



STREAMER
Premium Shotblasters

Operating Manual
S600E



Your Partner for Mobile Surface Preparation
IMPACTSamericas.com



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

[Feb 2011]

Table of Contents

1.0	Technical Data	2
2.0	Safety Instructions	4
3.0	General Information	10
4.0	Transportation.	19
5.0	Start Up	21
6.0	Operation.	25
7.0	Maintenance	29
8.0	Electrical System	40
9.0	Error Diagnostics	44
10.0	Spare Parts	47



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.

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: S600E
 Manufacturer: IMPACTS Americas
 1385 Bungalow Dr.
 Morris, IL 60450 U.S.A.

1.2 Unit Specifications

	Machine S600E	Dust Collector (optional) DC 4025
Length	73 in. / 1855 mm	63 in. / 1620 mm
Width	29 in. / 745 mm	31 in. / 795 mm
Height	41 in. / 1050 mm	55 in. / 1400 mm
Weight	1,157 lb. / 525 kg	1,014 lb. / 460 kg

Connected loads of the electrical system:

Power	30 HP / 22 kW	7.5 HP / 5.5 kW
Electrical Connection	480 V/60 Hz, 63A CEE - Plug Fuse 63 A	480 V/60 Hz, 3 Ph \ 400 V or 480 V/60 Hz, 63A to run IMPACTS S600E

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:	S600E
Unit / Designation:	IMPACTS Blast Machine
Working Width:	23.6 in. / 600mm
Drive:	Progressively adjustable 1-124 ft/min / 0-38 m/min
Blasting Capacity:	Up to 4,000 SF/hr / 400 m ² /h
Abrasive Consumption:	100-200 g/m ²
Dust Hose Connection:	6 in. / 150mm
Recommended Dust Collector:	IMPACTS DC4025

Chapter 2.0 Safety Instructions

- 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

2.1 Explanation of Warnings and Symbols

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.

2.2 Organizational Measures



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

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.



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!

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



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.

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!

2.3 Personnel Selection and Qualification

Fundamental Duties



*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.*

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

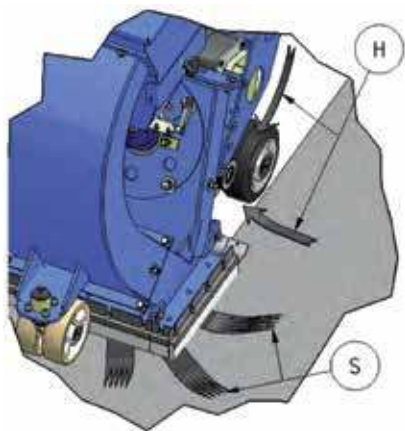
The safety off position is the position of the machine when it cannot generate any hazard. Setting the machine in the safety off position means:

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.



S: Moving Parts (Shot)

Abrasive leaves the blast housing at high speed!

H: Turning Parts (Wheels)

Lift and tip the machine only when it is in the Safety Off position!

It is not allowed to stay within the working radius of the machine!

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.

2.9 For Special Attention

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.

Chapter 3.0 General Information

- 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 The Traction Drive**
- 3.8 Base Seals**
- 3.9 Abrasive Media**
- 3.10 Selecting Abrasive Media**
- 3.11 Care and Maintenance**

3.1 Operative Range

The IMPACTS blast machine S600E is a downward blasting machine with a closed abrasive circuit designed for the pre-treatment of horizontal surfaces. The bouncing impact of metallic abrasive onto the surface thoroughly removes surface contaminants, coats of paint, sealants, and thin coatings.

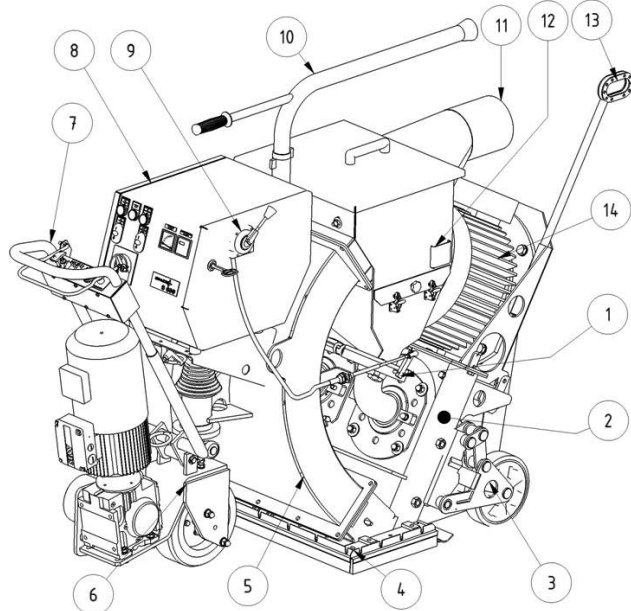
A suitable filter unit must be connected to the machine in order to separate the dust from the abrasive. A specially designed dust collection system ensures dust-free operation of the machine and clean air at the workspace. IMPACTS recommends the DC3003 GP to work in conjunction with the S600E.

3.2 Scope of Supply

- Blast Machine (S600E)
- Dust Collector DC2075 (optional)
- Dust Hose (50 ft./15.24 m)
- Manual (1)
- Maintenance Box (optional)
- Magnetic Broom (optional)

3.3 Description of the Machine

- | | |
|----|------------------------------|
| 1 | Abrasive Feeding |
| 2 | Side Force Wheel Housing |
| 3 | Toggle Lever Lifting Device |
| 4 | Base Seal |
| 5 | Rebound |
| 6 | Traction Drive |
| 7 | Combination Operation Handle |
| 8 | Control Panel |
| 9 | Abrasive Control Lever |
| 10 | Cable Guide |
| 11 | Hose Connector |
| 12 | Separator |
| 13 | Lever for Toggle Lifting |
| 14 | Wheel Motor |



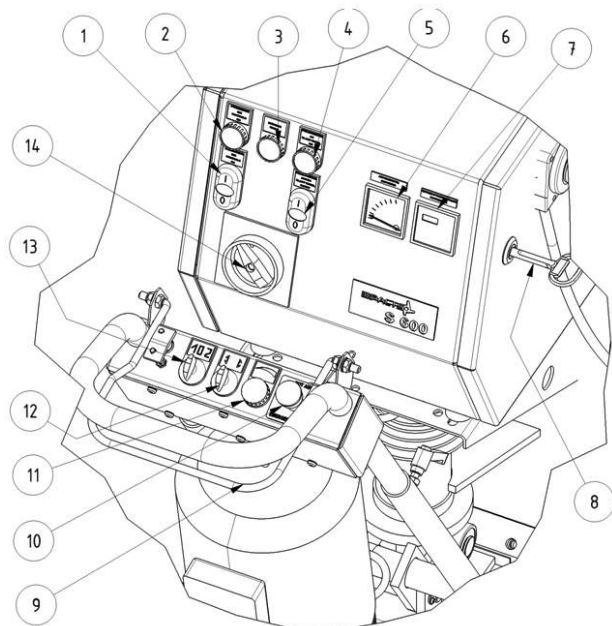
The blast wheel method is a revolutionary invention based on a simple principle:

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

The Control Panel contains all controls and instruments used for supervision and control of the machine.

- | | |
|----|----------------------------------|
| 1 | Key Button Controls ON / OFF |
| 2 | Control Light Controls ON |
| 3 | Fault Control Light |
| 4 | Control Light Wheel motor ON |
| 5 | Switch Wheel ON / OFF |
| 6 | Ammeter (40 Amp Max.) |
| 7 | Hour Meter |
| 8 | Control Panel Key |
| 9 | Dead Man's Handle Traction Drive |
| 10 | Emergency Stop Button |
| 11 | Traction Drive Speed Control |
| 12 | Switch Forward-Backward |
| 13 | Overdrive Switch |
| 14 | Main Switch |



Key Button Controls ON, Control Light

Pushing the Key Button "ON" (1) will switch the controls on. Control light inside Button lights up.
Pushing the "OFF" Button (1) will disable the controls.

Fault Control Light

This Light (3) indicates an electrical fault, such as an overload of the Wheel Motor or another fault within the electric system. If the controls aren't switched "ON," this light also lights up.

Switch Wheel ON / OFF

Pushing Button (5) (I) the Wheel Motor will start up. Control light lights up.
Pushing Button (5) (O) the Wheel Motor will stop.

Ammeter

The ammeter (6) shows the load consumption of the blast wheel motor. When switching on the motor the current value is high (starting current peak), for no-load current and operating current please see the following values.

Machine	Non Load Current	Operating Current
S600E	Approx. 12 A	max. 40 Amp

Hour meter

The hour counter (7) shows the sum of the actual working hours performed by the blast wheel.

Switch "Overdrive"

This switch (13) bypasses the drive speed control and the machine will move at max. speed.

Dead Man's Handle

The switch (9) lever below the control handle serves for controlling the drive motor. Actuating the switch lever upwards closes the power circuit to switch "ON" the drive motor. When the lever is released, the drive motor switches "OFF" (Dead man's handle).

Speed Control

The operation speed is set by a Potentiometer (11). Although this indication does not allow direct reading of the actual speed, it shows comparing numbers allowing the operator to set the appropriate speed.

Forward Reverse Switch Traction Drive

This switch (12) controls the direction of the blast machine.

- Position "2" Blast cleaning direction, movement is backwards
- Position "1" Direction forward

Emergency Stop

Pressing the emergency shutdown button (10) switches the machine off immediately and interrupts power supply to all machine components.

Main Switch

The Main Switch is located at the front of the panel (14). This Switch should be switched "ON" before any kind of operation can be started.

Abrasive Control Valve

To regulate the flow of abrasive to the blast-wheel there are two magnetic-valves (2) fitted between storage and feed spouts (1).

The valves are connected with a coupling (3) and are synchronised.

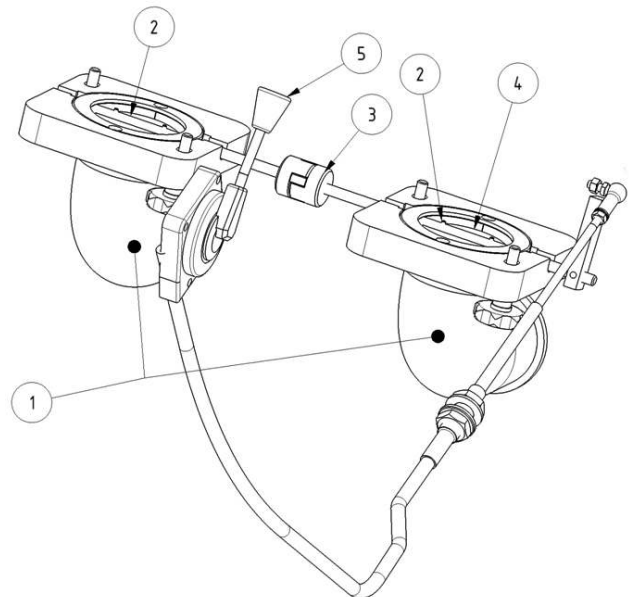
This valves have a turn able shutter (4) that is controlled by the lever (5) of the control cable.

Changing the angle of the shutter position results in a different amount of abrasive flowing to the blast wheel. Feeding more abrasive is causing more work means higher load on the blast-wheel motor.

Load on the motor is indicated by the Ammeter.

Do not load more abrasive than recommended for the S600E, the max load is at 40 Amp.

Higher load will cause the motor to fail or damage of the motor.

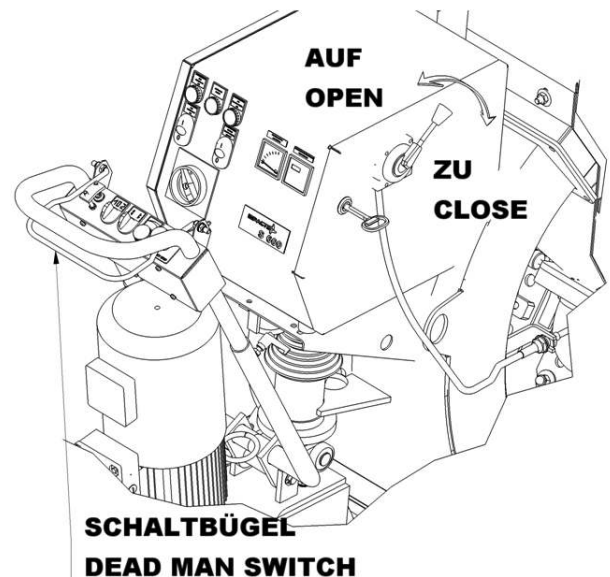


Abrasive Control Lever

This Lever is located on the control panel and regulates the magnetic valves to control the flow of abrasive towards the blast wheels. The valves are hand-operated and can be set to each amount of abrasive throughout by changing the lever position. (Max. 40 Amp. allowed.)

Dead Man's Handle

The switch lever (dead man's handle) below the control handle serves for controlling the drive motor. Actuating the switch lever upward closes the power circuit to switch on the drive motor. Depending on the setting of the selection switch, the machine will move forward or backward. The speed depends on the setting of the speed control (overdrive not switched). When this lever is released, the drive motor switches off (dead man's handle).



3.5 The Wheel Kit

The heart of every blast machine are the blast wheels (1). They will throw the abrasive to the surface using centrifugal forces. The blast wheels are placed in a side force wheel housing protected with replaceable wear plates. The blast wheels are driven by a electric motor via a belt drive and mounted on bearing units.

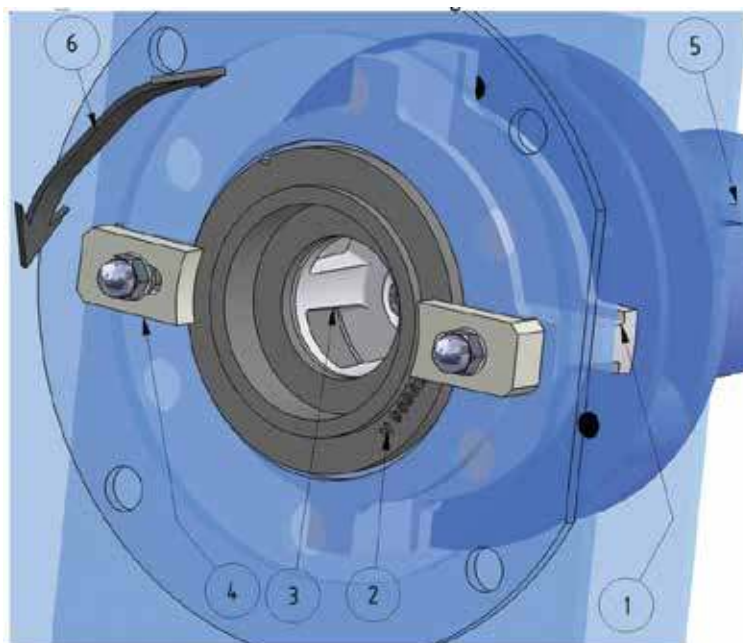
The center of the blast wheel shows a pre-accelerator, called an impellor (3) feeding dosed quantities of abrasive onto the blades of the turning blast wheels. On top of this is the control cage (2) which, once it is carefully set, regulates the direction of the abrasive flow.

The abrasive goes through the opening of the control cage onto the blades (1) of the turning blast wheel.

The Control Cages, held by two clamps (4) need to be adjusted so the blast pattern shows to the center of the machine and gives an optimal blasting result.

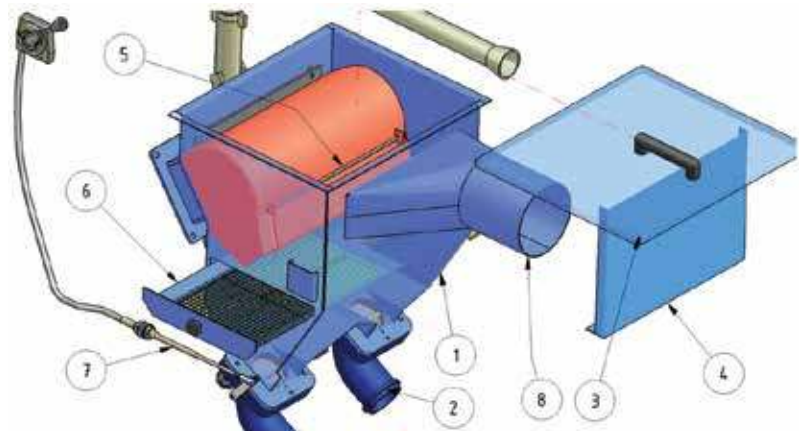
For all wheels, turning right or left the turning of the control cage to the left results in a moving of the blast pattern to the right. The turning of the control cage to the right results in a moving of the blast pattern to the left.

This is also true in the S600E, where the wheel rotation is against each other.



3.6 The Separator

- | | |
|---|-------------------|
| 1 | Separator Housing |
| 2 | Feed Spout |
| 3 | Separator Lid |
| 4 | Baffle Plate |
| 5 | Deflector |
| 6 | Wire Mesh Tray |
| 7 | Control Cable |
| 8 | Hose Connector |



The Separator (1) is mounted to the end of the Rebound plenum. The deflector (5) and Baffle Plate (4) stop the reflected abrasive.

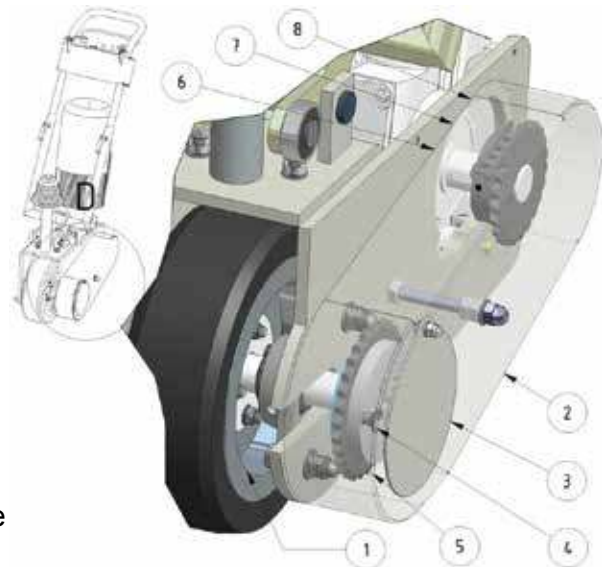
The filter is connected to the Hose Connector (8) and generates an appropriate airflow within the separator as it separates dust from abrasive.

The abrasive drops back to the storage unit where it passes a Wire Mesh Tray (6). The tray prevents any coarse contaminants from getting into the blast wheel. To clean the wire mesh tray, remove it from the side.

In this storage section, the abrasive runs through a magnetic control valve and feed spout (2) into the blast wheel. The valve is controlled by the Control Cable (7).

3.7 The Traction Drive

- | | |
|---|----------------------|
| 1 | Traction Drive Wheel |
| 2 | Chain Guard |
| 3 | Chain Guard Cover |
| 4 | Quick Release Pin |
| 5 | Drive Sprocket |
| 6 | Chain Link |
| 7 | Chain |
| 8 | Motor Sprocket |



The S600 is driven by a 1,1 kW electric drive motor. The power is transmitted via a chain drive. The drive wheel (1) and the drive sprocket (5) are not linked rigidly. The transmission is build from the traction drive wheel (1), sprocket (5), and chain. Drive wheel and drive wheel sprocket are not linked directly. Only the quick release pin (4) will link these parts so the energy gets to the drive wheel.

Note: They are only linked after insertion of the quick release pin (4).

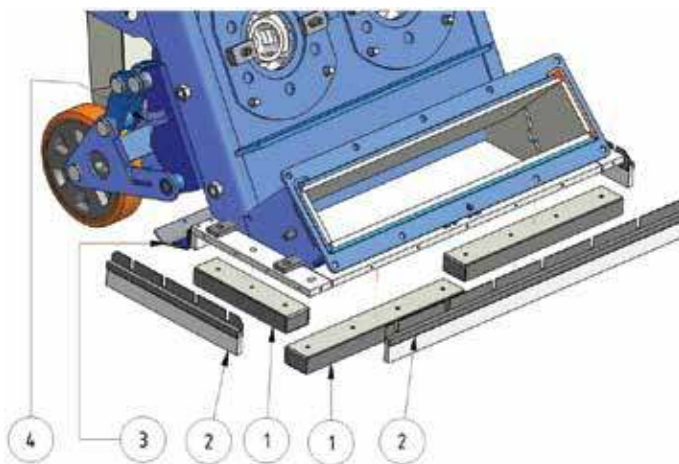
3.8 The Base Seals

- | | |
|---|----------------|
| 1 | Magnetic Seal |
| 2 | Brush Seal |
| 3 | Tail Seal |
| 4 | Adjuster Screw |

On the front and side are magnetic seals that are (1) surrounded by brush seals (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.

All seals should seal against abrasive spray. The correct setting of the magnets is 8-12mm

over the floor surface depending on the application. This is also very important for the best function of the machine. The adjustment is done by set screws on the traction drive and the rear (4).



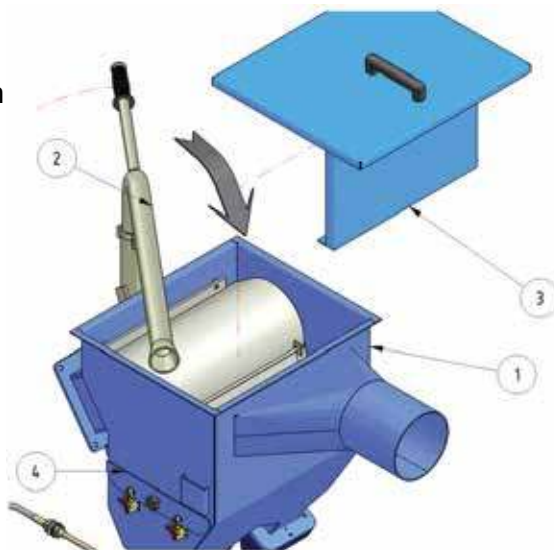
3.9 Abrasive Media

In order to operate IMPACTS blast-machine S600E you need hardened, spherical abrasive. The machine S600E has been especially designed to be operated with IMPACTS abrasive.

The IMPACTS abrasive is of very high quality and has the rebounding ability required for the efficient use of model S600E. The selection of the abrasive is very important since this is the material to carry out the surface treatment.

To add the abrasive:

Remove the lid (2) from the separator (1) making sure that the wire mesh tray (4) is in place and fill up abrasive (3) distributed equal up to the bottom of the mesh. Occasionally check the function of the deflector shutter as abrasive is being added.



3.10 Selecting Abrasive Media

Media IMPACTOR S 290

Applications:

- Creates fine profiles and is often used when the surface is only subsequently sealed, for example, on vacuumed concrete or for the removal of thin layers of paint on non-glazed tiles

Media IMPACTOR S 330**Applications:**

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

Media IMPACTOR S 390**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

Media IMPACTOR S 460**Applications:**

Used to generate a rough profile and to improve work output

- Removes laitance from new concrete
- Removes thicker paints or rust from steel surfaces
- Removes flex coatings from parking decks
- Removes painted road lines
- Re-texturing on asphalt surface and concrete roads

Media IMPACTOR GL18**Applications:**

Use only in addition to Media No. 3 and No. 4 with maximum 30% content. This media should never be used without blending, otherwise the wear in the machine would increase disproportionately.

- Removes polyurethane coatings
- Removes adhesive remnants
- Removes rubber deposits
- Penetrates hard to remove coatings
- Also suitable for use on steel

The effectiveness of the S600E is dependent on the rebound effect which ensures that the abrasive can be re-used.



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.

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

3.11 Care and Maintenance

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.

Chapter 4.0 Transportation

- 4.1 General Notes
- 4.2 Transport
- 4.3 Operation Conditions
- 4.4 Transport of the Machine by Vehicle
- 4.5 Machine Specifications

4.1 General Notes



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.

4.2 Transport

In order to transport the machine from a vehicle to the working area you need to lift the machine up. In order to do so use the Toggle Lever Lift at the rear.

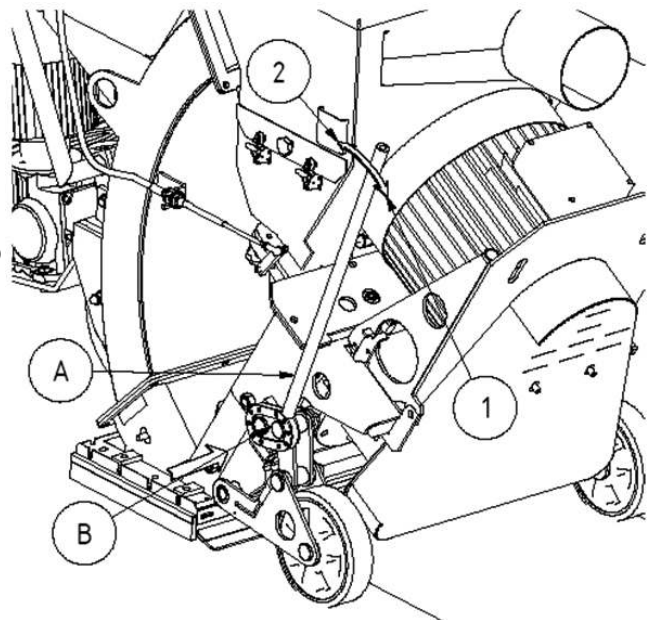
Push the handle (A) on the top linkage (B) and pull the lever (A) towards direction (L) until the linkage is touching the bracket. To reverse pull up the lever towards direction M.

After the rear Toggle Lever Lift has been set into its upward position, push down the handle on the front and pull the machine towards direction V onto the job side. Never push the machine, this could cause the rear seals to be damaged.

Hoisting Equipment

When transporting the machine with hoisting equipment like a crane or lift, check the total weight permitted (see Chapter 1 Dimensions).

(See Figure on following page): Please use only appropriate, allowed, and qualified hoisting equipment (A) as well as ropes and chains (A). See Chapter 1 for the weight of the equipment or look on the serial plate of the machine. Do not fix any rope or chain (A) to the handle. Fix ropes and chains only at locations as shown in the next figure.





The handle of the machine is only fixed with two fixing screws and cannot be used for transportation, to fix ropes, or hoisting equipment!

The machine transportation is divided into:

- Machine S600E
- Filter unit (DC4025)
- General accessories

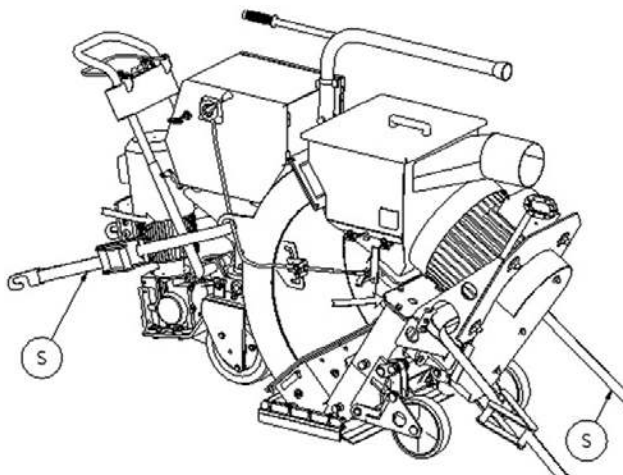


Remove all abrasives from the machine before transport. The machine may only be lifted as shown. Weight and dimensions are shown in Chapter 1 "Technical Data."

4.3 Transport of the Machine with Vehicles

Use straps (S) to tighten the machine to the cabin of the vehicle. Use at least two straps, or tighten the machine with one strap to the cabin wall of the vehicle. Make sure, that all parts of the machine are fixed.

To reduce the height of the machine, you may slide the handle down. In order to achieve this, you have to slacken the two fixing screws. Secure the fixing screws again ore you may lose them.



4.4 Operation Conditions

Check the surface before treatment for loose parts (stones, screws, etc.). The surface must be swept if necessary. Make sure that the machine can travel over all inequalities on the surface. Smaller inequalities, like weld seams or floor joints, will not effect the performance of the machine.

The machine must be operated in accordance with instructions given in Chapter 5 "Initial Operation."



Whenever the machine is not used for blasting, the abrasive valve must always be closed!

4.5 Dimensions

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

Chapter 5.0 Start Up

5.1 Preparing for Start Up

5.2 Start Up

5.3 Initial Operation

5.1 Preparing for Start Up

Before start up, ensure that all existing protective housings are fitted and the filter unit 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.

Carefully handle all plugs, cables, hoses, and operating devices. Avoid any contact with live wires.

Any work on the electrical system has to be done only by qualified specialists.

Check the surface before treatment for loose parts (stones, screws, etc.). The surface must be swept if necessary. Make sure that the machine can travel over all inequalities on the surface. Smaller inequalities, like weld seams or floor joints, will not effect the performance of the machine.

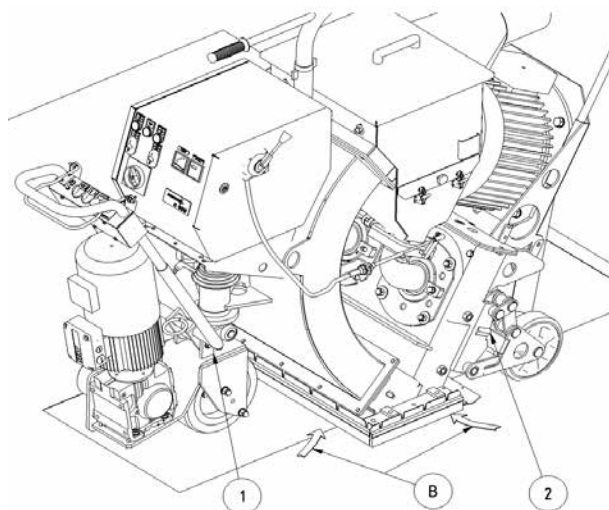
In order to avoid downtimes, a regular inspection is essential. Carry out the following checks before any start-up:

- 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 blast wheel blades, impeller, control cage, liners, and fastening screws for damages and wear.
- Check the magnetic and brush seals for 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.

- Place the blast machine and the filter unit onto the surface to be treated. Remove the quick release pin in order to drive the machine manually.
- Check the height adjustment (approx. 1/4-3/8 inch / 8-12 mm max.) of the blasting machine and the distance between magnet and surface.
- For the height adjustment, a 1/4"-3/8" sheet steel strip is shifted below the magnetic sealing (B). In order to adjust it you need to set the Set screws (1) and (2) (see also Chapter 7).
- Check the main power cable and the dust hose for damage. Replace or repair all damaged parts before starting the machine.
- Connect the machine to the filter unit with the dust hose. Use hose clamps at the connections.
- Check setting of the outlet damper on the filter. Some types of machines require lower airflows.
- 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 (400V, 50Hz, 63A CEE type-plug).



Check the function of the ground failure circuit breaker by pressing the test button!

- Fill the separator equally with the selected abrasive (see Chapter 3) up to the bottom of the separator tray. The magnetic feed valve has to be closed while doing this.
- Check that the filter dust bin is empty. Comply with local waste treatment regulations considering the removed materials.

5.2 Start Up



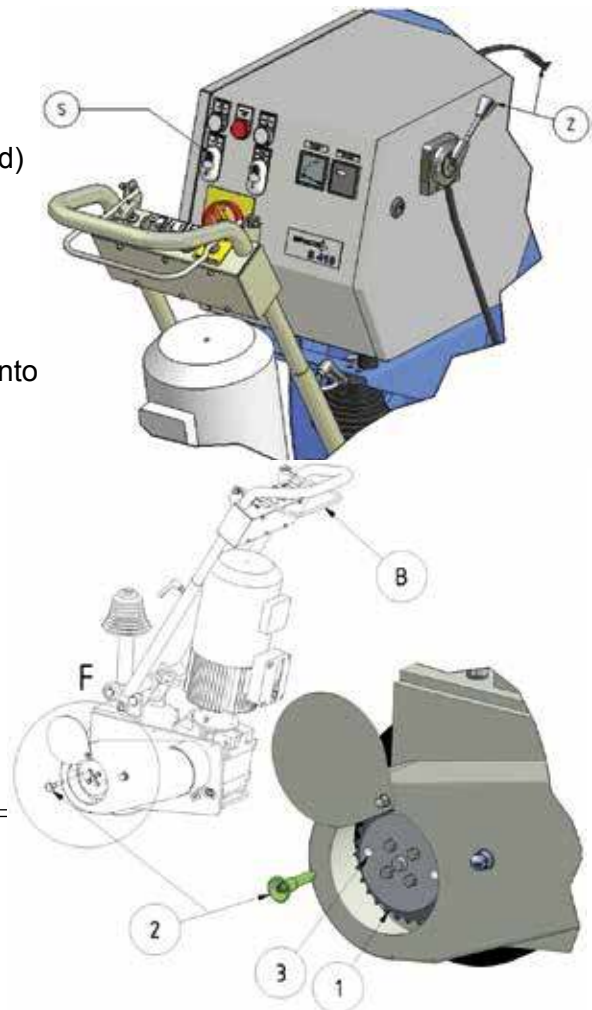
All persons near the machine must wear safety glasses with lateral protection, ear protection as well as safety shoes. The operator is obliged to wear close fitted protective clothing.

The start up of the blast machine and the filter unit should be done in the following order (see illustration):

1. Check that the magnetic valve is closed (black lever in position (Z) "CLOSED").
2. Press the push button (S) "Control ON."

Inserting the Quick Release Pin

1. Open the chain-guard cover.
2. Turn the Potentiometer (P) in lower 1-2 (low speed)
3. Check that Overdrive (O) is not selected.
4. Switch the direction switch (V) into forward or reverse.
5. Move the Quick Release Pin(2), button pushed, into the bore (3) of the sprocket hub. Keep the button pushed.
6. Pull the lever (B). The sprocket (1) starts to turn. Push the Quick Release Pin further inwards, still keeping the button pushed.
7. Push inwards until the front ring of the pin (2) is touching the sprocket. The machine is now driven by the traction drive motor.
8. Close the chain guard cover of the traction drive.



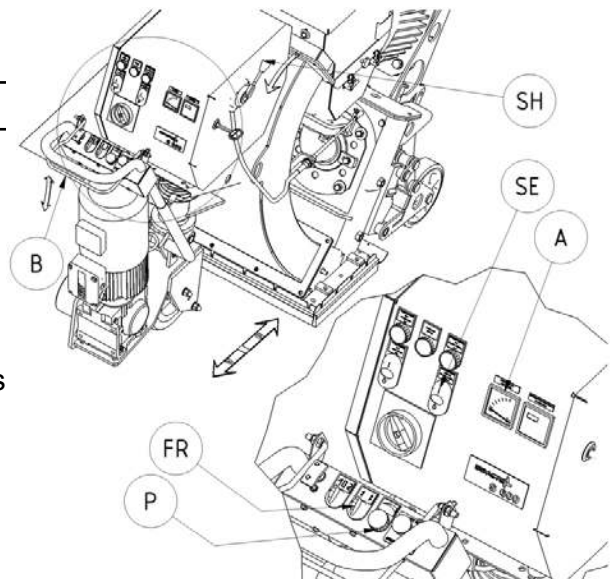
When blasting concrete the abrasive feed valve only may be opened when the blast-machine is in forward motion! If the machine is at a standstill and the valve is opened deep grooves are blasted into the concrete surface within seconds.



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.

5.3 Initial Operation

1. Press the key button (SE) "WHEEL ON" on the front of the panel. The wheel motor starts up.
2. Watch the Ammeter (A), to control the load of the wheel-motor. During start-up, the motor will need its starting current until max. speed is achieved.
3. When the motor achieved max. speed the amperage drops down to no-load-current.



4. If the ammeter indicates a high load consumption after having reached the idle-run speed, the magnetic valve may be partially open or may have another problem.
5. Find out the cause of the disturbance and, if necessary, contact your IMPACTS customer service engineer.
6. Set the direction switch (FR) to "Reverse" blast direction (V). Adjust speed by the Potentiometers (P).
7. Pull the lever (B), to start up the traction-drive.



BEWARE: When blasting concrete the abrasive feed valve only may 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!

Advice:

When the machine is moving, pull the Combination Lever (SH) to operate the feed valve. Watch the ammeter to monitor the full load amperage (depending on the selected abrasive up to the operating current 25-28 Amp maximum).

An indication exceeding the full load value means overloading of the motor, whereas an indication below the full load value shows that there is not enough abrasive fed to the blast wheel. If necessary, re-adjust the cable to the magnetic valve or refill the hopper with abrasive.

After having approx. 2 ft. /1-2 m. blasted, close the abrasive valve, stop the machine and check the blasted surface.

If the blast pattern is irregular, it may be necessary to re-adjust the blast pattern (see Chapter 7 "Setting the blast pattern") or select different speed for the machine.



*Only alter the travel direction while the feed valve is closed.
Regularly dump the dustbin of the filter unit.
Do not overfill the bin to avoid dust exposure when opening the bin.
Comply with the local waste treatment regulations considering the removed material.*

Chapter 6.0 Operation

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

6.1 Daily Operation

This operating manual has to be always 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.

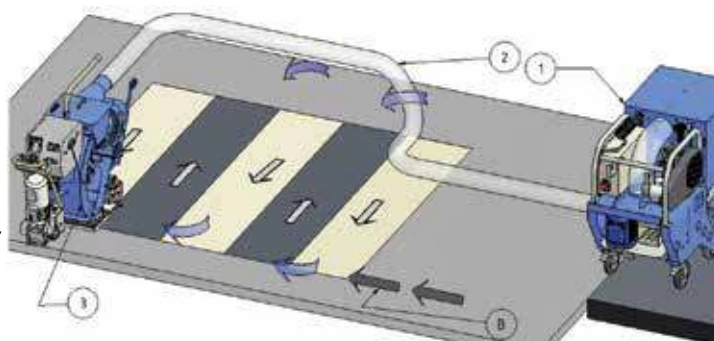
6.2 Information about the Chart Speed

The chart speed depends on the material of the surface to be blasted and the desired profiling. The correct chart speed can best be determined by observing the blasted surface and varying the speed during the blast cleaning process, for example:

- Slight profiling on concrete requires a higher speed than coarse profiling (6-10).
- Blasting on steel requires a very low chart speed (1-3).

6.3 Recommended Blast Paths

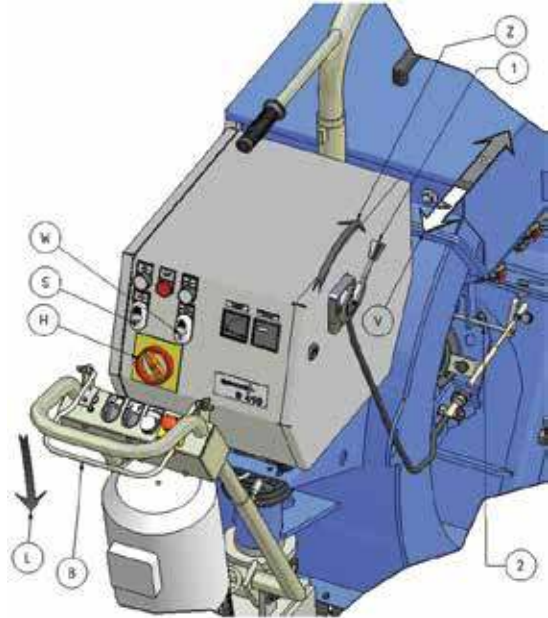
1	Filter Unit
2	Dust Hose
3	Blast Machine



- Follow normal start-up and operation of the blast machine as described in Chapter 5 "Initial Operation."
- Cut blast paths in parallel tracks in order to cover the entire surface completely and to keep the dust hose and electric cable untwisted.
- Connect the blast machine and filter with the dust hose.
- Check setting of the outlet damper on the filter.
- The illustration shows the correct placement of the dust collector and hose. The dust collector hose must not be confined in any way.
- Recommended blast paths always lead away from the location the filter unit and the power supply source.
- Be aware of the maximum length of the cable and dust hose during operation.
- Turn the blast machine around at the end of the path by first closing the feed valve. Then turn the machine and guide it back in an arc to place the machine next to the last blasted path. Repeat this procedure in order to complete the surface, always moving away from the filter toward the open surface.
- Finally, move the filter to the surface already blasted and finish the area where the filter was first located.

6.4 Turning Off the Machine

1. First close the feed valve by the handle (1), push this forward toward direction (Z).
2. Keep the traction drive switched on so the machine moves toward (V) as long as the feed valve (2) isn't closed fully to assure no grooves are blasted into the surface.
3. Release the traction drive actuator (B) so it swings back into it's previous position (L). The Traction drive switches off and the machine stops.
4. Press the Wheel Motor Off Switch (W)
5. Switch off the control circuit by pressing button (S).
6. During longer standstill of the machine switch off the main switch (H).
7. Finally switch off compressor and blower on 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.

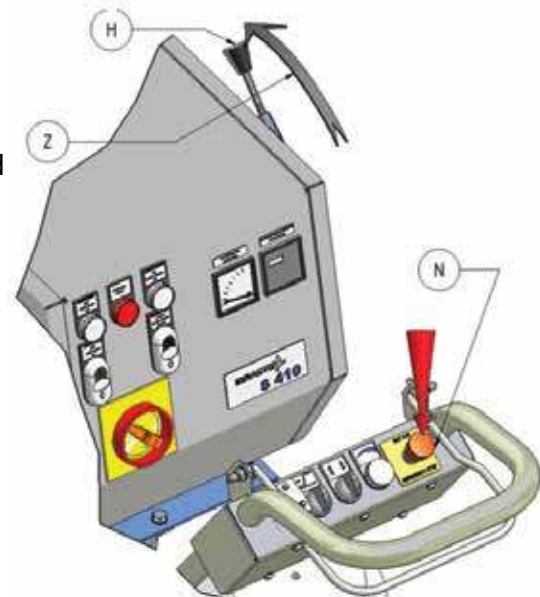
6.5 If Failure Occurs

In a case of emergency you can stop the machine immediately by pushing the emergency switch. In an emergency press immediately the Red Emergency Button (N) and then close the Feed Valve pushing lever (H) toward Z. To release the emergency switch, turn the red button and move it upward.

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

Assure all rotating machine parts have come to a standstill before inspection or maintenance work begins.

Always maintain the Safety Off Position of the machine as described in Chapter 2.



6.6 Safety Switch Off



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

6.7 Restart

After a mechanical failure, please ensure that you find the reason of the failure before you restart the machine.

Leave the Emergency-Switch pushed down and bring the machine in the Safety-Off Position before you start to find out the failure.

If you can't find the failure or if you are unsure about the reason for the failure, please contact your IMPACTS contact person and ask for help.



Please be aware of the regulations for electric equipment such as VBG 4 and VDE-0701. These regulations describe the necessary considerations and actions after repair and changes on electrical Equipment (see Chapter 5 for "Startup of the Machine").



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.

6.8 Proceedings Prior and After Longer Stoppage

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.
- 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.

After Longer Stoppage:

- See Chapter 5 "Initial Operation."

Chapter 7.0 Maintenance

- 7.1 Recommendations
- 7.2 Maintenance and Inspection
- 7.3 Maintenance
- 7.4 The Blast-Pattern
- 7.5 Adjusting the Blast-Pattern and Control Cage
- 7.6 Adjusting Magnets and Seals
- 7.7 The Belt
- 7.8 Fitting Belts
- 7.9 Belt Tension
- 7.10 Taper-Lock Bushes
- 7.11 The Chain Drive
- 7.12 Fitting Sprockets
- 7.13 Fitting the Chain
- 7.14 Maintenance and Repair of the Chain
- 7.15 Adjust Chain Tension of the Traction Drive
- 7.16 Wear Parts
- 7.17 Replacing the Wheel Kit
- 7.18 Replacing Liners

7.1 Recommendations

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.

<i>Operating Hours / Time Period</i>	<i>Inspection Points & Maintenance Instructions</i>
12 hours — after repairing	Check function of all safety devices.
	Check all accessible screw connections for tight seat.
Every 3 hours	Check whether there is any foreign matter in the hopper, the feed spout, or in the blast wheel unit.
Daily — prior to operation	Check the hose connections for tightness and fixed seat.
	Check the hose to the filter for damages.
	Make sure that the dust bin of the filter has been dumped.
	Check blast wheel, feed spout, liners and fasteners for wear and damage.
	Check the separator parts for wear and defects. Remove foreign bodies and dust deposits.
	Check the level of abrasive in the storage hopper. Refill to bottom of wire mesh if necessary.
	Check the magnetic and seals for wear and replace if necessary.
Yearly	Check the electric connections for sediments of dirt or foreign bodies.
	Check the electric motor for dirt and other contaminants.
Yearly	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 55°. 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 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.

Each time the Wheel Kit cage is replaced, the thread of the blast wheel fastening screw should be checked. Make sure that this screw is tightened correctly. In addition, absolute care must be taken to clean the thread from dust and abrasive.

After each blast wheel repair work, switch on the blast wheel motor for a short period (without feeding abrasive) in order to find out whether the rotating parts turn freely and without vibration. After that, the blast cleaning procedure can be continued.

The blast wheel motor is designed for a long service life. Damages to the blast wheel motor can be detected by unusual noises or functional failure of the electric motor. In this case notify our service department.

7.5 Adjusting the Blast Pattern and Control Cage

In order to get a uniform and perfect blast pattern on the surfaces 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 switch-on. Put the machine to its Safety Off Position.

Incorrect adjustment of the blast pattern results in:

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

Four factors affect the blast pattern:**1. Rotation direction of the blast wheel:**

The rotation direction of the blast wheel must correspond to the instructions on the housing (arrow indicating the turning direction).

2. Worn tune-up kit:

With increased wear of the Wheel Kit (impeller, control cage), the blast pattern will change

3. 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.

4. 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 where it hits the surface to be treated. After changing the Wheel Kit, the adjustment of the control cage must be checked and re-adjusted. To do so, you need to create a blast pattern. The same applies for blasting on another type of surface.

Adjustment of the Control Cage

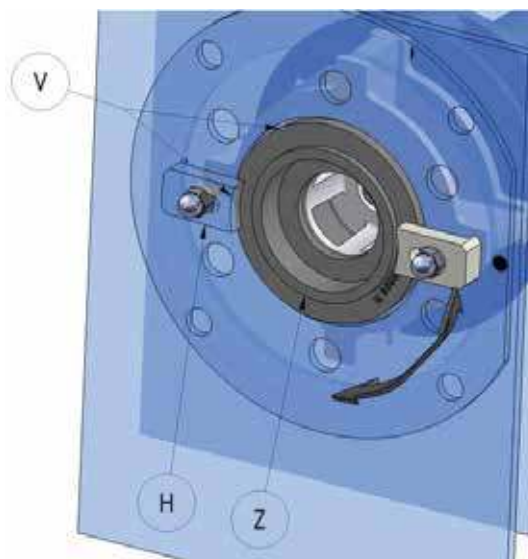
The adjustment is done as follows:

Slack the cage clamps (H) and turn the control cage (Z) into a pre-setting position. The cast grooves on the control cage show the position of the control cage opening. The feed spout remains in its former position.

The following adjustment standard value is valid: the control cage opening is approximately opposite to the throwing angle.

The abrasive grain size plays an important role. Different types of abrasive have different throwing characteristics due to their different weights and frictional resistance. This explains why the blast pattern needs to be adjusted after presetting and testing.

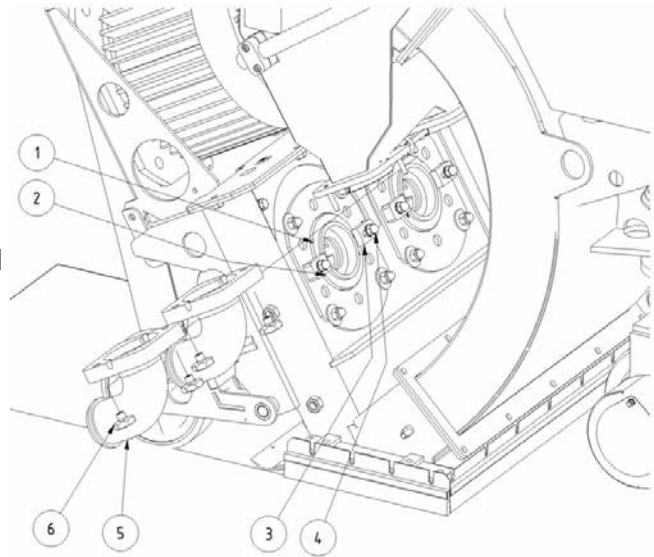
After fitting new spares always, check the blast pattern in order to get best performance. This is the only way to grant economical work and to avoid unnecessary wear and repair costs.



The adjustment of the blast patterns can be carried out as follows:

Since the S600E has two blast wheels, you have to adjust two blast patterns:

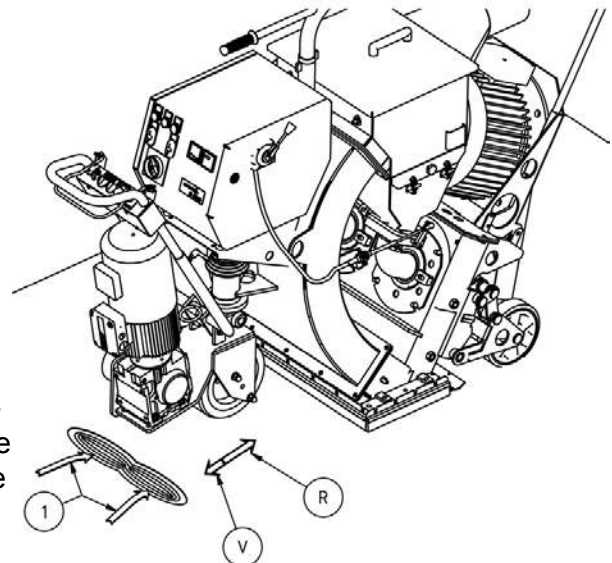
1. The left hand blast pattern (control cage). Determine the upper (1) and lower (2) window edges of the Control Cage.
2. Set the upper window edge (1) of the control cage to imaginary 11.00 of a dial. Place the cage clamps (3) and fix them with nuts (4). Finally replace the feed spout (5) onto the control cage.
3. Proceed with the right hand blast pattern in the same way in a mirrored direction.
4. Move the blast machine in direction (V) on a 5-8 mm thick steel plate and blast for 45 seconds at full amperage without moving the machine.
5. Move the machine from the blast zone and carefully inspect the steel plate.



Hot Zones

You will find the Hot Zone 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. Adjust the control cage until the Hot Zone (HZ) is exactly in the middle of the blast pattern (1).

- Now the blast procedure can be started. When a concrete surface is to be blasted, check the blast pattern again after some distance and readjust slightly if necessary. The blast pattern will change with and increase wear of the Wheel Kit when the size of the abrasive is changed.
- If the blast result shows strong blasting on the right-hand side 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 and weak blasting on the right-hand side (shadows), turn the upper edge of the control cage counter-clockwise (CCW) for 2-4 mm.
- Adjust the control cage until the Hot Zone (HZ) is exactly in the middle of the blast pattern (1).
- Note: All descriptions are seen from the front into the blast wheel.



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

7.6 Adjusting Magnets and Seals

The adjusted height of the magnetic seals, parallel to the surface to be treated, should be set equal at about 1/4 in. / 8 mm.

For the height adjustment an 6-8mm stainless-steel strip (C) is shifted below the magnetic sealing.

Front setscrew (1)

Quantity: 2

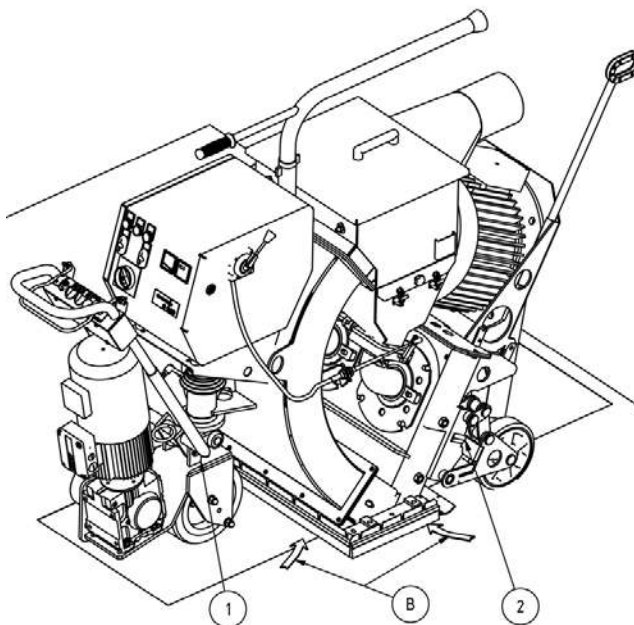
Rear setscrew (2)

Quantity: 2

Adjust the height with the setting screws until the correct distance of 8-10 mm has been set.

On the IMPACTS S600E, the adjustment is done by 4 setting screws (one screw (2) each at the rear wheels and two (1) on the inner side of the traction drive bracket).

The height of the brush seals should be maximum 1 mm above the surface. The adjustment is possible within the slots of the seal elements. The setting depends on the structure of the surface to be treated, in general the rougher the surface the lower the setting. Working on steel means to set it down as far as possible.



7.7 Belt Drive

The V-belt is designed for the installed drive power. Forcing the drive to grant a higher output by over tensioning the V-belt results in belt breaks, bearing damage, and thus lower efficiency. A low V-belt tension results in slippage causing an increased belt temperature and premature destruction of the V-belts.

Temperatures exceeding 70°C for a long period reduce the service life and performance of the V-belts. The grooves of the V-belt pulleys have to be free from rust, grease, dirt, and damages. The use of belt wax or similar substances to increase the friction coefficient is unnecessary and damages the V-belts. Avoid any contaminations by oil, grease, or chemicals.

In order to grant a perfect output transmission, the V-belt drive needs continuous observation.

7.8 Fitting Belts



Remove the belt guard only when the blast wheel motor is at a standstill and the main switch of the blast machine is in Safety Off Position as described in chapter 2.

Release the tension of the V-belt drive by reducing the distance between the shafts of the blast wheel motor and wheel-bearing unit.

Insert the V-belt in the V-belt pulley grooves manually without forcing the belt.

Adjust the tension the V-belt by increasing the distance between the shafts of the blast wheel motor and the wheel-bearing unit as described next.

Fasten the required protection equipment has been fitted before.

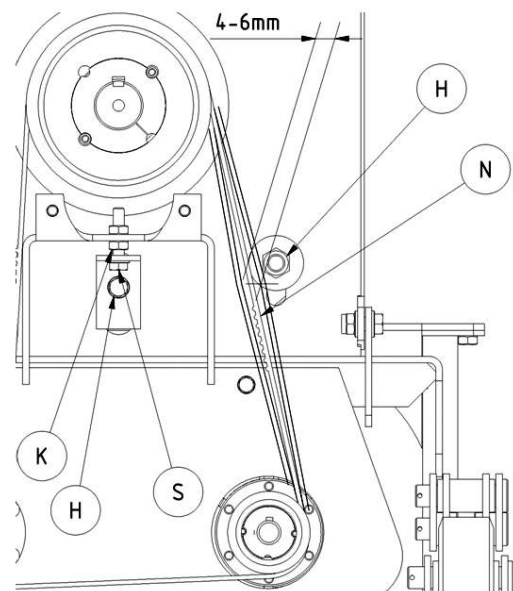
7.9 Belt Tension

To achieve a maximum power transfer and live time the correct setting of the belt tension is essential. Often belts are set with the wrong tension and fail before normal service time. Belts that are set with too much tension may cause bearing problems on motors or bearing units.

Check the correct pre-tension in accordance with the illustration by pressing on the belt. The displaced distance of the belt should be 4-6 mm.

To adjust the correct belt tension, slacken the motor fixing screws (H) and the locknut (K). Adjust the belt tension by the adjuster screws (S) and then tighten the locknut (K).

Finally, draw up the motor screws (H) and fit the belt guard again.



7.10 Taper-Lock Bushes

Taper locks are used to shrink-fit hubs on shafts. Mounting and demounting only requires a screw driver DIN 911 (Allen key). Tightening and loosening is affected with the same threaded pins or screws.

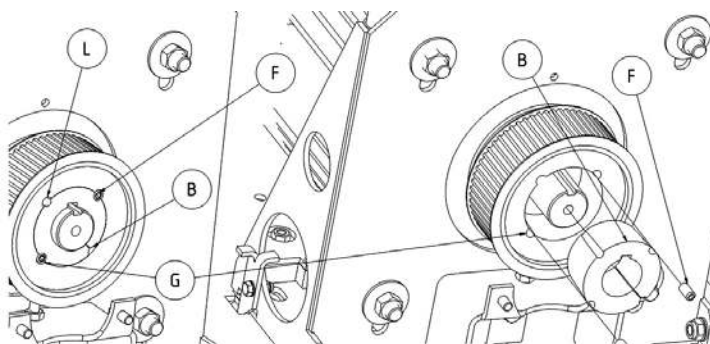
Taper locks are cylindrical on the inside, tapered on the outside, and slit longitudinally. The smaller bushes 2 and 3 have in the large face their cylindrical blind holes in parallel to the axis, which, however, are only placed half in the bush material. The other halves of these blind holes are threaded and are placed inside the hub.

Threaded pins or screws are screwed to the stop in the boreholes using an Allen key. When the screws are tightened further using a certain amount of force the hub is drawn up to the tapered bush which is pressed onto the shaft with great force.

Demount

Demount the screws (F) in the belt pulley
Lubricate the thread and the tip of the screw and turn it into the bore (L) as shown.

Turn the screw until the taper lock (B) gets loose inside the pulley and the assembly is loose on the shaft. Take the pulley and the taper lock from the shaft.



Mounting

Assure that all contact surfaces are free from dirt and oil. Place the taper lock into the pulley.
Lubricate the screws slightly and insert them into the respecting threaded holes.

Clean the shaft, shift the pulley with the taper lock, as one unit, onto the shaft, and position the assembly. Note, that first the taper lock is fixed on the shaft before the pulley reaches its final position on the bush.

Use an Allen key to fit the screws. Knock the frontal face of the bush lightly with a hammer to make sure that the bush is seated in the center of the pulley (use a mandrel to avoid any damages).

Now tighten the screws. Repeat the alternating hammering and tightening until all screws fully tightened.

7.11 The Chain Drive

The mounting, demounting, and repair work always needs to be done with appropriate tools. With these works, the prevailing safety regulations must be strictly observed.

Chain drives are relatively robust and reliable even under unfavorable operating conditions. Incorrect mounting and insufficient lubrication and maintenance can cause premature wear of the chain and the chain wheels.

Careful fitting of the chain drives and appropriate maintenance therefore both contribute to a long service life..

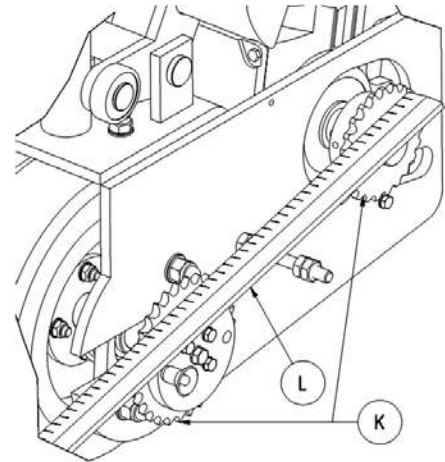


Remove the chain guard only when the drive motor is at a standstill and the main switch of the blast cleaning machine is locked (see chapter 2 "Safety off position").

7.12 Fitting Sprockets

Chain sprockets must be aligned. In order to achieve this, both shafts and the chain sprockets must be parallel and dimensioned according to the load.

Check the mounting precision by a ruler putted to the chain wheels. This has to be done several times with different chain wheel positions. Incorrect mounting makes the internal chain link plates press against the external link plates and accelerates the chain wear or even causes the chain wheels to lock up.

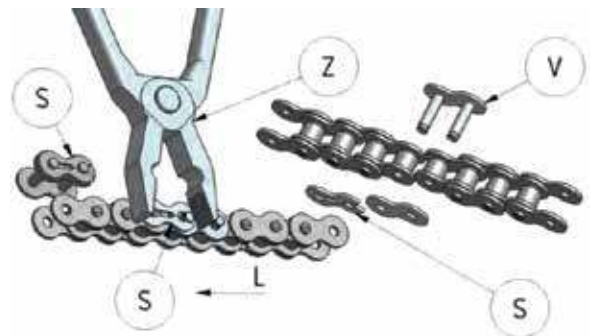


7.13 Fitting the Chain

Before mounting the chain it must be degreased to prevent any abrasive or abrasive particles from adhering. The chain is supplied as a chain string and has to be prepared during mounting.

This is done as follows:

- Place the chain on the chain wheels so that the links lie in two adjacent gaps between the teeth. Now close the chain using a chain link. With heavy chains or big distances between the shafts use a pre-stressing tool in order to bring the two end links so close together that the coupling link can be inserted without being deformed.



Chain Links with springs:

- Their closed sides should point to the running direction (L) of the chain (S). Slide in the link adapter (V) and place the link plate opposite place the spring onto the link plate and press it over the pin into the ring groove by means of a pair of tongs. Demount the spring in the reverse order.

7.14 Maintenance and Repair of the Chain

A chain drive needs little maintenance only if the correct chain has been selected, is mounted correctly for the application, and is not lubricated with grease. A chain guard protects the drive chain. The chain guard prevents excessive contamination and prevents accidents.

The chain drive needs to be cleaned every three months. On these occasions, check the alignment of the chain sprockets and the chain tension. In order to clean thoroughly, first remove the dirt adhering to the outside of the chain drive using a hard or wire brush. Then wash the chain in petroleum ether or a similar substance.

After this, clean the dirt from the internal parts of the chain. To do this, place the chain for approximately 24 hours in petroleum ether, diesel, or another solvent in order to soften the dirt and hardened lubricant remnants in the chain joints. Move the chain several times back and forward in the bath to clean the joints.

7.15 Adjust Chain Tension of the Traction Drive

The traction drive motor is mounted on a slotted plate. If necessary to retighten the chain, it can be done by shifting the motor along the slots.

In order to adjust the chain tension, loosen the fixing screws, and shift the motor in the direction needed to correct the chain tension.

The correct chain tension is set when the chain allows to be dislocated for about 10-15 mm between the chain sprockets.

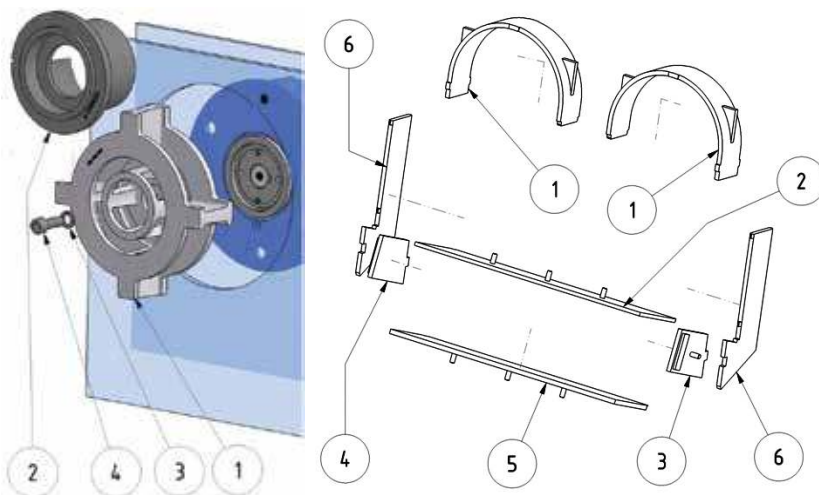
7.16 Wear Parts

The Wheel Kit

- | | |
|---|--------------|
| 1 | Blast Wheel |
| 2 | Control Cage |
| 3 | Lock Washer |
| 4 | Bolt Liners |

Liners

- | | |
|---|----------------------|
| 1 | Top Liner |
| 2 | Top Plenum Liner |
| 3 | Side Liner Plenum RH |
| 4 | Side Liner Plenum LH |
| 5 | Bottom Plenum Liner |
| 6 | Side Liner |

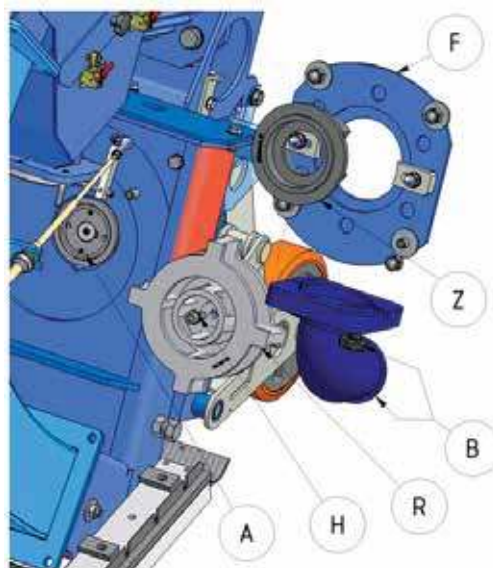


7.17 Replacing the Wheel Kit

The Wheel Kit consists of Blast Wheel, Control Cage, Lock Washer, and Bolt.

Demounting:

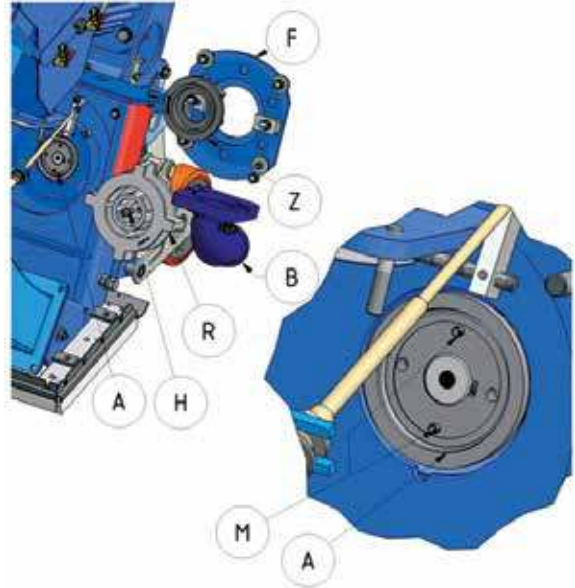
1. Remove the feed spout (B) by loosening the Knurled-Nuts, pulling away the feed spout, and moving the feed spout out of the housing.
2. Loosen the cage clamps and remove the control cage (Z).
3. Unscrew the 4 screws of the front cover plate (F) and take it off.



4. Unscrew the fixing screw (H) of the blast wheel while holding the blast wheel still. Take the blast wheel out of the housing.
5. Check the wheel adapter (A) for wear and replace if necessary.

Mounting:

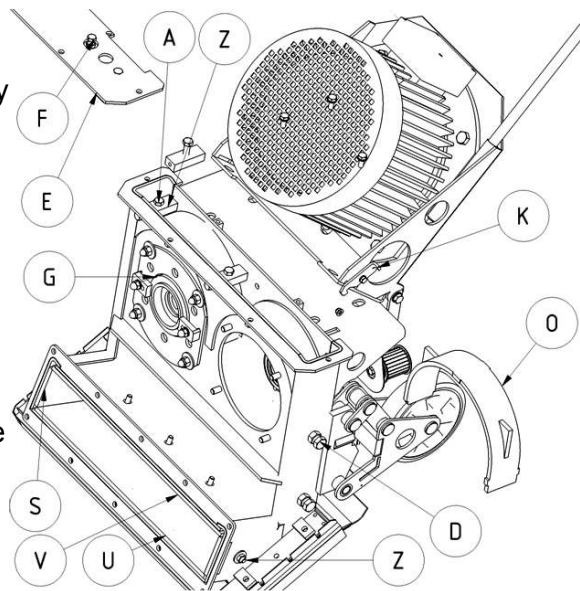
1. Clean all threads and use a new blast wheel fixing screw. Place the blast wheel (R) on the wheel hub (A) through the blast housing opening assure the blast wheel fit with the adapter pins (M) in line. Tighten the blast wheel by the fixing screw (H).
2. Fix the front cover plate (F) using the 4 washers and nuts.
3. Insert the control cage (Z) in the center (observe Chapter 7.5 "Adjusting the Blast Pattern") and clamp the control cage with the cage clamps so that the blast wheel can rotate freely. Turn the blast wheel manually. It must rotate free.
4. Place the feed spout (B) in the housing and fix it with the knurled-nuts.



7.18 Replacing Liners

Demounting:

1. Take off the belt guard. Remove the screws fitted on the inner side of the motor bracket, loosen the locker (K), and swing the motor carefully forward by using the handle. Take off the belt.
2. Remove the front-plate and wheel-kit (G).
3. Slacken the setscrews (F) of the top liner. Take off the screws of the cover (E) and remove the cover.
4. Slacken the inner setscrews (A) of the left hand and right hand liners.
5. Slacken and remove the two fixing blocks (Z) of the liners.
6. Loosen the pressing screws (D) of the side liners.
7. Remove the top liner (O) toward the top.
8. Slacken the nuts (Z) of the rebound side liners push the liners inward. Fully take off the nuts and move both liners downward away from the housing.
9. Push both side liners (S) toward the bottom, taking them out of the housing.



10. Remove the side liners in the housing by pushing them downward out of the housing, using a hammer.
11. Remove the rebound bottom (U) and top liner (V). Take off the nuts and pull both downward out of the housing.

Mounting:

1. Before fitting any new liner, check all threads for dirt and abrasives. Clean where necessary.
2. Place the bottom and top rebound liners, put the nuts on, and tighten them.
3. Place both side liners into the housing.
4. Then place both side liners (S) in the rebound area. Put the nuts on, but do not tighten them.
5. Place the top liner (O) on the top.
6. Place the fixing blocks (Z) and fix them with the screws, adjust the top liners with the set screws in a way so there is no gap on the radius of the inner housing plates.
7. Close the cover (E) and fit the screws. Set the setscrews (F) on the cover so the top liners are supported in the center.
8. Tighten up the set screws (D) for all liners.
9. Fit the wheel kit and front plate as described in Section 7.18.
10. Swing back the motor bracket, fit belt and belt guard. Control the belt tension after 3 hours.

Chapter 8.0 Electrical System

8.1 Hints for the Electronics

8.2 Circuit Diagrams

8.1 Hints for the Electronics



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.



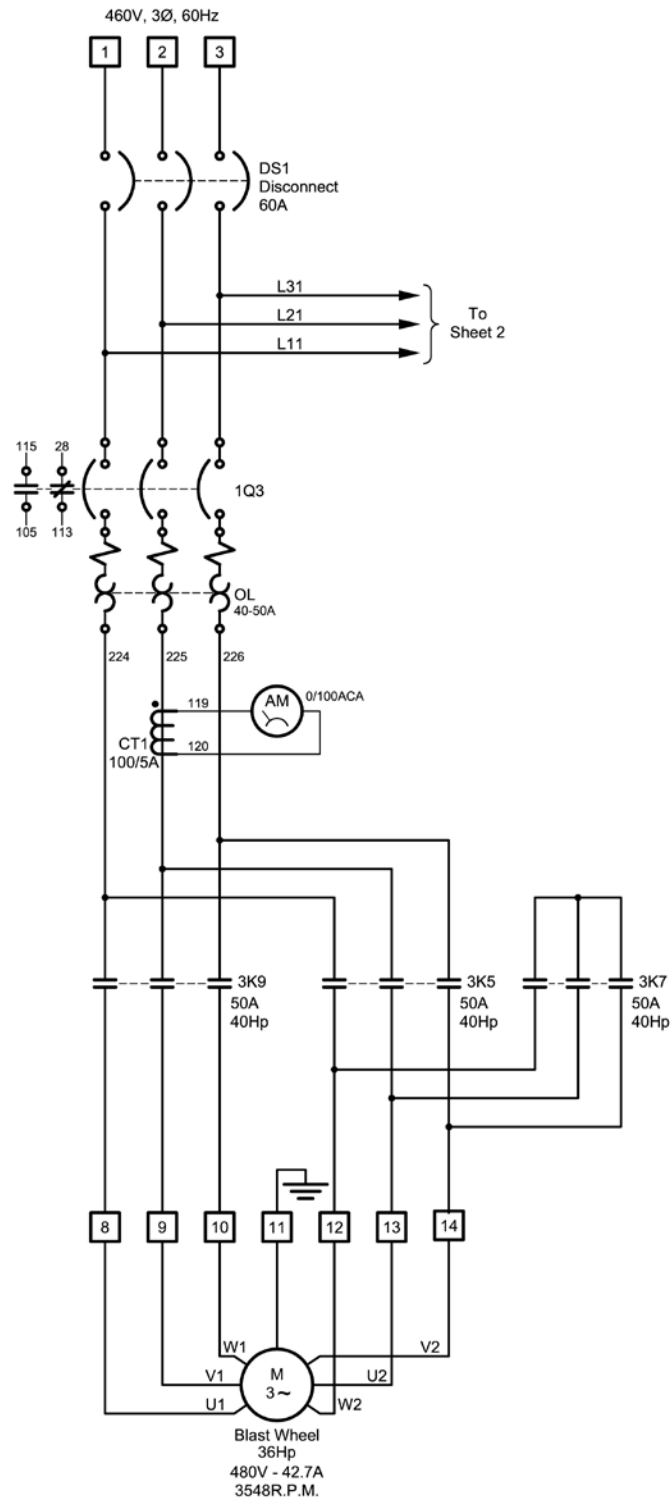
Electric spares need to be ordered with reference to the electrical circuit diagram within this chapter. If there is any doubt, you need to call your local IMPACTS service technician.

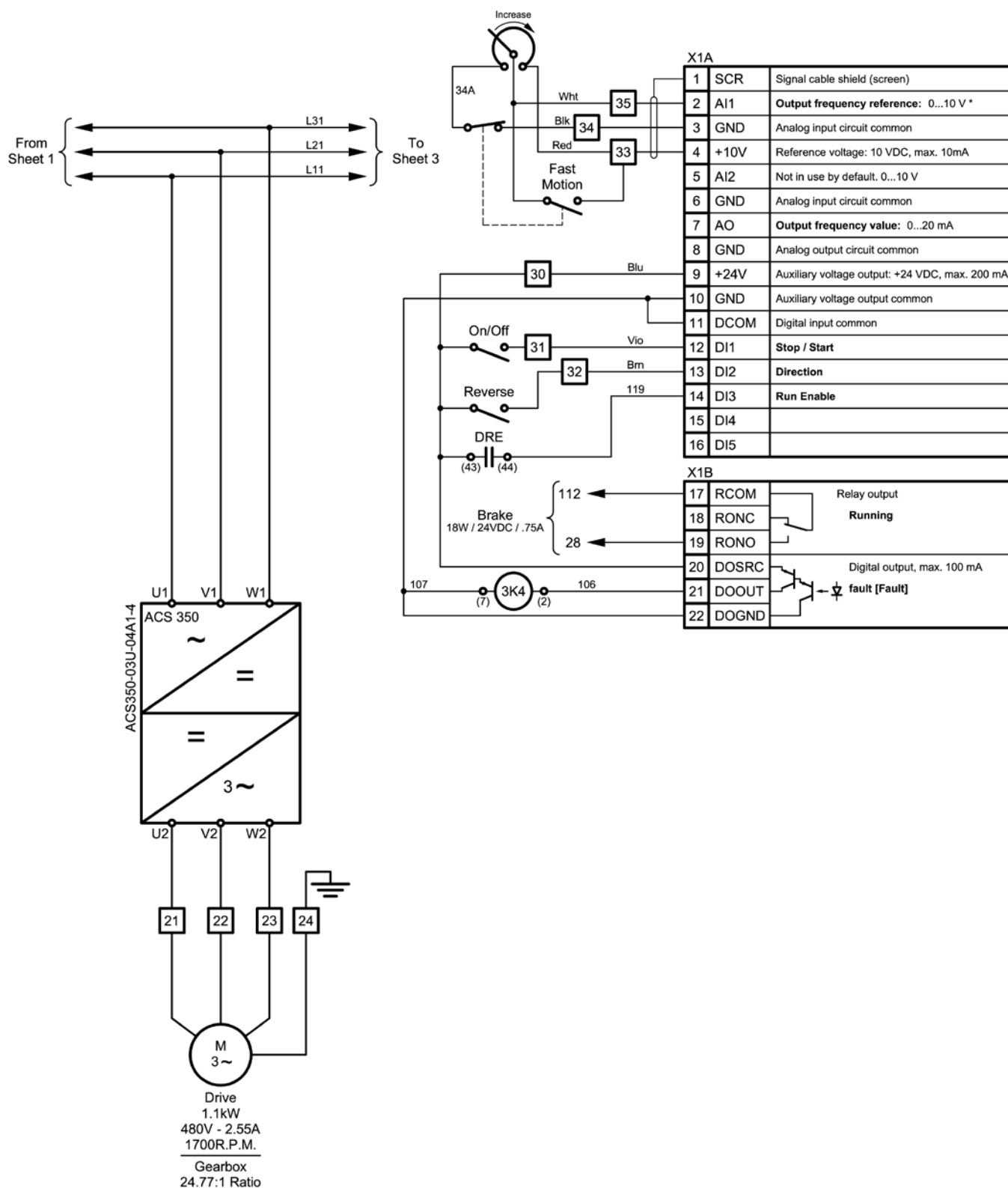
The electrical parts of the machine must be inspected regularly. Please note in particular the specified recurring inspections according VBG 4 or other local regulations. Defects such as loose connections or scorched cables must be rectified immediately. Call a skilled electrician or the IMPACTS customer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

8.2 Circuit Diagrams





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.

Failure	Possible Reasons for Failure	Failure Corrective Actions
Unusual Vibrations	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.
	Wheel hub worn out	Replace wheel hub
	Drive shaft bent	Replace shaft or complete bearing unit
Unusual Noise	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.
	Shrieking wheels	Apply oil or grease. Replace if worn.
	Motor bearings worn	Replace bearings
Reduced performance or no performance	Insufficient flow of abrasive in front of the blast wheel	Clean wire mesh and check feed spout for cleaning
	Not enough abrasive in storage	Fill up abrasive
	Loose valve lever	Tighten up set screw
	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)

Failure	Possible Reasons for Failure	Failure Corrective Actions
Reduced performance or no performance	Blast wheel or control cage	Blast wheel or control cage worn out. Replace worn items.
	Belt tension	Check and adjust
	Valve does not close properly and abrasive is blocking the blast wheel when switch is on.	Close valve, stop motor, and readjust valve.
	Too much abrasive emitted when switched on.	Ensure motor has max speed before opening the valve,
	Feed motion too fast.	Reduce speed.
Loosing Abrasive	Bad seals	Check base seals readjust and replace when worn.
	Elevation adjustment of magnets	Check elevation to be no higher than 8mm.
	Magnets lost field	Replace magnets
	Filter unit	Adjust reducing damper
Dumping or Loosing Abrasive	Poor Abrasive quality	Use Quality abrasives
	Blast Wheel worn	Replace Blast Wheel
	Worn Seals	Replace Seals
	Elevation adjustment of magnets	Readjust elevation of magnets and adjust seals
	Too much dust and sand in system	Check filter
Too much dust and other particles in storage	Insufficient air flow toward filtration unit	<p>Check rated performance of the filter unit connected.</p> <p>Check all seals</p> <p>Check dust hose</p> <p>Check differential pressure and replace filter elements if pressure is too high.</p>

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.

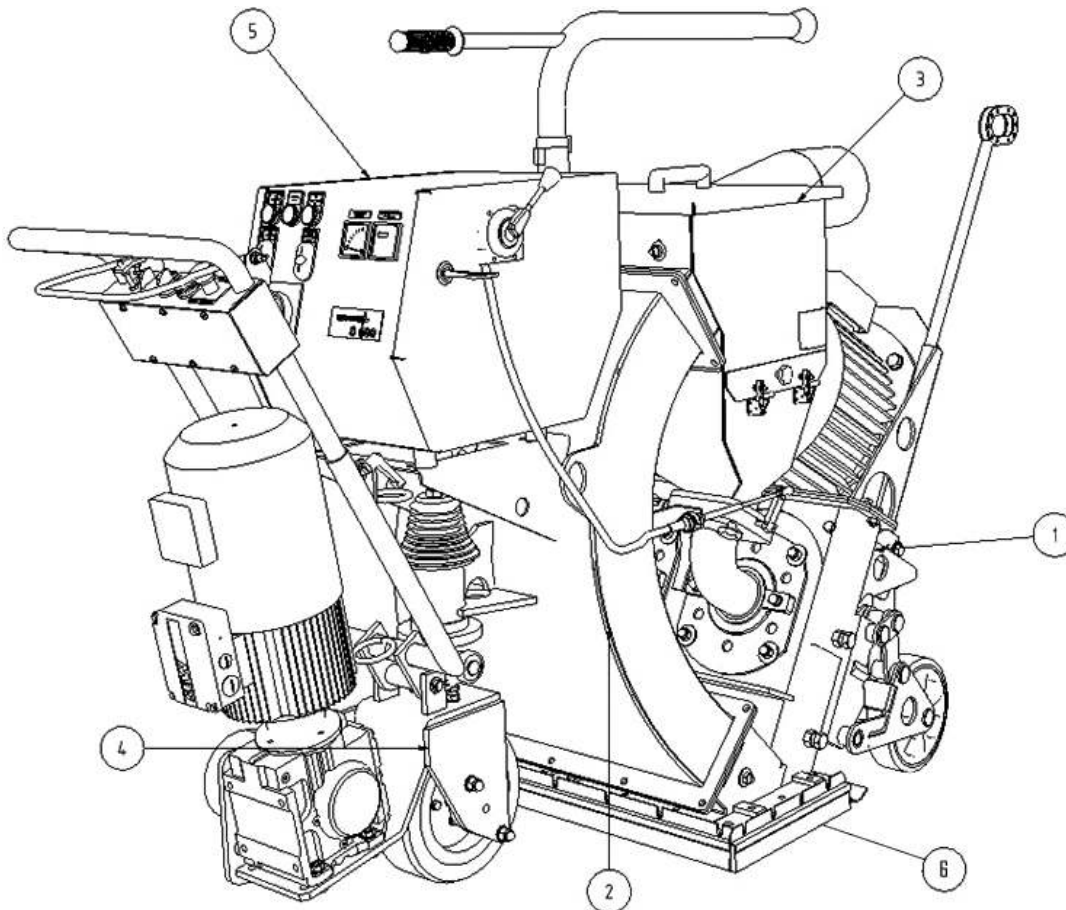
Failure	Possible Reasons for Failure	Failure Corrective Actions
Motor does not start up	Missing Phase	Check power supply
	Faulty Switch or relays	Diagnosis and replacement by electrician
	Emergency Stop	Unlock Emergency Stop Button
Motor stops during operation	Current too high	Disconnect plug
	Power supply circuit breaker disengaged	Reset circuit breaker or replace fuse. Adjust maximum abrasive feeding (use Amp meter)
	Motor is damaged	Check motor

Chapter 10.0 Spare Parts

- 10.1 Machine Overview
- 10.2 Wheel Drive Assembly
- 10.3 Wheel Housing Assembly
- 10.4 Rebound Assembly
- 10.5 Separator Assembly
- 10.6 Traction Drive Assembly
- 10.7 Base Seal Assembly

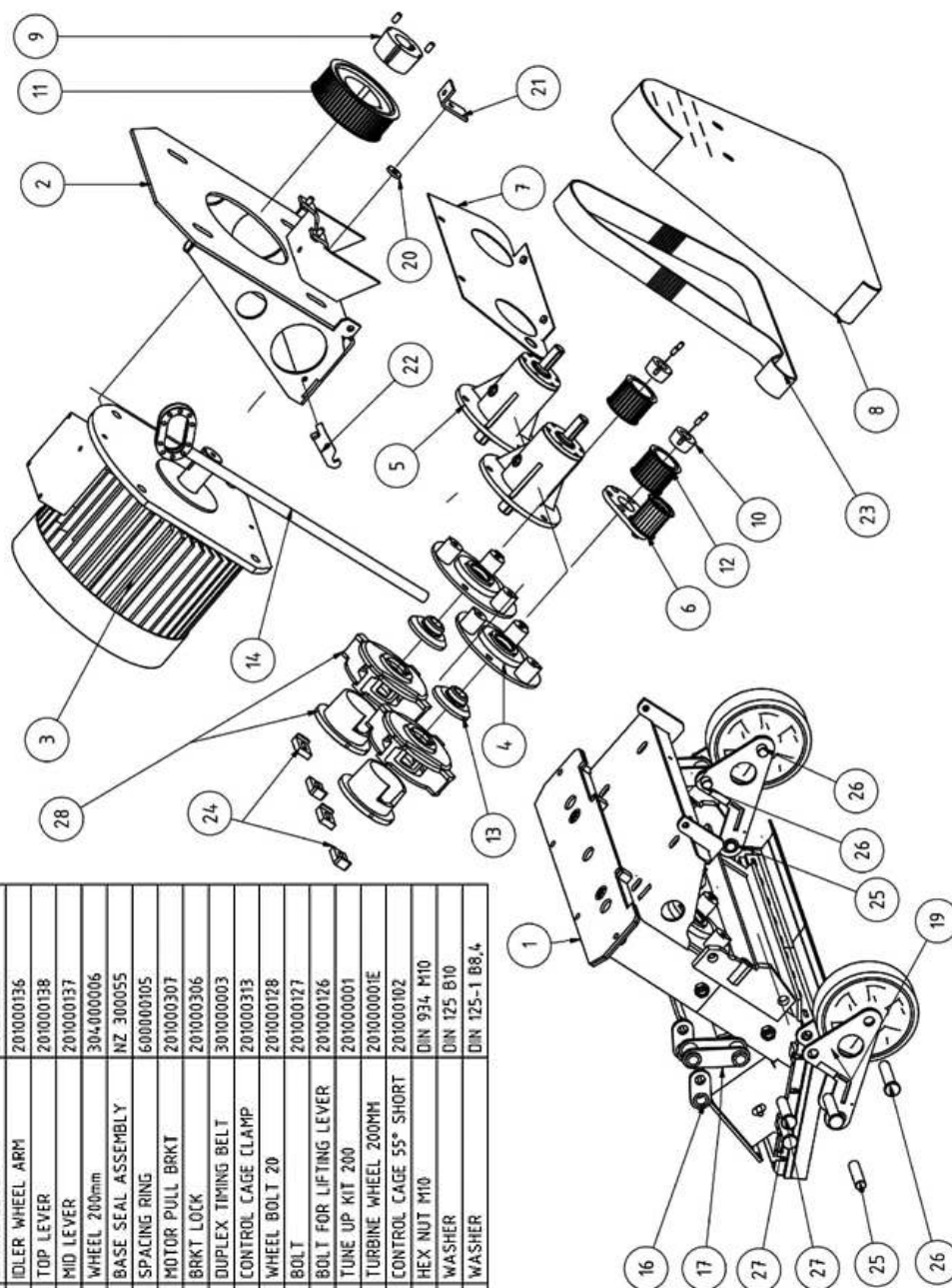
10.1 Machine Overview

#	QTY	DESCRIPTION	ASSEMBLY No.
1	1	WHEEL HOUSING including WHEEL DRIVE ASSEMBLY	NZ01312C
2	1	RBC ASSEMBLY S600	BM N70312A
3	1	SEPARATOR ASSEMBLY S600	BM N30312A
4	1	TRACTION DRIVE ASSEMBLY S410E-S800A	NZ1204117B
5	1	CONTROL PANEL ASSEMBLY S600	BM 611002
6	1	BASE SEAL ASSEMBLY	NZ300055



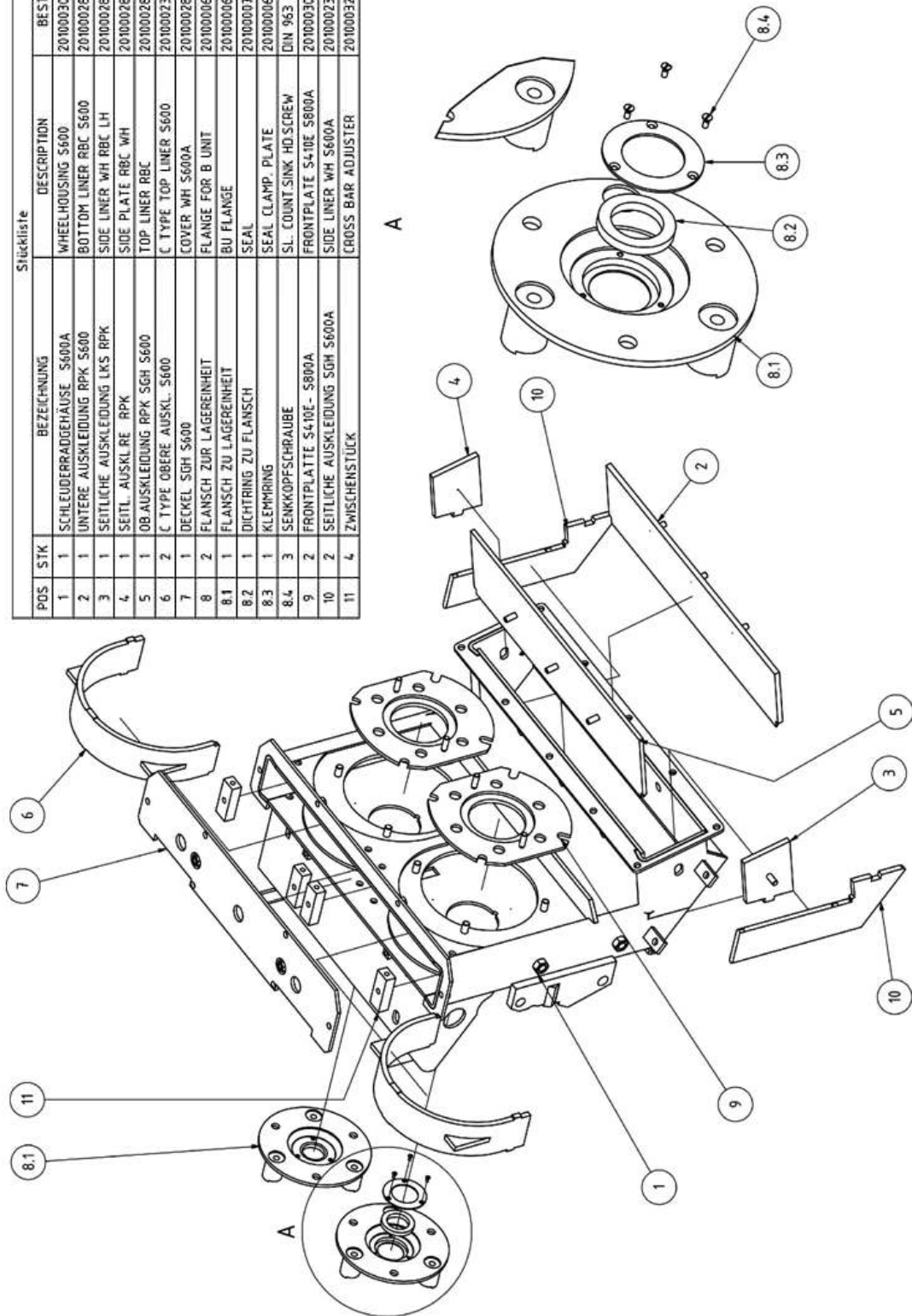
10.2 Wheel Drive Assembly

POS	STK	BEZEICHNUNG	DESCRIPTION	BESTELL NR / PT No
1	1	SCHILGEHÄUSE ZUSAMMENBAU S600A	WH ASSEMBLY S600A	NZ 01312C
2	1	MOTORKONSOLE S600	MOTORBRACKET	201000305
3	1	ANTRIEBSMOTOR	WHEEL DRIVE MOTOR	601000007
4	2	FLANSCH ZUR LAGEREINHEIT	FLANGE FOR B UNIT	201000061
5	2	LAGEREINHEIT	BEARING UNIT	201000043
6	1	KOMPLETTE UHLENKROLLE	DEFL. PULLEY ASSEMBLY	201000085
7	1	HINTERE ABDECKUNG RSCHUTZ S600	REAR BELT GUARD SHIELD	201000172
8	1	RIEMENSCHUTZHAUBE S600	BELT GUARD	201000171
9	1	TAPER-LOCK	TAPER LOCK BUSH	303000003
10	2	TAPER-LOCK	TAPER LOCK BUSH	303000005
11	1	ZAHNRIEMENSCHIBE P64	MOTOR PULLEY	302000003
12	2	ZAHNRIEMENSCHIBE P28	PULLEY SMALL	302000004
13	2	SRADADAPTER	WHEEL HUB	201000051
14	1	HEBEL HÖHENVERSTELLUNG	LIFTING LEVER	201000139
15	2	RADSCHWINGE	IDLER WHEEL ARM	201000136
16	4	OBERER HEBEL	TOP LEVER	201000138
17	2	MITTLERER HEBEL	MID LEVER	201000137
18	2	RAD 200MM	WHEEL 200mm	304-000006
19	1	ABDICHTUNG ZUSAMMENBAU	BASE SEAL ASSEMBLY	NZ 300055
20	1	ZWISCHENRING 6MM	SPACING RING	600000105
21	1	ZUGWINKEL MOTORKONSOLE	MOTOR PULL BRKT	201000307
22	1	SPERRKLINKE	BRKT LOCK	201000306
23	1	DUPLEXZAHNRIEMEN	DUPLEX TIMING BELT	301000003
24	4	SPANNPATZTE ZUTEILHÜLSE	CONTROL CAGE CLAMP	201000313
25	2	SCHWINGENBOLZEN 20x80	WHEEL BOLT 20	201000128
26	4	BOLZEN ZUR SCHWINGE	BOLT	201000127
27	4	BOLZEN ZUM GELENK	BOLT FOR LIFTING LEVER	201000126
28	2	SCHLEUDERRADSATZ 200mm	TUNE UP KIT 200	201000001
x	2	TURBINENRAD 200MM	TURBINE WHEEL 200MM	201000001E
x	2	ZUTEILHÜLSE 55GRAD KURZ	CONTROL CAGE 55° SHORT	201000102
29	1	SECHSKANTMUTTER	HEX NUT M10	DIN 934 M10
30	1	SCHEIBE	WASHER	DIN 125 B10
31	2	SCHEIBE	WASHER	DIN 125-1 B8,4

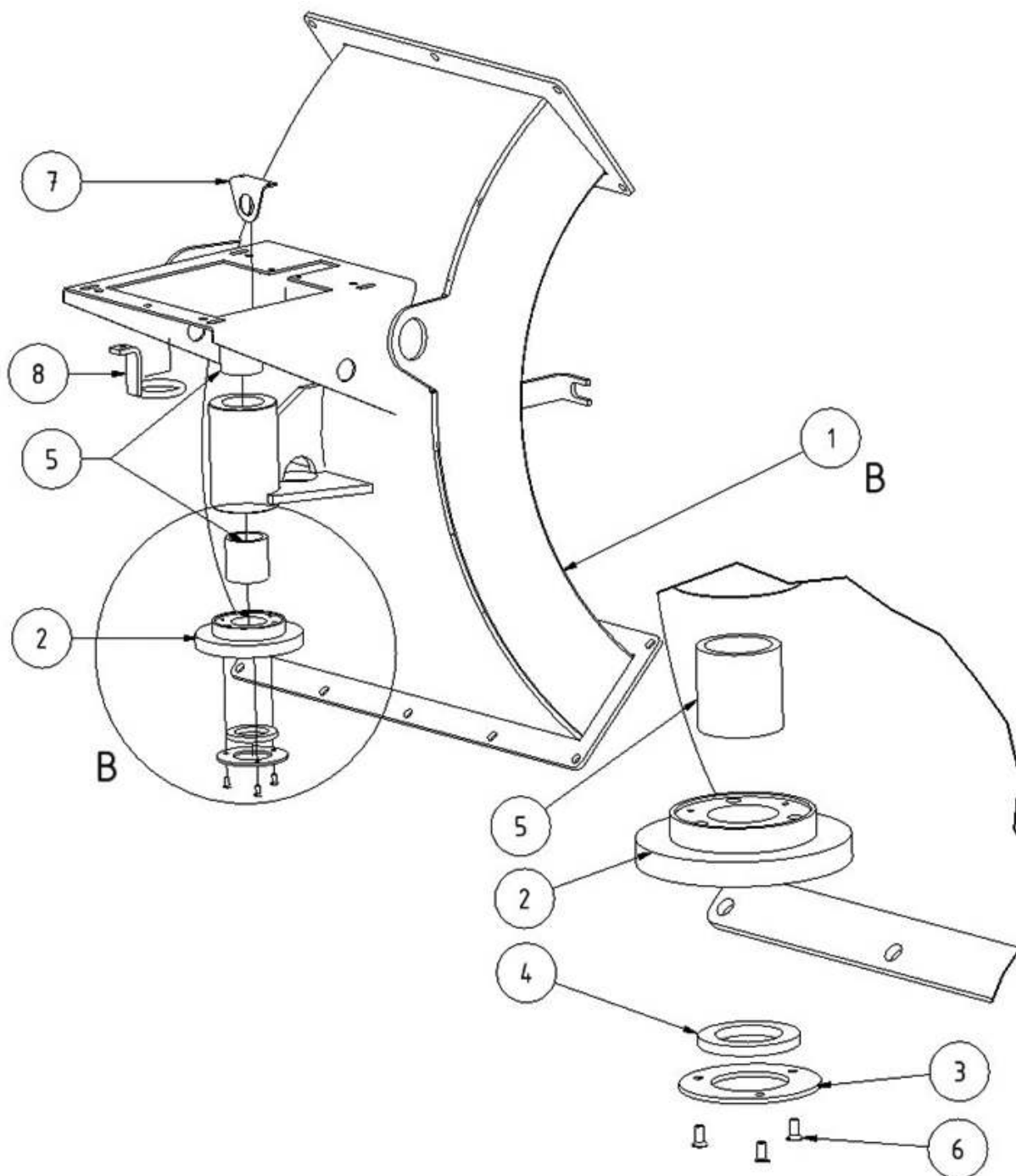


10.3 Wheel Housing Assembly

Stückliste			
POS	STK	BEZEICHNUNG	BESTELL NR / PT No.
1	1	SCHLEUDERRADGEHÄUSE S600A	201000301
2	1	UNTERE AUSKLEIDUNG RPK S600	201000286
3	1	SEITLICHE AUSKLEIDUNG LKS RPK	201000287 LKS
4	1	SEITL. AUSKL. RE. RPK	201000287
5	1	OB.AUSKLEIDUNG RPK SGH S600	201000288
6	2	C TYPE OBERE AUSKL. S600	201000234
7	1	DECKEL SGH S600	201000289
8	2	FLANSCH ZUR LAGEREINHEIT	201000061
8.1	1	FLANSCH ZU LAGEREINHEIT	201000061
8.2	1	DICHTUNG ZU FLANSCH	201000073
8.3	1	KLEMMRING	201000062
8.4	3	SENKKOPFSCHRAUBE	DIN 953 M4x10 Zn
9	2	FRONTPLATTE S410E - S800A	201000302
10	2	SEITLICHE AUSKLEIDUNG SGH S600A	201000233
11	4	ZWISCHENSTÜCK	201000323

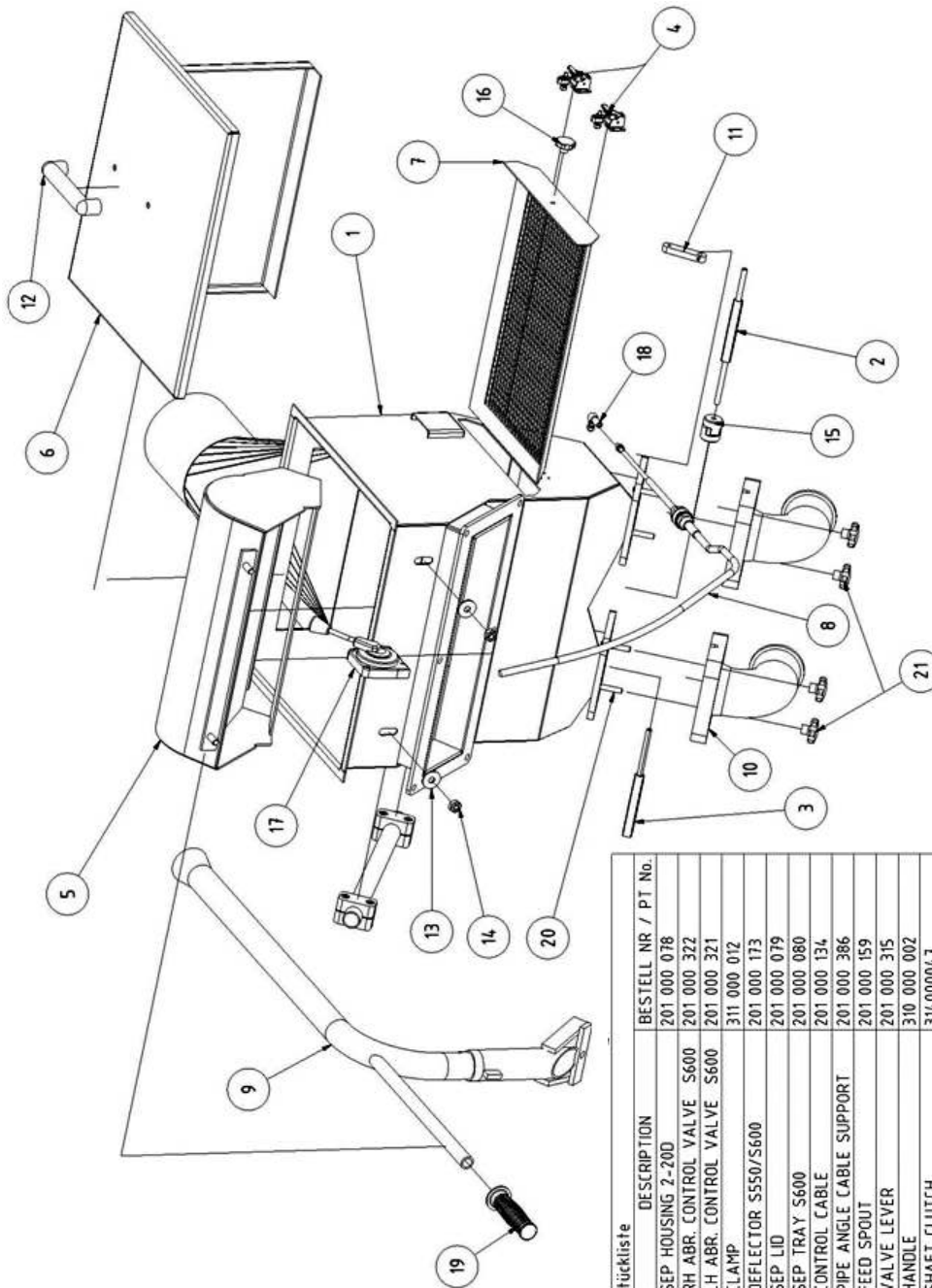


10.4 Rebound Assembly



POS	STK	BEZEICHNUNG	DESCRIPTION	BESTELL NR / PT No.
1	1	RÜCKPRALLKANAL S600	REBOUND S600	201000160
2	1	LENKPLATTE PLATE	SWIVEL PLATE	201000058
3	1	HALTERING FILZRING	SEAL SUPPORT PLATE	201000059
4	1	FILZRING ZUR LENKUNG	FELT SEAL	201000187
5	2	SINTERBUCHSE	BUSHING	314000003
6	3	SENKSCHRAUBE M5	COUNT S. HD SCREW	DIN 963 M5 Zn
8	1	KABELFÜHRUNG ZU RÜCKPRALL	CABLE GUIDE RING	201 000 411
7	1	VERSCHRAUBUNGSHALTER RPK	CABLE GLAND BRKT.	612 000 052

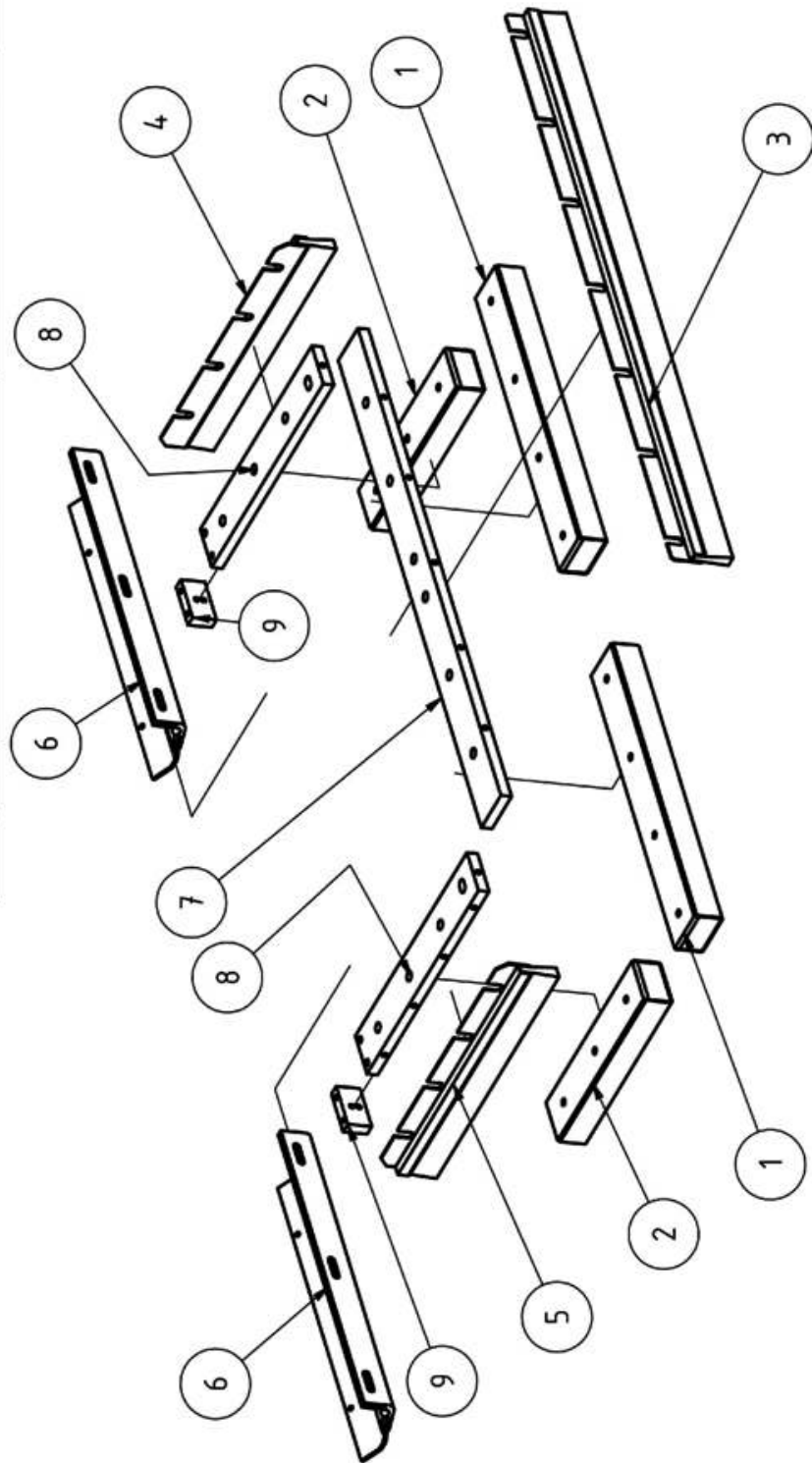
10.5 Separator Assembly



POS	STK	BEZEICHNUNG	DESCRIPTION	BESTELL NR / PT No.
1	1	SEPERATORGEHAUSE S600	SEP HOUSING 2-200	201 000 078
2	1	ZUTEILVENTIL RECHTS S600	RH ABR. CONTROL VALVE S600	201 000 322
3	1	ZUTEILVENTIL LINKS S600	LH ABR. CONTROL VALVE S600	201 000 321
4	2	SPANNER	CLAMP	311 000 012
5	1	DEFLEKTOR S550/ S600	DEFLECTOR S550/S600	201 000 173
6	1	SEPARATORDECKEL S600	SEP LID	201 000 079
7	1	SIEBSCHUBLADE S600	SEP TRAY S600	201 000 080
8	1	STRAHLMITTELKONTROLLKABEL	CONTROL CABLE	201 000 134
9	1	ROHRWINKEL KABELFÜHRUNG	PIPE ANGLE CABLE SUPPORT	201 000 386
10	2	ZUTEILROHR	FEED SPOUT	201 000 159
11	1	MAGNETVENTILHEBEL S410-S600	VALVE LEVER	201 000 315
12	1	HANDGRIFF	HANDLE	310 000 002
15	1	WELLENKUPPLUNG 8mm	SHAFT CLUTCH	314 000 004 7
16	1	STERNGRIF	STAR KNOB M6	310 000 006
17	1	HEBEL ZU ZUGDRUCKKABEL	CONTROL CABLE LEVER	201 000 083
19	1	HANDGRIFF	PLASTIC HANDLE	310 000 001
21	4	STERNGRIF M8x40	STAR KNOB	310 000 005
18	1	WINKELGELENK M6	BALL JOINT M6	471802004
13	2	U-SCHIBE	WASHER	ISO 7093 ST 10
14	2	SECHSKANTMUTTER	HEX NUT M10	DIN 934 M10
20	4	GEWINDESTIFT	BOL T M8x30	DIN 835 M8x30

10.7 Base Seal Assembly

POS	STK	BEZEICHNUNG	DESCRIPTION	BESTELL NR./ PT No.
1	2	FRONTMAGNET S600	FRONTMAGNET S600	201000308
2	2	SEITENMAGNET RE/LKS	SIDE MAGNET S380-S800A	201000175
3	1	BÜRSTE FRONT S600	FRONT BRUSH S600	201000304
4	1	BÜRSTE LKS SEITLICH	BRUSH LH	201000024
5	1	BÜRSTE RE SEITLICH	BRUSH RH	201000027
6	2	SCHLEPPE S600	TAIL SEAL	201000235
7	1	FRONT ALULEISTE S600	FRONT ISOLATOR S600	201000309
8	2	DISTANZSTÜCK ZU SEITENMAGNET	ISULATOR RH/LH	201000194
9	2	MAGNET DISTANZSTÜCK	AL SPACER BLOCK	201000195





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