



# **STREAMER**

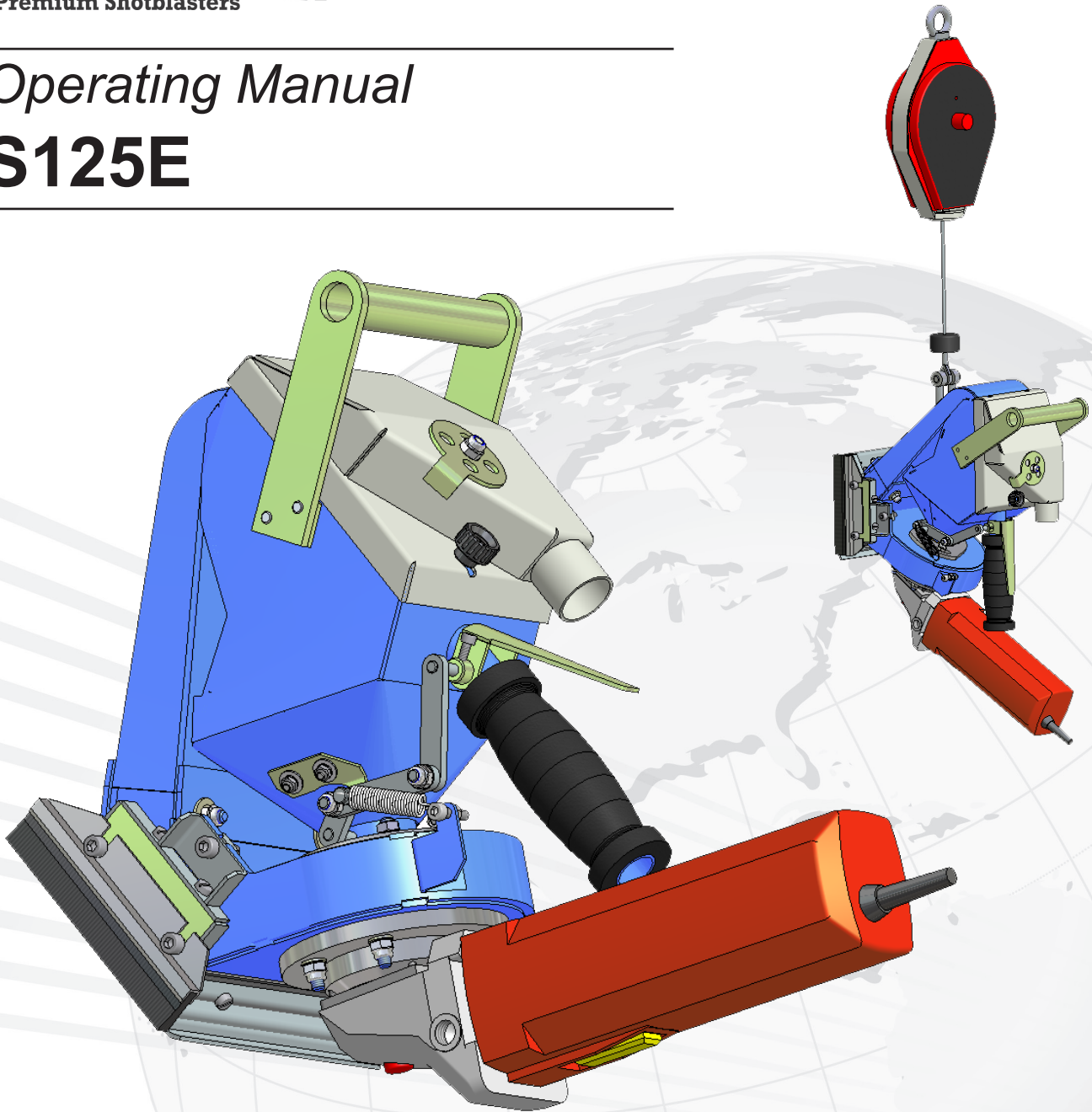
Premium Shotblasters

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## *Operating Manual*

# **S125E**

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***Your Partner for Mobile Surface Preparation***  
[IMPACTSamericas.com](http://IMPACTSamericas.com)

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***Please note: The following safety instructions must be followed as shown in this operating manual. Failure to do so may result in hazard to health or possible death.***

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IMPACTS Americas  
1384 Bungalow Rd.  
Morris, IL 60450 USA  
(815) 941-4800  
(815) 941-4600 Fax  
[www.IMPACTSAmericas.com](http://www.IMPACTSAmericas.com)

## Chapter 1.0 Technical Data

- 1.1 Rating
- 1.2 Unit Specifications
- 1.3 Operative Range and Correct Usage
- 1.4 Stand-by Power Supply (Generator)
- 1.5 Advice for Operator of the Blast Machine
- 1.6 Machine Type Designation

### 1.1 Rating

Machine: IMPACTS Blast Machine  
 Machine-Type: S125E  
 Manufacturer: IMPACTS Americas  
 1384 Bungalow Rd.  
 Morris, IL 60450 U.S.A.

### 1.2 Unit Specifications

	<b>Machine S125E</b>	<b>Dust Collector (optional) DC2003P</b>
<b>Length</b>	20 in. (500 mm)	32 in. (810 mm)
<b>Width</b>	7 in. (170 mm)	25 in. (645 mm)
<b>Height</b>	14 in. (350 mm)	60 in. (1524 mm)
<b>Weight</b>	17.5 lb. (8 kg)	183 lb. (83 kg)

#### **Connected loads of the electrical system:**

<b>Power</b>	2.0 HP (1.4 kW)	3 HP (2.3 kW)
<b>Electrical Connection</b>	110-120V, 15A	230 V/50 Hz, 16A

### 1.3 Operative Range and Correct Usage



*The blast machine is designed to be used on clean, dry, horizontal surfaces without any obstacles. The machine cannot be used for any other purpose. The manufacturer will not be held liable for damages resulting from incorrect usage. In cases of wrong usage, the user will assume all risks and damages.*

## 1.4 Stand-by Power Supply (Generator)



*If the blast machine is connected to a generator, the generator must be operated in accordance with the current VDE directives (this applies especially to the protective earth conductor) in order to ensure that all safety devices are functioning and are able to eliminate possible damage to electrical components.*

## 1.5 Advice for Operators of the Blast Machine



*During the operation of the machine, it may be possible to exceed the acceptable noise levels of 85 dB(A). This is dependent on various locations and circumstances. When the noise level is 85 dB(A) or more, the machine operator and the persons working near the machine must wear sound-insulating devices.*

## 1.6 Machine Type Designation

Machine Type:	S125E
Unit / Designation:	IMPACTS Blast Machine
Working Width:	5 in. (125mm)
Drive:	Progressively adjustable 1-20m/min
Blasting Capacity:	Up to 160 SF/hr / 15 m <sup>2</sup> /h on concrete
Abrasive Consumption:	~100 g/m <sup>2</sup>
S125E Dust Hose Connection:	1.25 in. (30mm)
Recommended Dust Collector:	PM3003AR
DC2003P Dust Hose Connection:	2 in. (50mm)

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## Chapter 2.0 Safety Instructions

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- 2.1 Explanation of Warnings and Symbols
- 2.2 Organizational Measures
- 2.3 Personnel Selection and Qualification
- 2.4 Safety Precautions Applicable to Different Operating Conditions
- 2.5 Repair Work, Maintenance Activities, and Default Repair on the Job Side
- 2.6 Definition of the Safety Off Position
- 2.7 Dangerous Aspects of the Machine
- 2.8 Electrical Engineering Regulations
- 2.9 For Special Attention

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### 2.1 Explanation of Warnings and Symbols

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*The following symbols are used in the operating instructions to highlight areas of particular importance:*



#### **Operational Safety**

This symbol will be shown in these Operating Instructions next to all safety precautions that are to be taken in order to ensure prevention of injury. Follow these instructions and take special care in these circumstances. In addition to these instructions, the general safety precautions and the local accident prevention guidelines also should be followed. Please check if there are special regulations for the particular job site.



#### **Safety Goggles/ Ear Protection**

Information, instructions, and restrictions with regards to possible risks of personal injury or extensive damage to materials.



#### **Electrical Warning**

Warning against dangerous voltages.

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### 2.2 Organizational Measures

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*The Operating Instructions are to be kept near the machine and must be reachable all the times!*

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In addition to the Operating Instructions, general and legal regulations regarding accident prevention and environmental protection must be indicated every time.

Such duties may, for example, relate to the handling of hazardous substances or to the provision and wearing of personal protection equipment as well as compliance with local traffic regulations.

The Operating Instructions must be supplemented by instructions including the duty to supervise and report relating to particular local working practices; for example, work organization, work procedures, and personnel allocation.

Personnel working with the machine must read the Operating Instructions before starting the work, in particular. Chapter 2 "Safety Instructions." This must be done before starting any work with the machine. This applies to certain activities such as setting up the machine, carrying out maintenance work, or training staff to work with the machine.

From time to time, the working practices of the staff should be checked regarding awareness of safety and hazards.



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*Personnel must tie back long hair and not wear loose clothing or any jewelry. There is risk of injury in getting stuck or being drawn into moving machinery. Use personal protection equipment whenever necessary and required by regulations!*

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Take notice of all safety and hazard notices on the machine. They must be kept complete and legible.



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*If safety-critical changes occur to the machine or its performance, the machine must be shut down immediately! The cause of the fault must be determined immediately and be repaired before starting work again.*

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Changes, add-ons, or conversions which might have an influence to the safety of the machine must not be undertaken without the permission of the manufacturer. This applies in particular to the fitting and adjustment of safety devices and to welding on major and load bearing parts.

Spare parts must always comply with the technical requirements and the specification of the manufacturer. Original spare parts by the manufacturer are guaranteed compliant.

Inspection intervals and intervals for recurring checks specified in these Operating Instructions must be followed. At the same time, it is necessary to meet all legal requirements. To perform maintenance work correctly, it is important to be equipped with proper tools for the task in question.

The location and the operation of fire extinguishers must be made known at each job site. Take note of the facilities for fire reporting and fighting fires!

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## 2.3 Personnel Selection and Qualification

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### *Fundamental Duties*



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*Only trained personnel can operate and perform work on the machine. **Note the statutory minimum age!** Clearly specify the responsibilities of personnel for operation, setup, service, and maintenance work.*

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Clearly define the machine operator's responsibilities regarding traffic safety regulations and empower him/her to decline instructions from third parties who are not complying with the safety requirements.

Personnel being trained or individuals testing the equipment must always be supervised by an experienced operator.



*Work on the electrical parts of the equipment may only be undertaken by a skilled electrician or by a trained person under the guidance and supervision of a skilled electrician in accordance with the electrical engineering regulations.*

## 2.4 Safety Precautions Applicable to Different Operating Conditions

Avoid any method of working that impairs safety! All precautions have to be taken. The machine must only be used in a safe and functional condition.



*Only operate the machine when all safety devices and related safety equipment, e.g. detachable safety devices, emergency stops, and suction devices, are present and operational!*

The machine has to be checked visually at least once a day for any damage and defects.

In the event of operational malfunctions the machine must be shut down immediately and secured. The error must be rectified before starting the machine again.



*Secure the work area around the machine in public areas providing a safety distance of at least 7 ft./ 2m around the machine.*

### **Default must be rectified immediately!**

Start up / switch off operations and control devices have to be handled in accordance with the Operating Instructions.



*All persons in the proximity of the machine must wear safety glasses with lateral protection as well as safety shoes. Ear protection may be required. The operator is required to wear close fitting protective clothing.*

Use only extension cables for extending the main cable that are sized and marked in accordance with the overall power consumption of the machine following valid VDE and local guidelines.

Before starting the machine ensure that no person in the job site can be endangered when the machine starts running.



*Do not switch off or remove the exhaust and ventilation devices when the machine is running!*

## 2.5 Repair Work, Maintenance Activities, and Default Repair on the Job Site

### **Mechanical Service Work**



*These activities can only be undertaken by qualified personnel. Please follow any special safety instructions in the various chapters on servicing the machine (see Chapter 7).*

Before starting any servicing work on the machine, put the machine in the Safety off position (as described in Chapter 2.6) in order to prevent the machine from being switched on accidentally.

Adjustments, servicing, and inspection work and inspection intervals specified in these Operating Instructions as well as any information on the replacement on parts and systems of the machine must be undertaken and/or complied with.

The operator must be informed of any maintenance or repair work done to the machine.

Startup and shut off procedures must be done in accordance with the Operating Instructions during all work related to the use, repair, and adjustment of the machine. The repair personnel must also be aware of the safety devices during inspection, maintenance, and repair.



*The machine must be shut off completely for repair or maintenance work. Please disconnect the main plug in order to prevent the machine from being switched on accidentally.*

The dust collector bin must be emptied before transportation. Please handle in accordance with the regulation how to dispose the dust and make sure that you meet the local regulations. Do not use any aggressive cleaning materials! Use only lint-free cleaning cloths.

Always remember to tighten any screw connections that are undone during servicing and maintenance work!

If safety devices need to be dismantled during setting up, servicing, or repair work, these safety devices must be reinstalled and inspected immediately after completion of the service.

Make sure that process materials and replacement parts are disposed of safely and in an environmentally-friendly manner.



*Work on the electrical parts of the equipment may only be undertaken by a skilled electrician or by a trained person under the guidance and supervision of a skilled electrician in accordance with the electrical engineering regulations.*

Make sure that electrical components used for replacement purpose comply with the original parts and are correctly adjusted if necessary.



## 2.6 Definition of the Safety Off Position

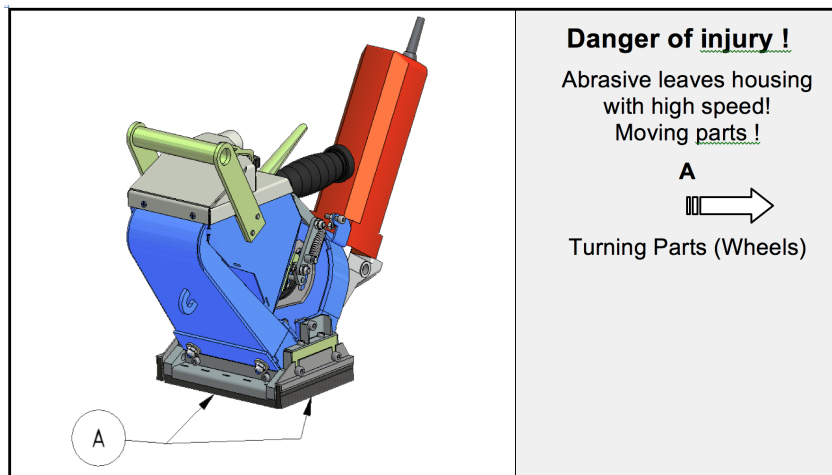
The safety off position is the position of the machine when it cannot generate any hazard. Setting the machine in the safety off position means:

1. Switch off the blast machine.
2. Switch off the dust collector.
3. Wait for standstill of all drives.
4. Pull out main plugs.
5. Secure the machine against accidental start up.

## 2.7 Particular Dangerous Aspects of the Machine



*Every machine not used according to the regulations may be hazardous for personnel during operating, setting-up, and service. The operating authority is responsible for compliance with the safety regulations during operation and maintenance of safety devices supplied with the machine as well as the provision of appropriate additional safety devices.*



## 2.8 Electrical Engineering Regulations



*Work on the electrical parts of the equipment may only be undertaken by a skilled electrician or by a trained person under the guidance and supervision of a skilled electrician in accordance with the electrical engineering regulations.*



*Use only extension cables for extending the main cable that are sized and marked in accordance with the overall power consumption of the machine following valid VDE and local guidelines. In case there is any question, ask the manufacturer or a skilled electrician.*



*The electrical parts of the machine must be inspected regularly. Please note in particular the specified recurring inspections according to BGV A3 or local regulations. Defects such as loose connections or scorched cables must be rectified immediately. Call a skilled electrician or the IMPACTS customer service.*



If work on live parts is necessary, a second person must be deployed who can pull out the main plug in an emergency. The working area must be sealed with a red and white safety chain and a danger sign. Use tools that are insulated against voltages.

Only start work once you are familiar with the electrical engineering regulations that apply to your area.

Only use voltage seekers that comply with the regulations when troubleshooting. From time to time, check voltage seekers to ensure that they are operationally efficient.

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## 2.9 For Special Attention

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Use only proper and default free tools for your work. Damaged tools have to be repaired immediately or be replaced.

Use safety equipment and clothing (e.g. safety glasses, safety shoes, safety gloves) during operation of the machine at all times for your safety.

***Please instruct your operators and the repair personnel about the following points:***

- Greasing, cleaning, and all repair work is only allowed if the machine is in the safety off position (see Section 2.6).
- No one is allowed to open or remove safety covers while the machine is running.
- Replace all safety covers and safety devices after cleaning, repair, and maintenance work.
- Do not touch moving parts or walk into the working path of the machine.
- Before start up of the machine after any cleaning, repair, or maintenance work, ensure that no person in the working area could be endangered by the machine.

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## Chapter 3.0 General Information

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- 3.1 Operative Range
- 3.2 Scope of Supply
- 3.3 Description of the Machine
- 3.4 Operating Elements
- 3.5 The Wheel Kit
- 3.6 The Separator
- 3.7 Abrasive sealing
- 3.8 Abrasive Media
- 3.9 Selecting Abrasive Media
- 3.10 Care and Maintenance

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### 3.1 Operative Range

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The IMPACTS blast machine S125E is a downward blasting machine with a closed abrasive circuit designed for the pre-treatment of horizontal and vertical surfaces. The bouncing impact of metallic abrasive onto the surface thoroughly removes surface contaminants, coats of paint, sealants, and thin coatings.

A suitable filter unit must be connected to the machine in order to separate the dust from the abrasive. A specially designed dust collection system ensures dust-free operation of the machine and clean air at the workspace. IMPACTS recommends the DC2003P to work in conjunction with the S125E.

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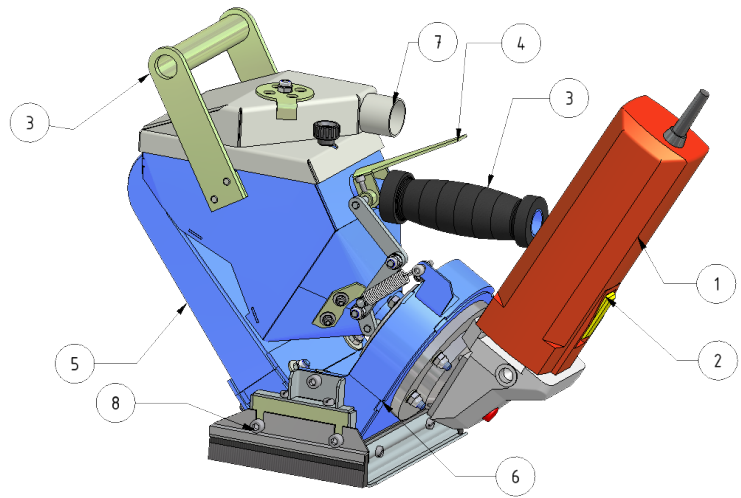
### 3.2 Scope of Supply

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- Blast Machine (S125E)
- Manual (1)
- Dust Hose (1.25 in/30mm) (*sold separately*)
- Dust Collector DC2003P (*optional*)
- Magnetic Cart (*optional*)

### 3.3 Description of the Machine

1	Wheel Motor
2	On/Off Switch
3	Handles
4	Abrasive Control Lever
5	Separator
6	Wheel housing
7	Dust Hose Connection



**The blast wheel method is a revolutionary invention based on a simple principle:**

After mechanical pre-acceleration, the abrasive is thrown onto the surface at high speed by the blast wheel. Once the abrasive has impacted the surface it rebounds into a rebound plenum. The rebound plenum deflects the abrasive into an air current separator. In this location, dust and other contaminants are removed from the abrasive so that only abrasive containing a very small amount of dust is falling back into the abrasive storage hopper to reflow to the blast wheel.

### 3.4 Operating Elements

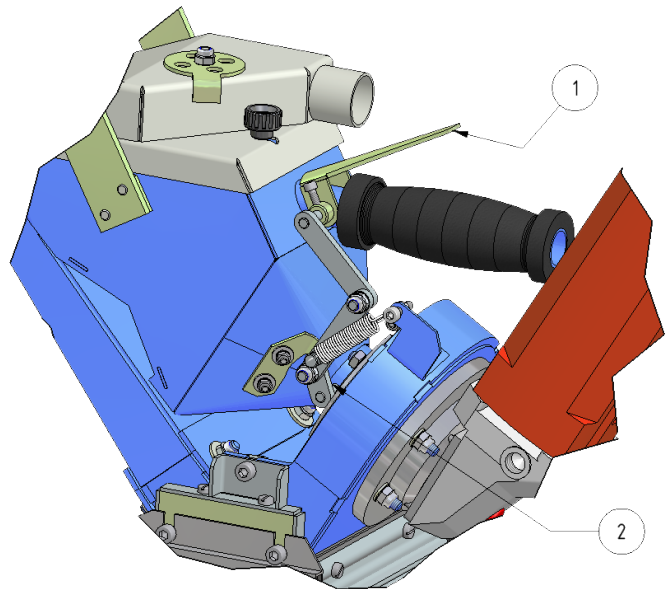
#### On/Off Switch

- By pushing and adjusting the switch on the motor, the blast wheel will be started.
- By releasing the switch, the blast wheel will stop.

#### Abrasive Control Lever

The Abrasive control lever (1) on top of the handle regulates the opening of the abrasive control valve (2).

Every change of the opening of the abrasive control valve allows a different amount of abrasive to go through the blast wheel. The valve is regulated by hand.

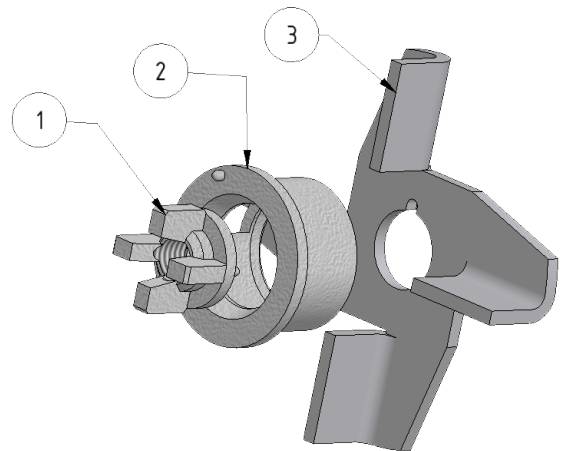


### 3.5 The Wheel Kit

The heart of every blast machine is the blast wheel (3). This will throw the abrasive to the surface using centrifugal forces.

The blast wheel is placed in a wheel housing (G) protected with replaceable wear plates (S). The blast wheel is driven by a electric motor.

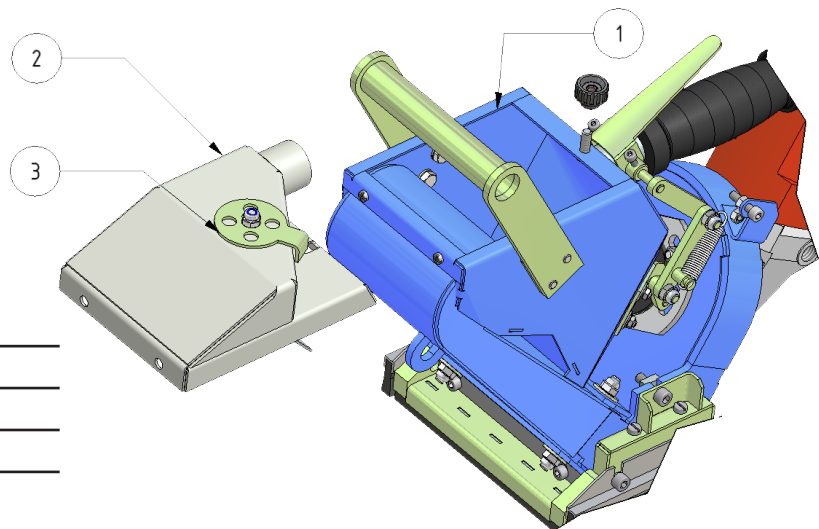
The center of the blast wheel shows a pre-accelerator, called an impeller (1) feeding dosed quantities of abrasive onto the blades of the turning blast wheel. The abrasive has to pass the opening at the Control Cage (2).



### 3.6 The Separator

The separator (1) is mounted to the end of the rebound plenum. The separator separates the reusable abrasive from the dust and brings it back into circulation.

The dust travels through the hose connector and the dust hose into the filter.



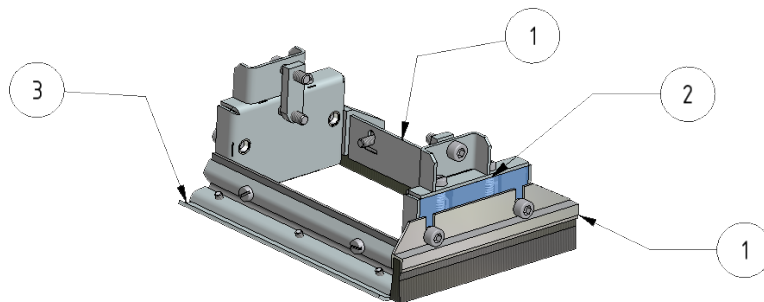
- |   |                   |
|---|-------------------|
| 1 | Separator Housing |
| 2 | Separator Cover   |
| 3 | Air Valve         |

### 3.7 The Abrasive Sealing

Located on the front and on the sides of the machine are the brush seals (1).

The sides are additionally sealed through spring operated plates (2).

On the rear, you will find a seal called a tail-seal (3). This seal slides over the surface and hinders abrasive getting out of the blast area.



### 3.8 Abrasive Media

In order to operate the IMPACTS blast machine S125E you need hardened, round abrasive.

The IMPACTS abrasives IMPACTOR S330 and S390 are standard abrasives, which can be used for most of the applications. The machine has been specially designed to use these abrasives.

The IMPACTS abrasive IMPACTOR is a very high quality blast media. It has the right rebound power to use the S125E blast machine very efficiently. The selection of the blast media is very important consideration for proper treatment to the floor surface.

### 3.9 Selecting Abrasive Media

#### **Media IMPACTOR S 330 (preferred)**

##### **Applications:**

- Creates a fine to medium texture on concrete
- Removes glazing from tiles prior to subsequent coating with anti-skid floor sealing
- Removes old impregnations and coatings about 1 mm thick

#### **Media IMPACTOR S 390 (preferred)**

##### **Applications:**

Standard abrasive, suitable for about 50-60% of all applications. Creates a medium profile on concrete. Fulfills the same purpose as Media No. 3 when a higher speed of the machine is required, i.e. on asphalt, in order to keep the thermal load low.

- Removes laitance from new concrete

- Roughening of smooth concrete or natural stone
- Removes coatings with a thickness of 1-3 mm
- Cleaning of steel surfaces



*Please take into account that the use of incorrect abrasive increases wear. Our service engineers have the experience to select the appropriate abrasive for the individual cases of application.*

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Please consult your IMPACTS customer service department if you have any questions about the selection of the best abrasive for your blast cleaning work.

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### 3.10 Care and Maintenance

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Special attendance and regular maintenance of the machine and its parts are imperative for functioning and safety.

In order to prevent unnecessary downtimes it is recommended to keep original spare and wear parts on stock as listed in the maintenance box.

A list of contents of the maintenance box is provided in Chapter 10 to enable the above mentioned work to be carried out quickly.



*All persons in the proximity of the machine in operation must wear safety glasses with lateral protection and safety shoes. The machine operator must wear close-fitting protective clothing.*

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## Chapter 4.0 Transportation

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- 4.1 General Notes
- 4.2 Manual Transportation of Machine
- 4.3 Dimensions

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### 4.1 General Notes

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*Before the machine is used for the first time, IMPACTS authorized dealers offer a course to familiarize maintenance and operating personnel with all elements of the machine. We are not liable for damage caused by incorrect use of the machine by personnel not trained by IMPACTS.*

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### 4.2 Manual Transportation of Machine

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If you transport the machine make sure that there cannot be any damage through unprofessional handling. Make sure that the machine is fixed in the vehicle. The best way to transport the S125E is in a plastic or cardboard box.



*Remove all abrasives from the machine before transport. The machine may only be lifted as shown. Weight and dimensions are shown in Chapter 1 "Technical Data."*

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#### ***The machine transportation is divided into:***

- Blast Machine S125E
- Dust Collector DC2003P
- General Accessories

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### 4.3 Dimensions

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Main dimensions and unit specifications of the machine assembly are shown in Chapter 1 "Technical Data."



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## Chapter 5.0 Start Up

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- 5.1 Preparing for Start Up
- 5.2 Start Up
- 5.2 Start Up on Vertical Surfaces

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### 5.1 Preparing for Start Up

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Move the blast machine and the dust collector to the working site.

Check the blast wheel, control cage, feed spout, all liners, and the separator for damages and wear. Worn and damaged parts have to be changed before starting the work.

Before switching on make sure that all existing protective housings are mounted and that a sufficient dust collector is connected correctly.



*All persons in the proximity of the machine must wear safety glasses with lateral protection as well as safety shoes. The operator is obliged to wear close fitting protective clothing.*



*Before start-up, operators and other personnel must be familiar with the safety regulations given in this manual.*

- Check whether all machine parts are assembled safely and correctly.
- Check all screws and other fasteners for tight seat.
- Check the abrasive storage hopper, the feed spout, and the blast wheel parts for foreign bodies and remove them.
- Check the blast wheel blades, impeller, control cage, liners, and fastening screws for damage and wear.
- Check brush seals, the rear seal, and the side plates for any wear.
- Check the tightness of the hose connections and the condition of the hose to the filter.
- Make sure the dust container of the filter unit is empty. Please comply with the local waste treatment regulations considering the removed material.
- Check the separator parts for wear and defects. Remove foreign bodies and dust deposits in order to prevent the separator from being blocked.
- Check the electrical connections for dirt and foreign body deposits.
- Check the electrical motors for dirt and other contaminants.
- Check the level of abrasive in the storage hopper. Fill up if necessary.



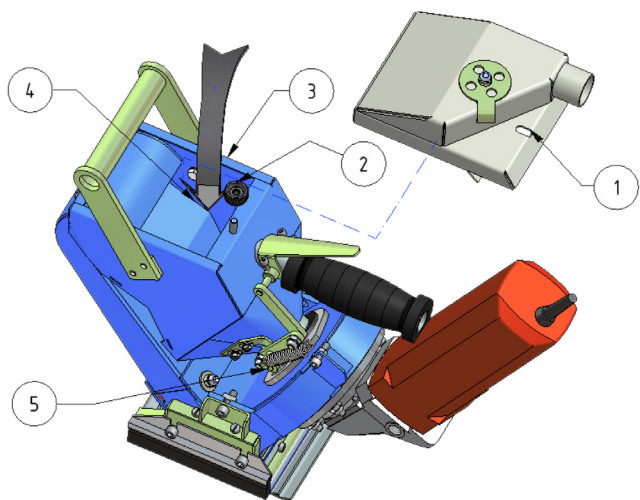
*Before start-up operators and other personnel must be familiar with the safety regulations given in this manual.*

1. Place the blast machine and the filter unit onto the surface to be treated.
2. Check the main power cable and the dust hose for damage. Replace or repair all damaged parts before starting the machine.
3. Connect the blast machine and the filter unit with the dust hose. Use hose clamps at the connections.
4. Connect the power supply cable of the blast-machine with the site supply or filter unit. Make sure that the correct electric supply is available (110v-60Hz).
5. Make sure the dust filter unit bin is empty. Comply with local waste treatment regulations considering the removal of materials.



*Check the function of the FI-switch trough by pushing the test switch!*

6. Remove the cover (1) of the separator by loosening the screws (2). Lift the cover upward and place it beside the machine while filling abrasive.
7. Fill the Separator (3) with abrasive up to ~ 60 mm below the separator opening up to the edge (4) (ca.2.5kg). Make sure, that the abrasive valve (5) is closed.
8. Replace the cover and tighten the screw.
9. Use vent on top of cover to manually adjust dust filter suction.



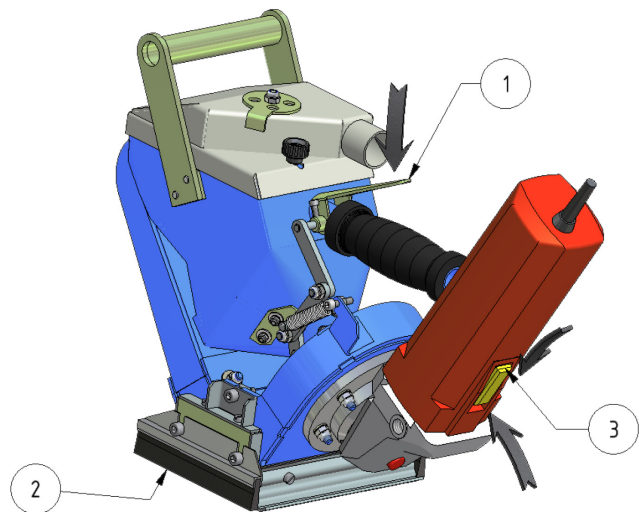
## 5.2 Start Up



*All persons near the machine must wear safety glasses with lateral protection, ear protection, and safety shoes. The operator is obliged to wear close fitted protective clothing.*

The start up of the blast machine and the filter unit should happen in the following order:

1. Switch on the filter unit. (See operating instructions of the filter unit.)
2. Check that the magnetic valve is closed. The lever (1) should be in the position as shown.
3. Make sure the machine sealings (2) are completely straight on the surface.
4. To start the wheel, move the switch downward (3) as shown and push the switch to adjust.



**BEWARE:** *When blasting concrete the abrasive feed valve should only be opened when the blast-machine is in forward motion! If the machine is at a standstill and the valve is opened deep grooves are blasted into the concrete surface within seconds.*



**WARNING:** *when the blast head is lifted from the floor, abrasive will spurt out of the sides of the blast head at high speed. If the machine is moved with the blast head raised, the abrasive feed valve must be fully closed.*

5. When the machine is moving, push the lever (1) down to the handle to operate the feed valve.
6. After having approximately blasted 1-2 ft of surface, close the abrasive valve, stop the machine, and check the blasted surface for an inconsistencies. If the blast pattern is irregular, it may be necessary to readjust the blast pattern (see Chapter "Setting the blast pattern") or select a different speed for the machine.



*Alter the travel direction only while the feed valve is closed.*



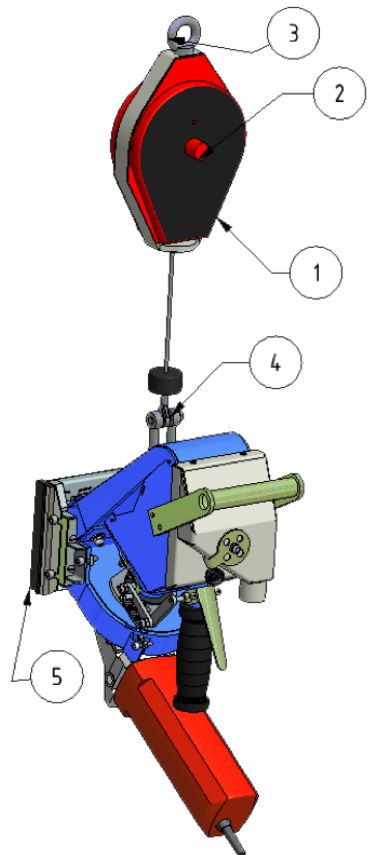
*The dustbin of the filter unit needs regular dumping. Do not overfill the bin to avoid dust exposure when opening the bin. Comply with the local waste treatment regulations when considering the removed material.*

### 5.3 Start Up on a Vertical Surface

1. Hang the balancer (1) with the eye screw (3) above the surface to be treated on a fixing point according to the safety regulations.
2. Connect the machine with the use of the shackle (4) with the balancer.
3. Before the start up, check that the machine is fixed that in a way that can only be moved over the working area. (5). If not, change the hanging point.
4. Please adjust the balancer according to the weight of the machine at the adjusting point.

**The following is shown in previous illustration — "Start Up:"**

5. Switch on the filter unit. (See operating instructions of the filter unit.)
6. Check that the magnetic valve is closed. The lever (1) should be in the position as shown.
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8. To start the wheel, move the switch downward (3) as shown and push the switch to adjust.



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The dustbin of the filter unit needs regular dumping. Do not overfill the bin to avoid dust exposure when opening the bin. Comply with the local waste treatment regulations when considering the removed material.

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## Chapter 6.0 Operation

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- 6.1 Daily Operation
- 6.2 Information about the Chart Speed
- 6.3 Recommended Blast Paths
- 6.4 Turning Off the Machine
- 6.5 Failure Occurs
- 6.6 Safety Shutdown
- 6.7 Restarting After a Fault
- 6.8 Proceedings Prior and After Longer Stoppage

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### 6.1 Daily Operation

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***This operating manual has to always be with the machine at the working site!***



*Only trained personnel can operate and perform work on the machine. **Note the statutory minimum age!** Clearly specify the responsibilities of personnel for operation, setup, service, and maintenance work.*

#### ***Instructions for daily operation of the blast machine:***

- Before starting the operation, check daily whether all machine parts are assembled safely and correctly.
- Before switching on the machine, check that all safety covers are in the right position and that the dust collector is connected correctly.
- Use only a dust collector which has the right suction power and offers an optimal dust separation.
- Treat all plugs, cables, hoses, and operating devices with special care. Avoid any contact with live wires.
- Check the surface to be treated for loose parts (Stones, screws, etc.) The surface must be swept if necessary. Remove all objects from the surface in order to avoid damage to the machine seals or serious damage to blast wheel and wheel-drive.
- Make sure that no vehicles, such as forklift trucks and other equipment, run over the electric cable and the dust hose.
- When using the dust collector, make sure to comply with the health and safety regulations and the local waste treatment regulations considering the removed material.
- Perform regular inspections in order to avoid downtimes of your blast machine (see Chapter 7 "Maintenance").



*All persons in the proximity of the machine must wear safety glasses with lateral protection as well as safety shoes. The operator of the machine is obliged to wear close-fitting protective clothing.*

## 6.2 Information about the Chart Speed

The blasting speed is achieved by manually pushing the machine.

The selection of the correct chart speed of the blast machine is essential for a good result.

The chart speed depends on the material of the surface to be blasted and the desired profiling.

The correct chart speed will be found out by observing the blasted surface and varying the speed during the blast cleaning process.

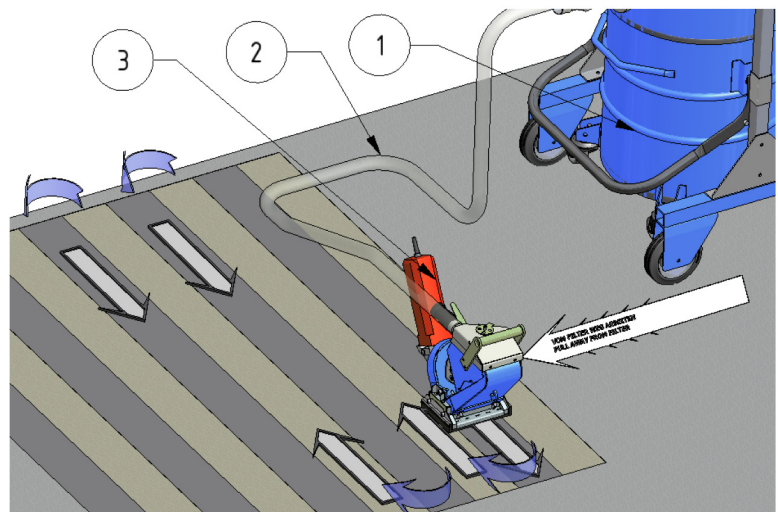
Slight profiling on concrete requires a higher speed than coarse profiling.

Blasting on steel requires a very low chart speed.

## 6.3 Recommended Blast Paths

Normal start-up and operation of the blast machine S125E has been described in Chapter 5 "Initial operation."

1. Position the filter unit near to a power supply source.
2. Connect blast machine and filter with the dust hose.
3. Place the blast machine near to the filter unit and spread out the hose as shown in the illustration.
4. Carry out blast operation in parallel tracks in a way that the dust hose and electric cable do not become twisted.



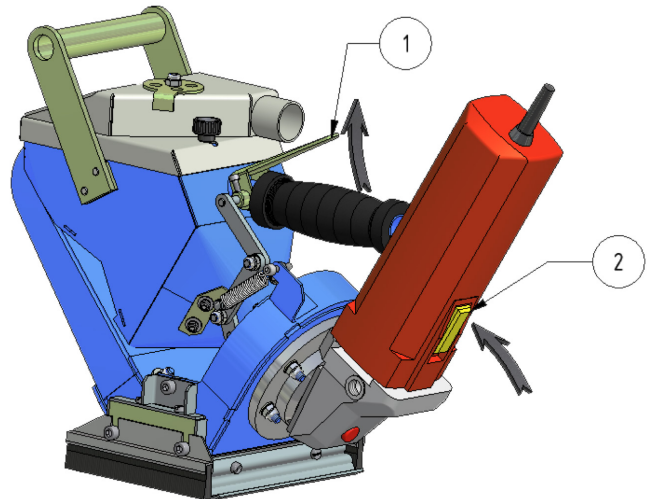
NOTE: Illustration shows the recommended blast paths leading away from the filter unit, with the hose spread out in the opposite direction, repeating the process away from the filter unit. Beware of the maximum length of cable and dust hose during operation.

5. Turn the blast machine around by closing the feed valve, then turn the machine to the right or left and guide it in an arc to position it parallel to the last blasted path.
6. Repeat this process in order to complete the surface, always moving away from the filter and toward the open surface.
7. Finally, move the dust filter to the surface that was already blasted, and finish the area where the filter was located before.

## 6.4 Turning Off the Machine

**To switch off the machine, please follow the described procedure:**

1. Close the abrasive feed valve by releasing the lever (1) while the machine is still moving forward.  
NOTE: Keep moving the machine forward as long as the feed valve is not fully closed to assure no grooves are blasted into the surface.
2. Stop the wheel motor by using the switch (2).
3. Finally, switch off the filter unit.



*If the machine will not be used for an extended period of time, pull out the main plug. Store the machine and cover by a tarp in a dry area.*

## 6.5 Safety Shutdown

The machine must be set into its “Safety Off Position” before starting any kind of maintenance or repair work. See Chapter 2 “Safety Instructions.”

## 6.6 If Failure Occurs

In a case of an emergency, immediately release the lever (1) and stop the wheel motor by using the switch (2).



*For repair work, inspection, and all maintenance work, make sure all turning parts are at a standstill and secure the machine in the safety-off position (Chapter 2).*



*Regardless of the following information in Chapter 7, the local safety regulations are valid in any case for the operation of the machine.*

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## 6.7 Restarting after a Fault

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After a fault make sure that you find the reason of the fault before you restart the machine.

If you do not find the fault or if you are unsure about the reason for the fault, please contact your IMPACTS contact person and ask for help.

For the start up of the machine, see Chapter 5.



*All persons in the proximity of the machine must wear safety glasses with lateral protection as well as safety shoes. Ear protection may be required. The operator is obliged to wear close fitting protective clothing.*

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*Please consider special regulations in VBG 4 and VDE-0701. These regulations describe the necessary considerations and actions after repairing and changing electrical Equipment. For start up of the machine, see chapter 5.*

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## 6.8 Proceedings Prior and After Longer Stoppage

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### ***Stoppage Longer Than 3 Months:***

- Switch off the machine (see Chapter 6).
- Remove all abrasive out of the machine.
- Remove all abrasive from magnets.
- Clean the machine and cover with a tarp in a dry area.
- Ensure that motors, cables, and plugs are protected against moisture, dust, heat, and shock.
- Protect bright parts of the machine and power pack with a preservative oil or grease.

### ***After Longer Stoppage:***

- See Chapter 5 "Initial Operation."



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## Chapter 7.0 Maintenance

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- 7.1 Recommendations
- 7.2 Maintenance and Inspection
- 7.3 Maintenance
- 7.4 The Blast Pattern
- 7.5 Adjusting the Blast-Pattern
- 7.6 Adjusting the Control Cage
- 7.7 Wear Parts
- 7.8 Changing the Wheel Kit

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### 7.1 Recommendations

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Prior to any repair work on the machine and its drives, secure the machine against unintentional switch-on. Put the machine in its Safety Off Position as described in Chapter 2.



*Failures due to inadequate or incorrect maintenance may generate very high repair costs and longer stoppage periods of the machine. Regular maintenance is essential.*

- Safety and service life of the machine depend, among other things, on proper maintenance.
- The time indications are based on uninterrupted operation. When the indicated number of working hours is not achieved during the corresponding period, the period can be extended. However a full overhaul must be carried out at least yearly.
- Due to different working conditions it cannot be foreseen how frequently inspections need to occur for wear checks, inspection, maintenance and repair works. Prepare a suitable inspection schedule considering your own working conditions. Our specialists will be pleased to assist you with any issues you may encounter.



*Sub-supplier's operating and maintenance instructions should be followed during service and maintenance. Highest attention should be paid when replacing electric parts and components.*

## 7.2 Maintenance and Inspection

The following table will show recommendations about time, inspection, and maintenance for the normal use of the machine.

<b><i>Operating Hours / Time Period</i></b>	<b><i>Inspection Points &amp; Maintenance Instructions</i></b>
<b>12 hours — after repairing</b>	<p>Check function of all safety devices.</p> <p>Check all accessible screw connections for tight seat.</p>
<b>Every 3 hours</b>	<p>Check whether there is any foreign matter in the hopper, the feed spout, or in the blast wheel unit.</p> <p>Check the amount of abrasive in the hopper. Refill if necessary.</p>
<b>Daily — prior to operation</b>	<p>Check the hose connections for tightness and fixed seat.</p> <p>Check the hose to the filter for damages.</p> <p>Make sure that the dust bin of the filter has been dumped.</p> <p>Check blast wheel, feed spout, liners and fasteners for wear and damage.</p> <p>Check the separator parts for wear and defects. Remove foreign bodies and dust deposits.</p> <p>Check the level of abrasive in the storage hopper. Refill to bottom of wire mesh if necessary.</p> <p>Check the magnetic and seals for wear and replace if necessary.</p> <p>Check the electric connections for sediments of dirt or foreign bodies.</p> <p>Check the electric motor for dirt and other contaminants.</p>
<b>After 20 hours</b>	Replace the blast wheel unit
<b>Yearly</b>	Fully overhaul and clean the entire machine.

## 7.3 Maintenance

As already mentioned in Chapter 5 “Initial operation,” we recommend you make your first repair work on the machine with the help of an IMPACTS personnel. Using this recommendation, your maintenance personnel will have the opportunity to get an extensive training.

Only those repair works are described which occur within the context of maintenance or which are required to replace wear parts.



*If you replace parts yourself for specific reasons, the following instructions and work sequence have to be observed:*

- You should also stock all spare or wear parts that cannot be supplied quickly. As a rule, production standstill periods are more expensive than the cost for the corresponding spare part.
- Screws that have been removed must be replaced with those of the same quality (strength, material) and design.



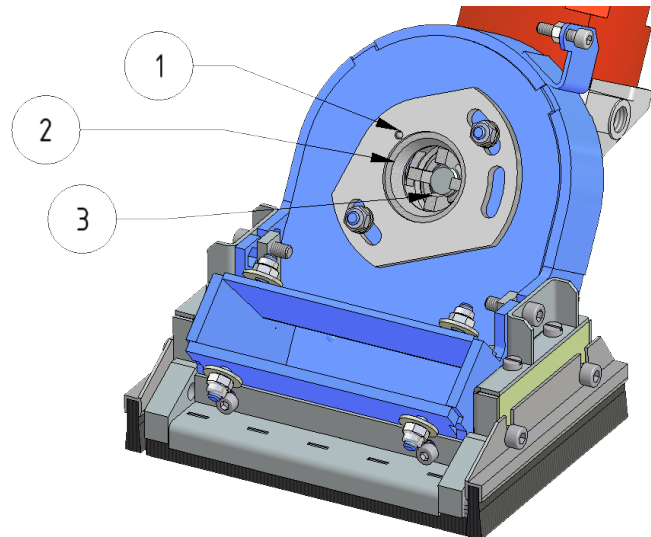
*Prior to any repair work on the machine and its drives, secure the machine against unintentional switching-on. Pull out the main plug in order to do this. Store the plug near the machine to avoid accidents.*

## 7.4 The Blast Pattern

Abrasive leaving the blast wheel blades is not thrown in all directions. Scatter is restricted to an angle of about 50°. This is achieved through the use of a control cage which surrounds the impeller. The position of the window in the control cage determines the direction and HOT ZONE of the blast pattern.

Correct adjustment of the control cage and thus of the blast pattern is the most important factor for optimum working with the S125E blast machine.

Incorrect adjustment of the control cage results in very high wear and premature blasting-through of the liners in the blast wheel housing, as well as reduced blasting performance and a possible loss of the rebound energy of the abrasive.



- |   |                           |
|---|---------------------------|
| 1 | Control Cage Fixing Plate |
| 2 | Control Cage              |
| 3 | Impeller                  |

## 7.5 Adjusting the Blast Pattern and Control Cage

In order to get a uniform and perfect blast pattern on the surface to be treated, the correct adjustment of the blast pattern is most important.



*Prior to any maintenance or repair work on the machine and its drives, secure the machine against unintended switching-on by putting the machine in its Safety Off Position (see Chapter 2).*

### **Incorrect adjustment of the blast pattern will result in:**

- Uneven cleaning (shadows on the right or left hand side).
- Extreme high wear (Wheel kit and the liners).

***The following three factors will affect the blast pattern:***

1. **Worn Wheel Kit:** With increased wear of the Wheel Kit (impeller & control cage), the blast pattern will start to change. Please replace. After changing the Wheel Kit, the adjustment of the control cage must be checked and re-adjusted. Do do so, you will need to create a new blast pattern and adjust accordingly. The same consideration applies for blasting on another type of surface.
2. **Size of Abrasive:** The size of the abrasive affects the blast pattern. Every change of abrasive requires the blast pattern to be set or to be re-adjusted.
3. **Position of the Control Cage:** The correct adjustment of the control cage is most important to obtain an optimum blast pattern. The control cage has a lateral window. The position of this window determines where the abrasive is fed on the blast wheel blades, and therefore where it physically hits the surface to be treated.

## 7.6 Adjusting the Control Cage

The adjustment is done by loosening the control cage fixing plate and turning the control cage into a pre-setting position.

**The following adjustment standard value is important to know:** the control cage opening is set approximately opposite to the throwing angle. The abrasive grain size plays an important role in this situation. Different types of abrasive have different throwing characteristics due to their different weights and frictional resistance. This is why the blast-pattern needs to be adjusted after pre-setting and testing.

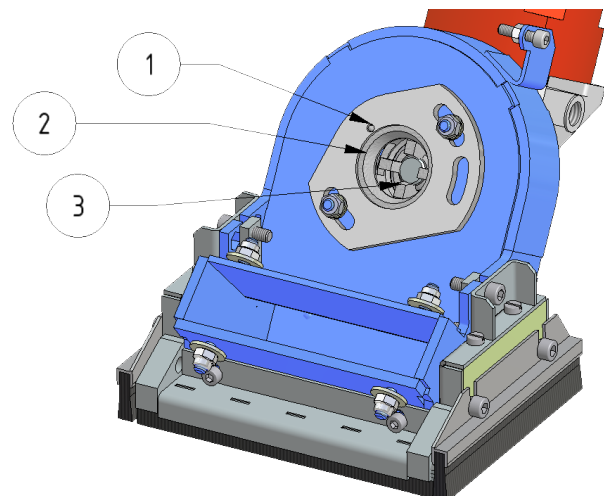
After fitting new spare parts, always check the blast pattern in order to get best performance. This is the only way to obtain optimal performance and to avoid unnecessary wear and repair costs.

***The adjustment should be carried out as follows:***

The position of the Control Cage is determined by the control cage fixing plate. In the middle position is the upper end of the window of the control cage compared to a clock at 11:30 o'clock.

You can change the position in both directions up to 12.5°.

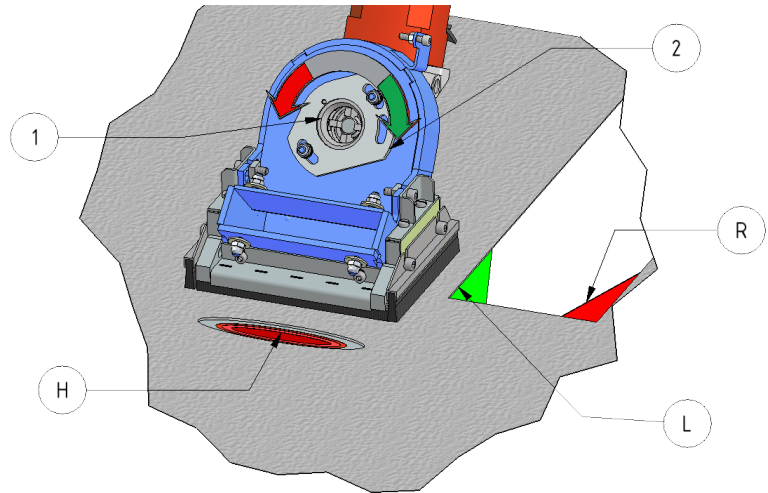
1. Loosen the two bolts and readjust the control cage fixing plate.
2. After adjustment, tighten the bolts on the plate to hold it in position.
3. Place the blast machine on a 5-8 mm thick steel plate, and blast for 45 seconds at full abrasive load **without** moving the machine.
4. After 45 seconds, stop blasting and move the machine from the blast zone to carefully inspect the steel plate for HOT ZONE (H).



You will find the HOT ZONE (H) on the blasted surface where the machine has developed the highest blast intensity.

This ZONE is normally a little lighter and warmer than the rest of the blast cleaned area due to the heat that is generated by the impacts of abrasive.

- If the blast pattern is exactly in the middle of the HOT ZONE, you may proceed with normal blasting.
- If the blast pattern shows irregularities in the HOT ZONE, you must readjust the control cage slightly until the pattern is exactly in the middle. (See the following for proper adjustments.)



**Note:** All descriptions are described from the front into the blast wheel.

- If the blast result shows strong blasting on the right-hand side (R) and weak blasting on the left-hand side (shadows), turn the upper edge of the control cage clockwise (CW) for 2-4 mm.
- If the blast result shows strong blasting on the left-hand side (L) and weak blasting on the right-hand side (shadows), turn the upper edge of the control cage counter-clockwise (CCW) for 2-4 mm.



*Never slacken cage clamps or try to adjust the control cage when the machine is in operation.*

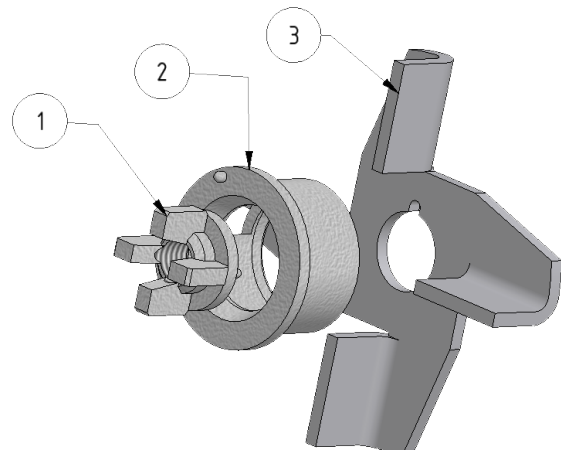
## 7.7 Recommended Spare Parts List

To avoid long standstills of the machine, IMPACTS recommends to keep the following spare parts in stock.

Number	Description	Amount
1	Impeller	1
2	Control Cage	1
3	Blast Wheel	1



*After the change of any spare parts, you should always adjust the blast pattern. Only this will guarantee your machine will work most efficiently and save unnecessary wear and repair costs.*

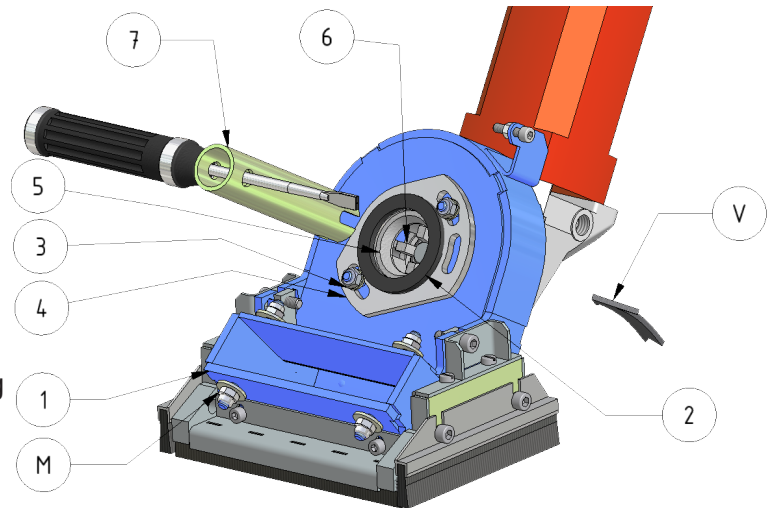


## 7.8 Changing the Wheel Kit

The Tune-up Kit (Wheel Kit) consist of the Blast Wheel, the Control Cage, the Impeller, and the fixing screw.

### Removal

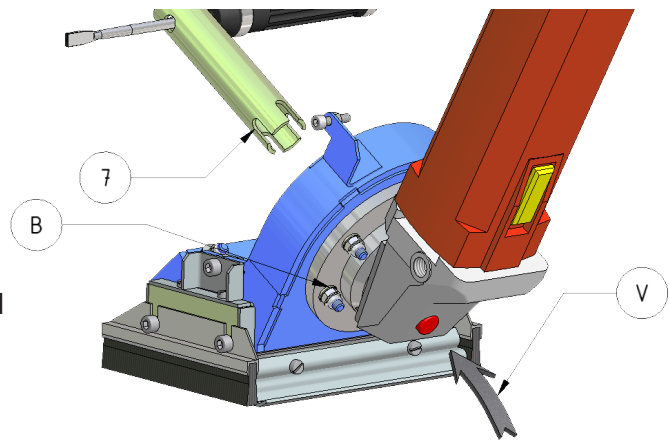
1. Remove the separator, by loosening the 4 screws and slide the separator away from the blast housing (1). Take care of the O-ring (2).
2. Loosen the screws (3) of the control cage fixing plate (4) and remove it. Then remove the control cage (5).
3. Now loosen the Impeller (6) by using the Impeller key (7) and remove it. While doing that, keep the fixing (V) of the motor pushed down.



4. Loosen the 4 fixing screws (B), two on one side and two on the opposite side, of the motor mounting plate. Take the motor out of the housing and take care of the wheel. Check the wear of the hub for the wheel and replace, if necessary.

### Fitting of the Wheel Kit

1. Clean the threads of the motor shaft.
2. Bring the wheel through the housing opening, put the motor with the motor mounting plate against the housing, and tighten the screws.
3. Continue in reversed order for the removal process.
4. Make sure the wheel is loose and "free-wheeling."



NOTE: Every time you change the wheel, please check the threads of the motor shaft. Make sure that the impeller is tightened carefully. It has to be carefully checked that there is no dust and abrasive in the threads.

After every repair around the wheel, the wheel motor should be started without abrasive in order to check, that the rotating parts are moving freely and that there is no vibration.

The wheel motor is a long life part. Damage with the wheel motor will appear if you hear unusual noises or it stops completely. In this case, contact the IMPACTS service department.

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## Chapter 8.0 Electrical System

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### 8.1 Tips for the Electronics

#### 8.2 Circuit Diagram

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### 8.1 Tips for the Electronics

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*Completely shut off the machine for repair or maintenance work. All plugs have to be disconnected. Keep all cables and plugs near the machine in order to prevent the machine from being switched on accidentally.*

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Electric spares need to be ordered with reference to the electrical circuit diagram within this chapter. If there is any doubt, you need to call your local IMPACTS service technician.

The electrical parts must be inspected regularly. Please note in particular the specified recurring inspections according to VBG 4 or other local regulations. Defects such as loose connections or scorched cables must be rectified immediately. Call a skilled electrician or the IMPACTS customer service.



*Work on the electrical parts of the equipment have to be undertaken by a skilled electrician or by a trained person under the guidance and supervision of a skilled electrician in accordance with the electrical engineering regulations.*

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## Chapter 9.0 Error Diagnostics

### 9.1 Diagnosis of Errors

#### 9.2 Diagnosis of Electrical Failures

### 9.1 Diagnosis of Errors



*Prior to any repair work on the machine or its drives, the machine has to be secured against unintentional switching on. Put the machine to its Safety off position as described in Chapter 2.*

<b>Failure</b>	<b>Possible Reasons for Failure</b>	<b>Failure Corrective Actions</b>
<b>Unusual Vibrations</b>	Uneven wear of the blast wheel	Replace blast wheel set
	Unbalance due to broken parts or blades.	Check separator and all other sections of the machine. Remove all broken parts.
<b>Unusual Noise</b>	Low clearances or bad adjustments of turning parts	Check parts adjustments (Blast wheel and Control Cage).
	Loose or lost screws.	Check screws and bolts to be fitted correctly. Tighten where necessary.
	Motor Bearing worn	Replace motor
<b>Reduced performance or no performance</b>	Not enough abrasive in storage	Fill up abrasive
	Valve adjustment	Adjust valve lever and valve disk.
	Too much dust and sand in the circuit	Check all seals and dust hose / Check filtration unit to be sealed properly (dust bin)
	Blast wheel or control cage	Blast wheel or control cage worn out. Replace worn items.
	Too much abrasive emitted when switched on.	Ensure motor has max speed before opening the valve,



<b>Failure</b>	<b>Possible Reasons for Failure</b>	<b>Failure Corrective Actions</b>
<b>Too much wear in the wheel housing and rebound chamber</b>	Wrong position of the control cage	The abrasive flow goes to the wheel housing and not to the surface.  Adjust the control cage
<b>Too high abrasive consumption</b>	Too much air through the system	Reduce airflow by adjusting air flow opening valve on top of the separator
	Too much abrasive in the hopper	Reduce the amount of abrasive in the machine

## 9.2 Diagnosis of Electrical Failures



*Prior to any repair work on the machine or its drives, the machine has to be secured against unintentional switching on. Put the machine to its Safety off position as described in Chapter 2.*



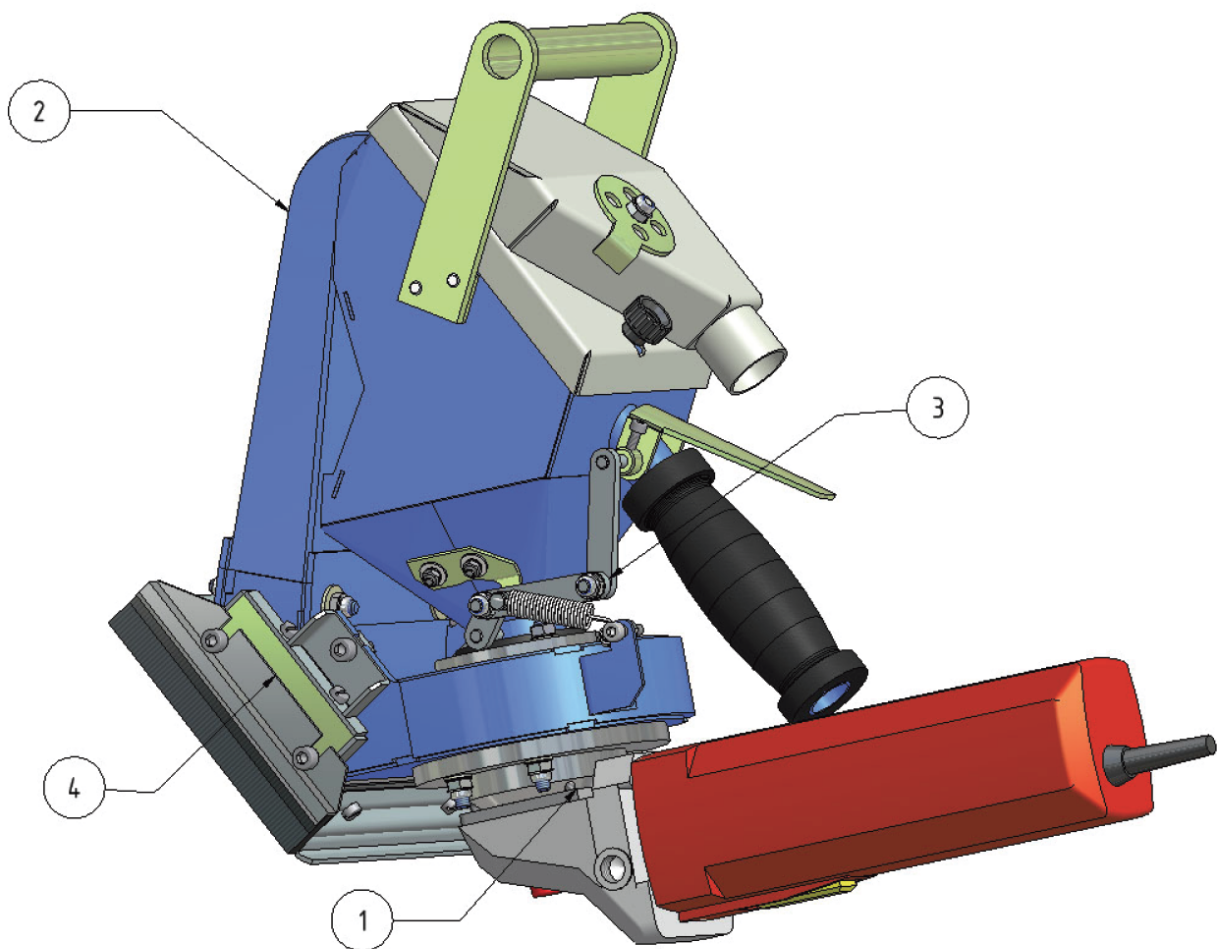
*Work on the electrical parts of the equipment have to be undertaken by a skilled electrician or by a trained person under the guidance and supervision of a skilled electrician in accordance with the electrical engineering regulations.*

<b>Failure</b>	<b>Possible Reasons for Failure</b>	<b>Failure Corrective Actions</b>
<b>Motor does not start up</b>	Missing voltage	Check power supply
	Faulty Switch Cable broken Faulty Plug	Diagnosis and replacement by electrician
<b>Motor stops during operation</b>	Current too high Cable Defect	Check by electrician Replace cable
	Carbon brushes worn out	Replace through an electrician

## Chapter 10.0 Spare Parts

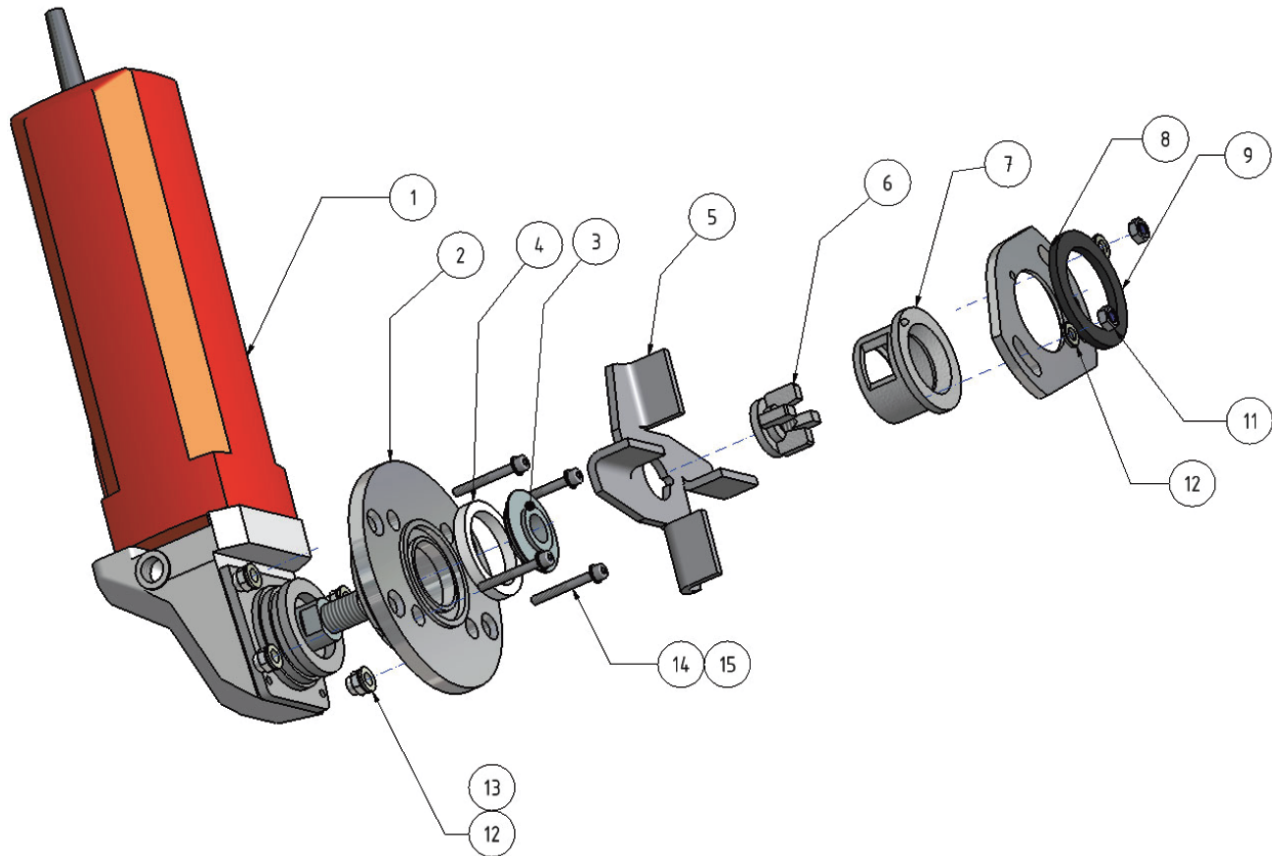
- 10.1 Machine Overview
- 10.2 Wheel Drive
- 10.3 Housing Assembly
- 10.4 Valve Actuator Assembly
- 10.5 Base Seal Assembly

### 10.1 Machine Overview



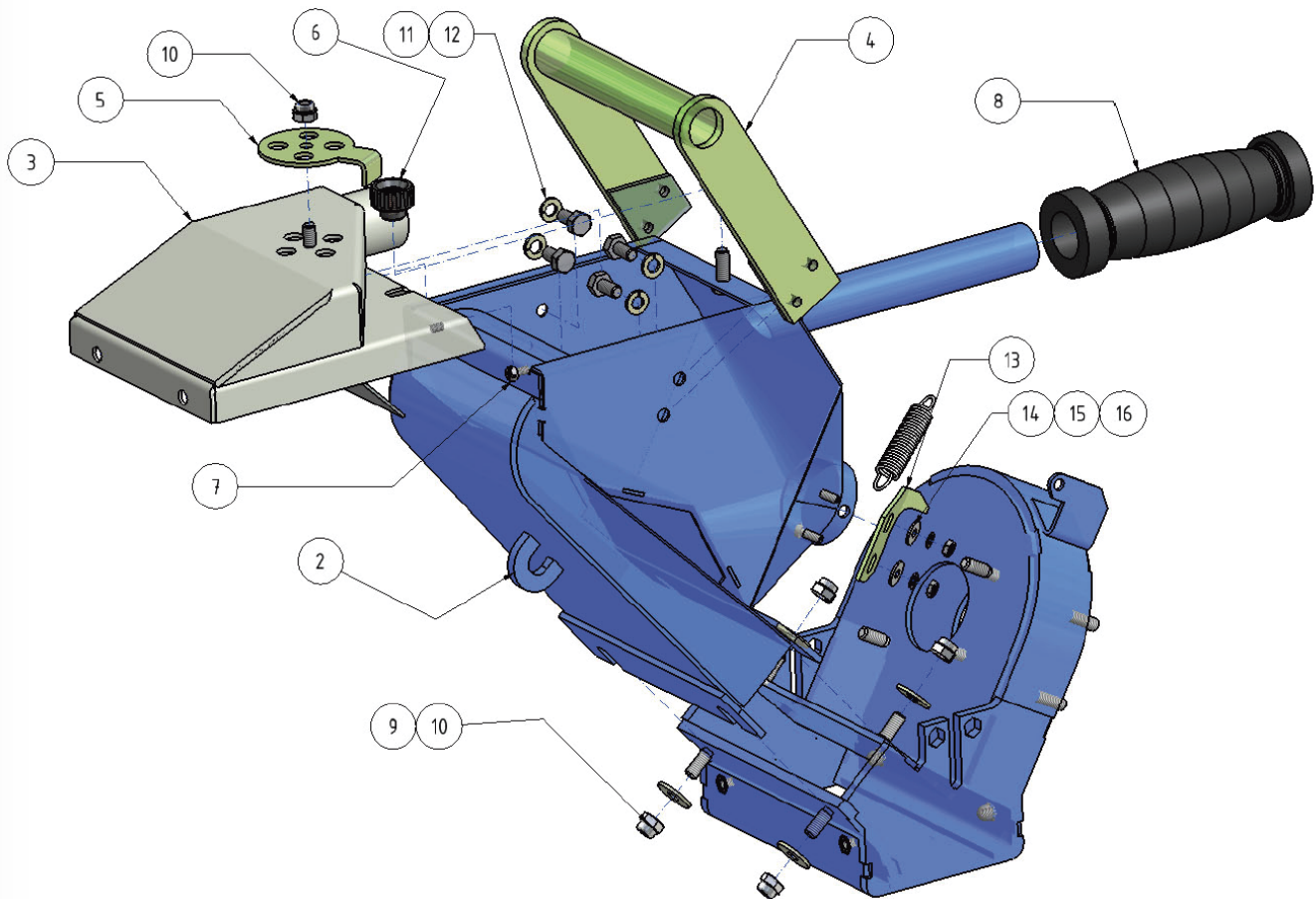
POS	QTY.	DESCRIPTION	PART No.
1	1	WHEEL DRIVE ASSY.	BM N98012A
2	1	HOUSING ASSY.	BM N301030
3	1	VALVE ACTUATOR ASSY.	BM N301535
4	1	BASE SEAL ASSY.	BM N301523

10.2 Wheel Drive



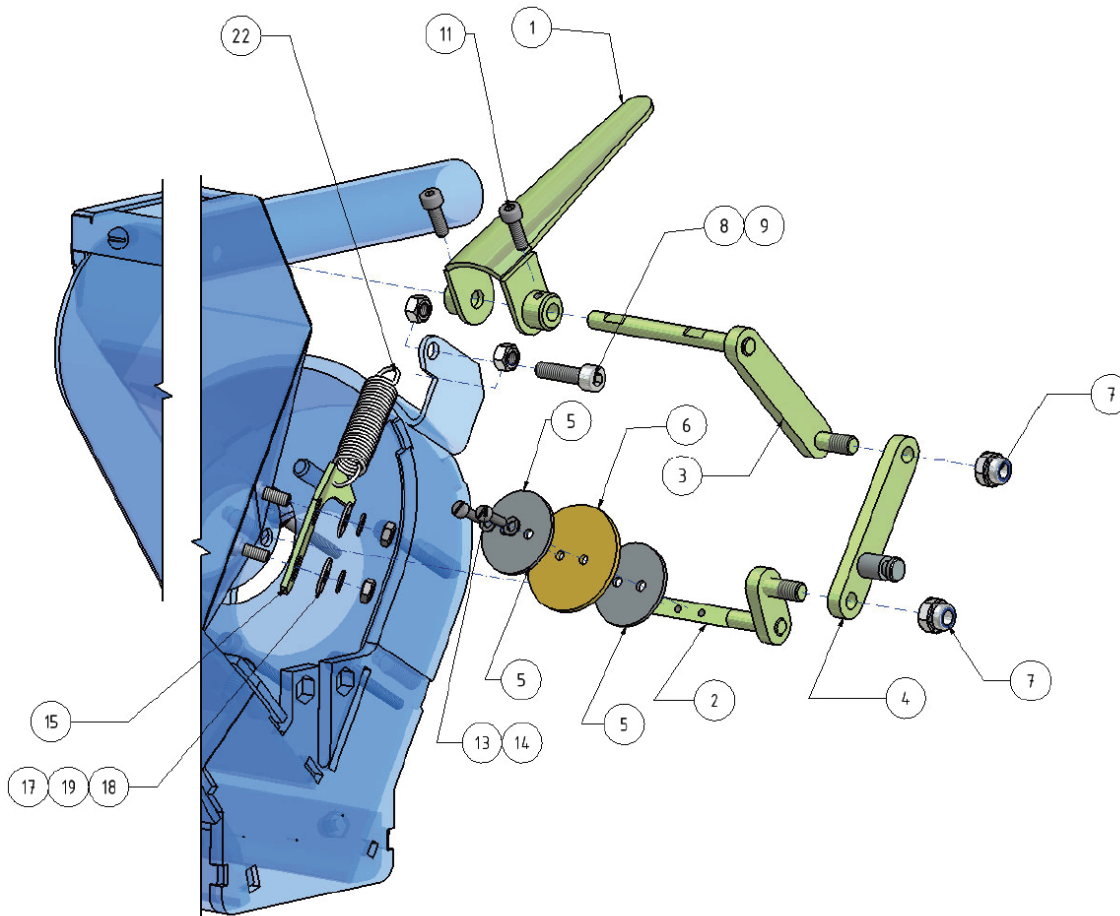
POS	QTY.	DESCRIPTION	PART NO.
1	1	WHEEL DRIVE MOTOR 230 Volt	601 000 066
	1	WHEEL DRIVE MOTOR 110 Volt	601 000 067
2	1	AL MOTORADAPTER MET	201 002 441
3	1	WHEEL HUB S125	201 001 351
4	1	FELT SEAL	201 001 320
5	1	BLASTWHEEL	201 001 349
6	1	IMPELLOR	201 001 248
7	1	CONTROL CAGE	201 001 249
8	1	CCAGE ADJUSTER	201 001 341
9	1	SEAL FEEDER VALVE	201 001 441
10	2	NUT	DIN EN 24032 M5 Zn
11	2	HEX NUT M6	DIN 934 M6 Zn
12	6	WASHER	DIN 125-1 B6,4 Zn
13	4	PREVAILLING HEX. HD. NUT	DIN 985 M6 Zn
14	4	CYL. HEAD CAP SCREW	DIN 912 M4x35 Zn
15	4	WASHER	DIN 125-1 B4,3

## 10.3 Housing Assembly



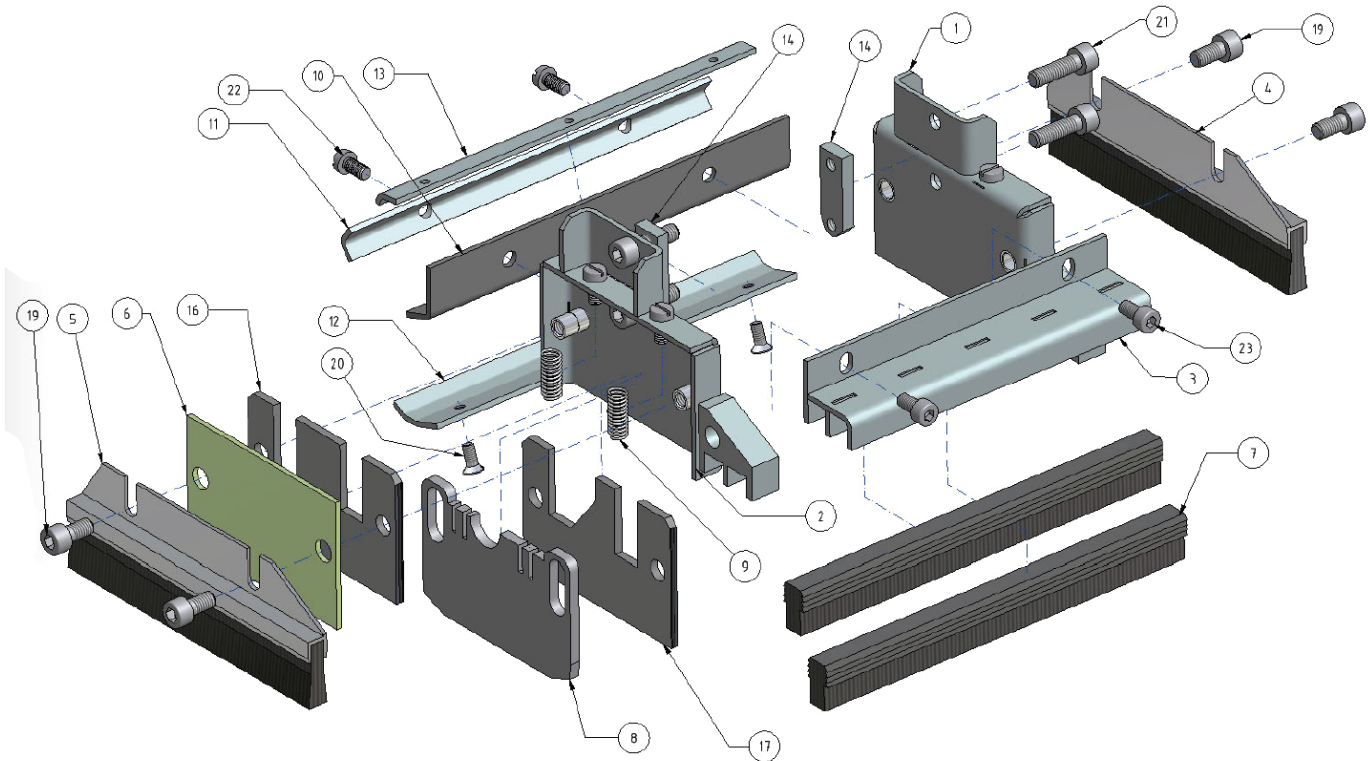
POS	QTY.	DESCRIPTION	PART No.
1	1	BLAST HOUSING S125	201 001 336
2	1	REBOUND S125	201 0001 337
3	1	COVER	201 001 339
4	1	TOP HANDLE	201 001 338
5	1	AIR ADJUSTER	201 001 340
6	1	KNURLED NUT	311 000 040
7	2	CYL SLOT SCREW	DIN 84 M4x8
8	1	SOFT RUBBER HANDLE	310 000 013
9	4	WASHER	DIN 9021 6,4 Zn
10	5	PREVAILLING HEX. HD. NUT	DIN 985 M6 Zn
11	4	HEX HEAD BOLT	DIN EN 24018 M6x12 Zn
12	4	LOCK WASHER	DIN 128 A6 Zn
13	1	VALVE LEVER STOP PLATE	201 001 494
14	2	WASHER	DIN 9021 ST 4 Zn
15	2	SPR.LOCK WASHER	DIN 128 A4
16	2	NUT	DIN EN 24032 M4 Zn
17	2	CYL SLOT SCREW	DIN 84 M4x10

10.4 Valve Actuator Assembly



POS	QTY.	DESCRIPTION	PART No.
1	1	ACTUATOR	201 001 347
2	1	VALVE SHAFT	201 001 344
3	1	ACTUATOR SHAFT	201 001 346
4	1	LINCKAGE	201 001 345
5	2	VALVE CLAMPING PLATE	201 001 342
6	1	VALVE WASHER	201 001 343
7	2	PREVAILLING HEX. HD. NUT	DIN 985 M6 Zn
8	1	CYL. HD. CAP SCREW	DIN 912 M5x20
9	2	NUT	DIN EN 24032 M5 Zn
10	6	WASHER	DIN 125-1 B6,4 Zn
11	2	CYL. HEAD CAP SCREW	DIN 912 M4x12 Zn
12	4	LOCK WASHER	DIN 128 A6 Zn
13	2	CYL HEAD SLOT SCREW	DIN 84 M3x10
14	2	SPRING WASHER	DIN 128 A3 Zn
15	1	VALVE LEVER STOP PLATE	201 001 494
16	2	CYL SLOT SCREW	DIN 84 M4x10
17	2	NUT	DIN EN 24032 M4 Zn
18	2	WASHER	DIN 9021 ST 4 Zn
19	2	SPR.LOCK WASHER	DIN 128 A4
20	4	CYL. HEAD CAP SCREW	DIN 912 M4x35 Zn
21	4	WASHER	DIN 125-1 B4,3
22	1	TENSION SPRING	201 000 131

## 10.5 Base Seal Assembly



POS	QTY.	DESCRIPTION	PART.No.
1	1	RH SIDE SEAL BOX	201 001 325
2	1	LH SIDE SEAL BOX	201 001 326
3	1	FRONT SEALSUPPORT	201 001 327
4	1	RH SIDE BRUSH S125	201 001 322
5	1	LH SIDE SEAL BRUSH S125	202 001 323
6	2	SIDE PLATE	201 001 328
7	2	FRONT SEAL	201 001 330
8	2	SIDE SEAL PLATE	201 001 329
9	4	SPRING	201 001 321
10	1	SEAL RUBBER STRIP	201 001 350
11	1	TOP CLAMPING ANGLE	201 001 334
12	1	BOTTOM SEAL STRIP	201 001 332
13	1	CLAMPING ANGLE	201 001 333
14	2	CLAMPING PLATE	201 001 335
15	1	OUTER SEAL LAYER	201 001 568
16	1	OUTER SEAL LAYER	201 001 568LH
17	1	SEAL LAYER	201 001 567LH
18	1	SEAL LAYER	201 001 567
19	4	HEX. SOCK.Hd. CAP SCREW	DIN 912 M6x12 Zn
20	3	SLOTTED C.SINK HD.SCREW	DIN 963 M4x10Zn
21	4	HEX SOCK HEAD CAP SCREW	DIN 912 M6x20
22	6	SL. CYL.HD. SCREW	DIN 84 M5x15 Zn
23	2	HEX SOCK HEAD CAP SCREW	DIN 912 M5x10 Zn





**IMPACTS Americas**  
1384 Bungalow Rd.  
Morris, IL 60450 USA  
(815) 941-4800  
(815) 941-4600 Fax  
[www.IMPACTSAmericas.com](http://www.IMPACTSAmericas.com)