

OPERATING MANUAL



MODEL 1-8DEZMKII

Shot Blasting System

WALK BEHIND MANUAL PUSH



Trust the Original Surface Preparation Experts
800.256.3440 **blastrac.com**

FORWARD

Blastrac is pleased that you have selected this Blast Cleaning System for your surface preparation requirements. This environmentally safe, closed-cycle, surface preparation machine has been designed and built for abrasive blast cleaning of horizontal surfaces.

This manual has been prepared to assist the operator and the maintenance personnel in understanding the machine so that it may be operated in the most efficient manner and maintained in the best condition. Therefore, it is necessary that all personnel responsible for the operation and maintenance of the machine read the manual thoroughly. By following the instructions in this manual, this system can be easily and effectively operated, serviced and maintained by personnel assisted by a brief period of familiarization and training from a Blastrac® technician.

Before attempting to operate, service, or maintain the machine, the personnel should thoroughly familiarize themselves with the physical makeup of the machine, be familiar with the major systems of the machine, and have an understanding of its operation.

The operating and maintenance personnel must obey all the warnings and safety precautions posted on the side of the machine and stated throughout this manual. Serious injury to personnel or severe damage to the equipment may result if the warnings and precautions are not followed, or through careless handling of this equipment.

Initial operation and maintenance must be done cautiously. Extreme care should be taken when activating any control devices until the response of the machine and its various components are clearly understood.

If you have any questions or problems in regard to the operation or capabilities of this Blastrac machine, please contact:

Blastrac
13201 North Santa Fe
Oklahoma City, OK 73114
405/478-3440
800/256-3440

or your nearest Service Center.

INTRODUCTION

This manual has been prepared to assist the operator and maintenance personnel in understanding the machine so that it may be operated in the safest and most efficient manner and maintained in the best condition. Therefore, it is necessary that all personnel responsible for the operation and maintenance of the machine read and understand the manual.

Before attempting to operate service or maintain the machine, the personnel should thoroughly familiarize themselves with the physical make-up of the machine. They should be familiar with the major components of the machine and have a general understanding of overall operations.

The operating and maintenance personnel must obey all the warnings and safety precautions posted on the machine and stated throughout this manual. Serious injury to personnel or severe damage to the equipment may result if the warnings and precautions are not followed.

You will be notified of any changes that occur after this manual is printed. We will send you manual revisions that should be inserted in the manual in accordance with instructions that will be forwarded with them.

Receipt of Machine

Examine the shipment carefully for possible damage that might have occurred while in transit. If any damage is noted, notify the transportation carrier immediately and advise Blastrac.



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Section 1

- 1.1 Safety Instructions
- 1.2 Safety – Mechanical
- 1.3 Safety - Ventilation



WARNING: ALL OPERATORS AND MAINTENANCE PERSONNEL SHOULD READ AND UNDERSTAND ALL OF THE *OPERATING INSTRUCTIONS* PRIOR TO OPERATING OR MAINTAINING ON THE 1-8DEZ.

These Blastrac[®] operating instructions have been specifically prepared for operating and maintenance personnel working with the Model 1-8DEZ shot-blasting system. The information in this manual is intended to provide an understanding of the 1-8DEZ to minimize safety risks and maximize 1-8DEZ performance.

1.1 Safety Instructions

All operating and maintenance personnel must observe all warnings and precautions that are listed in this manual for the Model 1-8DEZ. All safety and warning labels posted on the 1-8DEZ and the instructions included in these operating instructions must be followed.

This Blastrac[®] 1-8DEZ has been manufactured for specific floor preparation applications. The engineering design of this airless media blast machine incorporates several basic elements. These include the airless media blast wheel, the media recycling system and the dust collection system. As a result of many years of operating and engineering experience, the features of these machines when used with the proper operating and maintenance procedures enable them to operate in an efficient and trouble-free manner.

A thorough understanding of your 1-8DEZ will help ensure that it can be operated efficiently and with minimized safety risks. No instructions, written or verbal, can be effective without the use of sound judgment and good work practices in the operation and maintenance of the 1-8DEZ. The U.S. Department of Labor Occupational Safety & Health Administration (OSHA) provides standards and regulations relating to the use of portable tools on construction sites. The operator of this 1-8DEZ should be familiar with, and understand these Regulations and Standards. These Standards and Regulations are posted on the OSHA Website at www.osha.gov.

CAUTION: Always keep the abrasive valve control lever in the off/closed position except when the 1-8DEZ is actually blast cleaning. Immediately close the abrasive control valve by releasing the handle-mounted shot valve control if you experience any irregular or hazardous situations while operating or maintaining the 1-8DEZ. Unusual situations include, but are not limited to, loud noise and excessive vibration.



1.1 Cont'd

Before actual shotblasting can begin, the operator should be certain that the 1-8DEZ will clear all obstructions in the work area. Work areas must be dry and clean (no loose debris) before cleaning can begin.

WARNING: INTRODUCTION OF LOOSE DEBRIS MAY CAUSE A CATASTROPHIC FAILURE RESULTING IN SERIOUS INJURY.

WARNING: KEEP ALL GUARDS IN PLACE - THE 1-8DEZ IS EQUIPPED WITH GUARDS OR COVERINGS FOR PARTS THAT MAY BE HAZARDOUS. IF ANY GUARDS ARE REMOVED FOR MAINTENANCE, VERIFY THAT THE GUARDS HAVE BEEN REPLACED AND ARE FUNCTIONING PRIOR TO USING THE 1-8DEZ. REFER TO DRAWINGS 421-0001 FOR CORRECT PLACEMENT OF GUARDS, COVERINGS AND OTHER 1-8DEZ COMPONENT PARTS.

All personnel in the immediate work area must wear safety glasses with side shields whenever the 1-8DEZ is blasting. Protective clothing is also recommended. Long sleeve shirts and safety shoes should be worn. The abrasive used in the 1-8DEZ impacts the work surface at high velocity; therefore any leakage during normal operation may sting personnel in the surrounding area. The blast head must be sealed to the work surface during operation to prevent abrasive leakage. Loose clothing, long hair and jewelry should not be worn when operating or maintaining the 1-8DEZ.

1.2 Safety – Mechanical

Maintenance Mode

Maintenance mode is defined as the state or condition of the 1-8DEZ, which minimizes mechanical and electrical hazards.

The 1-8DEZ should be put into maintenance mode prior to making adjustments or attempting any maintenance. The steps for placing the 1-8DEZ in maintenance mode are listed below.

1. Move 1-8DEZ to level ground.
2. Verify all moving parts have stopped.
3. Turn off main power at electrical box located on steering handle.
4. Release grinder power trigger by simultaneously pressing the grinder power trigger and unlock button located on the back of the grinder.
5. Utilize Lock-Out/Tag-Out procedures on main power on/off switch on the electrical box located on the steering handle.

1.2 Cont'd

Most industrial and many commercial work sites will have already developed their own Lock-Out/Tag-out procedures. The site safety personnel should be contacted to establish the procedure to be used. If the site has no formal Lockout/Tag out procedure the operator of this 1-8DEZ should be prepared to implement their own procedure including training of all operating and maintenance personnel.

All drive guards must be kept in place and in good condition except during maintenance or when repair work is being performed. Once maintenance or repair work is complete, be sure all guards are securely remounted and operating.

Safety glasses with side shields should always be worn when working with or near the 1-8DEZ while in use.

Loose fitting clothing and gloves should not be worn when working with the 1-8DEZ. Gloves can be worn for added protection.

The 1-8DEZ and all areas around the 1-8DEZ should be kept clean. Loose media in particular can become hazardous for foot traffic. All abrasive leaks should be repaired immediately to help keep the work area free of loose abrasive.

Any condition(s) that may result in damage to the 1-8DEZ or cause injury to the operator and/or other personnel should be repaired immediately.

Do not attempt to make adjustments to the feed spout or any control cage components while the 1-8DEZ is in motion or the blast wheel is operating. All adjustments must be made after the 1-8DEZ as been put in Maintenance Mode.

Obey all safety and danger signs posted on the 1-8DEZ, read and understand the *Operating Instructions* thoroughly, and follow all information posted where the 1-8DEZ is being operated.

CAUTION: ALL SAFETY AND WARNING STICKERS MUST BE KEPT IN GOOD, READABLE CONDITION. SEE DRAWING NUMBER 421-0013 FOR STICKER DESCRIPTIONS AND LOCATIONS.

Do not operate the 1-8DEZ in the rain or when heavy moisture is present. Do not expose the abrasive supply to any type of moisture. Sticky, tar related and rubber surfaces should be avoided when using the Blastrac[®] 1-8DEZ. Always drain unused abrasive from the 1-8DEZ and empty the dust collector hopper before transporting the 1-8DEZ.

1.3 Ventilation

The 1-8DEZ will not operate correctly without a dust collector.

The dust collector aids in the recovery of the abrasive and removes potentially hazardous dust from the air stream. If the machine is leaving shot on the ground or emitting dust, make sure your dust collector is operating correctly. Moreover, the dust collector helps maintain cleaning efficiency and minimizes the wear of the 1-8DEZ component parts.

All abrasive blast equipment must be properly ventilated to be environmentally effective. This benefits the operator, helps maintain efficiency and minimizes wear.

Keep the dust collector filters as clean as possible and dispose of the dust regularly and safely. Follow all environmental regulations when disposing of the dust. Many types of dust have chemical and physical properties that can cause fire or explosion. These hazards are minimized when the dust is removed on a regular basis as recommended.

Be sure to obtain any MSDS that may pertain to the specific use of the 1-8DEZ. Always be aware that the dust generated may require the operator to wear the appropriate breathing apparatus according to the recommendations of the MSDS.

WARNING: AVOID INHALING AIR CONTAMINATED WITH CONCRETE DUST. SHOT BLASTING CONCRETE PRODUCES CONCRETE DUST THAT CONTAINS AIRBORNE CRYSTALLINE SILICA. NEVER OPERATE THE 1-8DEZ WITHOUT AN APPROPRIATE DUST COLLECTOR. MOREOVER, AIRBORN SILICA COULD STILL EXIST EVEN WITH THE USE OF A DUST COLLECTOR IF THE DUST COLLECTOR IS NOT OPERATING CORRECTLY. OBSERVE ALL APPLICABLE LOCAL, STATE AND FEDERAL SAFETY REGULATIONS. FOLLOW OSHA APPROVED RESPIRATORY PROTECTION STANDARDS (REFERENCE OSHA 29CFR 1910.134-RESPIRATORY PROTECTION, 1910.1000-AIR CONTAMINANTS, AND ALL SUBSEQUENT ADDITIONS OR MODIFICATIONS). THE USE OF THE APPROPRIATE RESPIRATORY PROTECTION IS ESPECIALLY IMPORTANT WHEN EXPOSED TO THE INTERNAL COMPONENTS OF THE DUST COLLECTOR WHEN CONCRETE DUST IS PRESENT, IN ADDITION TO NORMAL SHOT BLASTING. IHALATION OF AIRBORN SILICA CAN CAUSE SILICOSIS AND DEATH.



Operating Instructions

1-8DEZ

Owner/Operator Responsibilities

Section 2

2.1 Owner/Operator Responsibilities



2.1 Owner/Operator Responsibilities

1. The owner/operator shall be responsible for the observance of all safety precautions expressed in this manual.
2. The owner/operator shall be trained by a Blastrac[®] Technician for the operation and maintenance of Blastrac equipment.
3. The owner/operator shall provide the necessary blasting media in accordance with the recommendations of a Blastrac technician so that the 1-8DEZ will operate at maximum efficiency.
4. The owner/operator shall perform all maintenance and basic repair functions as stated and described in this manual.
5. The owner/operator shall maintain an inventory of wear parts as outlined in this manual.
6. The owner/operator shall dispose of all dust collector refuse.
7. The owner/operator shall provide the following tools and accessories:

- | | |
|--------------------|----------------------|
| Hammer | Screwdrivers |
| Metric Wrench Set | U. S. Wrench Set |
| Utility Knife | Metric Hex Key Set |
| 5/16" Allen Wrench | Magnetic Broom |
| Buckets | Imperial Hex Key Set |

Section 3

- 3.1 Blast Unit – General
- 3.2 Blast Unit – Abrasive Cleaning Head
- 3.3 Blast Unit – Abrasive Control Valve
- 3.4 Blast Unit – Rebound Chamber (Plenum)
- 3.5 Blast Unit – Deflector Plate / Hopper
- 3.6 Blast Unit – Abrasive Seals
- 3.7 Blast Unit – Chassis
- 3.8 Cleaning Media (Abrasive)

3.1 Blast Unit – General

The Blastrac[®] equipment series described herein includes the 1-8DEZ Blast Unit. This model is used in conjunction with the Turbo Vacuum Dust Collector. Each combination comprises a horizontal surface preparation, closed cycle, shotblasting system. The blast unit directs high velocity, metallic abrasive toward the work surface. The impact of each individual particle causes the surface to fracture and become loose. The abrasive and the loose surface particles are then directed upward due to the force of the impact and a strong airflow created by the dust collector. The mixture of shot and contaminants enters the rebound plenum and continues its upward movement until directed into a specially designed chamber called the separator. Inside this chamber, an air wash cleans the abrasive and allows the contaminants to be extracted back to the dust collector. The clean abrasive is then gravity fed to the blast wheel and the process repeats. The blast unit is manually propelled. Please refer to section 1.3 ventilation. The blast units consist of the following elements:

- Abrasive Cleaning Head
- Abrasive Control Valve
- Rebound Chamber
- Deflector Plate / Hopper
- Abrasive Seals
- Chassis
- Ventilation System
- Cleaning Media (Abrasive)

3.2 Blast Unit – Abrasive Cleaning Head

This section (3.2) refers to Figure Number 1 on page 13.

The center of the patented abrasive cleaning head is the four bladed, six-inch blast wheel that accelerates the abrasive towards the surface being cleaned. This center fed blast wheel propels the abrasive by centrifugal force at a speed of more than 200 mph.

This blast wheel is enclosed in an abrasion resistant housing that is also lined with abrasion resistant liners. These liners are located in areas where the most wear is present. The operator must change them periodically to protect the housing. The blast wheel is directly connected to an 8,000 RPM, 110V angle grinder.

3.2 Cont'd

The blast wheel is equipped with a cast in place impeller for easy maintenance. This impeller pre-accelerates the abrasive to the wheel blades in controlled portions. The impeller also acts as a timing device to ensure proper placement of abrasive on the blade face. Abrasive that is gravity fed to the center of the wheel is pre-accelerated by impeller segments and directed through the control cage. The control cage determines where the abrasive is introduced onto the rotating blades of the wheel which in turn determines where the abrasive is being “aimed”. The setting of the control cage is very important when setting up the “blast pattern.” Refer to Section 5 for setting the correct blast pattern.

3.3 Blast Unit – Abrasive Control Valve

This section (3.3) refers to Figure Number 2 on page 14.

The abrasive control valve regulates the amount of abrasive delivered to the blast wheel. The main component of this device is a butterfly valve surrounded by a magnetic strip. A slight gap exists between the disk on the butterfly assembly and the inner wall of the valve. When the disk is horizontal, the magnetic strip provides a seal that closes the gap with steel shot and stops the flow of abrasive. The valve is manually operated with the actuator below the handle. Should the abrasive valve need to be replaced, the lever arm should be oriented at approximately 45 degrees when the valve is closed (see figure #2) after inserting the new valve.

3.4 Blast Unit – Rebound Chamber (Plenum)

Once the abrasive has impacted the work surface, the shot is directed into the rebound plenum. This curved portion of the plenum absorbs a large percentage of the force exerted by the high velocity abrasive and helps dissipate the heat generated by the blast process.

3.5 Blast Unit – Deflector Plate / Hopper

This section (3.5) refers to Figure Number 3 on page 15.

Once the contaminated abrasive leaves the rebound plenum, it enters the separator and immediately encounters the deflector plate. The deflector plate slows the abrasive down even more before it enters a tray at the bottom of the deflector plate. The contaminated abrasive hits the abrasive already at the bottom of the plate and effectively absorbs any residual force left in the moving mixture. The contaminated abrasive then falls through a curtain of high velocity clean air, which physically separates the heavy abrasive and the lighter contaminants. The air wash pulls the contaminants through the separator towards the exhaust and eventually to the dust collector. The clean abrasive falls to the bottom of the separator, then into a hopper where it can be recycled.

3.6 Blast Unit – Abrasive Seals

This section (3.6) refers to Figure Number 4 on page 25.

Magnetic abrasive seals are present on all sides of the rectangular opening at the bottom of the blast housing. These magnets should be charged with a load of abrasive before the blasting process begins. During the blasting process, they will attract any loose abrasive onto their surface, thus providing a “seal” to help contain the high impact abrasive from escaping the blast chamber. The leading and trailing edges of the blast chamber are equipped with additional brush seals mounted on the outside of the magnetic seals. The brush seals drag across the work surface allowing clean air to be drawn inside the 1-8DEZ. The air draw aids in the cooling and the reclaiming process.

3.7 Blast Unit – Chassis

All components on the blast unit are mounted on a mobile transporter. This transporter, or carriage, is a two-wheeled hand propelled unit. A two-wheeled caster kit is installed in front of the rebound plenum for additional stability.

The operator’s handle is rigidly connected to the chassis and may be pushed down to allow the operator to lift the blast seal over small obstructions. For safety reasons, we recommend that the bottom of the front urethane seal not be lifted more than approximately 1/8” off the surface being cleaned. Lifting the seal edge beyond this may allow high velocity abrasive to escape the blast chamber.



Operating Instructions

1-8DEZ

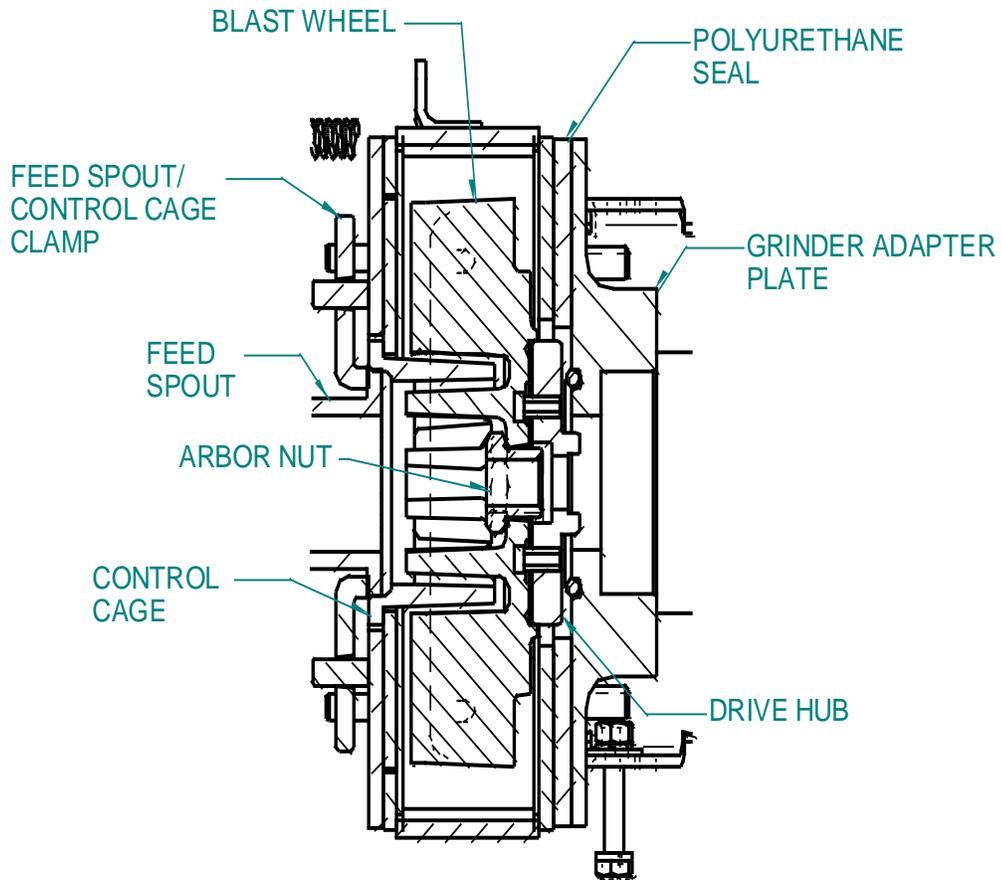
Description and Function

3.8 Cleaning Media (Abrasive)

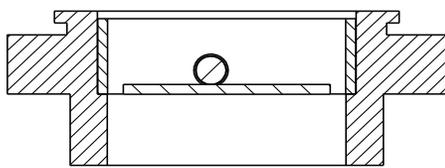
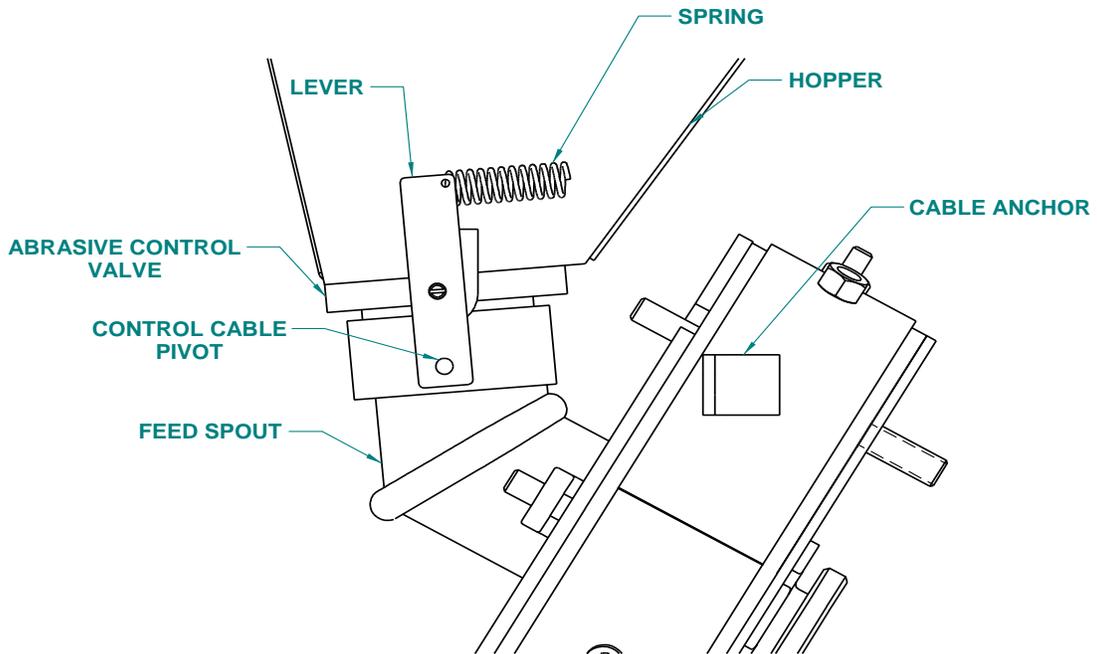
Blastrac provides a variety of specially sized, high quality abrasive for Blastrac shot cleaning systems. This steel abrasive is made of high quality martensitic steel to provide long operating life and minimal abrasive breakdown.

The 1-8DEZ is designed to operate with abrasive in sizes S-110 through S-330. The selection of proper abrasive is very important to the performance of the Blastrac shot cleaning system. Your Blastrac representative can help with the proper selection of abrasive for your particular application.

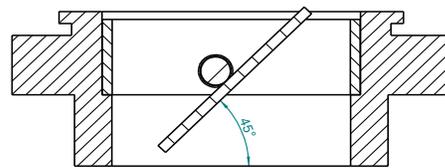
The steel abrasive causes minimum wear on the internal blast components. The dust and contaminants are the principal causes of component wear. A well-maintained ventilation system will minimize abrasive contamination, which helps reduce operating costs and increases the overall efficiency of the shotblasting system.



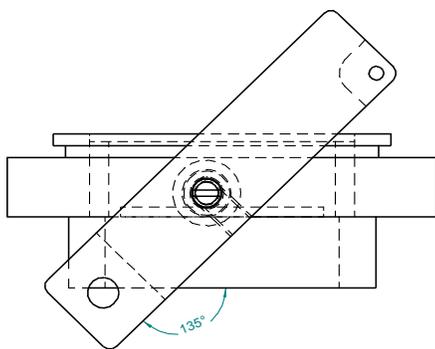
ABRASIVE CLEANING HEAD
FIGURE #1



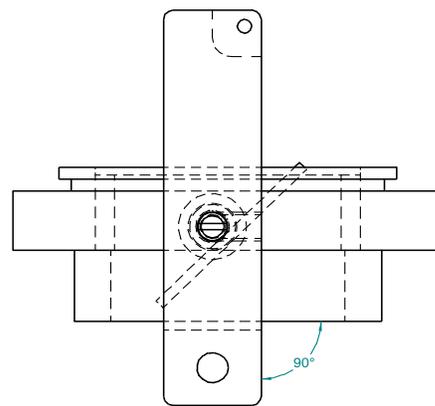
CLOSED



OPEN

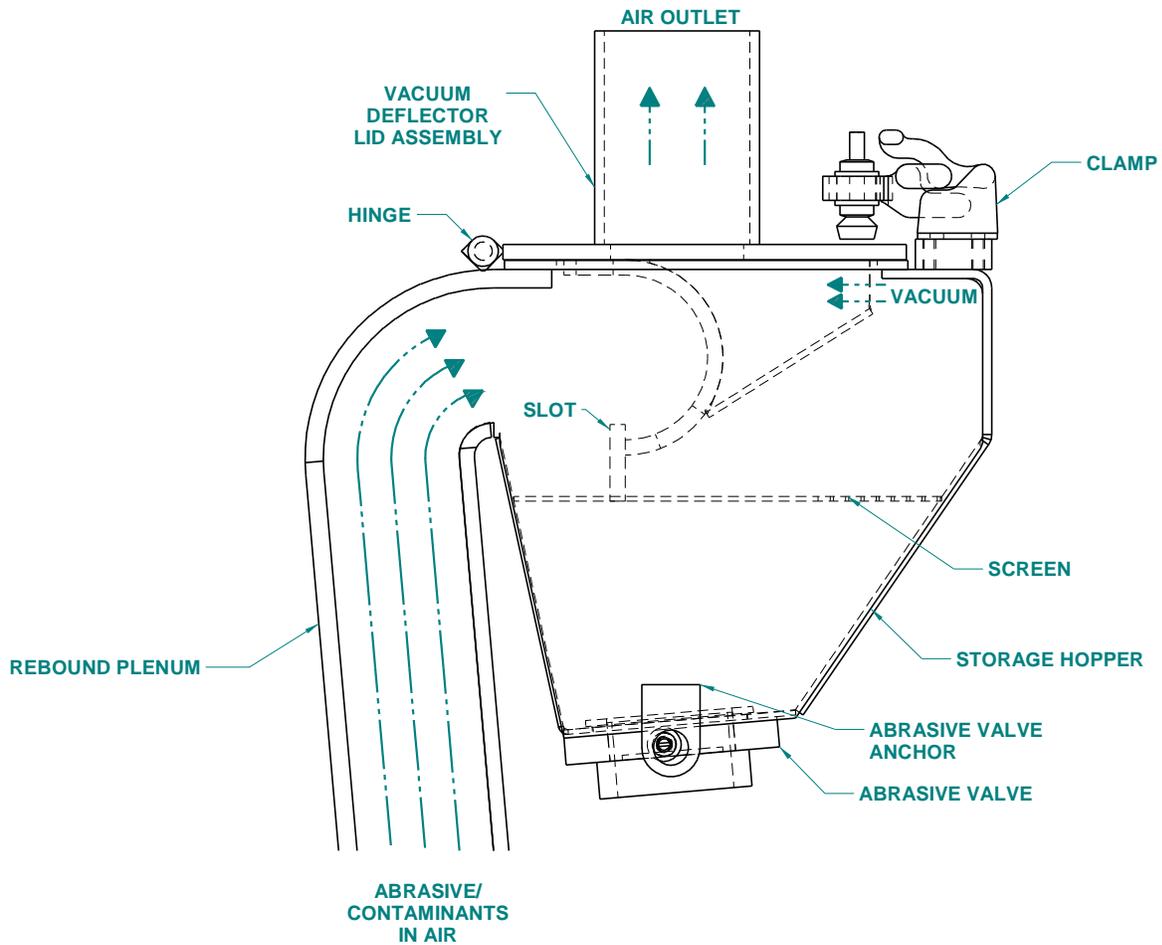


CLOSED



OPEN

ABRASIVE CONTROL VALVE
FIGURE #2



SEPARATOR 1-8DEZ
FIGURE #3



Section 4

- 4.1 Start-Up
- 4.2 Blast Cleaning
- 4.3 Shut-Down



4.1 Start-Up

WARNING: ALL OPERATING AND MAINTENANCE PERSONNEL ASSIGNED TO THE 1-8DEZ SHOULD READ AND UNDERSTAND THE *OPERATING INSTRUCTIONS* BEFORE ATTEMPTING TO OPERATE OR MAINTAIN THE 1-8DEZ. IN ADDITION, BLASTRAC® HIGHLY RECOMMENDS THAT ALL OPERATING AND MAINTENANCE PERSONNEL RECEIVE TRAINING FROM AN AUTHORIZED BLASTRAC REPRESENTATIVE BEFORE ATTEMPTING TO OPERATE OR MAINTAIN THE 1-8DEZ.

1. The 1-8DEZ and the dust collector should be moved to the cleaning site. Both machines can be hand-towed or moved by a lift truck.
2. Check the dustbin of the dust collector to be sure that it is empty. At the end of each job, the dustbin should be emptied.
3. Check the blast wheel, control cage, feed spout, liners, seals and hopper parts for wear. Replace parts where necessary.
4. Check the exhaust hose for holes, deformities, potential leaks or restrictions. Repair or replace all defective items before continuing.
5. Connect the exhaust hose and clamps to the blast unit and the dust collector. Be sure the clamps are secure.
6. All personnel in the immediate vicinity must now wear safety glasses with side shields.
7. Verify that the main power switch located on the electrical box on the steering handle is in the OFF position.
8. Check the area you are about to clean. Be sure that it is free of all debris that can clog or damage the 1-8DEZ. Be sure that the surface is moisture free. Blastrac machinery is designed to work on surfaces free from debris.
9. Make certain that the abrasive control valve is in the closed position. Remove the separator lid and check that the shot hopper is free of debris and abrasive. Remove the screens and check the butterfly valve at the bottom of the hopper. It should be in the horizontal position. Replace the bottom screen and add approximately eight (8) to ten (10) pounds of abrasive. The level of this abrasive

4.1 Cont'd

should reach the bottom of the screen. Do not overfill. Replace the separator lid and secure clamps (see figure #3, page 15).

10. Check the magnetic seals on the bottom of the blast unit for metallic contaminants such as nuts, bolts, etc. remove any foreign objects. Push the blast unit forward at a normal working pace. Deposit a layer of abrasive on the floor in front of the magnets. Drive the machine over the abrasive to charge the magnets with a layer of abrasive. The abrasive will form a seal between the magnets and the floor. Remove any excess abrasive from the floor.
11. Connect grinder power cord to electrical box power.
12. Lock grinder trigger in ON position.
13. Connect electrical box power cord to site power outlet.
14. Turn on dust collector
15. Turn on main power on electrical box
16. After cleaning a five-foot test strip, close the abrasive valve, stop the machine and check the cleaned area.
17. If the brightness or texture of the test strip is uneven, refer to Section 5, "BlastPattern", to adjust the "HOT SPOT".

4.2 Blast Cleaning

1. Ease the abrasive valve open. The operator will be walking forward to operate the machine in the forward direction.
2. If the cleaning is too severe or inadequate, adjust your travel speed accordingly. A faster pace will result in a lighter surface profile while a slower pace will be more aggressive and result in a deeper profile. If irregular surfaces are encountered, adjust your speed accordingly (see Section 7 - "Equipment Calibration").



4.2 Cont'd

3. The blast unit and the dust collector should be arranged so that the dust collector is centrally located. Blasting in straight lines will always give the best, most consistent results. Keep the duct hose situated between the two units so that you never have to pass across it or the power cord. Blasting during a turn will create an uneven profile. Once an area has been cleaned, the blast unit and the dust collector can be moved to an adjacent location to continue cleaning.
4. The blast unit will clear small obstructions by pushing down on the steering handle. Caution should be observed when clearing obstructions in this manner since the abrasive seal on the work surface may be broken. This may allow high velocity abrasive to escape (see section 3.7).
5. The blast pattern of the machine may change when the blast components start to wear. The operator should always note the blast pattern during normal cleaning and make adjustments or replace parts when necessary. (See Section 5 and 8.)
6. Check dust level in the dust collector at regular intervals while keeping track of the number of feet traveled. This will establish a cleaning interval for the dust collector.

4.3 Shut Down

1. Close the abrasive valve.
2. Turn the main power to OFF.
3. Turn dust collector off.
4. Be sure all rotating parts are fully stopped and the 1-8DEZ is in Maintenance Mode, as described in section 1.2, before attempting to inspect or maintain the blast unit or the dust collector.
5. At the end of each job, the dustbin and the shot hopper should be emptied. Abrasive and dust left in the 1-8DEZ or the dust collector will stick together when exposed to moisture.



Section 5

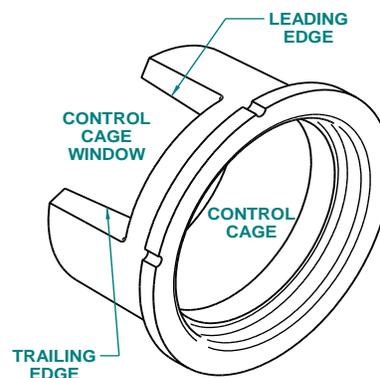
5.1 Setting the Correct Blast Pattern

5.1 Setting the Correct Blast Pattern

Setting the correct blast pattern is essential before an even, clean profile can be achieved when shotblasting with a Blastrac[®] machine. An uneven blast pattern can leave shadows on either side of the floor surface and can cause premature wear to the internal components. The importance of setting the proper blast pattern cannot be overstressed.

There are four major factors that can affect the blast pattern. They are:

1. **Wheel Rotation** - The blast wheel must be rotating in the proper direction indicated on the housing that surrounds the blast wheel. Most Blastrac[®] machines rotate in a clockwise direction when looking at the machine from the operator's position.
2. **Worn Wheel Kits** - Wheel kit components such as blades, impellers and control cages vary in different machines but perform similar functions. These kits must be periodically replaced to ensure that they produce the proper blast pattern and to eliminate excessive wear, which can cause internal component damage.
3. **Abrasive Size** - The size of the abrasive will affect the blast pattern. Different sized abrasives have different masses that will alter the "hot spot" setting. See Figure B. page 22.
4. **Control Cage Setting** -The setting of the control cage is the most critical factor in determining where the blast pattern is directed. Ideally, the blast pattern is centered so that the area being cleaned receives a consistent, even distribution of high velocity abrasive. Altering the setting of the control cage can move the blast pattern to the left or right depending on which direction the control cage is moved. Moving the control cage too far in either direction will direct the abrasive blast pattern to the side of the machine and cause premature wear to the internal components. The exact positioning of the control cage is done by trial and error.



5.1 Cont'd

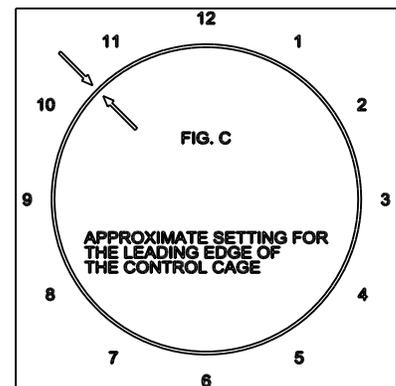
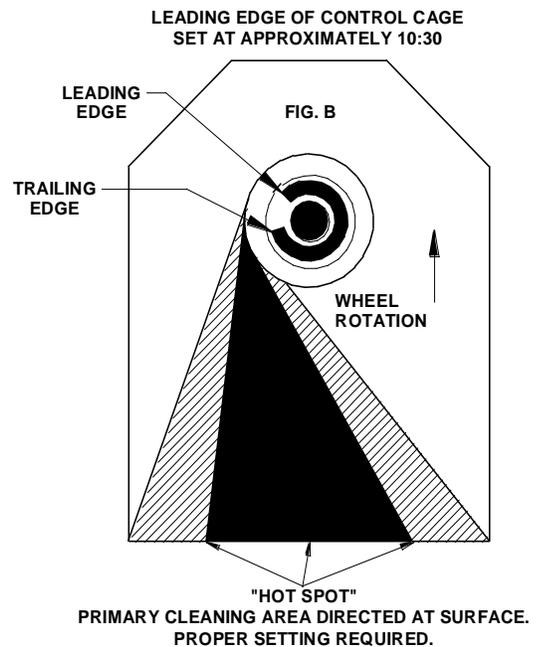
- The initial setting of a machine rotating in a counter-clockwise direction should be between 8:30 and 10:30 as indicated in Figures B and C. The resultant-cleaning path will determine the final setting.

These settings will vary with the abrasive size and the surface being cleaned. Once the proper control cage setting is obtained, the blast pattern should remain consistent. If the pattern begins to vary, check the blast wheel components for wear.

Control Cage "Trial & Error" Setting

The initial setting of the control cage for a machine that has the blast wheel rotating in a counter-clockwise direction is between 8:30 and 10:30. The leading edge should be at 10:30. Refer to Figures A, B and C. Place a 3/16" or 1/4" steel plate beneath the machine and blast with the abrasive control valve at full open for about 45 seconds. Do not move the machine during this test. The resulting "hot spot" should be centered as it appears on Figure B. If the "hot spot" is too far to the left, rotate the control cage in a counter-clockwise direction about 1/4" and recheck the blast pattern on the test strip. Small changes in the rotation of the control cage can move the "hot spot" significantly. If the "hot spot" is too far to the right, rotate the control cage in a clockwise direction. Once again, move the control cage in small increments until the blast pattern ("hot spot") is centered.

Note: If the blast pattern cannot be centered, check the blast wheel and be sure it is properly mounted and seated on the wheel hub located behind the blast wheel. The two pins on the hub must be seated on the back of the blast wheel before the wheel can be secured. This check must be made whenever the blast wheel is changed.





Section 6

6.1 Changing the Edging Mode

6.1 Changing The Edging Mode

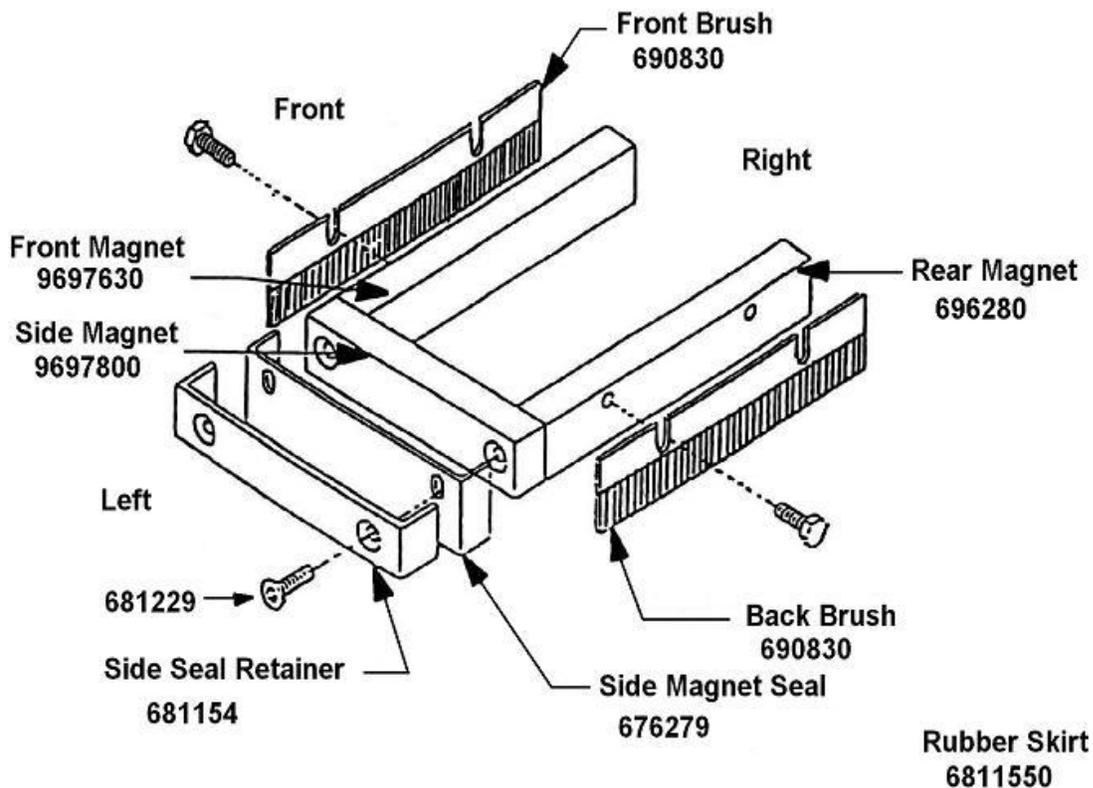
Refer to Figure Number 5

The model 1-8DEZ is capable of cleaning surfaces within 1 / 2 inch of vertical obstructions. (This is along the side of the machine. The 1-8DEZ can be pushed as close as 1-1/2 inches from the front of the machine.) Performing the following steps sets up the edging mode:

1. Remove the two hex screws holding the retainer, seal and magnet on the side of the machine where the edging is required. This requires a 3/16" hex key. Be careful to keep abrasive from entering the holes in which the screws were secured. You may want to cover these two holes with duct tape while in the edging mode to protect the threads.
2. Move the machine to the area in which the edging will be done and see if the machine can be moved freely. Adjust the height of the machine if necessary.
3. Begin cleaning in the normal fashion. Do not blast when the machine is away from the vertical surface in the edging mode since the magnetic seal is no longer present. Abrasive will disperse more readily from the side if the magnet is not in place. Keep in mind that the machine will tend to lose more abrasive while in the edging mode since the magnetic seal has been removed.

WARNING: DO NOT USE THE MACHINE FOR NORMAL BLASTING WHEN IT HAS BEEN PREPARED FOR EDGING. THE MAGNET, SEAL AND RETAINER MUST BE REINSTALLED FIRST.

WARNING: CLOSE THE ABRASIVE VALVE BEFORE MOVING THE 1-8DEZ AWAY FROM THE VERTICAL SURFACE. FAILURE TO DO SO MAY EXPOSE NEARBY PERSONNEL TO HIGH VELOCITY ABRASIVE.

Right Side Edge Mode

This magnet and seal illustration shows how the machine is set during the right side edging mode. This is achieved by simply removing the right side retainer, right side magnet seal and the right side magnet. For normal (non-edging) operation, the right and left side arrangements are identical. For left hand edging, reverse the above arrangement from right to left.

MAGNETIC SEAL ASSEMBLY
FIGURE #4



Section 7

7.1 Equipment Calibration

7.1 Equipment Calibration

The following list of recommended set-up adjustments and reference values should be used to help obtain the optimal performance from your blast cleaning system. These should be used as starting points and can be fine-tuned after trial and observation.

WARNING: CALIBRATION OF ITEMS 1, 2 AND 6 MUST BE MADE WITH THE 1-8DEZ IN MAINTENANCE MODE (SEE SECTION 1.2).

1. **Blast Housing Height** - The bottom of the blast housing (magnets) should be between 1/8" to 1/2" above the surface being cleaned. A smaller clearance can be obtained for smooth surfaces but height may need to be adjusted for rough surfaces.
2. **Control Cage Setting** - See Section 5, "Setting the Correct Blast Pattern", figures A, B and C.
3. **Abrasive Selection Recommendations** (Steel Shot Size)
 - Brush blast of smooth concrete: S-170 to S-280 (smaller size will produce a brighter etch)
 - Rough concrete etch for coatings: S-330
4. **Exhaust Hose Length** - 25 feet of 2" I.D. exhaust hose; longer or shorter sections of hose may affect abrasive consumption or abrasive cleaning. Contact your Blastrac[®] representative before changing the exhaust hose length.
5. **Dust Collector** – Inspect Dust Collector at 15-minute intervals to see how quickly the dustbin is being filled. Do not allow dustbin to overfill. Once fill time is determined, dump the dust at the corresponding time interval.
6. **Handle Height** – The handle height can be adjusted to match the individual operator's height. This is accomplished by loosening the knobs and then moving the handle to the desired position. Secure the knobs when finished.



Section 8

8.1 Wear Parts

8.2 Maintenance Log

Wear Parts

8.1 Wear Parts

Certain portions of the blast unit are continuously exposed to high velocity abrasive. These areas and their corresponding parts must be periodically inspected for wear and erosion to keep from damaging components that are not normally exposed to the abrasive blast. The parts are identified on the service drawings later in this manual along with part numbers. These ‘wear’ parts are designed to be easily replaced by the machine operator when necessary. A preventive maintenance program should be performed to monitor these areas on a regular basis. The following list outlines these areas and the time intervals involved.

WARNING: THE 1-8DEZ MUST BE PLACED IN MAINTENANCE MODE (SEE SECTION 1.2) PRIOR TO CARRYING OUT ANY INSPECTION OR PART REPLACEMENT ON THE 1-8DEZ.

Part	Inspection Interval	Wear Indication	Replacement Method
Blast Wheel	5 Hrs.	Blades Worn by more than 50%	Remove hub nut and replace (see section 9.1)
Feed Spout	50 Hrs.	Thin at Wheel Entry	Remove and replace
Control Cage	5 Hrs.	Eroded Edges	Remove and replace; adjust pattern
Rebound Chamber	50 Hrs.	Thin Sections; Wear on Welds.	Contact Blastrac [®] Service Center
Abrasive Hopper	20 Hrs.	Thin Sections; Wear at Welds; warpage	Contact Blastrac [®] Service Center
Liners	15 Hrs.	Thin Sections; Warpage; Holes	Loosen bolts, remove and replace
Blast Wheel Hub	Blast Wheel Replacement	Abrasive wear; pins missing	Remove and replace

Keep in mind that other portions of the machine require periodic inspections and maintenance. The parts mentioned above are associated with the internal abrasive blast. The power cords and exhaust hose, for example, also require close inspection and maintenance as described in other sections of this manual.

If the power cord(s) are found to have splits or cuts, they must be repaired in a manner that brings them to a same condition, function and safety, as that of a new cord(s). If this is impossible, they must be replaced.

8.2 Maintenance Log

MAINTENANCE LOG

Liners – Inspect for wear	Checked	<input type="checkbox"/>	OK	<input type="checkbox"/>	Change	<input type="checkbox"/>
Blastwheel/cage - Inspect for wear	Checked	<input type="checkbox"/>	OK	<input type="checkbox"/>	Change	<input type="checkbox"/>
Filters - Inspect – clean or replace	Checked	<input type="checkbox"/>	OK	<input type="checkbox"/>	Change	<input type="checkbox"/>
Power Cords - Inspect for splits or cuts	Checked	<input type="checkbox"/>	OK	<input type="checkbox"/>	Change	<input type="checkbox"/>
Shot valve – Inspect	Checked	<input type="checkbox"/>	OK	<input type="checkbox"/>	Change	<input type="checkbox"/>
Seals – Inspect for wear	Checked	<input type="checkbox"/>	OK	<input type="checkbox"/>	Change	<input type="checkbox"/>
Magnets & Seals – Inspect for wear	Checked	<input type="checkbox"/>	OK	<input type="checkbox"/>	Change	<input type="checkbox"/>



Section 9

9.1 Blast Wheel Replacement

9.1 Blast Wheel Replacement

WARNING: THE 1-8DEZ MUST BE PLACED IN THE MAINTENANCE MODE (SEE SECTION 1.2) PRIOR TO ATTEMPTING TO INSPECT, CHANGE, OR ADJUST THE BLAST WHEEL.
--

1. Loosen the two control cage clamps that secure the feed spout and control cage.
2. Remove the feed spout and the control cage.
3. Outline the area around the control cage mounting assembly with a marking pen or pencil. This will allow for easier alignment when reinstalling this part later during this procedure. Remove the four mounting nuts, flat washers and lock washers that secure the control cage mounting assembly to the blast housing. Do not loosen any other screws on the control cage mounting assembly since they are used to set the gap between the blast wheel and the control cage. Remove the control cage mounting assembly.
4. Remove the arbor nut and remove the blast wheel.
5. Check the wheel hub for wear and replace if necessary.
6. Install new blast wheel using the arbor nut that is included in the wheel kit. Be sure that the new blast wheel is seated properly on the wheel hub before tightening the socket head cap screw.
7. Reinstall the control cage mounting assembly to the blast housing using the outline made before removing the assembly.
8. Install the new control cage that was included with the wheel kit. Rotate the wheel by hand to be sure the control cage and the wheel do not make contact. The initial window setting for the control cage should be between 9:30 and 11:30.
9. Reinstall the feed spout.
10. Energize the grinder momentarily to check for good balance and proper clearance before shotblasting.



9.1 Cont'd

11. See Section 5, "Blast Pattern", before adjusting the control cage for the correct blast pattern.

The assembly of the blast wheel and its associated parts are illustrated on Figure 1 page 13 in Section 3, Description and Function. Original Blastrac[®] wheels are designed and dynamically balanced for use at high speeds. Use of any other blast wheel may cause damage to the 1-8DEZ and/or injury to operator and surrounding personnel.



Section 10

- 10.1 Blast Unit – Mechanical Troubleshooting
- 10.2 Dust Collector – Ventilation System
- 10.3 Vacuum Adjustment – Operating Tips

10.1 Mechanical Troubleshooting

WARNING: PLEASE REFER TO THE SPECIFIC SAFETY AND MAINTENANCE RECOMMENDATIONS THROUGHOUT THIS MANUAL AND THE MANUALS OF THE COMPONENTS BEING MAINTAINED BEFORE ATTEMPTING ANY MAINTENANCE. FAILURE TO ADHERE TO THESE RECOMMENDATIONS COULD RESULT IN EQUIPMENT DAMAGE, SERIOUS INJURY OR DEATH.

Trouble	Possible Cause	Remedy
Excessive vibration - usually indicates that the blast wheel is out of balance. This condition will eventually cause bearing failure in the motor or bearing unit.	a. Unevenly worn wheel. b. Chipped, broken blades.	a. Replace wheel kit. Check separator and ventilation system. b. Chipped or broken blades will permanently unbalance the blast wheel and can cause damage to other components. Change wheel kit immediately.
Excessive noise - usually indicates misaligned components which causes premature wear and component failure.	a. Improper clearances or alignments between rotating parts, usually the control cage and the blast wheel.	a. Check alignment of control cage and wheel. Allow sufficient clearance between rotating parts.
Excessive wear on blast housing rebound chamber/liners.	a. Improper setting of control cage.	a. Abrasive is being misdirected into internal components instead of work area. Check blast pattern and readjust.
Abrasive leakage.	a. Improper sealing. b. Feed spout c. Improper control cage setting. d. Abrasive valve setting	a. Check all seals for wear. b. Check feed spout alignment and rubber seal. c. Abrasive rebounding from side of machine. Check blast pattern. d. Be sure abrasive valve closes when handle is released. Readjust if necessary.

10.1 Cont'd

Trouble	Possible Cause	Remedy
Increased cleaning time.	<p>a. Storage hopper.</p> <p>b. Contaminated abrasive.</p> <p>c. Abrasive feed and abrasive control valve.</p> <p>d. Wheel impeller, control cage wear.</p> <p>e. Loss of consistent blast pattern, “hot spot”.</p> <p>f. Choked wheel.</p>	<p>a. Check abrasive level.</p> <p>b. Abrasive may contain substantial percentage of fines and contaminants. Check ventilation.</p> <p>c. Check for obstructions in the abrasive feed, i.e. feed spout, abrasive control valve, and separator screen.</p> <p>d. May be worn. Replace wheel kit.</p> <p>e. Check blast pattern. Check the blast wheel for proper seating with the wheel hub.</p> <p>f. Close abrasive valve and gradually reopen. Check abrasive valve operation.</p>
Machine hang-up.	<p>a. Uneven work surface/ floor obstruction.</p>	<p>a. Pull up on steering handle to raise machine to clear small obstructions or uneven work surfaces. Shut abrasive valve if obstruction cannot be cleared. Pull back machine to clear. <u>Use caution when raising seal due to high velocity abrasive exposure.</u></p>
Loss of cleaning action.	<p>a. Machine travel speed too fast.</p> <p>b. Abrasive contaminated.</p>	<p>a. Slow travel speed.</p> <p>b. Clean storage hopper and replace abrasive. Check ventilation system.</p>

10.2 Dust Collector – Ventilation System

Note: Once the Dust Collector has been in operation for several minutes, a stable operating level will result. Sudden changes in operation can usually be traced to a malfunction.

Trouble	Possible Cause	Remedy
Contaminated abrasive - fines and contaminants not being removed from abrasive.	<p>a. Very soft concrete removal. Excessive dust quantities entering system (will cause excessive component wear).</p> <p>b. Insufficient airflow being delivered by dust collector.</p>	<p>a. Increase machine speed to reduce the amount of concrete removal or reduce abrasive flow to wheel.</p> <p>b. Check filter: Clean or change if necessary.</p>
Visible dust discharge.	<p>a. Torn, punctured or improperly installed filter cartridges.</p> <p>b. Improper filter installation.</p>	<p>a. Check filters. Replace or reinstall.</p> <p>b. Refit properly.</p>

10.3 Vacuum Adjustment – Operating Tips

For normal concrete surfaces, Blastrac® does not recommend using more than the 25 feet of exhaust hose supplied with the blast system. Adding additional hose can cause insufficient suction, which will allow unwanted dust and contaminants to accumulate in the abrasive, thereby causing premature wear to the blast wheel and liners. Additional hose can only be added when cleaning steel surfaces. Contact your Blastrac® representative for your specific steel cleaning application.

Normal shotblasting with the blast unit will usually be accomplished with the vacuum adjustment gate partially open. Too much suction will sometimes allow abrasive to be pulled from the blast unit and deposited into the dustpan. This is particularly true when using small sizes of abrasive such as S-170 and S-230. A period of trial and error may be necessary for specific job applications. Generally speaking, the more dust generated by your shotblasting unit, the greater the suction you will need from the dust collector to keep the abrasive as clean as possible.



Section 11

11.1 Specifications – Blast Unit



11.1 Specifications – Blast Unit

1-8DEZ MECHANICAL DATA	
Length (Base)	24 inches
Length (including handle in normal position)	45 inches
Height (excluding handle)	19.5 inches
Height (including handle in normal position)	38 inches
Width	12-3/8 inches
Weight	123 pounds
Vacuum Hose Length	25 feet
Production Capacity	Approx. 215 square feet / hour
Cleaning Path	8 inches
Power Source	110 VAC
Travel Speed	Manual

Section 12

12.1 Recommended Spare Parts List

12.1 Recommended Spare Parts List

Part #	Description
4923050-EU	Wheel Kit
690825	Liner/Left Hand Side
690826	Liner/Right Hand Side
497307	Liner/Top
P000001	Abrasive Control Valve
**967577	Feed Spout
**684912	Feed Spout Seal
*P002639	Arbor Nut

*Items included in Wheel Kit.

**Items included in Abrasive Control Valve kit



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Product Warranty

Standard Equipment Products:

Blastrac warrants its Blastrac Standard Equipment Products against defects in quality of material and workmanship, under normal and proper use for a period of **1 Year** from the date of delivery, as noted on the returned warranty registration card, or, in the case of **Rental Fleet Machines, 180 Days** from the date of assignment to Rental Fleet. This warranty is non-transferable and is extended to machines purchased and entered into the normal service of surface preparation by a recognized professional or qualified contractor. Blastrac makes this warranty only to the buyer who purchases the products directly from Blastrac or its Authorized Distributor. This warranty does not include expendable parts such as, but not limited to, blades, blast wheels, wear plates, liners, seals, and electrical components. All purchased parts utilized in the manufacture will be honored to the original manufacturer's specified warranty.

If the buyer does not return the warranty card or register the product online at www.blastrac.com within 30 days after taking delivery of Blastrac Standard Equipment Products, the warranty period is limited to 6 months from the date of delivery noted on shipping receipt.

Hand Tool Products:

Blastrac warrants its BLASTRAC Hand Tool Products, including hand grinders and accessories, against defects in material and workmanship under normal and proper use for a period of **90 days** from the date of delivery or, in the case of Rental Fleet Machines, from the date of assignment to a Rental Fleet. Blastrac makes this warranty only to the buyer who purchases the products directly from Blastrac or its authorized distributor. This warranty does not include expendable parts such as blades.

If the buyer does not return the warranty card, or register online at www.blastrac.com within 15 days after taking delivery of Blastrac Hand Tool Products, the warranty period is limited to 30 days from the date of delivery noted on shipping receipt.

WARRANTY TERMS AND CONDITIONS:

1. Blastrac's obligation under this warranty is limited to the replacement or repair, at Blastrac's option, of products and does not include, labor, the cost of transportation, loss of operating time, or normal maintenance services.
2. This warranty does not apply to failure occurring as a result of abuse, misuse, negligence, corrosion, erosion, normal wear and tear, alterations or modifications made to products without the express written consent of Blastrac.
3. The buyer must submit all warranty claims no later than thirty (30) days after buyer becomes aware of the basis for any such claim, or should have become aware of the basis for any such claim in the exercise of reasonable diligence.

To return parts for warranty consideration, please call Blastrac Customer Service at **800-256-3440**. Your customer service representative will obtain the necessary information to complete the Blastrac Returned Merchandise Authorization (RMA) Form. Blastrac will then send the RMA form to the customer authorizing the return of the parts for warranty evaluation. The parts must be received within sixty (60) days following the RMA origination date or the warranty claim will be denied. Once the parts are received they will be evaluated for warranty.

If the customer cannot wait for the evaluation/replacement of the parts during this process, the customer must issue a new purchase order to Blastrac for the replacement parts before they can be shipped. Once the evaluation process is complete and parts are deemed a valid warranty claim, a credit will be issued against this invoice.

4. The buyer may not return Blastrac products without written authorization to do so through a Blastrac RMA.

5. Blastrac reserves the right to inspect and determine the scope of its warranty responsibilities for any returned Blastrac products.

6. Blastrac makes no warranty with respect to accessories it does not manufacture, including but not limited to, engines, motors, batteries, tires and all other parts. See component manufacture warranty.

7. Blastrac reserves the right to make product changes or improvements without prior notice and without undertaking any obligation for such changes or improvements on previously sold products.

8. The above warranty conditions can only be altered by Blastrac. Blastrac must confirm alterations in writing for each specific transaction.

9. Blastrac reserves the right to modify this warranty for used or demo products on an individual transaction basis. Blastrac will include warranty modifications on its invoices for used or demo products.

10. BLASTRAC DOES NOT AUTHORIZE ANY PERSON, REPRESENTATIVE, SERVICE OR SALES OUTLET TO MAKE ANY WARRANTY DIFFERENT FROM THIS PRODUCT WARRANTY.

11. EXCEPT FOR ITS PRODUCT REPAIR OR REPLACEMENT OBLGATIONS DESCRIBED IN THIS PRODUCT WARRANTY, UNDER NO CIRCUMSTANCES SHALL BLASTRAC BE LIABLE TO THE BUYER, OR ANY OTHER PERSON, FOR ANY DIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE BLASTRAC PRODUCT, OR FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER, INCLUDING WITHOUT LIMITATIONS, DAMAGES FOR ANY LOSS OF GOODWILL, WORK STOPPAGE, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES.

12. BLASTRAC MAKES NO OTHER PRODUCT WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.



IMPORTANT!

TO THE DELIVERING DISTRIBUTOR OR END USER

To ensure the proper warranty coverage is extended to the owner of this machine, fill in the necessary information below **COMPLETELY** and **ACCURATELY** and retain for your records. **Go to www.blastrac.com and register online.** Click on the Register icon in the left column of the homepage, and fill out the product registration form with the same information that will be recorded here.

The warranty period will start upon the delivery date of the machine.

The distributor or the end user must provide the machine warranty information when the machine is delivered. Registration of the machine will extend the warranty period from the recorded delivery date entered with product registration. **Failure to comply will make any and all warranties on the equipment void after 6 months.**

OWNER/END USER'S REFERENCE INFORMATION

Delivery Date _____	Machine Model No. _____
Delivering Distributor's Name and Address _____ _____ _____ _____	Machine Serial No. _____ Modifications _____ _____ _____ _____
Signature of Delivering Distributor's Representative _____	_____

Blastrac is a registered trademark of Blastrac,NA
Fold and Detach Here if Mailing

Warranty Registration

IMPORTANT! To ensure that your Blastrac® machine is covered under warranty, please provide the information recorded here by registering online at blastrac.com, or complete this page and fax to 866-485-1046, or if you prefer, detach and mail to:

Blastrac, 13201 North Santa Fe Avenue, Oklahoma City, OK 73114-9901

(Please print legibly)

Company _____
Address _____
City, State, & Zip _____
Telephone No. _____ Contact Person _____
Date of Purchase _____ Date Received _____
Machine Model No. _____ Serial No. _____
Distributor Name _____
End User Name _____
End User E-mail _____