supply hose.

3.7.5 Shutdown the compressor.

4.0 ADJUSTMENTS

4.1 Blast Pressure

4.1.1 The blast pressure pilot regulator, located on the blast machine, enables the user to adjust blasting pressure to suit the application. The suitable pressure for most purposes is 80 psi. Lower pressures may be used for delicate work. In all cases, highest production can be achieved only when pressure is carefully monitored.

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

4.2 Abrasive Metering

4.2.1 Abrasive flow is adjusted by the metering valve located at the bottom of the blast machine. The valve is closed when the handle is fully right. To adjust, close the valve and slowly move the handle to the left to increase abrasive flow. Allow time for the flow to stabilize before further adjusting. The valve is fully open when the handle is at the full left position. The correct flow rate will depend on the type and size of abrasive and blasting pressure, and can best be determined by experience. Use as little abrasive as possible to do the job while maintaining the best cleaning rate.

5.0 PREVENTIVE MAINTENANCE

WARNING

Failure to wear approved respirators and eye protection when servicing dust-laden areas of the dust collector, and when emptying the dust drawer, could result in serious eye irritation and lung disease or death. Toxicity and health risk vary with type of abrasive 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 material safety data sheet for the blast abrasive.

5.1 Inspection

5.1.1 To avoid unscheduled downtime, establish a weekly inspection schedule. Inspect all parts subjected to abrasive contact.

5.1.2 Inspect the blast head assembly, nozzle, and brushes for wear.

5.1.3 Inspect the blast hose and recovery hose for wear by squeezing and feeling for soft spots.

5.1.4 Inspect dust collector bag compartment for dust. Check the dust bags for wear.

5.1.5 Inspect the reclaimer wear plate for wear. Replace the wear plate before the rubber coating wears through.

5.2 Dust Collector

5.2.1 The dust collector uses tubular filters which collect dust on their inner surfaces. Every two to three hours while the exhauster is on, clean the filter bags by opening and closing each door four to six times in succession. Hand pulls are provided on these two doors which are located on the dust collector directly above the dust drawer. Opening and closing the doors momentarily compresses the filter bag, loosens dust, dropping it into the dust drawer. During the blasting operation, the collector doors must be closed tightly.

5.2.2 Empty the dust drawer regularly. Begin by checking the drawer after every bag cleaning, and adjust frequency based on usage and breakdown rate of abrasive. Dump the contents into a suitable disposal container.

CAUTION

Blast media is usually non-toxic, however, some materials removed by the process may be toxic. Check with proper authorities for disposal regulations.

5.3 Debris Screen

5.3.1 The screen is accessible through the reclaimer door. With the exhauster off, remove the screen and empty it daily or when loading abrasive. Empty more often if part blasted causes excessive debris. Do not operate the machine without the screen in place.

5.4 Air Filter

5.4.1 The blast machine is equipped with a manual drain air filter. Drain the filter at least once a day, and more often if an abundance of moisture accumulates. Moist air inhibits the flow of abrasive. If moisture continues to be present, a dryer or aftercooler may be required in the air supply line.

5.5 Changing Abrasive Type

5.5.1 When changing the type of abrasive, make sure the blast machine, blast hose, recovery hose, and reclaimer are carefully cleaned, to remove any remaining abrasive material. If not carefully done the new abrasive will be contaminated.

6.0 SERVICE MAINTENANCE

WARNING

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

6.1 Nozzle

6.1.1 Replace the nozzle when its diameter has increased by 1/16", or sooner if pressure diminishes noticeably, or if abrasive escapes from the brush. Make sure the nozzle gasket is in place before screwing the nozzle into the nozzle holder.

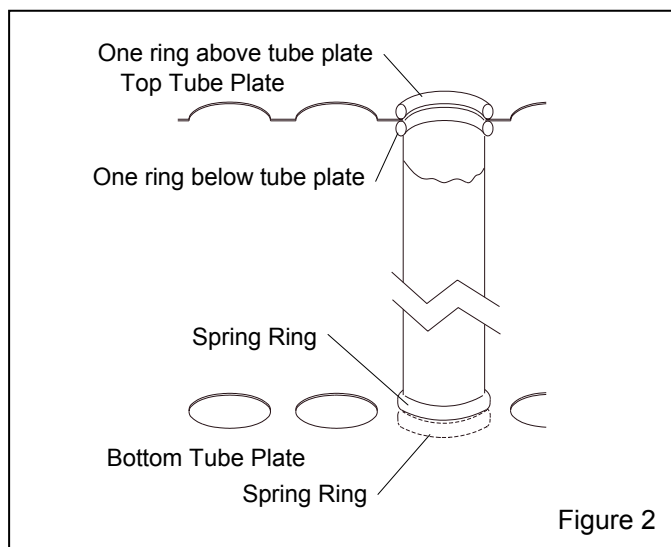
6.2 Filter Tube Replacement

CAUTION

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

6.2.1 Replace damaged filters immediately. Remove the old filters by pulling the spring rings off the bottom and top tube plates. Working from the back to the front, install one filter at a time. To install new filters, form the end of the spring ringed tubular filter into a shallow "c" shape, push the filter far enough into the hole of the top plate to allow one spring ring to snap into place above the tube plate and the other to snap into place below it. See the illustration in Figure 2.

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



6.3 Brushes

6.3.1 To avoid unscheduled down-time, keep spare brushes on-hand. Replace brushes at the first sign of deterioration. Worn brush will cause abrasive escaping at the blast surface.

6.4 Reclaimer Wear Plate Replacement

6.4.1 Remove the two screws holding the wear plate in place, and remove the wear plate.

6.4.2 Place the new wear plate into position, and secure with self drilling screws.

6.4.3 Caulk between the wear plate and reclaimer housing to prevent rapid wear in those areas.

6.5 Pop-up Valve Replacement

6.5.1 Empty the machine of media as described in Section 3.3.

6.5.2 Depressurize the blast machine, and lock out and tag out the compressed-air supply.

⚠ WARNING

Failure to observe the following procedure before performing any maintenance could cause serious injury or death from the sudden release of compressed air.

- Depressurize the blast machine.
- Lock out and tag out the compressed-air supply.
- Bleed the air supply line to the blast machine.

6.5.3 To gain access to the pop-up valve, remove the inspection door assembly.

6.5.4 Using a small pipe wrench, unscrew the pop-up valve guide, by turning it counterclockwise. Remove the pop-up valve and guide from the machine. Place the new pop-up valve in the guide, and screw the valve guide (with the pop-up valve in it) back into position inside the machine. Tighten the guide as tight as possible without using a wrench.

6.5.5 Put a new gasket on the inspection door and bolt the door back onto the machine.

6.6 Pop-up Valve Seat Replacement

6.6.1 The easiest method to replace the rubber pop-up seat is through the reclaimer access door. If for some reason replacement can not be made through the reclaimer, observe the warning in Section 6.5, empty the machine and bleed the air supply line. Remove the inspection door assembly and work through the opening.

6.6.2 Remove the old seat by using a finger, screwdriver, or similar object, to work the seat out of the retainer groove.

6.6.3 Push the new seat all the way through the port and then fit it into the groove. Pull up on the seat and allow it to "pop" into position.

7.0 TROUBLESHOOTING

⚠ WARNING

To avoid serious injury, observe the following when troubleshooting.

- Turn off the air, and lock out and tag out the air supply.
- If checking the controls requires air, always enlist the aid of another person to:
 - Hold the nozzle securely.
 - Operate the finger switch.
- Never bypass the finger switch, or tie it in the operating position.

7.1 Poor Vacuum Recovery, (abrasive escaping at brushes)

7.1.1 Dirty tube filters. Clean the tube filters, and empty dust drawer regularly.

7.1.2 Using friable abrasive that rapidly breaks down, or using abrasive that is too fine or worn out.

7.1.3 Hole worn in recovery hose between blast head and reclaimer inlet. Inspect hose for wear.

7.1.4 Reclaimer or dust collector door open. All doors must be closed during operation.

7.1.5 Obstruction in recovery. Check for blockage.

7.1.6 Brushes worn. Inspect brushes.

7.1.7 Nozzle worn. Check nozzle orifice, and replace the nozzle if worn by 1/16".

7.1.8 Exhauster not operating. Make sure the exhauster toggle switch is on.

7.2 Abnormally High Abrasive Consumption

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

7.2.2 Abrasive may be too fine or worn-out.

7.2.3 Using friable abrasive that rapidly breaks down.

7.2.4 Nozzle pressure too high for the abrasive, causing abrasive to break down.

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

7.3 Reduction In Blast Cleaning Rate

7.3.1 Low abrasive level reducing abrasive flow. Check and fill if low.

7.3.2 Incorrect metering valve adjustment. Adjust per Section 4.2.

7.3.3 Reduced air pressure. This may be caused by a malfunctioning regulator, a dirty filter element in air filter, partially closed air valve, leaking air line, or other air tools in use.

7.3.4 Blockage in nozzle. Blockage may occur as a result of a missing debris screen.

7.3.5 Moist abrasive. Frequent bridges or blockage in the area of the metering valve can be caused by moisture. See Section 7.5.

7.4 Plugged Nozzle

7.4.1 Depressurize the blast machine before checking the nozzle for blockage.

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

7.5 Abrasive Bridging

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

7.5.2 To avoid contaminating abrasive from the workpiece, all parts should be clean and dry. If parts are oily or greasy, degrease and dry them prior to blasting.

7.5.3 Moist compressed air may be due to: a faulty compressor that overheats, or pumps oil or moisture into the air line; too long an air line permitting moisture to condense on the inside; high humidity. Drain the filter regularly. If the problem persists, change abrasive more often, or install an aftercooler or air dryer.

7.5.4 Absorption. Some abrasive tends to absorb moisture from the air, especially fine-mesh abrasive in high humidity areas. Empty the blast machine after use.

7.5.5 A vibrator mounted either on the blast machine leg or on a bolt on the abrasive metering valve may help prevent bridging of fine-mesh abrasive.

7.6 Neither Abrasive Nor Air Comes Out The Nozzle When The Finger Control Switch Is Pressed

7.6.1 Depressurize the blast machine, and check the nozzle to see if it is plugged. See Section 7.4.

7.6.2 Check that the blast machine pressurizes when the switch is pressed. If it does not, see Section 7.11.

7.6.3 Check that the abrasive metering valve and the choke valve are open.

7.7 Blast Machine Will Not Depressurize Or Depressurizes Too Slowly

7.7.1 Faulty finger switch or solenoid valve. Check voltage and continuity, by a qualified electrician.

7.7.2 Check the outlet muffler for blockage.

7.8 Heavy Abrasive Flow

7.8.1 Make sure the choke valve is open.

7.8.2 Abrasive metering valve open too far. Adjust per Section 4.2. If adjusting the valve does not regulate abrasive flow, empty the machine, depressurize the

machine, and inspect the internal parts of the valve for wear. Refer to the Sentinel metering valve manual for troubleshooting and maintenance of the valve.

7.9 Abrasive Surge A small amount of surge is normal at start-up.

7.9.1 Heavy abrasive flow. Adjust per Section 4.2

7.9.2 Empty, and depressurize the blast machine, and inspect the internal parts of the metering valve for wear.

7.10 Air Only (no abrasive) Comes Out The Nozzle

7.10.1 Make sure the machine contains abrasive.

7.10.2 Check that the abrasive metering valve is open.

7.10.3 Check for minor blockage in the abrasive metering valve by fully opening the metering valve, and closing the choke valve. Activate the finger control switch, to blow out obstructions. If this procedure fails, depressurize the machine, open the metering valve inspection plate, and check for foreign objects.

7.10.4 Check the muffler on the solenoid valve. Air should exhaust from the muffler when the finger switch is released. If air does not exhaust, remove the muffler and try again. If air exhausts now, the muffler is blocked. If air does not exhaust, the solenoid valve may be faulty. Have it checked by a qualified electrician.

7.11 Blast Machine Will Not Pressurize

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

7.11.2 Check that pressure regulator is not turned down. Minimum pressure is 40 psi. See Section 4.1.

7.11.3 Inadequate air supply. See Section 2.1.

7.11.4 Inspect the diaphragm outlet valve for wear.

7.11.5 Inspect pop-up valve and seat for alignment and wear.

7.11.6 Blocked or leaking control line. Check all fittings for blockage or leaks.

7.11.7 Finger switch or solenoid valve malfunction. Check by qualified electrician.

7.11.8 Inspect the check valve for obstruction or broken flap.

7.12 Dust Leaking From Dust Collector

7.12.1 Check for damaged or loose filters.

8.0 ACCESSORIES AND REPLACEMENT PARTS

8.1 Blast Head and Control Assembly, Figure 3

Item	Description	Stock No.
1.	Control assembly, includes items 8, 9, and 10	12383
2.	Head, vacuum, includes set screws and item 3 in alum.	12300
3.	Insert, tube aluminum, standard	12175
	boron carbide, optional	12409
4.	Collar	13890
5.	Nozzle, Tungsten carbide CT-2, 1/8" orifice	01351
	CT-3, 3/16" orifice, standard	01352
	CT-4, 1/4" orifice	01353
	Boron carbide, CTB-3	21091
6.	Nozzle washer, pack of 10	21580
7.	Retainer, brush	12039
8.	Cover, switch	11587
9.	Switch	12119
10.	Gasket, 1/8" x 2" foam, per foot 1 foot min., trim to fit	13089
11.	Hose, blast 1/2" ID x 25 ft., coupled includes item 12 and coupling	01268
12.	Nozzle holder, CHE, 1/2"	00577
13.	Hose, vacuum, 1-1/2" x 20 ft.	12450
14.	Clamp	12750
15.	Flat Surface Brush	11569
16.	Inside Corner Brush	11570
17.	Outside Corner Brush	11571

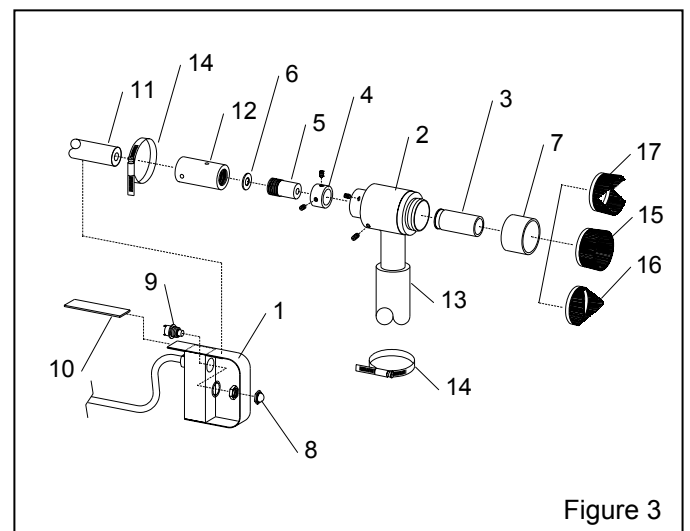


Figure 3

8.2 Blast Machine, Figure 4

Item	Description	Stock No.
1.	Ball valve with handle, 1"	02396
2.	Handle, 1" ball valve	22531
3.	Pop-up valve	01242
4.	Seat, pop-up	01245
5.	Check valve, 1" swing	12187
6.	Metering valve, Sentinel fine mesh	21439
7.	Inspection door assembly, 3" x 4"	01267
8.	Gasket, 3" x 4" inspection door	01249
9.	Regulator, 1/4" pilot, with gauge	12050
10.	Gauge, pressure, 1/8" cbm	01908
11.	Solenoid, 4-way	12197
12.	Muffler, 1/4" bronze	03988
13.	Valve, 1/2" diaphragm outlet	02512

14.	Adaptor, 1" male NPT x 1" male flare	11720
15.	Pusher line assembly	22508
16.	Muffler, exhaust	05068
17.	Regulator, 1" pilot operated with gauge	12052
18.	Air filter, auto-drain	22425
19.	Gasket, 5/16" x 1" adhesive backed, (4 ft. required)	00187
20.	Fitting, elbow 1/4" NPT x 3/8" tube	11685
21.	Fitting, straight 1/4" NPT x 3/8" tube	11736
22.	Tubing, 3/8" OD poly, specify ft. required	12478
23.	CFP-P Coupling w/nipple 1-1/4" NPT	10806
24.	Gasket, CQGP-3 pack of 10	08853
25.	Coupling, 1/2" ID hose, CQA-1/2	00599
26.	Gasket, CQG, pkg of 10	00850
27.	Nozzle holder, CHE-1/2	00577
28.	Blast hose, 1/2" ID x 25 ft. coupled, includes items 25 & 27	01268

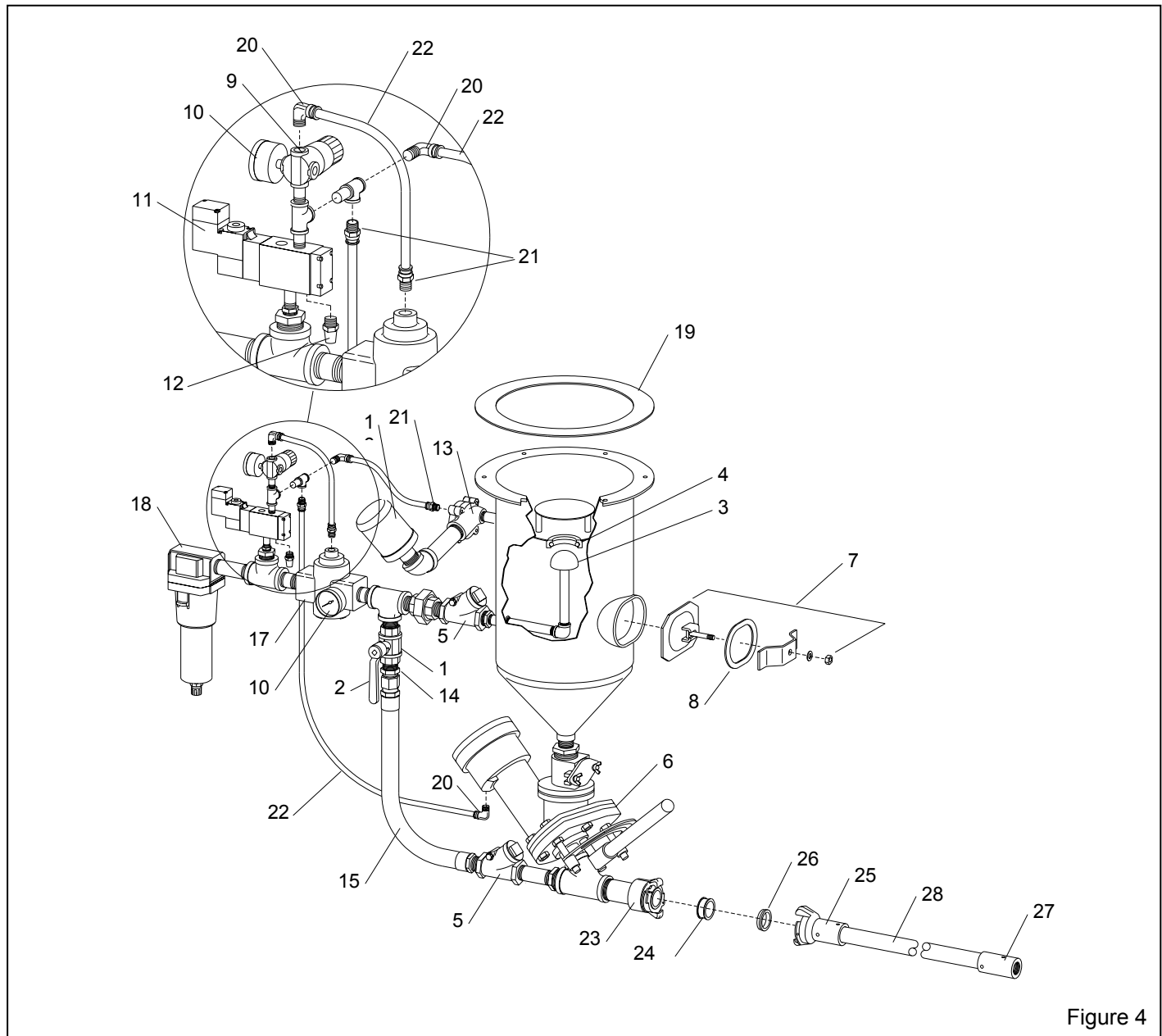


Figure 4

8.3 Dust Collector, Figure 5

Item	Description	Stock No.
1.	Spring Latch	11876
2.	Gasket, door	13481
3.	Gasket, 5/16" x 1" adhesive backed, (3 ft. required)	00187
4.	Dust Bag, 20" Long, 12 required	11506
5.	Gasket, air injector	11754
6.	Gasket, motor adaptor	11781
7.	Motor	12315

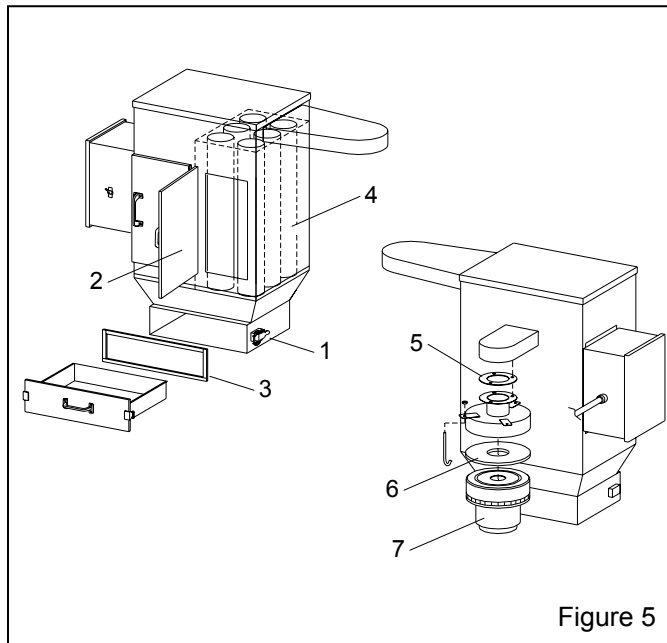


Figure 5

8.6 Reclaimer, Figure 6

Item	Description	Stock No.
1.	Debris screen	21265
2.	Gasket, door	11745
3.	Gasket, reclaimer mount	11755
4.	Hose, vacuum, 1-1/2" x 20 ft.	12450
5.	Clamp	12750
6.	Gasket, 5/16" x 1" adhesive backed, (4 ft. required)	00187
7.	Spring latch assembly	12263
8.	Wear plate	13882

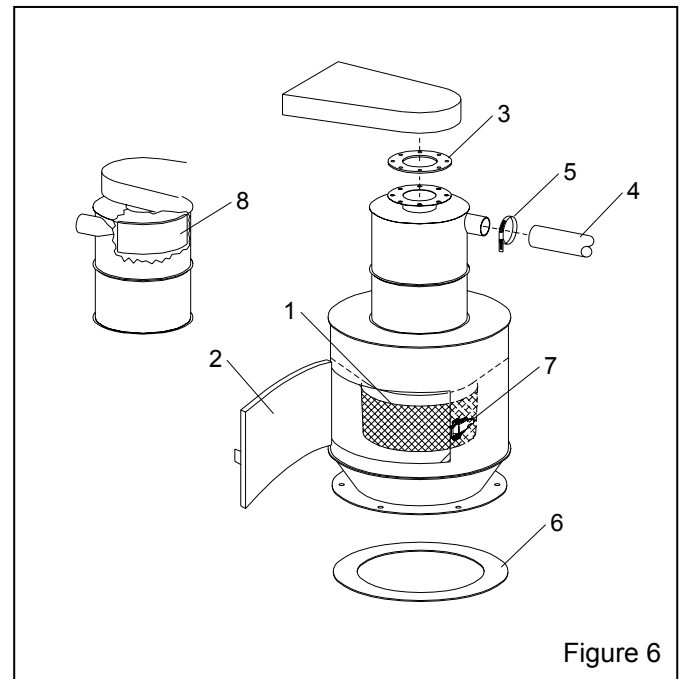


Figure 6

8.4 Electrical, Refer to the schematic packed in the electrical panel for items not listed

Item	Description	Stock No.
(-)	Transformer	12172
(-)	Relay, 24 volts	12047
(-)	Switch	12127

8.5 Miscellaneous

Caster, 4 inch, each	13142
Lock pins (pkg of 25) for twist-on couplings	11203
Safety cable, 1/2" hose	15012