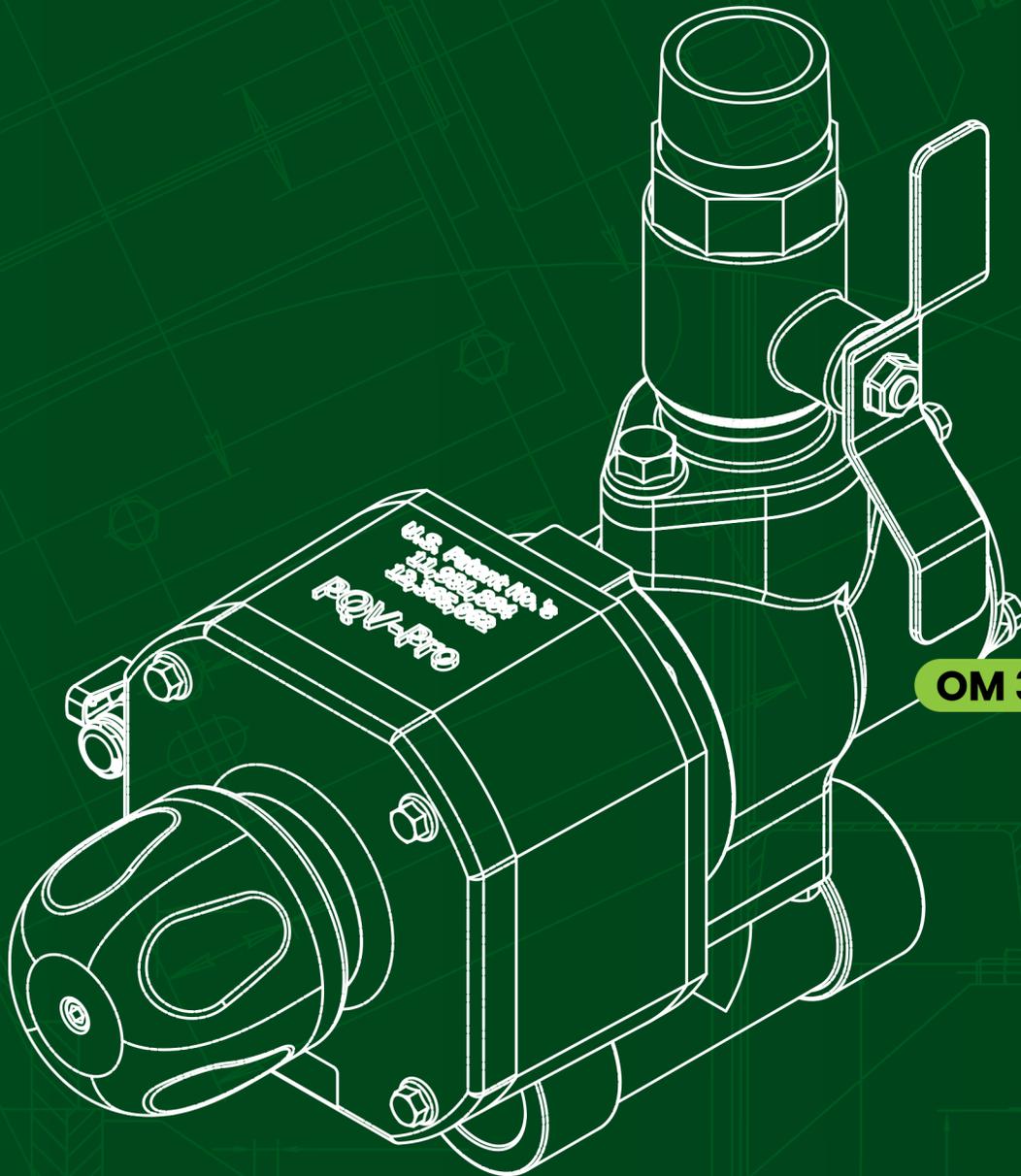


O P E R A T I O N M A N U A L



OM 32393

clemco

**PQV-Pro Pneumatically Operated
Abrasive Metering Valve**

Date of Issue: 09/25 | Rev. A

WARNING

DO NOT use this equipment before **READING** this **MANUAL** and **UNDERSTANDING** its contents. These **WARNINGS** are included for the health and safety of the operator and those in the immediate vicinity. Failure to read and understand these warnings can result in **INJURY** or **DEATH**.

NOTICE

Notice to purchasers and users of our products and this informational material

Clemco proudly provides products for the abrasive blast industry and is confident that industry professionals will use their knowledge and expertise for the safe and efficient use of these products.

The products described in this material and the information relating to these products are intended for knowledgeable, experienced users. It is the responsibility of the user to insure that proper training of operators has been performed and a safe work environment is provided.

No representation is intended or made as to: the suitability of the products described here for any purpose or application, or to the efficiency, production rate, or useful life of these products. All estimates regarding production rates or finishes are the responsibility of the user and must be derived solely from the user's experience and expertise, not from information contained in this material.

It is possible that the products described in this material may be combined with other products by the user for purposes determined solely by the user. No representations are intended or made as to the suitability of, or engineering balance of, or compliance with regulations or standard practice of any such combination of products or components the user may employ.

This equipment is only one component of a blasting operation. Other products, such as air compressors, air filters and receivers, abrasives, equipment for ventilating, 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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Safety Alerts Key



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

DANGER

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

1.0 Introduction

1.1 Scope of Manual

1.1.1 | These instructions cover the setup, operation, maintenance, and replacement parts for Clemco’s PQV-Pro Pneumatically Operated Abrasive Metering Valves.

1.1.2 | This manual contains important safety information. All operators and personnel involved with the abrasive blasting process must read and understand the contents of these instructions, including the orange cover. It is equally important that the operator is trained and qualified to safely operate the blast machine, remote controls, and all other equipment used with the blast machine.

1.1.3 | All personnel involved with the abrasive

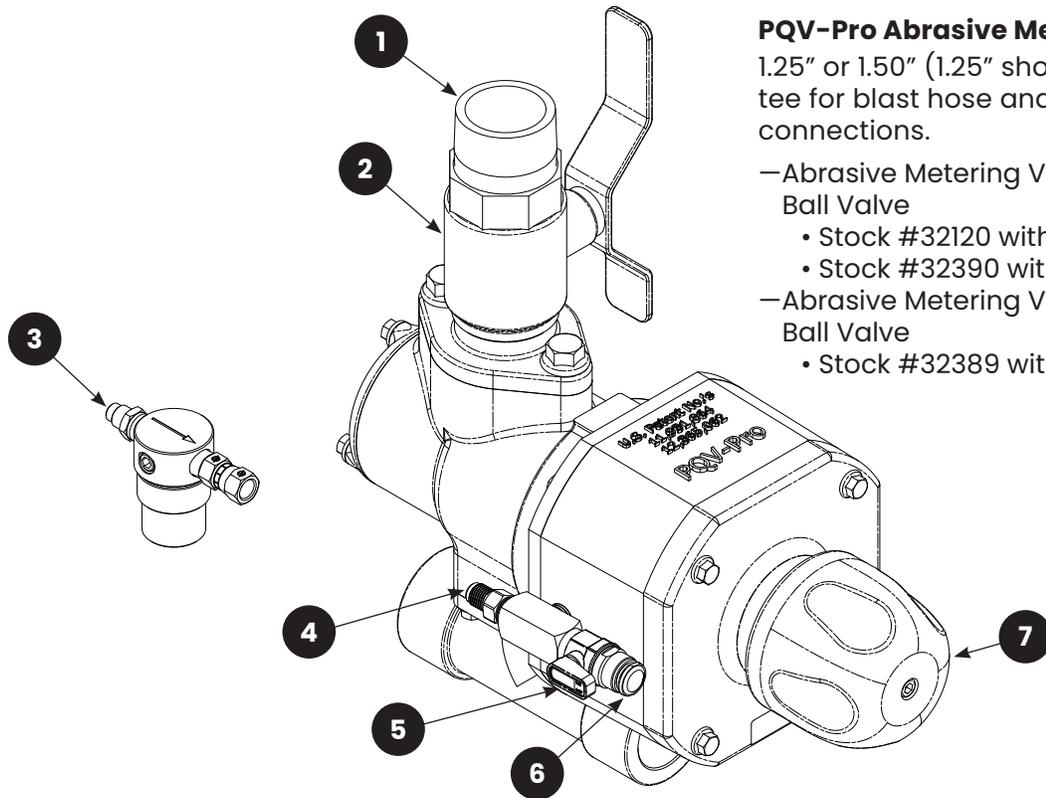
blasting process must be made aware of the hazards associated with abrasive blasting. The Clemco booklet, *Abrasive Blasting Safety Practices* is included with every blast machine; the booklet contains important safety information about abrasive blasting that may not be included in equipment operations manuals. To request additional copies, email info@clemcoindustries.com.

1.2 Pressure Specifications

Pressure to fully open the valve.....80 psi
 Maximum working pressure.....175 psi

1.3 Components and Operating Principles

1.3.1 | Main components of the metering valve assembly are shown in **Figure 1** and include the



PQV-Pro Abrasive Metering Valve

1.25" or 1.50" (1.25" shown), flanged outlet tee for blast hose and pusher line connections.

- Abrasive Metering Valve with Flanged Ball Valve
 - Stock #32120 with 1.25" Outlet Tee
 - Stock #32390 with 1.50" Outlet Tee
- Abrasive Metering Valve less Flanged Ball Valve
 - Stock #32389 with 1.25" Outlet Tee

FIGURE 1: (1) 1.50" NPT Nipple; (2) Ball valve with Flange shown with Handle in Open Position; (3) Connection from RLX shown, or Optional Restrictor Kit, P/N 32400, order kit when media adjustment is required during blasting, order separately; (4) Connect RLX Here (5) Safety Petcock; (6) No Connection Here; (7) Abrasive Flow Adjustment Knob

metering valve and a 1.50" nipple to connect the valve to the blast machine. There are two valve options as noted below:

- Metering valve with a flanged (shutoff) ball valve.
- Metering valve without the flanged ball valve and includes a flanged inlet nipple.

1.3.2 | Operating Principles: The PQV-Pro is a normally closed, pneumatically operated, abrasive metering valve. When the valve is idle (the control handle is up), air assisted spring pressure keeps the valve closed. When control air is applied (the control handle is pressed), the air-assist vents and control-air pressure overcomes the spring pressure and opens the valve to a specific point set by turning the metering knob. When the control handle is released, control pressure vents and spring pressure closes the valve, stopping abrasive flow.

1.4 Abrasives

WARNING

Abrasives and dust from blasting may contain toxic materials (e.g., lead paint, silica) that are hazardous to workers. Before blasting, obtain a safety data sheet (SDS) for the blast abrasive and identify all substances removed by the blasting process:

- Silica sand (crystalline) can cause silicosis, lung cancer, and breathing problems in exposed workers.
- Slags can contain trace amounts of toxic metals such as arsenic, beryllium, and cadmium and have the potential to cause lung disease.

NO DUST IS SAFE TO BREATHE. DUST PRODUCED FROM ANY ABRASIVE OR FROM THE BLASTING PROCESS CAN CAUSE SERIOUS LUNG DISEASE AND DEATH WHEN INHALED. It is the employer's responsibility to train employees to identify hazardous substances and to provide suitable policies, procedures, monitoring, recordkeeping, and personal protective equipment.

NOTICE

Use only abrasives specifically manufactured for blasting that are compatible with the surface being blasted. Abrasives produced for other applications may be inconsistent in size and shape and produce an unsatisfactory finish, contain particles that can jam the abrasive metering valve, or cause irregular wear.

1.4.1 | Selection of blasting abrasive can play a significant part in worker health risk, job productivity, and maintenance of the blast machine. **DO NOT USE** abrasives containing more than 1% crystalline (free) silica. Obtain safety data sheets (SDS) for the blasting abrasive prior to blasting, paying particular attention to worker health risks and presence of any hazardous/toxic substances.

1.4.2 | Abrasive size: The PQV-Pro is designed to be used with most common abrasives ranging in sizes from 16-mesh to 220-mesh. However, the blast machine or accessories may limit the size and type of abrasive to something between the coarse and fine limitations of the valve. The choice of abrasive size depends on the desired profile, cleaning rate, nozzle size, and availability of clean dry air. Generally, larger and denser abrasive provide a deeper profile, while smaller abrasives clean faster. Most abrasive blasting is done with abrasive sizes between 16- and 80-mesh. Abrasive for cabinet use is generally between 50-mesh and 180-mesh. Coarse mesh sizes may be used if the nozzle orifice is large enough to prevent multiple particles to pass without jamming. Finer abrasive requires clean dry air to prevent bridging in the blast machine or metering valve.

1.4.3 | Sand: Sand should never be used because of the respiratory hazards associated with abrasive containing free silica.

1.4.4 | Slags: Slag abrasives are compatible with the valve. Obtain a safety data sheet (SDS) to identify hazardous substances.

1.4.5 | Steel: Steel shot and steel grit may be used but attention must be given to moisture in the compressed air, the recovery process, and weight of the abrasive. Steel abrasive rusts under humid conditions, especially with day and night temperature changes, or when compressed air supplied to the vessel is damp with condensation. Steel abrasives weigh approximate 250 lbs per cu ft. Steel abrasives are normally used in blast rooms with recovery systems and protected from the elements.

1.4.6 | Silicon carbide, aluminum oxide, and garnet: These are the most aggressive of the commonly used abrasives. Although aggressive abrasives such as these may be used, the service life of any equipment components which come in contact with these abrasives will be reduced. To avoid unscheduled downtime, periodically inspect the metering valve, hoses, and nozzles

for abrasive wear. Use nozzles lined with boron carbide with aggressive abrasives.

1.4.7 | Glass bead and crushed glass: These are compatible with the PQV-Pro Metering Valve.

1.4.8 | Lightweight Abrasive: Plastic media and agricultural media are compatible with the PQV-Pro Valve, but generally require a blast machine with 60 degree conical bottom for continuous, uninterrupted media flow.

2.0 Installation

2.1 Remove Existing Metering Valve from Blast Machine

2.1.1 | Empty the blast machine of abrasive and depressurize the machine.

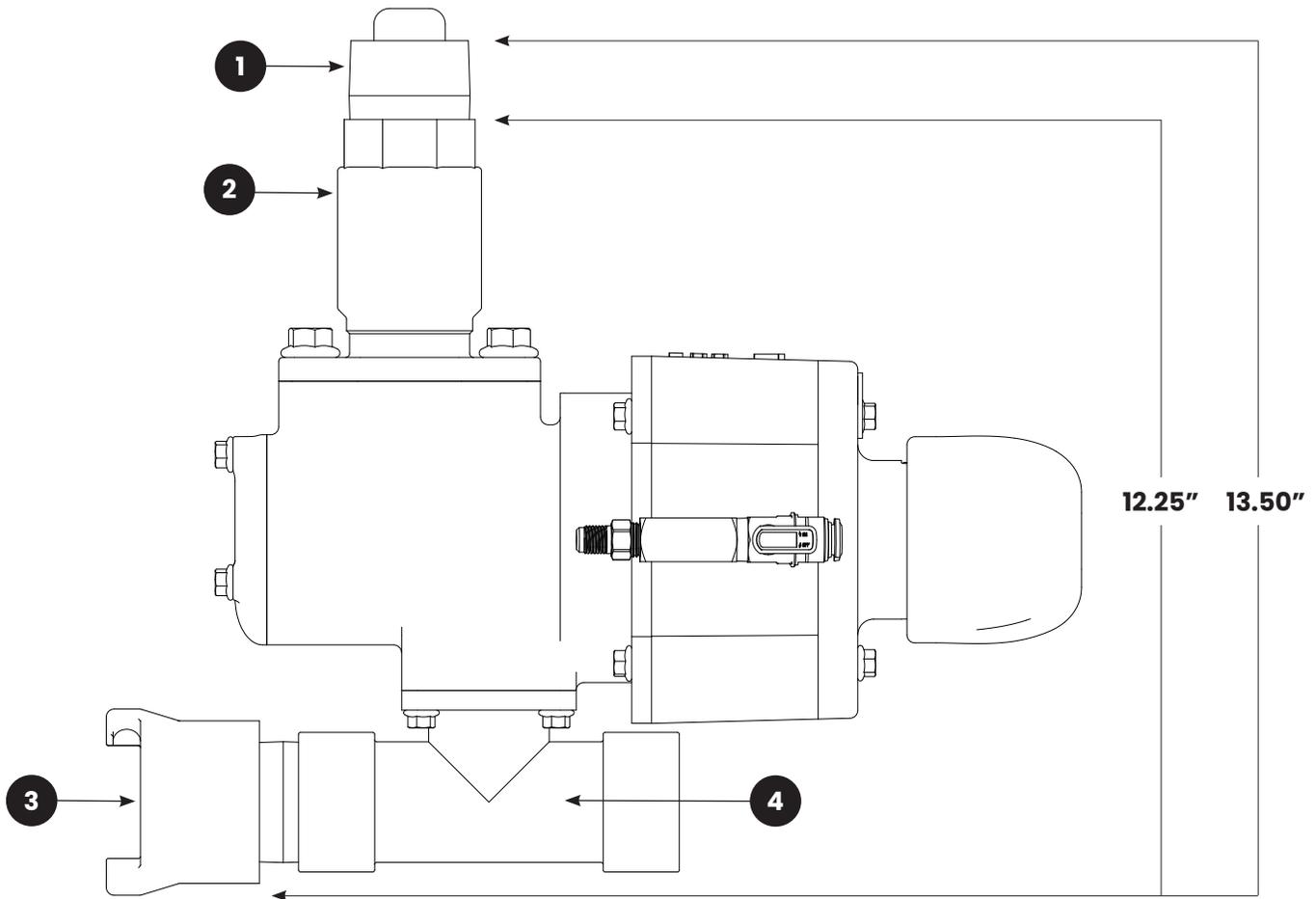


FIGURE 2: (1) 1.50" Installation Nipple; (2) Flanged Ball Valve; (3) Hose Coupling (REF) not included; (4) Outlet Tee

! WARNING

Failure to observe the following before performing any maintenance on the blast machine could cause serious injury or death from the sudden release of trapped compressed air:

- Depressurize the blast machine.
- Bleed the compressed-air supply line to the blast machine.
- Lockout (be certain the air supply is off and that it cannot be started while work is in process) and tagout (make sure the air supply is clearly marked to prevent restarting while work is in process) the compressed-air supply.

2.1.2 | Shut down the compressed-air source, lockout and tagout the air supply, and drain the air-supply line.

2.1.3 | Before removing the existing metering valve, refer to **Figure 2** to determine the ground clearance required for each of the valve options. Besides the height of the PQV-Pro Valve, an additional 1.75" is needed to allow for the installation nipple and blast hose coupling. Measure the distance from the bottom of the blast machine to ground level to make sure the blast machine has the clearance to accommodate the valve. **NOTE:** A 1.50" x 1.25" bushing may be required on the blast machine, depending on the vintage of the machine. The bushing increases the clearance needed to install the valve.

2.1.4 | Make a note of the connections on the existing metering valve because connections shown in the illustrations can differ based on remote control options. Remove control hose(s). If the type of control connections are different from those supplied with the PQV-Pro Valve, save the connections and hoses from the existing valve for reuse.

2.1.5 | Remove all blast machine piping (pusher line adaptors, and blast hose fittings) from the metering valve. Save them as they will be reused.

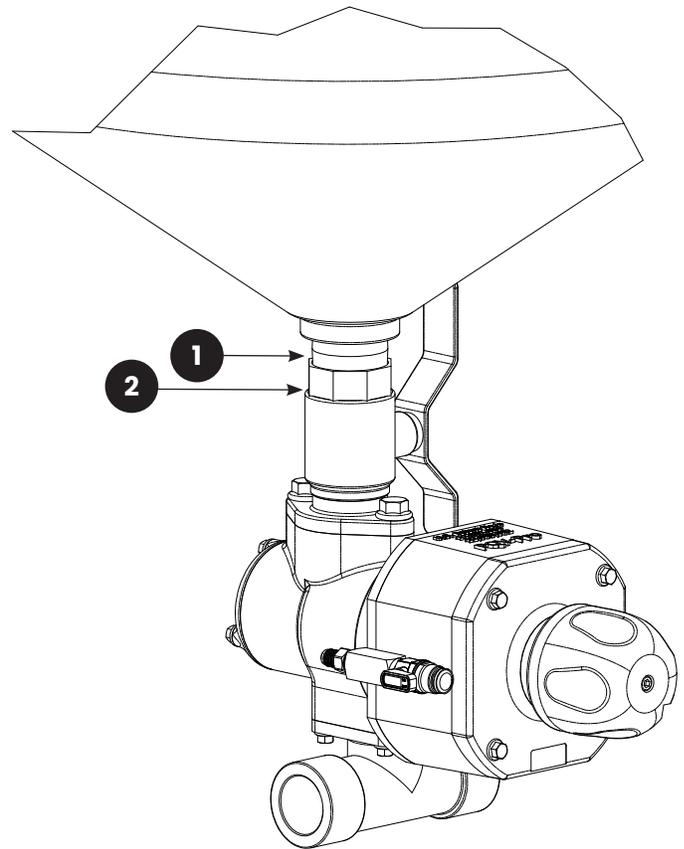


FIGURE 3: (1) 1.50" Installation Nipple; (2) Use wrench to tighten only on wrench flats

2.1.6 | Remove the existing metering valve from the blast machine.

2.2 Install PQV-Pro Valve onto the Blast Machine — Figure 3

Installation Notes:

Tighten and align the valve by using a wrench on the flanged inlet nipple or ball valve only, as shown in **Figure 3**. Avoid applying pressure on the valve body or outlet pipe (lower flange) to tighten or align the valve. Doing so could damage the upper or lower flanges.

! NOTICE

Avoid tightening the valve to the blast machine or aligning the valve by using a wrench or applying leverage on any part of the valve at or below the upper flange. Doing so could damage the flanges.

To ensure airtight seals and make assembly easier, apply pipe-thread sealant to all male pipe threads.

Additional fittings may be required to connect the valve to some blast machines and piping configurations.

The PQV-Pro Valve is non-directional; air flow can enter through either end of the outlet pipe, and the pipe can be rotated 90 degrees in either direction. **NOTE:** The illustrations show the installation onto a portable blast machine. Installation on a bulk blast machine is slightly different but the process is the same.

2.2.1 | The upper flange (inlet pipe or flanged ball valve, depending on the option ordered), 1.50" NPT close nipple, O-ring, and two flange bolts are packaged separately in a plastic bag. The upper flange will be installed onto the blast machine before attaching the valve section.

2.2.2 | Apply thread sealant to both ends of the 1-1/2" NPT installation nipple and use the nipple to attach the upper flange to the machine as, shown in **Figure 3**.

2.2.3 | Use a pipe wrench or strap wrench to grip the valve body or body of the inlet nipple to tighten it onto the blast machine. Do not use a wrench on or below the flanges, as noted in **Figure 3**. Doing so could damage the flanges.

2.2.4 | The valve body may be rotated 90 degrees in either direction. Rotate the body to the inlet flange, as needed to provide the best access to the metering knob, and clean-out cover. Make sure the O-ring is in place before bolting the body onto the inlet flange.

2.2.5 | The outlet pipe flange may be rotated 90 degrees in either direction. Rotate the outlet pipe to the valve body, as needed to provide the best alignment with the pusher line and blast hose connection. Make sure the O-ring is in place before reconnecting the outlet pipe to the valve body.

2.3 Connect Piping to the Metering Valve – Figure 4

2.3.1 | Apply pipe thread sealant to the male threads of a new 1.25" NPT nipple (1.50" NPT when using the 1.50" outlet pipe) and connect the blast hose coupling to the outlet pipe as shown in **Figure 3**.

2.3.2 | Apply pipe thread sealant to the male threads of the pusher line and connect the pusher line to the outlet pipe, as shown. **NOTE:** The old pusher line may be too long or too short to connect to the fittings without it stretching or kinking. Some adjustment can be done by lengthening or shorting the nipples between the side-piping tee and choke valve. **If the pusher line does not fit correctly, a shorter or longer pusher line is required.**

3.0 Adjust Abrasive Flow – Figure 4

3.1 Optimum abrasive flow depends on the type and size of abrasive and blasting pressure, and

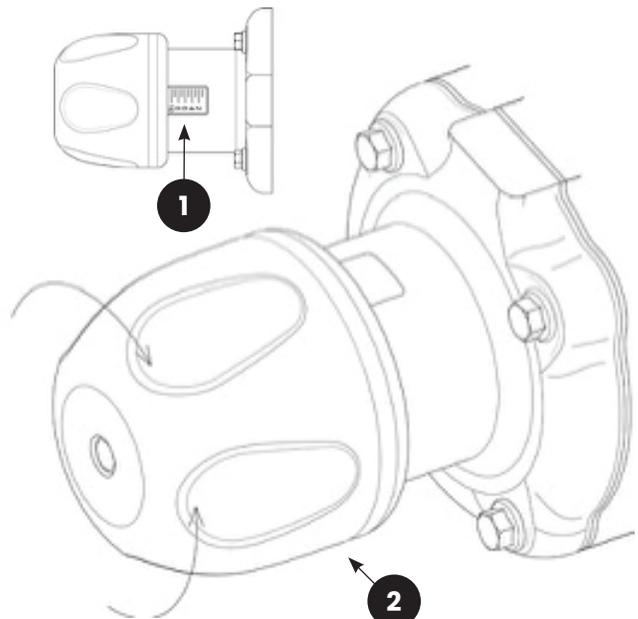


FIGURE 4: (1) Adjustment-Position Indicator Label; (2) Turn the metering knob clockwise for less abrasive. Turn the metering knob counterclockwise for more abrasive.

can best be determined by experience. Use as little abrasive as possible while maintaining the maximum cleaning rate. The air-abrasive mixture should be mainly air. As a rule, the stream of abrasive coming out of the nozzle should barely discolor the air when seen against a contrasting background.

3.2 The valve is closed when the knob is fully clockwise. Increase abrasive flow by turning the knob counterclockwise and decrease abrasive flow by turning the knob clockwise, as shown in Figure 6. Begin with the knob set two turns from fully closed. Increase flow by turning the knob no more than 1/4 turn counterclockwise. Allow 10 to 15 seconds for the flow to stabilize before readjusting. Continue adjusting as described until the correct flow is attained.

3.3 The indicator label behind the knob shows how far the metering valve is open. When the knob is turned in or out it moves over the label, allowing the operator to reset the valve to the same position when abrasive flow is temporarily changed.

4.0 Service Maintenance

WARNING

To avoid serious injury from the sudden release of compressed air, observe the following before performing any maintenance:

- Depressurize the blast machine.
- Turn OFF the compressed-air supply.
- Lockout and tagout the compressed-air supply.
- Bleed the air-supply line to the blast machine.

4.1 Servicing Notes

- **Valves with flanged ball valve:** If the flanged shutoff valve and main body housing do not need to be replaced, the metering valve may be serviced while on the machine by closing

the flanged shutoff valve and closing the choke valve, located on the pusher line.

- Remove the tubings and control hoses (mark them to make sure they are reconnected correctly).
- Many of the fasteners are secured with removable thread lock, such as Blue Loktite®. Using an impact wrench with hex bit sockets and hex sockets makes disassembly and assembly easier.
- If the valve has a flanged shutoff valve and the shutoff does not require service, close the valve and separate the metering valve housing by removing the two 7/16-NC flange bolts securing the housing to the ball valve.

4.2 Main Housing Assembly — Figure 5

4.3 Disassemble Main Housing Assembly

NOTE: If the PQV-Pro Valve has a flanged ball valve the housing may be serviced without removing abrasive from the machine unless the ball valve needs to be replaced. The following instructions cover the complete disassembly and reassembly of all main body parts. If service is not required in an area, skip to the next.

1. Remove the pusher line and the blast-hose coupling pipe from the flanged outlet pipe.
2. Remove the main housing from the machine by either one of the following methods:
 - a. Unscrew the flanged ball valve or inlet pipe (with main housing attached) from the blast machine.
 - b. Separate the metering housing from the ball valve/inlet pipe by removing the two 7/16" flange bolts that secures it to the housing.

NOTE: If the ball valve or inlet pipe require service, they (it) must be removed from the machine.

3. Use a 2" socket to remove the valve seat from the housing.
4. Remove the seat gasket from the valve seat.
5. Remove the flanged outlet pipe from the hous-

ing by using a 3/8" wrench to remove the four flange bolts that secure it to the bottom of the housing.

6. Remove the clean-out cover from the housing by using a 3/8" wrench to remove the three flange bolts, securing it to the housing.
7. Remove the two flange bolts, securing the housing to the flanged ball valve/inlet pipe.
8. Remove the O-rings from the top of the housing, clean-out cover, and outlet pipe.

4.4 Reassemble Main Housing Assembly

1. Clean all parts that are to be reused and replace any worn or damaged parts. Make sure all male and female threads are clean and free of abrasive. Use new O-rings and valve seat gasket.

NOTE: If the flanged ball valve or inlet pipe was removed from the machine, using a new 1-1/2" NPT nipple and reattaching it to the machine will make

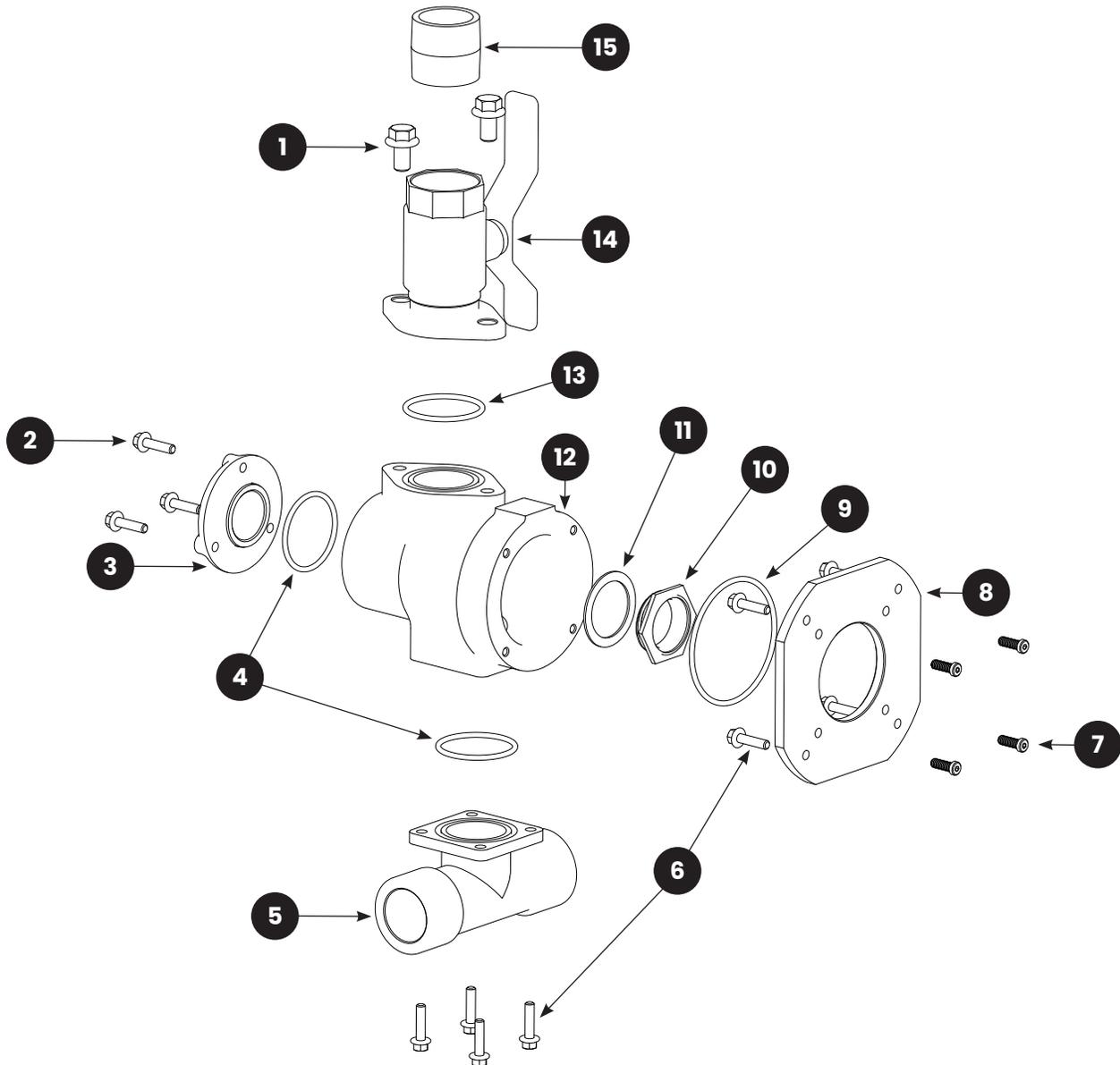
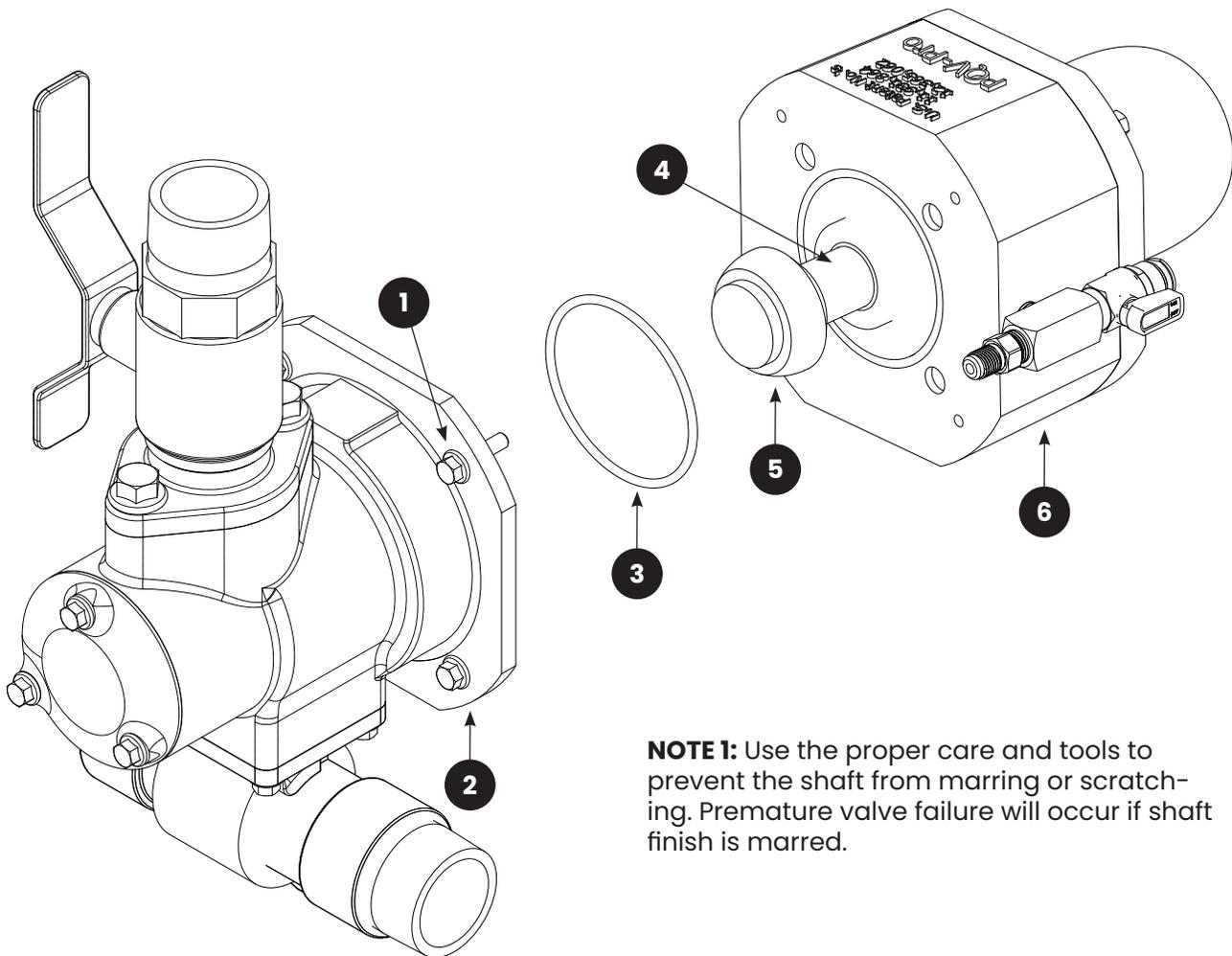


FIGURE 5: (1) 7/16" x 3/4" Hex Bolt; (2) 1/4" x 1" Flange Bolt—11; (3) Clean-out Cover; (4) O-Ring—3; (5) Outlet Tee; (6) 1/4" x 1" Flange Bolt—11; (7) 1/4" x 3/4" Socket Head Bolt; (8) Plate, Housing Adaptor; (9) O-Ring, Body-Flange; (10) Valve Plunger Seat; (11) Valve Plunger Seat Gasket; (12) Main Body Housing (13) O-Ring—3; (14) Ball Valve; (15) 1.50" Close Nipple



NOTE 1: Use the proper care and tools to prevent the shaft from marring or scratching. Premature valve failure will occur if shaft finish is marred.

FIGURE 6: (1) Using 1/4" x 1" Flange Bolts—4, attach adaptor flange to actuator body with o-rings in groove; (2) Adaptor Flange; (3) O-Ring, fits in actuator body flange; (4) Hold shaft with non-marring grips when replacing plunger—See note 1; (5) Turn counterclockwise to remove plunger from shaft, using blue loctite on plunger threads turn plunger in shaft to re-install, see figure 5 for valve plunger seat and gasket replacement; (6) Actuator Body Assembly

it easier to reattach the metering housing later.

2. Place a new valve seat gasket on the valve seat and use a 2" socket to tighten the seat into the housing. Torque the seat to 35 ft lb.
3. Place a new O-ring into the groove on the outlet pipe flange and use four flange bolts to attach the pipe to the bottom of the housing. Use a 3/8" wrench to tighten the flange bolts.
4. Place a new O-ring into the groove at the top of the housing and use two flange bolts to attach the housing to the flanged ball valve or inlet pipe. Tighten the bolts securely.
5. Place a new O-ring on the clean-out cover and

use three flange bolts to attach the cover to the housing. Use a 3/8" wrench to tighten the flange bolts.

6. Make sure all fasteners are tight, as leaks will cause the valve to malfunction.
7. No internal service is needed on the Actuator assembly, see Figure 6 for plunger replacement.

4.5 Reassemble Valve Sections — Figure 6

4.5.1 Align the 4 hex bolts with the mounting holes in the main housing and screw the bolts in to secure the valve actuator sections.

4.5.2 | Tighten the thru-bolts with a 3/8" wrench.

4.6 Reconnect Piping & Control Tubing

4.6.1 | Apply thread sealant compound to male NPT pipe threads before reconnecting the pusher line and blast-hose coupling piping.

4.6.2 | Test the valve for leaks and function before returning it to service.

4.7 Cutting Control Hose and Reusing Control Hose Fittings — Figure 7

! WARNING

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

- Bleed all compressed air-supply lines.
- Lockout and tagout the compressed-air supply.

NOTE: Control hoses may be shortened and cut to length as follows:

4.7.1 | Remove the hose end by placing the sleeve in a vise or use a backup wrench on the sleeve to prevent it from turning. Unscrew the insert by turning it counterclockwise.

4.7.2 | Turn the sleeve clockwise to remove it from the hose.

4.7.3 | Cut hose to the required length.

4.7.4 | Turn the sleeve counterclockwise to install it onto the hose. Do not over-tighten the sleeve, stop tightening as soon as the hose bottoms against the sleeve's internal shoulder. Over-tightening will cause the hose to curl inward and could cause blockage.

4.7.5 | Push the end of the insert into the sleeve, and turn it clockwise to tighten until the insert hex is against the sleeve.

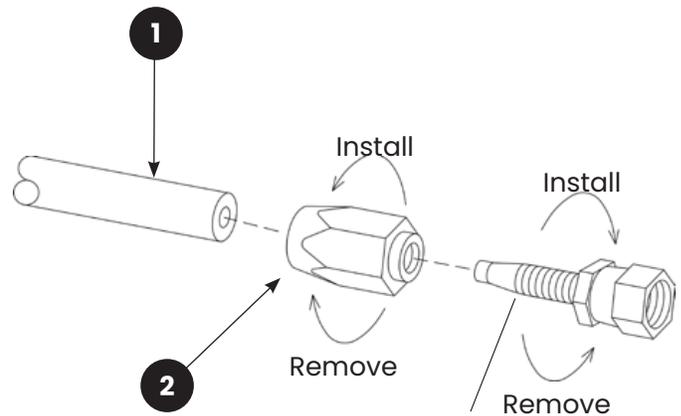


FIGURE 7: (1) Control Hose; (2) Sleeve

4.8 Using Tube-Lock Fittings

! WARNING

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

- Bleed all compressed air-supply lines.
- Lockout and tagout the compressed-air supply.

4.8.1 | To remove the tubing from tube-lock fittings, push the retaining collar toward the fitting, which releases 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 retaining collar is pushed in correctly.

4.8.2 | Reconnect the tubing by inserting it through the collar until it seats. Tug on the tubing to make sure it is tight.

4.8.3 | To connect the tubing, push the tubing into the fitting until it seats. Gently pull on the tubing to make sure it is securely fastened.

4.8.4 | To remove the tubing, push the collar in to release the tubing.

5.0 Troubleshooting

NOTE: This section only identifies conditions and problems in the blast machine and remote control system. For service information, always refer to the appropriate section of this manual and accessory equipment manuals before servicing the equipment.

WARNING

To avoid serious injury from the sudden release of compressed air, observe the following when troubleshooting the machine and remote controls.

- Turn OFF the air supply, and lockout and tagout the air supply.
- Drain the air-supply line.
- When checking if the controls require air, always enlist the aid of another person to operate the control handle, hold the nozzle securely, and point it in a safe direction.
- Never strap the remote control handle lever down in the operating position.

5.1 Air Flow Only — No Abrasive Flow

5.1.1 | Metering valve closed or needs to be adjusted. Adjust abrasive flow, per **Section 3.0**.

5.1.2 | Optional ACS switch is closed. Make sure the ACS is in the ON position with the ACS toggle pointing away from nozzle. Refer to the RLX Control Handle operations manual.

5.1.3 | Leak or blockage in the control hose or fittings between the control handle and the PQV-Pro Metering Valve. Make sure control air is reaching the side port fitting on the 4-way pilot-valve adaptor plate. Refer to **Section 5.8**.

5.1.4 | Blast machine is empty. Check abrasive level.

5.1.5 | Obstruction in metering valve. Clear as follows:

WARNING

To avoid serious injury, depressurize the blast machine, and lockout and tagout the compressed-air supply before continuing.

Fully open the control valve. (It is fully open when the metering knob is turned fully counterclockwise.) While blasting, close the choke valve to force out small obstructions or wet abrasive.

For larger obstructions, shut the machine down to examine the abrasive valve. Remove the clean-out cover from the main body and clear obstruction.

5.1.7 | The metering valve may require service. Refer to **Section 4.0** to service the valve.

5.1.8 | Abrasive bridging in the blast machine. Refer to the blast machine operations manual and inspect the inside of the machine for foreign material.

5.2 Heavy Abrasive Flow

5.2.1 | Make sure the choke valve is fully open (handle in-line with the valve and piping).

5.2.2 | Abrasive metering valve may be open too far. Refer to **Section 3.0** to adjust the metering valve.

5.2.3 | Inspect the metering valve for wear. The metering valve may require service. Refer to Section 4.0 to service the valve.

5.2.4 | If the valve is used with a pressure-hold remote control system, check the diaphragm in the ACE Air Valve for damage.

5.3 Irregular Abrasive Flow

5.3.1 | Check the abrasive metering valve and air control lines for air leaks. The abrasive valve is a normally closed valve and requires air to open; any leak or fluctuation in pressure can cause the valve to close or partially close.

5.3.2 | Abrasive metering valve may be open too far. Refer to **Section 3.0** to adjust the metering valve.

5.3.3 | Refer to **Section 5.9** for additional information on moisture.

5.3.4 | Check control line pressure. Pressure below 80 psi will cause the metering valve to begin to close. Pressure fluctuations cause the metering valve to partially close and reopen.

5.4 Abrasive or Air Flow Continues After Releasing the Control Handle

5.4.1 | Control air may not be fully exhausting from the control handle. Refer to the control handle and remote control systems operation manuals.

5.4.2 | Control air may not be fully exhausting from the metering valve.

5.4.3 | If the valve is used with a pressure-hold remote control system, inspect the metering valve plunger and seat for wear. Refer to service instructions in **Section 4.0**.

5.5 Abrasive Flow Continues After the Optional ACS is Switched Off

5.5.1 | While blasting, turn the ACS switch OFF (toggle pointing toward the nozzle). A short spurt of air should exhaust from the muffler. If it does, the ACS is working. If air does not exhaust, remove the muffler and try again. If it now exhaust, the muffler is plugged and should be replaced. If it still does not exhaust, check the ACS control line for blockage.

5.5.2 | Worn plunger or plunger seat, or an obstruction between the plunger and seat. Service the valve as needed, per **Section 4.0**.

5.6 Abrasive Flow Decreases Shortly After Blasting Starts

5.6.1 | Air leak in the blast machine causing pressure imbalance:

- Check for leaks in the blast machine and around the metering valve.
- Make sure the exhaust (outlet) valve is not leaking. Once the RLX Control Handle is pressed, there should be NO leaks anywhere on the blast machine, valves, or control lines.

5.6.2 | Abrasive bridging in the blast machine. This is usually caused from using very fine abrasive, using spent abrasive, or from moist air. Refer to **Section 5.9** for additional information on moisture.

5.7 Turning the Metering Knob Does Not Change Abrasive Flow

5.7.1 | Inspect the seat and plunger for wear, per **Sections 4.2, 4.4, and 4.6**.

5.7.2 | Summary: When the control handle is pressed, air should come from near the metering knob.

5.8 Abrasive Bridging From Moisture

5.8.1 | Frequent bridging or blockage in the blast machine and metering valve can be caused by damp abrasive. Blast media becomes damp from moisture in the compressed-air line, from absorption from ambient air, and by blasting parts that are slightly oily (when using recycled abrasive).

5.8.2 | Moist compressed air: Moisture in the air supply can result from several factors, including an overheating compressor that leaks oil or moisture into the air line, an excessively long air line that allows condensation to form inside, or high ambient humidity. Drain filters and receiver tank regularly. If moisture in the air is a recurring problem, a dryer or after-cooler may be required in the air-supply line.

5.8.3 | Absorption: Some abrasive tends to absorb moisture from the air, especially fine-mesh abrasive in high-humidity areas. Empty abrasive from portable blast machines at the end of the workday and store the machine in an area protected from damp environment.

5.8.4 | Condensation: When working in conditions of extreme temperature change or humidity, condensation may develop inside the machine. Condensation dampens abrasive and causes flow problems. To eliminate trouble from moist abrasive, empty abrasive from the machine before shutting down for the day.

6.0 Replacement Parts

6.1 Replacement PQV-Pro Metering Valves

Description	Stock No.
• Metering valve assembly with 1.5" outlet pipe	
– with flanged ball valve	32390
• Metering valve assembly with 1.25" outlet pipe	
– with flanged ball valve	32120
– without flanged ball valve	32389

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