

# OPERATING INSTRUCTIONS

## BB4000LED SERIES



BADDDBOY Blasters, Inc  
1720 Wallace Ave  
Canton Ohio 44705  
(330) 454-2699

Model Number: \_\_\_\_\_

Builders Name \_\_\_\_\_

Date of Shipment: \_\_\_\_\_

Date of Installation: \_\_\_\_\_

Buyers Name: \_\_\_\_\_

Buyers Address: \_\_\_\_\_

Phone: \_\_\_\_\_

**Manufactured by:**

**BADBOY Blasters Inc COMPANY 1720 Wallace Ave Canton, Ohio 44705.**

**BADBOY Blasters equipment should be properly maintained per the operating instructions. For peak performance of your equipment, use only genuine BADBOY Blasters replacement parts; accept no substitutes! The use of non-BADBOY Blasters parts will void the warranty. To order replacement parts, contact BADBOY Blasters @ 1-330-454-2699, fax us at 330-454-9690, or e-mail us @ [badboyblasters@yahoo.com](mailto:badboyblasters@yahoo.com) or our website [www.badboyblasters.com](http://www.badboyblasters.com) and we will get back with you.**

**CAUTION**

**Never use silica-based abrasives in a BADBOY blast system.**

# DUST COLLECTOR



## MAINTENANCE

**Badboy Blasters** uses a 1400 CFM cyclonic dust collection system. This allows a lot of air movement through the cabinet for supreme vision. The clear bottom bag is the dust collection reservoir and the white cloth bag is the .005 Micron dust bag which is made of Polyester material. This **MUST** be serviced on a as needed basis. If the top bag looks to be pressurized simply shut off the dust collection motor and shake the filter bag. This might take up to a minute depending on how clogged the filter bag is. By doing this you are removing fine dust from the internal filter bag pours. The abrasive dust will collect in the bottom clear bag. If used more than two hours daily this process might have to be repeated up to 6 times a day. Once dust builds up in the clear bag over 6 inches it is recommended that the bag be dumped of dust material. **\*\*\*\*THIS MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH THE LAWS OF YOUR STATE. ALWAYS WEAR A RESPIRATOR AND SAFETY GLASSES DURING THIS PROCESS\*\*\*\***

# HV (HAND VALVE GUN CONTROL)

**\*\*\*\*THIS HANDLE MUST BE IN THE OFF POSITION AT ALL TIMES WHEN NOT IN USE! THE DOORS MUST BE IN THE CLOSED POSITION AND LOCKED WHEN IN USE. SEVERE BODILY INJURY CAN OCCUR IF THESE SAFETY MEASURES ARE NOT FOLLOWED\*\*\*\***



The HV valve a BADBOY Exclusive. This allows the operator more freedom during the blasting operation as they don't have to hand squeeze nor stand on a foot pedal. Switching to the right is for direct pressure blasting and to the left for suction blasting. This is a great feature that allows you both types of blasting with the turn of a knob. BADBOY Blasters has fabricated a cover for the HV valve (not shown) that prevents someone from accidentally bumping into the HV handle. If any maintenance on these valves is needed, the air supply must be disconnected for safety. It is recommended that periodically all fittings are check for tightness.



# DIRECT PRESSURE SETUP



The setting at the bottom of the pressure tank is very important! It's the device that meters the amount of abrasive that travels through the blasting hose during a blasting operation. By letting the valve open too far, you will be filling the tank more often than needed. Yes, more media is better, but there comes a point when too much will slow down the cut. Your media only cuts efficiently with media velocity. So, if media is allowed to travel through the hose in excess, it won't remove as fast as it's being fed, which takes the velocity away. The best setting to start with is the ball valve at 7 o'clock then adjust from there. Rule of thumb if the blast hose pulsates then the blast media setting is too much. Once you operate a few times you will get the hang of it! Set the pressure on the regulator at 110 psi, engineered valves will only allow the pressure pot to reach 60 psi.



## PRSSURE TANK REFILLING

**\*\*\*\*\*BE SURE TANK IS DECOMPRESSED BEFORE ATTEMPTING TO REFILL AND YOU ARE WEARING A RESPORATOR AND SAFETY GLASSES\*\*\*\*\***

Screw off the TEE handle at the top of the red pressure tank. Once open put in the supplied funnel and begin to fill. Remember it takes 40 lbs of media just to make the pressure tank to function. The tank has a max capacity of 200lbs. It should be noted that when removing media from the cabinet to refill the pressure pot, it is wise to strain the media for any small pieces of debris. This debris will cause problems with the blast Nozzle to plug. A recommended means to strain is a colander/ strainer.

# **CABINET SPECS AND REQUIRMENTS**

**Voltage**

**110**

**Amperage**

**20**

**Max PSI**

**120**

**Suction CFM per gun**

**16**

**Pressure CFM**

**24**

**Lighting Type**

**LED**

**Internal Cabinet Size**

**48 X 96 X 50**

**Overall Height**

**89 Inches**

**Weight**

**860 lbs**

**Regulator Connection Size**

**½ NPT**

**Number of Water Traps**

**3**

# THIS WHY YOU USE SILICA FREE BLAST MEDIA

**WARNING!** Abrasive blasting with sands containing crystalline silica can cause serious or fatal respiratory disease.

The National Institute for Occupational Safety and Health (NIOSH) requests assistance in preventing silicosis and deaths in workers exposed to respirable crystalline silica during sandblasting. Sandblasters, exposed coworkers, and their employers urgently need information about the respiratory hazards associated with sandblasting. Your assistance in this effort will help prevent silicosis and death, a national goal for health promotion and disease prevention stated in Healthy People 2000 [DHHS 1990].

The Alert describes 99 cases of silicosis from exposure to crystalline silica during sandblasting. Of the 99 workers reported, 14 have already died from the disease, and the remaining 85 may die eventually from silicosis or its complications. NIOSH requests that editors of trade journals, safety and health officials, labor unions, and employers bring the recommendations in this Alert to the attention of all workers who are at risk.

## Background

### Description and Uses of Abrasive Blasting

Abrasive blasting involves forcefully projecting a stream of abrasive particles onto a surface, usually with compressed air or steam. Because silica sand is commonly used in this process, workers who perform abrasive blasting are often known as sandblasters. Tasks performed by sandblasters include the following:

- Cleaning sand and irregularities from foundry castings
  - Cleaning and removing paint from ship hulls, stone buildings, metal bridges, and other metal surfaces
  - Finishing tombstones, etching or frosting glass, and performing certain artistic endeavors.

### Description of Silicosis

When workers inhale the [crystalline silica\\*](#) used in abrasive blasting, the lung tissue reacts by developing fibrotic nodules and scarring around the trapped silica particles [Silicosis and Silicate Disease Committee 1988]. This fibrotic condition of the lung is called silicosis. If the nodules grow too large, breathing becomes



difficult and death may result. Silicosis victims are also at high risk of developing active tuberculosis [Myers et al. 1973; Sherson and Lander 1990; Bailey et al. 1974].

The silica sand used in abrasive blasting typically fractures into fine particles and becomes airborne (see Figure 1). Inhalation of such silica appears to produce a more severe lung reaction than silica that is not freshly fractured [Vallyathan et al. 1988]. This factor may contribute to the development of acute and accelerated forms of silicosis among sandblasters.

Figure 1. Sandblaster working in the dusty atmosphere created by airborne particles of silica sand.

## Number of Exposed Workers

Estimates indicate that more than 1 million U.S. workers are at risk of developing silicosis and that more than 100,000 of these workers are employed as sandblasters [Shaman 1983]. Approximately 59,000 of the 1 million workers exposed to crystalline silica will eventually develop silicosis [Shaman 1983]. No published estimates indicate the number of sandblasters who will develop silicosis, but a 1936 study in Great Britain [Merewether 1936] reported that 5.4% of a population of sandblasters (24 of 441) died from silicosis or silicosis with tuberculosis in a 3.5-year period. The National Occupational Exposure Survey indicates that the construction industry employs the largest number of sandblasters, with the highest proportion in the special trades industries [NIOSH 1988b, c; 1990b].

## Respiratory Protection Practices

Acute silicosis is less common today than it was in the 1930s because engineering controls are used to reduce exposure to respirable crystalline silica and because the use of alternative abrasives is increasing. However, data indicate that most abrasive blasters continue to work without adequate respiratory protection [NIOSH 1974a]. In addition, workers adjacent to abrasive blasting operations (for example, painters, welders, and laborers) often wear no respiratory protection [NIOSH 1990b].

Ventilation controls for reducing crystalline silica exposures are not used in most industries [NIOSH 1990b]. Samimi et al. [1974] found that even in short-term sandblasting operations (less than 2½ hours of blasting during an 8-hour workday), the average concentration of crystalline silica was 764 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), with an average silica content of 25.5%. This average dust concentration was twice the 1974 standard of the Occupational Safety and Health Administration (OSHA).

In a 1974 study of respiratory protection practices during abrasive blasting [NIOSH 1974a], the protection factors for supplied-air respirators with helmets ranged from 1.9 to 3,750. This wide range was attributed to the varied conditions of the equipment rather than to the superiority of any brand. Maintenance was

universally poor or nonexistent, and the persons responsible for selective respiratory protection for abrasive blasting were inadequately informed about the proper use and maintenance of such equipment.

## BLASTER TROUBLE SHOOTING

**Sandblasters operate on a pressure or siphon system, whether you use them for cleaning glass, metal, plastics or wood. This means that troubleshooting problems with your sandblaster will be similar, regardless of the model or brand. A sandblaster's input is high-pressure air from a compressor and the correct abrasive for the surface you're cleaning and the output of a sandblaster is a mixture of air and the abrasive, meaning there are few places for a malfunction to occur. The majority of your problems will be due to moisture in lines, tanks or valve adjustments, if you've ruled out the lack of compressed air and other obvious problems.**

- **Air pressure-** Eliminate the possibility of a faulty gauge by testing your air gun to ensure you have high-pressure air available. No air is generally caused by a faulty compressor, so confirm that the air compressor output pressure gauge indicates a suitable pressure available when the compressor runs.
- **Clear blockages-** Try activating the sandblaster gun and ensure you can see and feel the abrasive coming out of the nozzle. If you can, your sandblaster is working correctly. Don't worry, blockages like this are common and often, clogged abrasive lines will clear themselves if they're bumped.

If you can feel air but no abrasive through the gun, you either have plugged up feed lines or an empty abrasive tank. If you have a pressure blaster, you may find that the mixing valve on the pressure tank is defective or obstructing the abrasive feed.

- **Check your nozzle-** If you have adequate air and abrasive material, but you have a reduced blasting effect, try changing your nozzle. This is because the nozzle wears over time. As it gets larger, the blast pattern also becomes larger and less effective. This gradual fault can often be overlooked. An enlarged nozzle will cause your blaster to use more abrasive, so it's always a good idea to regularly change it.
- **Unwanted moisture-** Drain condensation builds up in the compressor tank to be noticeable within a week, and even quicker if you live in a high humidity area. Getting rid of this unwanted moisture is one of the most important preventative maintenance jobs you can do. You will need to locate the drain and open it to properly dry it out. Moisture in the abrasive and air lines is the main cause of problems with sandblasters.

## **Tips and advice**

- Complete your troubleshooting in an orderly fashion, and keep an up to date maintenance log, so you can quickly identify any possible problems before they occur.
- Never look into the sandblaster nozzle while the air compressor is attached to the system.
- Wear a respirator when troubleshooting your sandblaster.