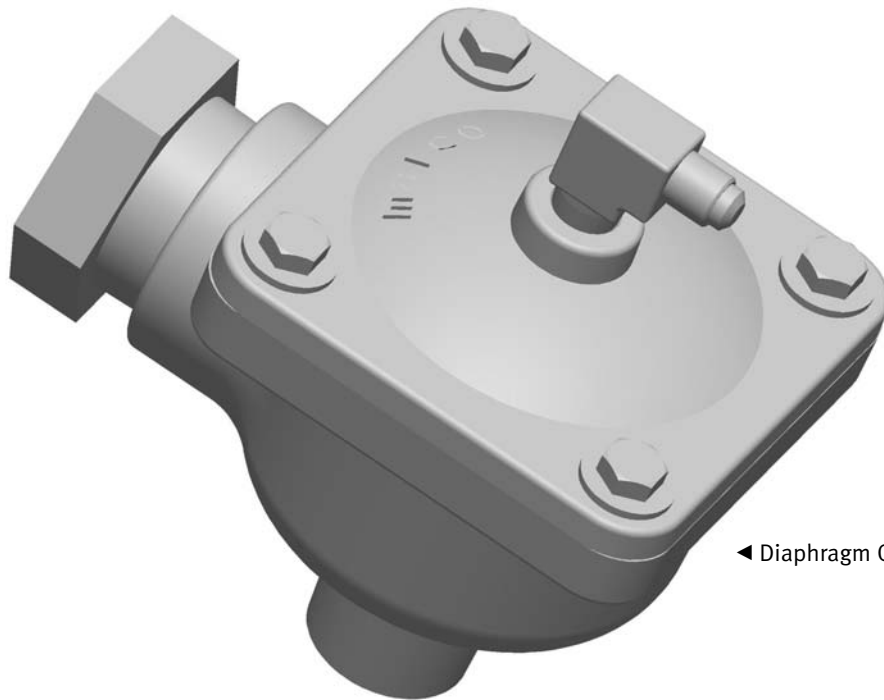


# Diaphragm Outlet Valve



◀ Diaphragm Outlet Valve

**⚠ DANGER**

Before using this equipment, read, understand and follow all instructions in the Operator's Manuals. If the User or Assistants cannot read or understand the Warnings and Instructions, the Employer of the User and Assistants must provide adequate and necessary training to ensure proper Operation and Compliance with all Safety Procedures pertaining to this equipment. If Manuals have been lost, contact your Distributor or call (563) 324-2519 for replacements. Failure to avoid the above Danger will result in death or serious injury.

*For more information call:*

**800-BLAST-IT**

Phone: (800) 252-7848  
 Fax: (563) 324-6258  
 e-mail: [sales@marcouisa.com](mailto:sales@marcouisa.com)  
[www.marcouisa.com](http://www.marcouisa.com)

**NOTICE**

Inspect nozzle before placing in to service. Damage to nozzle liner or jacket may occur during shipping. If you receive a damaged nozzle, contact your distributor immediately for replacement. Nozzles placed in to service may not be returned. Nozzle liners are made of fragile materials and can be damaged by rough handling and striking against hard surfaces. Never use a damaged blast nozzle.

**NOTICE**

► When it comes to abrasive & air mixtures, more is not necessarily better. Optimum blasting efficiency takes place when a lean abrasive & air mixture is used. To correctly set the metering valve, begin with the valve fully closed and slowly increase the amount of abrasive entering the airstream. As you increase the abrasive flow, watch for a "blue flame" (Figure 1) at the exit of the nozzle. Faster cutting, reduced abrasive consumption and lower clean up costs, are benefits of the "blue flame".



Figure 1

**NOTICE**

See Abrasive Consumption Chart for consumption rates and required air flow (cubic feet per minute). The system must meet these minimum requirements to ensure proper function and performance.

**NOTICE**

The optimal blasting air pressure of 100 psi should be maintained at the nozzle. For each pound per square inch of air pressure below 100 psi, blasting efficiency is reduced 1.5%. A 10 psi reduction in air pressure will cause a 15% loss of productivity. Use a Needle Pressure Gauge to test air pressure in your air hose and blast hose.

**NOTICE**

Replace Blast nozzle if liner or jacket is cracked or damaged. Replace nozzle if original orifice size has worn 1/16" or more. Determine nozzle wear by inserting a drill bit 1/16" larger than original size of nozzle orifice. If drill bit passes through nozzle, replacement is needed.

**Abrasive Consumption Chart\***

Nozzle Orifice	Pressure at the Nozzle (psi)								Air (in cfm), Abrasive & Compressor Requirements
	50	60	70	80	90	100	125	140	
No. 2 (1/8")	11	13	15	17	18	20	25	28	Air (cfm)
	67	77	88	101	112	123	152	170	Abrasive (lbs/hr)
	2.5	3	3.5	4	4.5	5	5.5	6.2	Compressor Horsepower
No. 3 (3/16")	26	30	33	38	41	45	55	62	Air (cfm)
	150	171	196	216	238	264	319	357	Abrasive (lbs/hr)
	6	7	8	9	10	10	12	13	Compressor Horsepower
No. 4 (1/4")	47	54	61	68	74	81	98	110	Air (cfm)
	268	312	354	408	448	494	608	681	Abrasive (lbs/hr)
	11	12	14	16	17	18	22	25	Compressor Horsepower
No. 5 (5/16")	77	89	101	113	126	137	168	188	Air (cfm)
	468	534	604	672	740	812	982	1100	Abrasive (lbs/hr)
	18	20	23	26	28	31	37	41	Compressor Horsepower
No. 6 (3/8")	108	126	143	161	173	196	237	265	Air (cfm)
	668	764	864	960	1052	1152	1393	1560	Abrasive (lbs/hr)
	24	28	32	36	39	44	52	58	Compressor Horsepower
No. 7 (7/16")	147	170	194	217	240	254	314	352	Air (cfm)
	896	1032	1176	1312	1448	1584	1931	2163	Abrasive (lbs/hr)
	33	38	44	49	54	57	69	77	Compressor Horsepower
No. 8 (1/2")	195	224	252	280	309	338	409	458	Air (cfm)
	1160	1336	1512	1680	1856	2024	2459	2754	Abrasive (lbs/hr)
	44	50	56	63	69	75	90	101	Compressor Horsepower
No. 10 (5/8")	308	356	404	452	504	548	663	742	Air (cfm)
	1875	2140	2422	2690	2973	3250	3932	4405	Abrasive (lbs/hr)
	68.5	79.5	90	100.5	112	122	146	165	Compressor Horsepower
No. 12 (3/4")	432	504	572	644	692	784	948	1062	Air (cfm)
	2672	3056	3456	3840	4208	4608	5570	6238	Abrasive (lbs/hr)
	96	112	127	143	154	174.5	209	236	Compressor Horsepower

\*Abrasive consumption is based on abrasive with a bulk density of 100 lbs per cubic foot.

**⚠ PELIGRO**

Antes de usar este equipo, lea, entienda y siga todas las instrucciones que se encuentran en el Manual del Operador. Si el usuario o sus ayudantes no pueden leer ni entienden las instrucciones y advertencias, el empleador del usuario y de sus ayudantes debe proporcionar la capacitación adecuada y necesaria para asegurar la operación y el cumplimiento apropiado con todos los procedimientos de seguridad relacionados con este equipo. Si los manuales se han extraviado, comuníquese con su distribuidor o llame al (563) 324-2519 para reemplazarlos. La falta de cumplimiento con las medidas anteriores relacionadas para evitar peligro resultará en muerte o lesión grave.

**⚠ DANGER**

Avant la mise en service de l'appareil, lire, comprendre et suivre toutes les instructions dans le Manuel de l'Utilisateur. Si l'Utilisateur ou des Assistants ne peuvent pas lire ou comprendre les Avertissements et les Instructions, l'Employeur de l'Utilisateur et des Assistants doit fournir la formation nécessaire et adéquate pour garantir le bon Fonctionnement et la Conformité avec toutes les Procédures de Sécurité concernant cet appareil. Si des Manuels ont été perdus, contactez votre Distributeur ou appelez au (563) 324-2519 pour obtenir des copies de remplacement. L'inobservation des instructions concernant le Danger signalé ci-dessus entraînera la mort ou des blessures graves.

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**Definition of Terms**

**⚠ DANGER**

This is an example of danger. This indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

**⚠ CAUTION**

This is an example of a caution. This indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It can also be used to alert against unsafe practices.

**⚠ WARNING**

This is an example of a warning. This indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

**NOTICE**

This is an example of a notice. This indicates policy or practice directly related to safety of personnel or protection of property.

**⚠ DANGER**

**Failure to avoid ANY DANGER listed below will result in death or serious injury.**

- ▶ Breathing dust from silica sand may cause silicosis, a fatal lung disease. Breathing dust during blasting operations may also cause asbestosis, lead poisoning and/or other serious or fatal diseases. A NIOSH-approved, well-maintained, supplied-air abrasive blasting respirator must be used by anyone blasting, anyone handling or anyone using the abrasive and anyone in the area of the dust. Harmful dust containing toxic material from abrasive or surface being blasted (*asbestos, lead paint, heavy metal paint and other toxins*) can remain suspended in the air for long periods of time after blasting has ceased.
- ▶ Contact NIOSH and OSHA offices to determine the proper respirator for your specific application. The air supplied to the respirator must be at least Grade D quality as described in Compressed Gas Association Commodity Specification G-7.1 and as specified by OSHA Regulation 1910.134. Ensure air filter and respirator system hoses are not connected to non-air sources or in-plant lines that may contain nitrogen, oxygen, acetylene or other non-breathable gases. Before removing respirator, use an air monitoring instrument to determine if the atmosphere is safe to breathe.
- ▶ You must comply with all OSHA, local, City, State, Province, Country and jurisdiction regulations, ordinances and standards, related to your particular work area and environment. Keep unprotected individuals out of the work area.
- ▶ Blast operators must receive thorough training on the use of abrasive resistant attire which includes: supplied-air respirator, blastsuit, safety shoes, gloves, ear protection and eye protection. Protect the operator and bystanders by complying with NIOSH and OSHA Safety Standards.
- ▶ You must consult the Original Equipment Manufacturer for operator's manuals, information, training, instructions and warnings, for the proper and intended use of all equipment.
- ▶ Inspect all equipment before and after each use. Failure to use Original Equipment Manufacturer repair parts and failure to immediately replace worn or damaged components will void warranties and cause malfunctions.
- ▶ Always depressurize the entire blasting system, disconnect all electrical power sources and lockout/tagout all components before any maintenance or troubleshooting is attempted. Failure to avoid the above dangers will result in death or serious injury.
- ▶ OSHA requires blast-cleaning nozzles be equipped with an operating valve, which shall be designed to be held open only by continuous hand pressure and shall close immediately upon release of hand pressure (i.e., a "dead man" control). The valve shall not be modified in any manner that would allow it to remain open without the application of hand pressure by the operator. Failure to avoid the above danger will result in release of high speed media and compressed air resulting in death or serious injury. OSHA 29CFR 1910.244(b)
- ▶ Point the blast nozzle only at the surface being blasted. Never point the blast nozzle or abrasive blast stream at yourself or others.
- ▶ Unless otherwise specified, maximum working pressure of blast machines and related components must not exceed 125 psi. Exceeding maximum working pressure of 125 psi will cause the blast machine and components to burst.
- ▶ Never weld, grind or drill on the blast machine (or any pressure vessel) without a National Board 'R' Stamp. Doing so will void ASME certification as well as manufacturer's warranty. Welding, grinding or drilling on the blast machine (or any pressure vessel) can weaken the vessel causing it to burst. Failure to avoid the above danger will result in death or serious injury.

**⚠ DANGER**

**Failure to avoid ANY DANGER listed below will result in death or serious injury.**

---

- ▶ This equipment is not intended for use in any area that might be considered a hazardous location, as described in the National Electric Code NFPA 70, Article 500. Use of this equipment in a hazardous location will cause an explosion or electrocution.
- ▶ Marco control switches should only be used with Marco remote control systems. Using a Marco control switch on another manufacturer's remote control system may cause malfunctions.
- ▶ Do not cut, obstruct, restrict or pinch pneumatic control lines. Doing so will prevent the proper activation and deactivation of the remote control system, resulting in the release of high speed media and compressed air.
- ▶ Frozen moisture will cause restrictions and obstructions in pneumatic control lines. Any restriction or obstruction in the pneumatic control lines will prevent the proper activation and deactivation of the remote control system, resulting in the release of high speed media and compressed air.
- ▶ This product is not for use in wet environments. Always use a Ground Fault Interrupter Circuit (GFC) for all electrical power source connections. Use of this product in wet environments will create a shock hazard.

**⚠ WARNING**

**Failure to avoid ANY WARNING listed below could result in death or serious injury.**

---

- ▶ Never hang objects from the blast machine handle. Doing so may cause the blast machine to become unstable and tip over.
- ▶ Never attempt to move a blast machine containing abrasive. Never attempt to manually move blast machines greater than 6.5 cubic foot capacity. Always use at least two capable people to manually move a blast machine on flat, smooth surfaces. A mechanical lifting device must be used if blast machine is moved in any other manner.
- ▶ Always be certain to have secure footing when blasting. There is a recoil hazard when blasting starts that may cause user to fall and misdirect the abrasive stream at operator or bystander.

**NOTICE**

- ▶ Always use abrasive that is dry and properly screened. This will reduce the potential for obstructions to enter the remote control system, metering valve and blast nozzle.
- ▶ Moisture build-up occurs when air is compressed. Any moisture within the blast system will cause abrasives to clump, clogging metering valves, hoses and nozzles. Install an appropriately sized moisture separator at the inlet of the blast machine. Leave the moisture separator petcock slightly open to allow for constant release of water. If insufficient volume of air exists and petcock is unable to be left open (*at all times*) petcock should be opened frequently to release water.

# Diaphragm Outlet Valve

## Description

Rugged and reliable is what you get with the Marco Diaphragm Outlet Valve. Designed for use with fine mesh media and steel abrasive, the Marco Diaphragm Outlet Valve provides a low maintenance component to the KwikFire 125 Remote Control System.

## Features:

- Brass body and cap resists corrosion
- Urethane diaphragm for long life

## Operational Requirements

### The following may cause safety hazards or reduced performance:

- Improper installation and/or maintenance of components
- Incorrect disassembly and/or incorrect reassembly
- Improper air supply pressure (minimum 50 psi, 125 psi maximum)
- Improper installation and routing of pneumatic control lines

## Operating Instructions

### Before using:

- Set up blast machine and remote controls per instructions furnished with those components.
- Inspect components for damage. Replace any damaged components before use.
- Inspect pneumatic control line for air leaks. Tighten fittings if leaks are present.

### During use:

- Monitor Pneumatic Control Line to ensure air flow cannot be disrupted.

## DANGER

You must consult the Original Equipment Manufacturer for operator's manuals, information, training, instructions and warnings, for the proper and intended use of all equipment. Failure to avoid the above danger will result in death or serious injury.

## DANGER

OSHA requires blast-cleaning nozzles be equipped with an operating valve, which shall be designed to be held open only by continuous hand pressure and shall close immediately upon release of hand pressure (i.e., a "dead man" control). The valve shall not be modified in any manner that would allow it to remain open without the application of hand pressure by the operator. Failure to avoid the above danger will result in release of high speed media and compressed air resulting in death or serious injury. OSHA 29CFR 1910.244(b)

## NOTICE

The maximum recommended length of pneumatic control line is 100 feet. Pneumatic control lines operated at distances greater than 100 feet will degrade performance. Use electric remote controls for distances greater than 100 feet.

# Diaphragm Outlet Valve

## Installation

### **⚠ DANGER**

Always depressurize the entire blasting system, disconnect all electrical power sources and lockout/tagout all components before any maintenance or troubleshooting is attempted. Failure to avoid the above dangers will cause electrical shock and inadvertent activation of equipment resulting in death or serious injury.

### **⚠ DANGER**

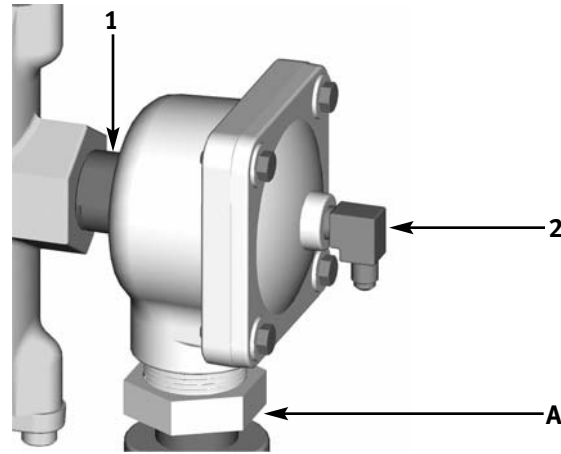
Use of a full port Control Air Fitting, located on the lower portion of Inlet Valve, will cause inadvertent pressurization of blast machine. Ensure Control Air Fitting located on lower portion of Inlet Valve is a 1/16" orifice restrictor fitting. Failure to avoid the above danger will cause inadvertent activation of equipment resulting in death or serious injury.

### **⚠ DANGER**

Marco control switches should only be used with Marco remote control systems. Using a Marco control switch on other manufacturer's remote control system may cause malfunctions. Failure to avoid the above danger will result in death or serious injury.

- 1) Thread 1" Close Nipple (1) installed in Diaphragm Outlet Valve on blast machine exhaust pipe string. Ensure exhaust port (A) of Diaphragm Outlet Valve is facing toward ground.
- 2) Install Pneumatic Control Line from Inlet Valve to 1/4" Brass Elbow (2).

Figure 2



## Troubleshooting

If the Diaphragm Outlet Valve does not function properly, check the following:

### **SYMPTOM (Cause)**

### **ACTION**

#### **Blast Machine will not pressurize**

(Damaged components, improper air supply, Pneumatic Control Line)

Inspect Pneumatic Control Line for correct routing, air leaks, blockage or pinch points. Tighten control line fittings if leaks are present. Replace damaged Pneumatic Control Line.

Insufficient air supply. Ensure minimum of 50 psi is supplied to valve.

Inspect Diaphragm Outlet Valve for damage. Immediately replace damaged components.

Refer to Operator's Manual of Remote Control System and Blast Machine.

#### **Blast Machine will not depressurize or depressurizes slowly**

(Damaged components, excessive air pressure)

Inspect Diaphragm Outlet Valve for damage. Immediately replace damaged components.

Inspect Pneumatic Control Line for correct routing, blockage or pinch points. Immediately replace damaged Pneumatic Control Line.

Refer to Operator's Manual of Remote Control System and Blast Machine.

#### **Inconsistent activation/deactivation of blast machine**

(Damaged components, improper air supply, Pneumatic Control Line)

Insufficient air supply. Ensure minimum of 50 psi is supplied to valve.

Inspect Diaphragm Outlet Valve for damage. Immediately replace damaged components.

Refer to Operator's Manual of Remote Control System and Blast Machine.

## Diaphragm Outlet Valve

### **⚠ DANGER**

Always depressurize the entire blasting system, disconnect all electrical power sources and lockout/tagout all components before any maintenance or troubleshooting is attempted. Failure to avoid the above dangers will cause electrical shock and inadvertent activation of equipment resulting in death or serious injury.

### Maintenance

Maintenance of the Diaphragm Outlet Valve, is limited to daily cleaning and the immediate replacement of worn or malfunctioning parts.

### Diaphragm Outlet Valve

#### Disassembly: (Figure 3)

- 1) Remove 1/4" Brass Elbow (1) from Valve Cap (4).
- 2) Remove 1/4" x 1" Hex Head Cap Screws (2) and 1/4" Lock Washers (3) from Valve Cap (4).
- 3) Remove Valve Cap (4) from Valve Body (7).
- 4) Inspect Diaphragm (5) for damage. Replace if damaged.
- 5) Inspect Valve Body (7) for damage. Replace if damaged.
- 6) Remove 1-1/4" x 1" Bushing (6) and 1" Close Nipple (8) and inspect for damage. Replace if damaged.

#### Assembly: (Figure 3)

- 1) Install Diaphragm (5) in recess of Valve Body (7).
- 2) Place Valve Cap (4) on Valve Body (7). Ensure dome of Valve Cap (4) is facing away from Valve Body (7).
- 3) Place 1/4" Lock Washer (3) on Hex Head Cap Screw (2). Insert in hole in Valve Cap (4) and tighten. Repeat for remaining three holes.
- 4) Thread 1/4" Brass Elbow (1) in Valve Cap (4).
- 5) Thread 1-1/4" x 1" Bushing (6) in bottom of Valve Body (7).
- 6) Thread 1" Close Nipple (8) in Valve Body (7).

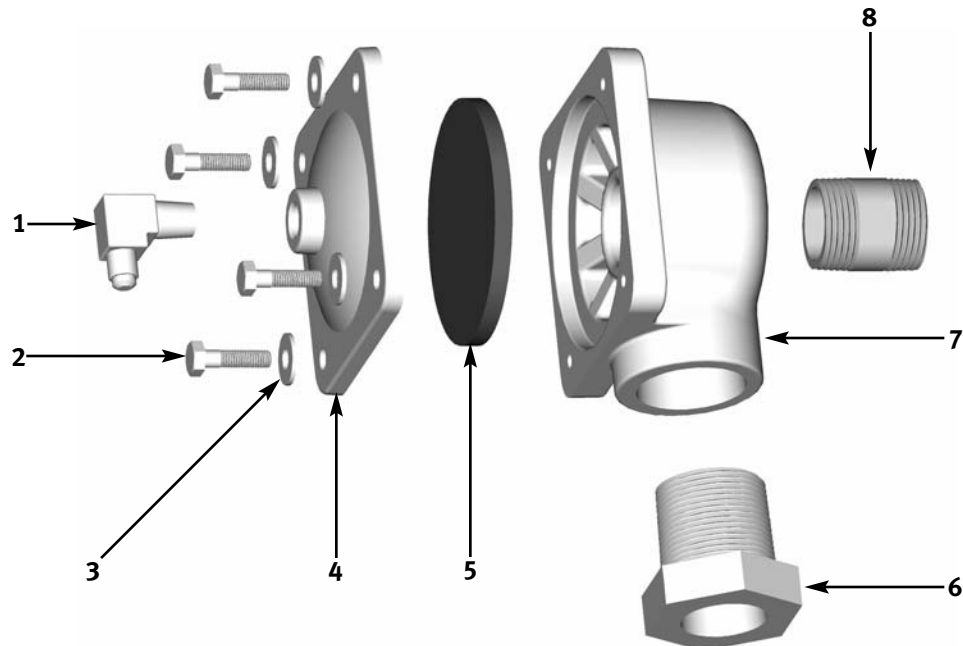


Figure 3

## Diaphragm Outlet Valve Schematic

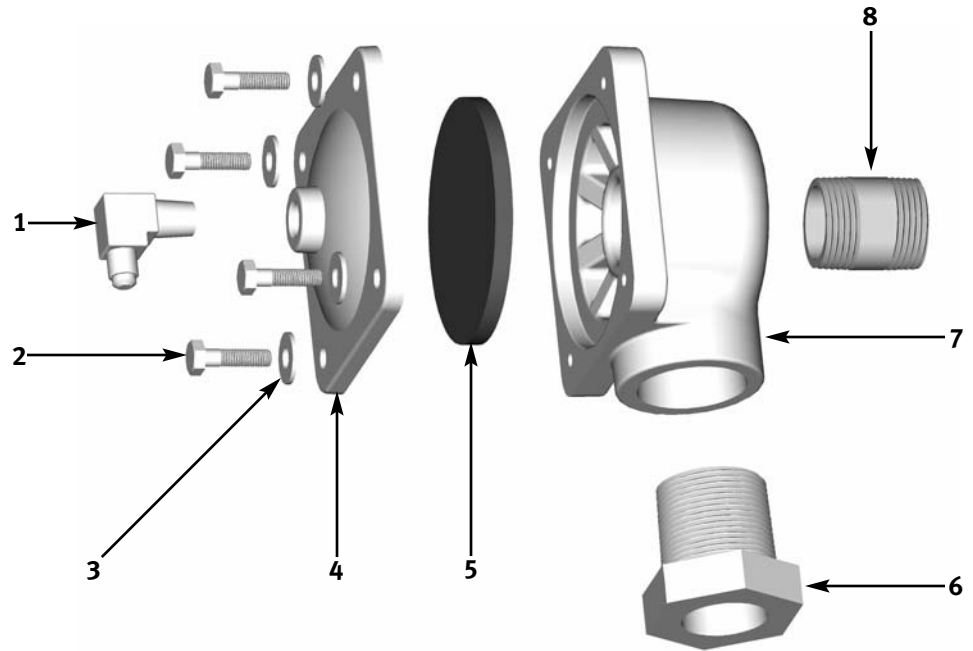


Figure 4

Item #	Part #	Description
Fig. 4	1012150	1" Diaphragm Outlet Valve
1	1012051	1/4" NPT x 1/4" Brass Elbow
2	1012154	1/4"-20 x 1" Hex Cap Screw (4 required)
3	1012153	1/4" Lock Washer (4 required)
4	1012155	1" Diaphragm Outlet Valve Cap
5	1012152	Diaphragm for 1" Diaphragm Outlet Valve Cap
6	1012157	1-1/4" (M) NPT x 1" (F) NPT Bushing
7	1012156	1" Diaphragm Outlet Valve Body
8	1012151	1" NPT Close Nipple
--	1090053	1" Diaphragm Outlet Valve Operator's Manual



## ADDITIONAL TECHNICAL DATA

The associations listed below offer information, materials and videos pertaining to abrasive blasting and safe operating practices.

- **American Society for Testing and Materials (ASTM)**  
100 Barr Harbor Drive  
West Conshohocken, PA 19428-2959  
Phone: (610) 832-9585  
FAX: (610) 832-9555  
www.astm.org
- **Occupational Safety & Health Administration (OSHA)**  
United States  
Department of Labor  
200 Constitution Avenue  
Washington, DC 20210  
Phone: (800) 321-OSHA  
(800) 321-6742  
www.osha.gov
- **The National Board of Boiler & Pressure Vessel Inspectors**  
1055 Crupper Avenue  
Columbus, Ohio 43229  
Phone: (614) 888-8320  
FAX: (614) 888-0750  
www.nationalboard.org
- **National Association of Corrosion Engineers (NACE)**  
1440 South Creek Drive  
Houston, TX 77084-4906  
Phone: (281) 228-6200  
FAX: (281) 228-6300  
www.nace.org
- **The Society for Protective Coatings (SSPC)**  
40-24th Street, 6th Floor  
Pittsburgh, PA 15222-4656  
Phone: (412) 281-2331  
FAX: (412) 281-9992  
www.sspc.org

## WARRANTY

Seller warrants to the original purchaser that the Product covered by this Warranty will remain free from defects in workmanship or material under normal commercial use and service for a period of one year from the date of shipment to the original Purchaser. This Warranty shall not apply to defects arising, in whole or in part, from any accident, negligence, alteration, misuse or abuse of the Product, operation not in accordance with applicable instructions or manuals or under conditions more severe than, or otherwise exceeding, those set forth in the written specifications for the Product, nor shall this Warranty extend to repairs or alterations of the Product by persons other than Seller or Seller's authorized representatives, or to maintenance parts.

## DISCLAIMER OF WARRANTY

The foregoing Warranty is exclusive and is in lieu of all other Warranties of quality, whether oral or written and whether express or implied. All Warranties of merchantability or fitness for a particular purpose are hereby excluded and are inapplicable to the Product. Seller makes no warranties or representations concerning respirators, or equipment made by other manufacturers.

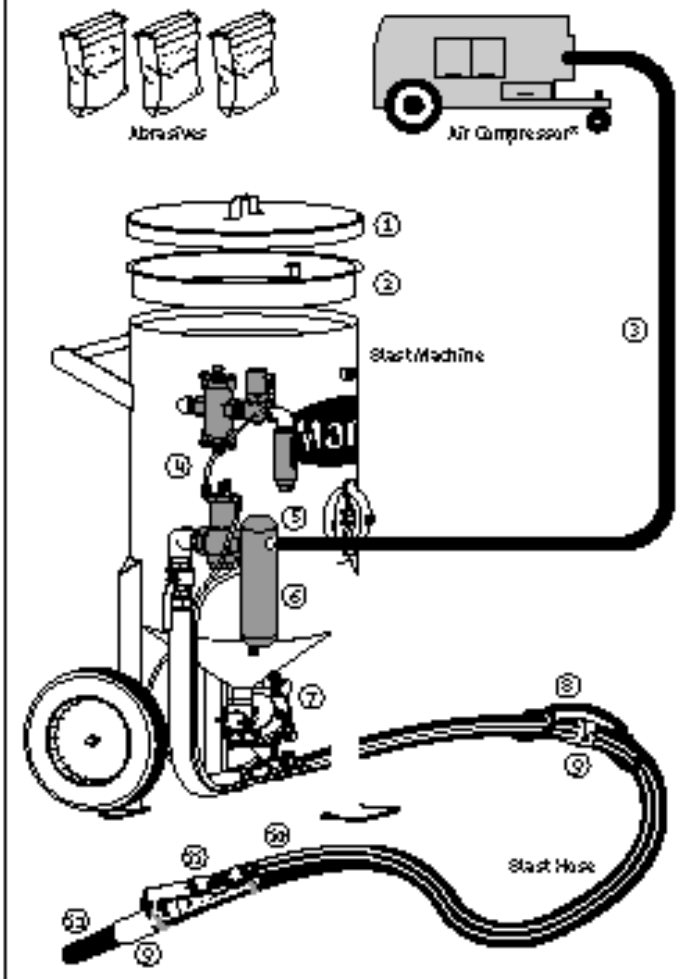
## EXCLUSIVE REMEDIES FOR WARRANTY CLAIMS

THE SOLE AND EXCLUSIVE REMEDIES OF PURCHASER FOR UNDER THE FOREGOING WARRANTY COVERING THIS PRODUCT SHALL BE REPAIR OR REPLACEMENT, FREE OF CHARGE, F.O.B. POINT OF MANUFACTURE, OF ANY DEFECTIVE PART OR PARTS OF THE PRODUCT THAT WERE MANUFACTURED BY SELLER, AND WHICH ARE RETURNED TO SELLER AT SELLER'S PRINCIPAL PLACE OF BUSINESS, POSTAGE PREPAID. THIS SOLE AND EXCLUSIVE REMEDY IS CONDITIONED UPON PURCHASER'S PROMPT WRITTEN NOTICE TO SELLER AT SELLER'S PLACE OF BUSINESS THAT A DEFECT HAS BEEN DISCOVERED, TOGETHER WITH A REASONABLY DETAILED DESCRIPTION OF THE DEFECT IN THE PRODUCT, WITHIN THIRTY (30) DAYS AFTER DISCOVERY OF THE DEFECT, OTHERWISE SUCH CLAIMS SHALL BE DEEMED WAIVED. NO ALLOWANCE WILL BE GRANTED FOR ANY REPAIRS OR ALTERATIONS MADE BY PURCHASER OR OTHERS WITHOUT SELLERS PRIOR WRITTEN CONSENT. IF SUCH NOTICE IS TIMELY GIVEN, SELLER WILL HAVE THE OPTION TO EITHER MODIFY THE PRODUCT OR COMPONENT PART THEREOF TO CORRECT THE DEFECT, REPLACE THE PRODUCT OR PART WITH COMPLYING PRODUCTS OR PARTS, OR REFUND THE AMOUNT PAID FOR THE DEFECTIVE PRODUCT, ANY ONE OF WHICH WILL CONSTITUTE THE SOLE LIABILITY OF SELLER AND FULL SETTLEMENT OF ALL CLAIMS. PURCHASER SHALL AFFORD SELLER PROMPT AND REASONABLE OPPORTUNITY TO INSPECT THE PRODUCT FOR WHICH CLAIM IS MADE. THE SOLE PURPOSE OF THE FOREGOING STIPULATED EXCLUSIVE REMEDY SHALL BE TO REPAIR OR REPLACE DEFECTIVE PRODUCTS OR COMPONENTS THEREOF, OR TO REFUND PURCHASER THE PURCHASE PRICE THEREOF. THIS STIPULATED EXCLUSIVE REMEDY SHALL NOT BE DEEMED TO HAVE FAILED OF ITS ESSENTIAL PURPOSE SO LONG AS SELLER IS WILLING AND ABLE TO REPAIR OR REPLACE THE DEFECTIVE PARTS OR REFUND THE PURCHASE PRICE IN ACCORDANCE WITH THE TERMS HEREOF.

## LIMITATION OF REMEDIES

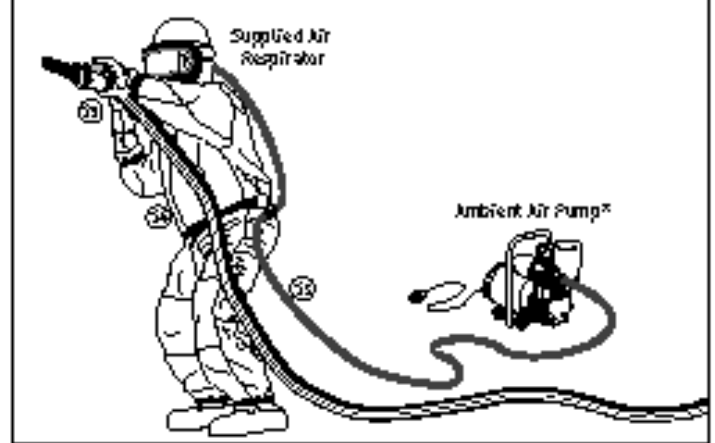
The foregoing stipulated exclusive remedies is in lieu of all other remedies for breach of Contract, Warranty and/or Tort. Seller shall not be liable for the Purchaser's expenses for downtime or for making up downtime, damages for which the Purchaser may be liable to other persons and/or entities, damages to property, and injury to or death of any persons and/or any claims for incidental or consequential damages, including but not limited to loss of profits, regardless of whether Seller has been informed of the possibility of such damages. Seller neither assumes nor authorizes any person to assume for it any other liability in connection with the sale or use of any Products covered by the foregoing Warranty and Disclaimers, and there are no oral agreements relating to remedies which are collateral to or which affect this limitation.

## Marco Blast Machine – Hose Configuration



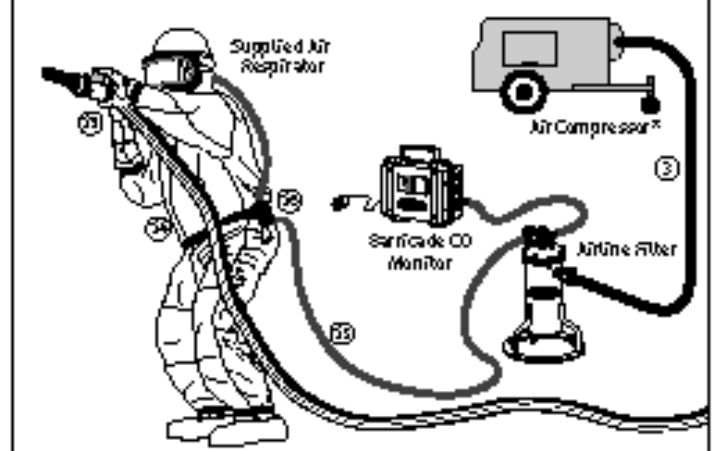
\*Grade D quality air in an atmosphere free of contaminants

## Ambient Air Pump Configuration



\*Grade D quality air in an atmosphere free of contaminants

## Air Compressor Breathing Air Configuration



\*Grade D quality air in an atmosphere free of contaminants

## DAILY PRE-OPERATION CHECKLIST

### Additional Components

- ① blast machine lid
- ② blast machine screen
- ③ air hose
- ④ remote control system
- ⑤ air hose couplings & gaskets
- ⑥ moisture separator
- ⑦ metering valve
- ⑧ safety cable
- ⑨ blast hose couplings & gaskets
- ⑩ remote control line
- ⑪ remote control handle
- ⑫ blasting nozzle
- ⑬ blasting gloves
- ⑭ abrasive resistant blastsuit
- ⑮ breathing line
- ⑯ climate control device

### ABRASIVES:

- Review the Abrasive MSDS (*Material Safety Data Sheet*) to ensure the material is free of toxic or harmful substances such as lead, silica, cyanide or arsenic. Use properly sized abrasive to ensure required surface finish.

### BLAST MACHINE:

- Inspect the Blast Machine for internal and external wear, abrasions and leaks.
- Ground the Blast Machine to dissipate static electricity created by the Abrasive moving through the Blast Hose.
- Install a Moisture Separator at the Inlet Port of the Blast Machine. Removing moisture from the Air Supply will allow Abrasive to flow smoothly from the Blast Machine to the work surface.

### AIR SUPPLY: Blast Machine

- Use an Air Compressor that will provide sufficient CFM (*Cubic Feet Per Minute*) volume of air to the Blast Nozzle and all other pneumatic tools, with an additional 50% to allow for Nozzle wear.

### AIR SUPPLY: Respirator

- Inspect Respirator Assemblies for worn components and replace as needed.
- You MUST consult the Operator's Manual supplied with your Respirator for ALL applicable Warnings and Hazards.

### BLAST NOZZLES:

- Replace Blast Nozzles if liner or jacket is cracked, damaged or an orifice size 1/16" larger than the original size.
  - *Determine Nozzle wear by inserting a drill bit 1/16" larger than original size of the Nozzle orifice. If the drill bit passes, replacement is needed.*
- Long Venturi Nozzles are most effective when the distance from Nozzle to work surface is 24-36".

### AIR & BLAST HOSE:

- Inspect all Hoses for internal and external wear, abrasions and leaks.
- Lay out Air Hose and Blast Hose as straight as possible to remove restrictions which cause reduced performance and premature wear.
- Blast Hose I.D. should be 3-4 times the size of Nozzle orifice.
- Blast Hose and Air Hose Couplings are to mate securely using Gaskets and Nozzle Washers to provide a positive seal without leaks. Inspect and replace any worn or damaged component before use.
- Install Safety Clips and Safety Cables at each connection.

### PROTECTIVE CLOTHING:

- Wear appropriate Protective Clothing and Equipment (*supplied-air respirator, blastsuit, safety shoes, leather gloves, ear protection and eye protection*) appropriate for the work environment.



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