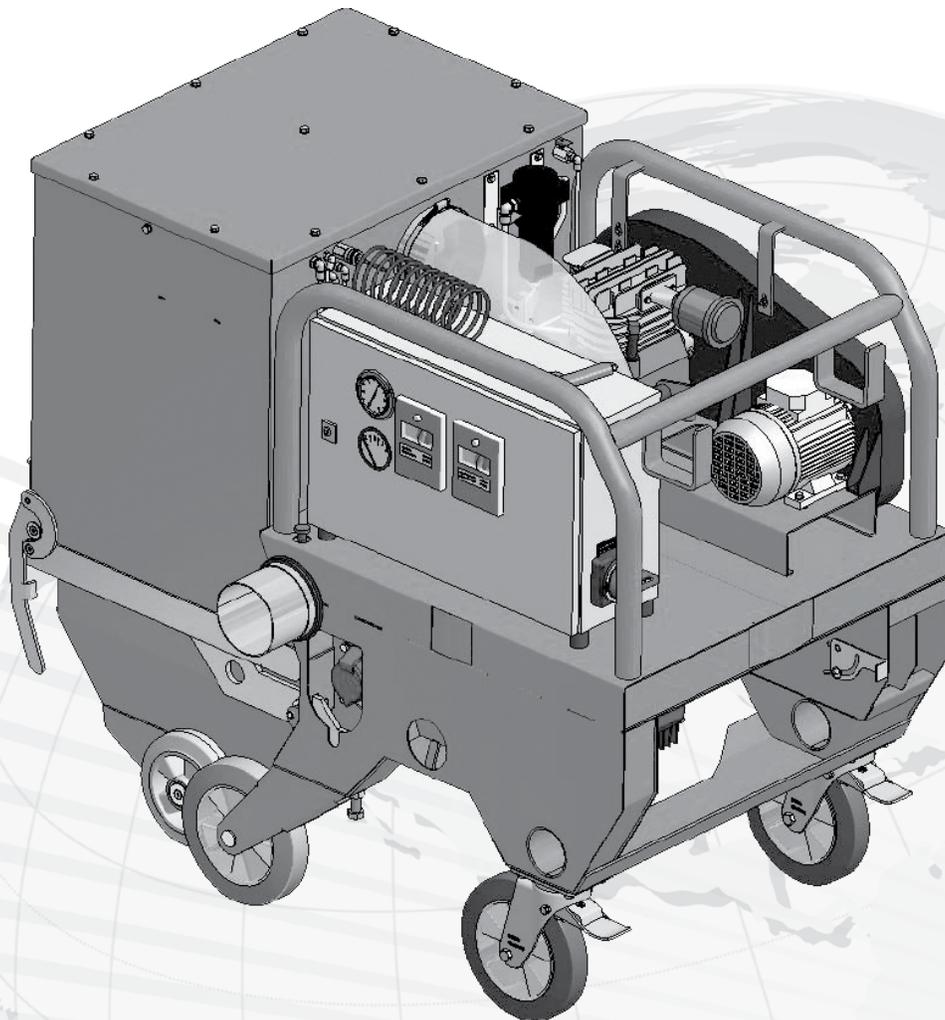




Operating Manual
Dustcom 3324



Your Partner for Mobile Surface Preparation
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.

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

1.1 Rating

Machine: IMPACTS Blast Machine
 Machine-Type: DC3324
 Manufacturer: IMPACTS Americas
 1385 Bungalow Dr.
 Morris, IL 60450 U.S.A.

1.2 Unit Specifications

Machine: DC3324
 Machine Series: Filter
 Traction Drive: Manual
 Performance: Up to 706 C.F.M. / 1200 m³/h
 Filtration Area: 355 SF / 33 m²
 Hose Connection: Variable

Dustcom 3324	
Length	50 in. / 1285 mm
Width	31.5 in. / 800 mm
Height	47.5 in. / 1210 mm
Weight	730 lb. / 330 kg

Connected loads of the electrical system:

Dustcom 3324	Power Consumption	Amps
Compressor	1.5 kW	Maximum 3.2A
Blower	4.0 kW	Maximum 7.9A
Filter Total	7.5 HP / 5.5 kW	Maximum 12.0A
Filter a. Subsystem	Add subsystem	Add subsystem

1.3 Operative Range and Correct Usage



This specific filter unit has been designed to vacuum dry dust. The dust collector is exclusively designed to be used with IMPACTS machines. It can only be used to vacuum dry dust. The manufacturer will not be liable for damage resulting from incorrect usage. In these cases, the user is responsible for all risks and damages.

It is designed to vacuum dry dust specified to be Class L (E DIN IEC 61J/94 CD).

The Filter fabric FA 6176 is certified to DIN/EN DUST CLASSIFICATION CLASS L and M. Do not use this equipment on applications where you expect dust to be harmful. If you feel uncertain, ask local authorities for assistance.

1.4 Stand-by Power Supply (Generator)

If the Dustcom is used in conjunction with a generator, the generator must be operated in accordance with current VDE or further local directives. This applies especially to the protective earth conductor in order to ensure that all safety devices are functioning and to eliminate possible damage to electrical components.



During the operation of the Dustcom in combination with other equipment it may be possible to exceed the acceptable noise level of 85 dB(A). This is dependent on the different locations and the local 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.

Do not use the Dustcom in corrosive or explosive environment.

Do not vacuum flammable liquids or other flammable media.

Do not vacuum glowing particles

Do not open the dustbin while turbines switched on.

Do not use the Dustcom without a filter cartridge fitted.

1.5 Advice for Operators

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 considering the removed material.

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 Filter
- 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 filter 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 filter 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 filter. This applies to certain activities such as setting up the filter, carrying out maintenance work, or training staff to work with the filter.

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 filter. They must be kept complete and legible.



If safety-critical changes occur to the filter or its performance, the filter 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 filter 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 filter. **Note the statutory minimum age!** Clearly specify the responsibilities of personnel for operation, setup, service, and maintenance work.*

Clearly define the filter 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 filter must only be used in a safe and functional condition.



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

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

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



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

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 filter 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 filter following valid VDE and local guidelines.

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



Do not switch off or remove the exhaust and ventilation devices when the filter 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 filter (see chapter 7).

Before starting any servicing work on the filter, put the filter in the Safety off position (as described in Chapter 2.6) in order to prevent the filter 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 filter must be undertaken and/or complied with.

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

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 filter. The repair personnel must also be aware of the safety devices during inspection, maintenance, and repair.



The filter must be shut off completely for repair or maintenance work. Please disconnect the main plug in order to prevent the filter 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 that is connected to the dust collector.
2. Switch off the dust collector.
3. Wait for standstill of all drives.
4. Pull out main plugs.
5. Secure the machine and filter against accidental start up.

2.7 Particular Dangerous Aspects of the Filter

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.



Danger of injury!

Squeezing danger by rollers and wheels!

Squeezing danger by moving parts!

Strangers or Visitors are not allowed to stay within the working radius of the equipment without permission of the operator!

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. In case there is any question, ask the manufacturer or a skilled electrician.



The electrical parts of the filter must be inspected regularly. Please note in particular the specified recurring inspections according to VBG 4 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 filter 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 filter 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 filter.
- Before start up of the filter after any cleaning, repair, or maintenance work, ensure that no person in the working area could be endangered by the filter.



When using this dust collector, you must comply with the health and safety regulations and the local waste treatment regulations considering the waste materials.

Chapter 3.0 General Information

- 3.1 Operative Range
- 3.2 Scope of Supply
- 3.3 Description of the Filter Unit
- 3.4 Care and Maintenance

3.1 Operative Range

Operative Range of the Dustcom:

- Vacuum dust out of a blast machine
- Vacuum dust out of a grinder
- Vacuum dust out of a scarifier or milling machine
- Vacuum dust from a surface with optional vacuum set

3.2 Scope of Supply

Scope of supply and options:

- Filter Unit Dustcom
- Manual Dustcom
- Dust Hose (Optional)
- Multi Hose Connector (Optional)

Based on the machine, as well as the application, the selected filter unit provides dust free working and improved service life of machine and tools. Clean air is a matter of cause and should be observed by professional associates. IMPACTS uses particularly arranged filtering material that is certified and has a very high filtration efficiency.

For the connection to the machine please select a dust hose with an inside diameter that corresponds with the conditions of the machine.

The IMPACTS filter unit DC3324 is characterized by particularly high economy and simple handling.

The IMPACTS filter unit DC3324 is a compact, efficient filtering unit to operate from middle to larger surface treatment machines.

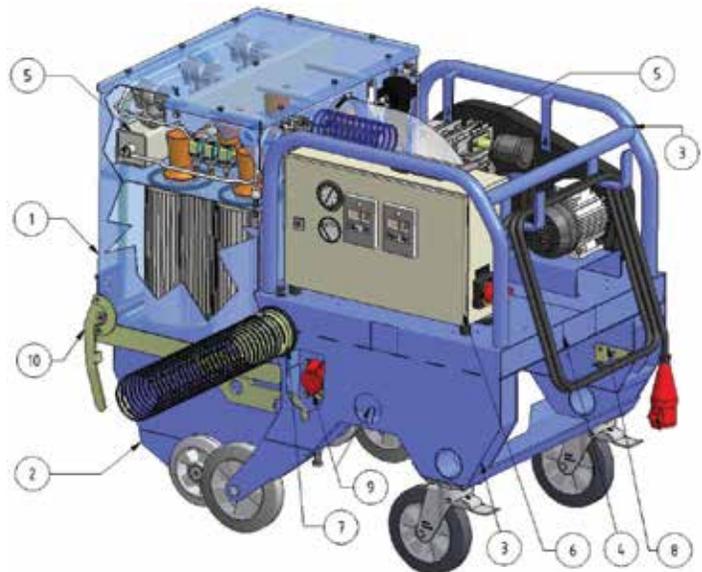
Innovative features provide optimized operation at your work site:

- Central Lift-Lock Device for the dust bin
- Large, well balanced and ergonomically optimally arranged dust bin

- Dust hose connector plug-in and changeable
- No Components reaching out
- Optimized proportions, with highest achievement and smallest possible weight, divisible if necessary
- Fastens and integrated crane eyes
- Electrical, pneumatic compressor controls

3.3 Description of the Filter Unit

1	Filter Housing
2	Dust Bin
3	Rear Frame
4	Blower
5	Pulse Cleaning System
6	Control Panel
7	Hose Connector
8	Outlet Damper (Butterfly Valve)
9	Power Supply for Subsystem
10	Lifting System for Dust Bin



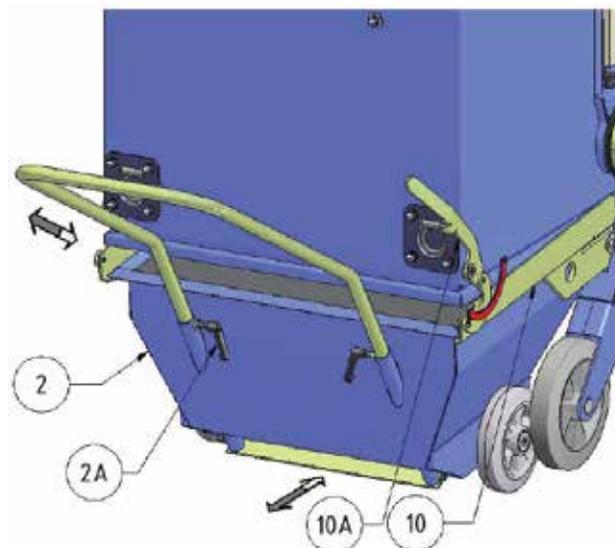
Filter Housing (1)

The filter cartridges as well as the automatic pulse air system are located in the filter housing. The filter cartridges separate the dust particles from air and thereby are contaminated. To clean the filter cartridges, a pulse cleaning system blows air via valves into them.

Dust Bin (2) and Dust Bin Lifting (10)

Underneath the filter housing is the dust bin. This bin takes up the particles separated by the filter cartridges. The bin collects approximately 26.5 gallons/100 liters and is equipped with two wheels.

The dust bin is held with a Lifting System (10) at the filter housing and can be lowered and/or lifted over a tiltable lever (10A) to bring it out or to bring it in. By locking the levers (2A), the handle (2) of the dust bin can be adapted to the individual needs.



Rear Frame (3) and Blower (4)

The rear framework serves as the admission of the fan and forms at the same time the main chassis. In the frameworks, integrated fastening spots ensure possible safe transport. The fan produces the necessary negative pressure and is connected by a larger hose line with the filter housing.

Pulse Air System (5)

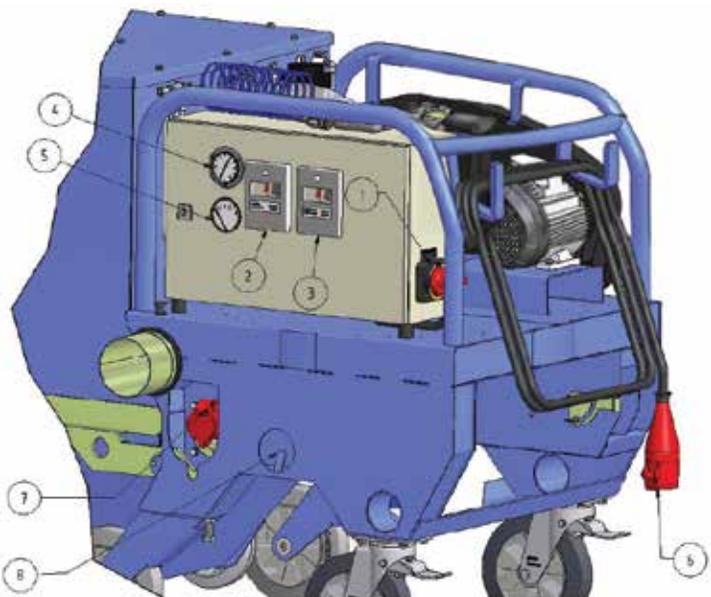
The Pulse Air System is used to clean the filter cartridges while the blower unit is in operation. Conventional Cleaning systems do not allow a cleaning during blower operation. The system essentially consists of three components, the compressor, the pneumatic manifold, and the electrical controlling of the pneumatic manifold. A pressure gauge integrated in the control panel and the differential pressure gauge offer all required information's over the function behavior of the pulse cleaning system.

Control Panel (6)

In the control panel of the DC3324, all elements are centrally combined for the operation and monitoring of the filter. The Main Switch (1) must be switched ON to start up the filter and attached machines.

By Push Button (2) as well as (3) the fan as well as compressor are switched ON/OFF. The Failure Light (6) indicates an electrical overload or an error is present. The pressure gauge indicates the current operating pressure of the Pulse Air System.

The differential pressure gauge gives you information over the condition of the filter cartridges. See details of the control elements and the functions in Chapter 5 Start-Up as well as in Chapter 6 Operation.

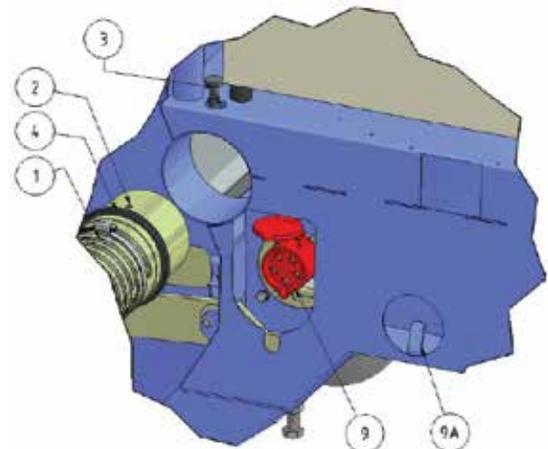


Outlet Damper (8)

This damper is used to adjust the airflow of the filter unit depending of the needs of the type of machine that has been connected.

Hose Connectors (7)

The Dust Hose (1) will be connected via a Connector (2) being pushed into the side opening and secured by a notched pin (3). The adapter (2) needs to be pushed into the side of the housing while the pin (3) is lifted upwards, turned about 90 degree, and restored back into the bore of the adapter to be locked.



Machine Power Supply (9)

The machines power connection finds view down the RH of the hose connector. It is integrated and protected from destruction in the rear frameworks. Depending on filter type machines with a total output admission of 32 ampere can be connected. This Power Supply is additionally secured by an earth-leakage circuit breaker inside the control panel. The cable itself should be lead through the pull relief (9A) in order to avoid breaking the power connector.

3.4 Care and Maintenance

Careful servicing and regular maintenance of the filter unit is essential for function and safety.

Consider unusual noises and examine each change of the operational behavior of the unit. Call a technician if doubts arise about the cause or a normal remedy without a technician does not appear possible.



Pay attention that no impurities or fiber arrears in the range of the intake connection remain. Check Air Intake for remaining debris and dust, remove and clean if necessary.



All junction points must be carefully sealed and the dust hose should be secured with hose clamps!

The filter housing must be well sealed, all seals in the range of the Dust Bin must be in good condition!

If dust is apparent in the area of the clean air section of the filter unit, then this is an indication that the filter cartridges are damaged or not fitted correctly. If the filter unit shows insufficient suction, check the differential pressure (see Chapter 7 Maintenance).

Chapter 4.0 Transportation

- 4.1 General Notes
- 4.2 Dimensions and Weight
- 4.3 Transport
- 4.4 Transport by Lifting Devices
- 4.5 Transport of the Filter by Vehicle
- 4.6 Transport During Machine Operation

4.1 General Notes

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

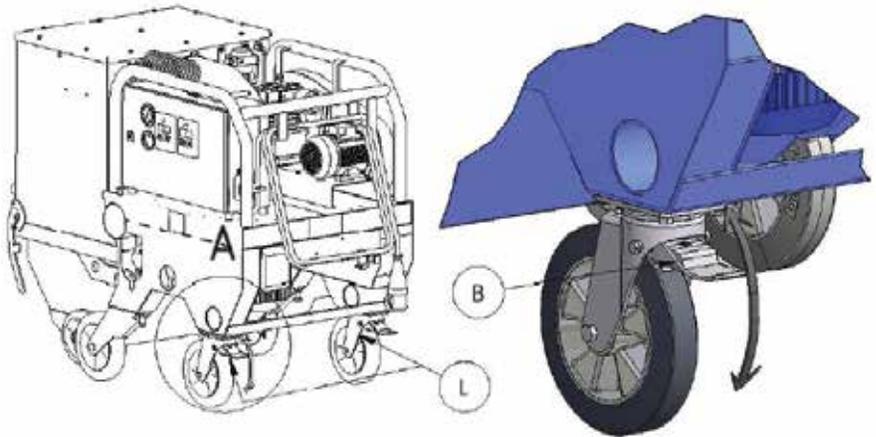
4.2 Dimensions and Weight

<i>Dustcom 3324</i>	
Length	50 in. / 1285 mm
Width	31.5 in. / 800 mm
Height	47.5 in. / 1210 mm
Weight	730 lb. / 330 kg

4.3 Transport

The bottom of the filter has four casters for easy transport.

To move the filter, first check the brakes (B) at the swivel casters (L) on the rear framework are open. To open the brakes you need to pull the lever (B) upward on both swivel casters (L). Move the filter into the desired position and lock the brakes of the swivel casters again by pushing the lever (B) downward.



4.4 Transport with Lifting Devices

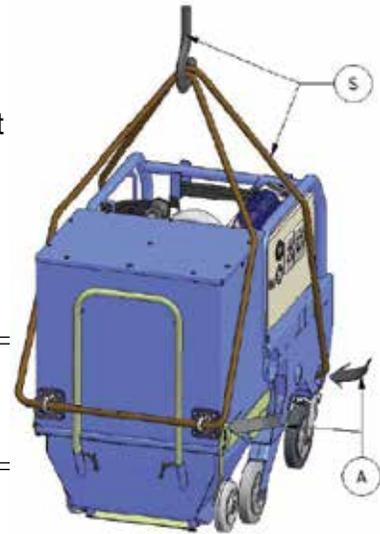
When transporting the filter with hoisting equipment like a crane or a lift, check the total weight permitted (see Chapter 1: Dimensions).

Please use only appropriate, allowed, and qualified hoisting equipment as well as ropes and chains. You can find the weight of the equipment on the serial plate of the machine.

Do not fix any rope or chain to handles, fix ropes and chains only at locations (A) as shown in illustration.



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



4.5 Transport of the Filter by Vehicle

When transporting the machine with vehicles, proceed in such a manner that damage due to the effects of use of force or incorrect loading and unloading is avoided. Use straps and fix them to the intended points (A) to tighten the filter to the cabin of the vehicle.

Use at least two straps, or tighten the machine with one straps to the cabin wall of the vehicle. Make sure, that all parts of the machine are fixed with special attention on the dust bin.



Remove all dust from the filter unit before transport. The additional weight of the dust can cause damage to the filter with extreme dynamic loads during transportation. The filter should only be fixed with ropes or straps in the intended locations (A).

4.6 Transport During Machine Operation

The filter unit can be moved during operation — please pay close attention to cables and dust hose length and location while doing so. Ensure cables and hoses are never brought to full expansion. Be certain that no person is obstructing the cable or hoses or that they cable or hoses are brought into the way of other vehicles.

Chapter 5.0 Start Up

5.1 Preparing Start Up

5.2 Start Up

5.1 Preparing Start Up



Before start up of the filter, operating personnel must be familiar with the safety regulations in this manual.



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

- Bring the filter on the job side near to the machine to be connected.
- Make sure that the power connections for the blast machine and filter unit are installed. Power connections should be sufficiently secured with an earth-leakage circuit breaker. If in doubt, ask a local electrical specialist.
- Check available cable extensions on size and possible damages.
- Check the dust hose for damages.
- Check the dust bin to be empty.



If you're facing any kind of technical problem that is related to the power supply during your preparation call an electrician. Work on the electrical connections may only be performed by trained technical personnel.



Each machine can be dangerous, if it is not used correctly, for operating, setting-up, and service staff. For the adherence of the safety regulations of operation and the maintenance of the provided protection device and/or the supply of appropriate safety devices the operator is responsible!

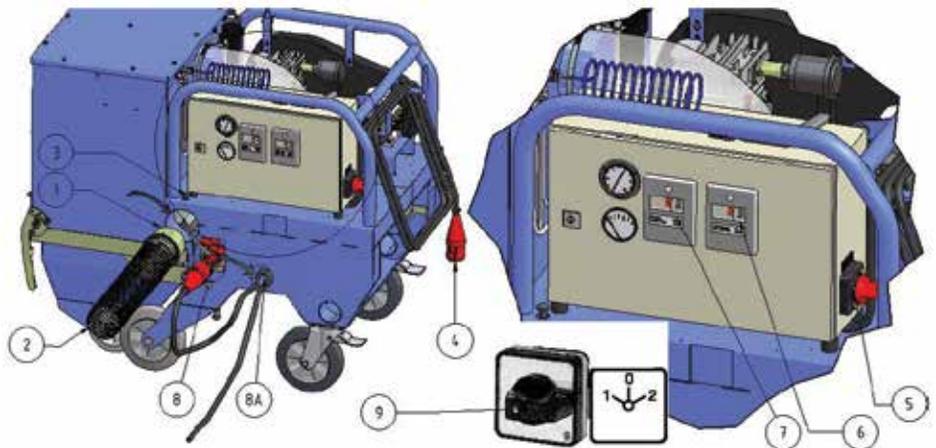


IMPACTS does not recommend to operate any machine that generates dust without a filter unit. The filter should be suitable to keep the base of the machine dust free and to take up dust from the surface. (Consider dust classifications.)

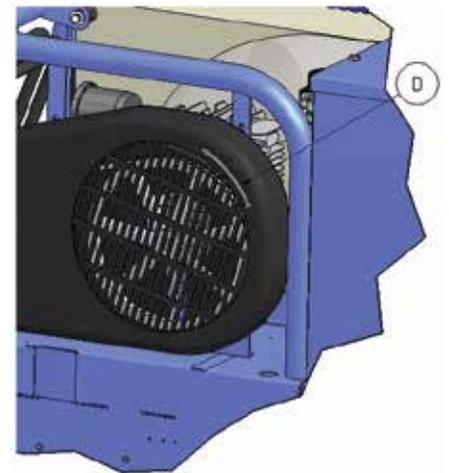
5.2 Start Up

After preparing start up (see 5.1), proceed as follows to start up the equipment:

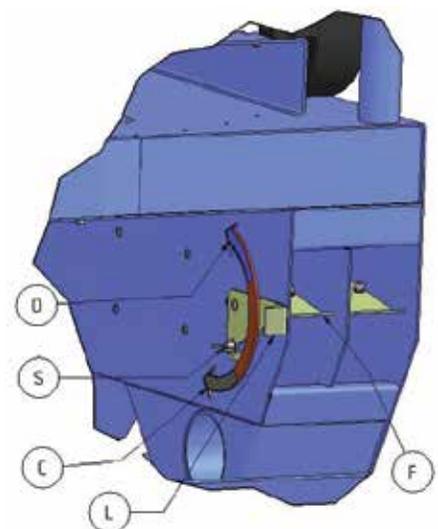
1. Connect Hose Connector (1) or optional Multiple Connector (2A) with the Dust Hose (2).
2. Lift up the Pin (3), push the Connector (1) into the port on the filter and lock with the Notched Pin (3) that is located on the port. If necessary, turn the pin (3) 90 degree to allow locking the hose connector.



3. Connect the Main Cable (4) to the Power Supply.
4. Switch ON the Main Switch (5).
5. To check the direction of rotation switch on the compressor by the Push Button (6), after the compressor starts up, switch OFF and check the direction of rotation on the Compressor Blower (D). The direction of rotation should be Counter clockwise (CCW).
6. If the direction of rotation is CW and not CCW (D) switch OFF the Main Switch. Open the Control Panel and switch the Phase Reverse Switch (9) into the opposite position (the switch is located in the upper RH section of the panel). Close the panel and check direction of rotation again as described before.



7. Now connect the machine to machine power supply (8) on the filter and check direction of rotation on the machine. Run the cable through the cable pull relief (8A) as shown to avoid damage to the machine socket.
8. Switch ON the blower first (7) then switch ON the compressor (6) pushing the ON button (7) and (6).
9. To adjust the airflow to the requirements of the machine that's connected the filter is equipped with a butterfly valve (F). For the adjustment, loosen the retaining screw (S) and push the lever (L) upwards direction (O) to throttle or downwards direction (C) to increase the air flow. Tighten the retaining screw (nut) (S).



10. During the first minutes of operation, regularly observe the dust arising in the dust bin to analyze the filling and to prevent an overload.

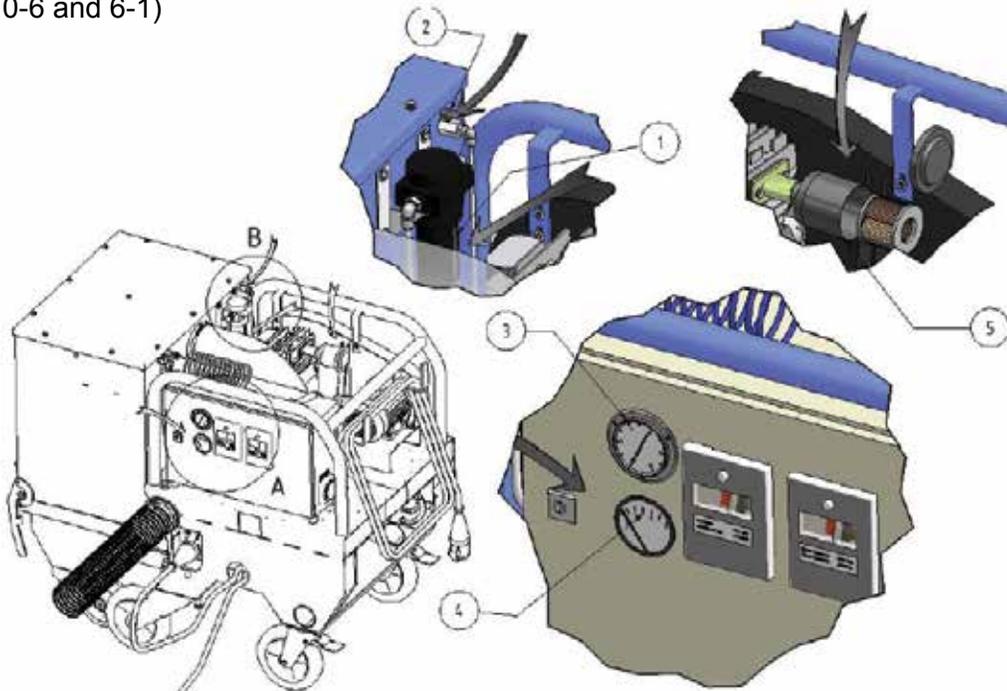
Chapter 6.0 Operation

- 6.1 Operation of the Filter Unit
- 6.2 Dust Bin Dumping
- 6.3 Switch Off the Filtering Unit
- 6.4 Behavior on Disturbances
- 6.5 Safety Switch Off
- 6.6 Start Up After Safety Switch Off
- 6.7 Measures Before and After Lengthy Downtimes

6.1 Operation of the Filter Unit

Start Up and operation of the filtering unit do not differ from the proceeding described in Chapter 5 "Start Up". Consider however the following advice for continuous operation.

- Daily, open the exhaust valve (5) of the compressed air system to discharge condensation. In hot and moist climates, do this at least two times a day.
- Daily, control the sediment bowl filter separator (1) of the compressed air system.
- Weekly, check the condition of the intake filter insert (2) of the compressor (2). This is strongly recommended. If the insert shows dirt and dust, it must be cleaned or replaced.
- During operation always observe the differential pressure (4) of the filter cartridges, The pressure should not rise over 1.5 kPa. If the differential pressure does not adjust durably by the additional cleaning of the cartridges under 1,5 kPa the cartridges must be exchanged.
- The pressure (3) of the compressed air system should reach 6 bar again during the pulse cycles. (Range 0-6 and 6-1)





Ensure that no vehicles, as fork-lift trucks and other devices can drive over the electrical cable and the dust hose.

6.2 Dust Bin Dumping

The dust bin of the filter unit should be checked regularly for its level. The time intervals depend on the attached machine as well as the surface to be treated.

To empty the Dust Bin, place the handle (2) into the desired position. Loosen the locking levers (1) and pull the handle (2) up to the desired height.

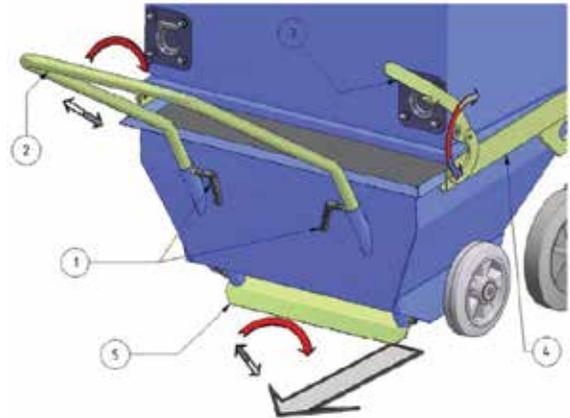
Fix the handle firmly by the locking levers (1). Lower the dust bin and pull it away from the filter turn up lever (3) until it stands vertical.

The Lifting Device (4) lowers itself thereby. Pull the Dust Bin out of the Lifting Device and empty into available containers.

If required, the dust bin offers a trestle (5) that is pushed in the dust bin itself. To set up this trestle, pull it out, turn it and place it back to the bin. For transport of the complete filter unit, this trestle should be set to maximum ground clearance or being pulled out and moved separately.

Paying attention that the lever (3) is still in a vertical position, push the Dust Bin in the angles of the Lifting Device to a complete stop.

Finally, move the lever (3) downward into its starting position.



When opening the Lifting Device of the dust bin, consider the increased weight. Swivel the lever (3) carefully upward! Consider your local disposal regulations.

6.3 Switch Off the Filtering Unit

Allow the filter unit, after completion of the work, to run still some time with throttled fan to cool down the unit. This will also clean out the filter cartridges better. This is recommended especially with high air humidity and if the treated surface had moisture.

1. Once the cooling and cleaning minutes are completed (see above), push the Button Compressor OFF and the Blower OFF.
2. Set the Main Switch into the OFF position.
3. Set the Butterfly Valve back into the most used position.



Make sure that all turning parts of the filter unit have stopped before any inspection or maintenance work is made.

If the filter unit will be unused for a longer period of time, proceed as follows:

1. Disconnect unit from power supply.
2. Empty the dust bin completely.
3. Cover the filter with a tarp.

6.4 Behavior on Disturbances

Independent of the procedures outlined in this manual, all local safety regulations must be applied to the operation of the filter unit in every case. In principle, only a filter unit in a secured, complied condition can allow error tracing procedures to begin.

6.5 Safety Switch Off



After an emergency, switch off the unit. Prior to any kind of repair, bring the equipment into the safety off position (see Section 2.6). Make sure that all turning parts of the filter unit have stopped, before any inspection or maintenance work is made.

6.6 Start Up After Safety Switch Off

See Chapter 5.0 Start Up.

6.7 Measures Before and After Lengthy Downtimes

Before lengthy downtimes:

- Clean the filter cartridges thoroughly starting with a fan completely throttled and the compressor running.
- Switch off the filter unit (see Section 6.3).
- Empty the dust bin and clean it.
- Clean the filter unit.
- Treat bright parts of the filtering unit with rust preventive covering or a similar preservative.
- Protect electric motors from humidity, heat, and dust.
- Cover the filter unit with a tarp.

After lengthy downtimes:

See Chapter 5.0 Start Up.

Chapter 7.0 Maintenance

- 7.1 Notice to the Dust Collector
- 7.2 Maintenance and Inspection List
- 7.3 Corrective maintenance
- 7.4 Belts
- 7.5 Dismantle and mounting of belts
- 7.6 Belt-tension
- 7.7 Taper-Lock Bushes
- 7.8 Changing Filter Cartridges
- 7.9 Drive Motors
- 7.10 Spare Parts Stock

7.1 Notice to the Dust Collector



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



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

Safety and service life of the machine depend, among other things, on proper maintenance.

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

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 for wear checks, inspection, maintenance, and repair works ought to be carried out. Prepare a suitable inspection schedule considering your own working conditions.

Our specialists will be pleased to assist you with more advice.



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 List

<i>Operating Hours / Time Period</i>	<i>Inspection Points & Maintenance Instructions</i>
12 hours — after repairing	<p>Check function of all safety devices.</p> <p>Check all accessible screw connections for tight seat.</p>
Daily — prior to operation	<p>Check Ground-failure Protection Switches functions</p> <p>Check all Dust Hose Connections to be gas tight and secured fitting.</p> <p>Check condition of Dust Hoses</p> <p>Check Dust Bin to be empty</p> <p>Check all electrical connections to be tight clean and free of any contamination</p> <p>Check all drive Motors to be free of contamination</p> <p>Check differential-pressure not to exceed a max. of 1.5 kPa</p> <p>Check pulse cleaning pressure range to run within 1-6 Bar</p> <p>Check pulse cleaning cycle times and pressure drop</p>
After Work	<p>Check Dust Hoses for sediment</p> <p>Drain Pressure Reservoir ¹</p>
Weekly	<p>Apply Oil and clean all moving Elements</p> <p>Check Oil level of the compressor</p>
Monthly	<p>Check condition off compressor suction filter</p>
100-200 hours	<p>Replace Compressor oil (use API CC/SC SAE40)</p>
Yearly	<p>Full cleaning and checking of all functions</p> <p>Clean-out control panel</p> <p>Replace line-filter off the differential pressure gauge</p> <p>Replace compressor oil ²</p> <p>Replace seals of dust bin and filter cover</p>

¹ In hot and moist environment, drain every 2-4 hours.

² In hot and moist environment, replace every 6 months.

7.3 Corrective 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 Belts

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 to lower efficiency. A low V-belt tension results in slippage causing an increased belt temperature and thus to premature destruction of the V-belts.

Temperatures exceeding 158°F / 70°C for a long period of time will 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.



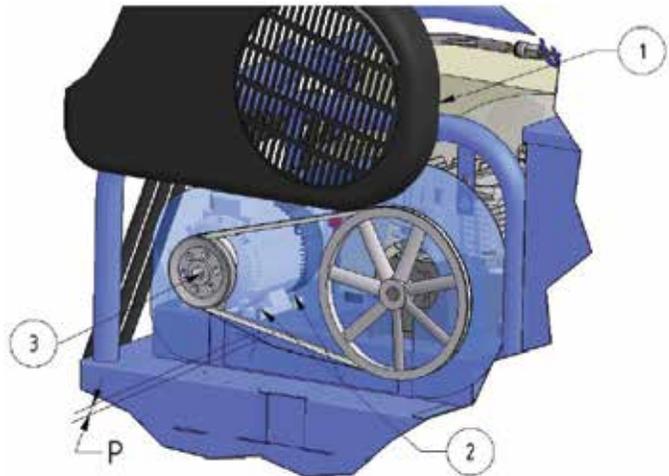
The use of belt wax or similar substance to increase the friction coefficient is unnecessary and damages the V-belts. Avoid any contaminations by oil, grease or chemicals. In order to grant a perfect output transmission, the V-belt drive needs continuous observation.

7.5 Dismantle and Mounting of Belts



Please remove the belt guard only after the drive motor is at a standstill, the main switch of the filter is OFF, and the machine is in the Safety Off Position as described in Chapter 2.

1. Remove the belt guard (1).
2. Slacken screws (2), move the drive motor toward the compressor so the distance between motor and compressor axle is reduced so the belt can be taken out of the pulley grooves without any constraining force.
3. Put on new belts and move the motor away from the compressor and tighten up screws (2) so the distance between motor and bearing unit axle is getting to a point so the belt tension is set as described at 7.6.
4. Secure the belt guard.



7.6 Belt-tension

To achieve a maximum power transfer and life time of the belt, 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 cause bearing problems on motors or bearing units.

Check the correct pre-tension in accordance by pressing down the belt as shown in the illustration. The distance (P), that the belt can be pressed down (3-4 kg) should be 3-4 mm.

7.7 Taper-Lock Bushes

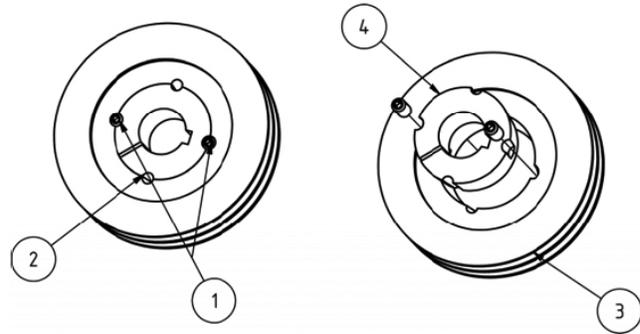
Taper locks are used to shrink-fit hubs on shafts. Mounting and demounting only requires a screw driver DIN 911 (Allen key). Tightening and loosening is effected with the same threaded pins or screws.

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 half of these blind holes are threaded and are placed inside the hub.

Threaded pins or screws are screwed to the stop in the bore holes 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:

1. Demount the screws (1) in the belt pulley
Lubricate the thread and the tip of the screw and turn it into the bore (2) as shown.
2. Turn the screw until the taper lock (4) gets loose inside the pulley (3) and, thus, the assembly is loose on the shaft. Take the pulley and the taper lock from the shaft.

**Mount:**

1. Assure that all contact surfaces are free from dirt and oil. Place the taper lock into the pulley. Slightly lubricate the screws (1) and insert them into the respecting threaded holes.
2. 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 (4) is fixed on the shaft before the pulley (3) reaches its final position on the bush.
3. Slightly tighten screws (1). Knock the frontal face of the bush lightly with a plastic-hammer to ensure sure that the bush is seated in the centre 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.

7.8 Changing Filter Cartridges

Before you start changing the cartridges you should clean the dust bin as described in Chapter 6.2, afterwards remove the dust bin.

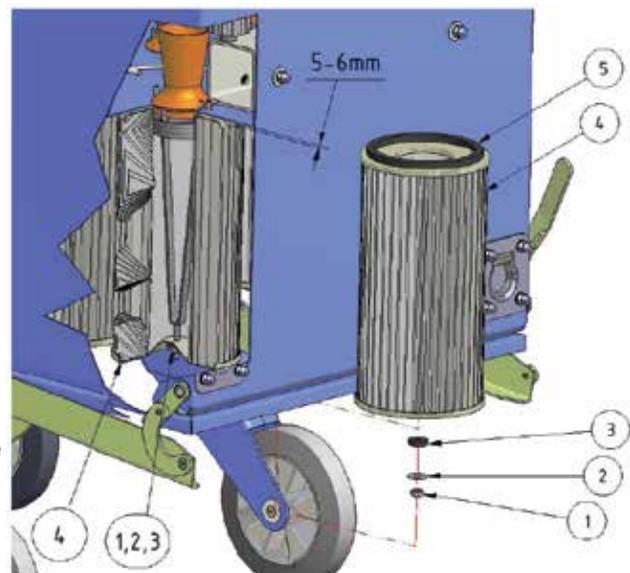
Unpack the new cartridges and place them at the side. Reuse the packaging for dust free transport and storing of the older cartridges.

Remove the locknut (1), steel-washer (2), and rubber seal (3) under the cartridge and pull down the cartridge (4). Place the old cartridge in the packaging and seal it.

Place a new cartridge on the holder and push on the rubber seal to avoid the cartridge falling down again. Afterward, place the steel washer (2) and nut, and tighten up the nut (1).

Ensure the cartridge centered to the Venturi on top and the seal (5) should not be fully compressed when tightening up the nut (1). Tighten it too much will damage the cartridge. Leave at least 5mm between Metal TOP of the cartridge and the upper plate of the filter housing.

Ensure the cartridge is vertical and the distances within the group of cartridges are nearly the same.



7.9 Drive Motors

All drive motors are built for a long life span. Damages of the motors are perceptible by unusual noises or malfunctions. Keep the driving motor always free by excessive contamination. Avoid overheating of the engine coil by overloading. With malfunctions of the motor, please call an electrical specialist for help. If the malfunction cannot be repaired, inform IMPACTS Americas.

7.10 Spare Parts Stock

To avoid longer down time of the dust collector, IMPACTS recommends to stock the following parts and quantities:

Part Name	Quantity	Stock Numbers
Filter Cartridge	8	306000002
Suction Filter	1	3140000051

Chapter 8.0 Electrical System

8.1 Hints for the Electronics

8.2 Circuit Diagram DC3324

8.1 Hints for the Electronics



Shut off the machine completely 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 electric circuit diagram within this chapter. If there is any doubt, please call your local IMPACTS service technician.

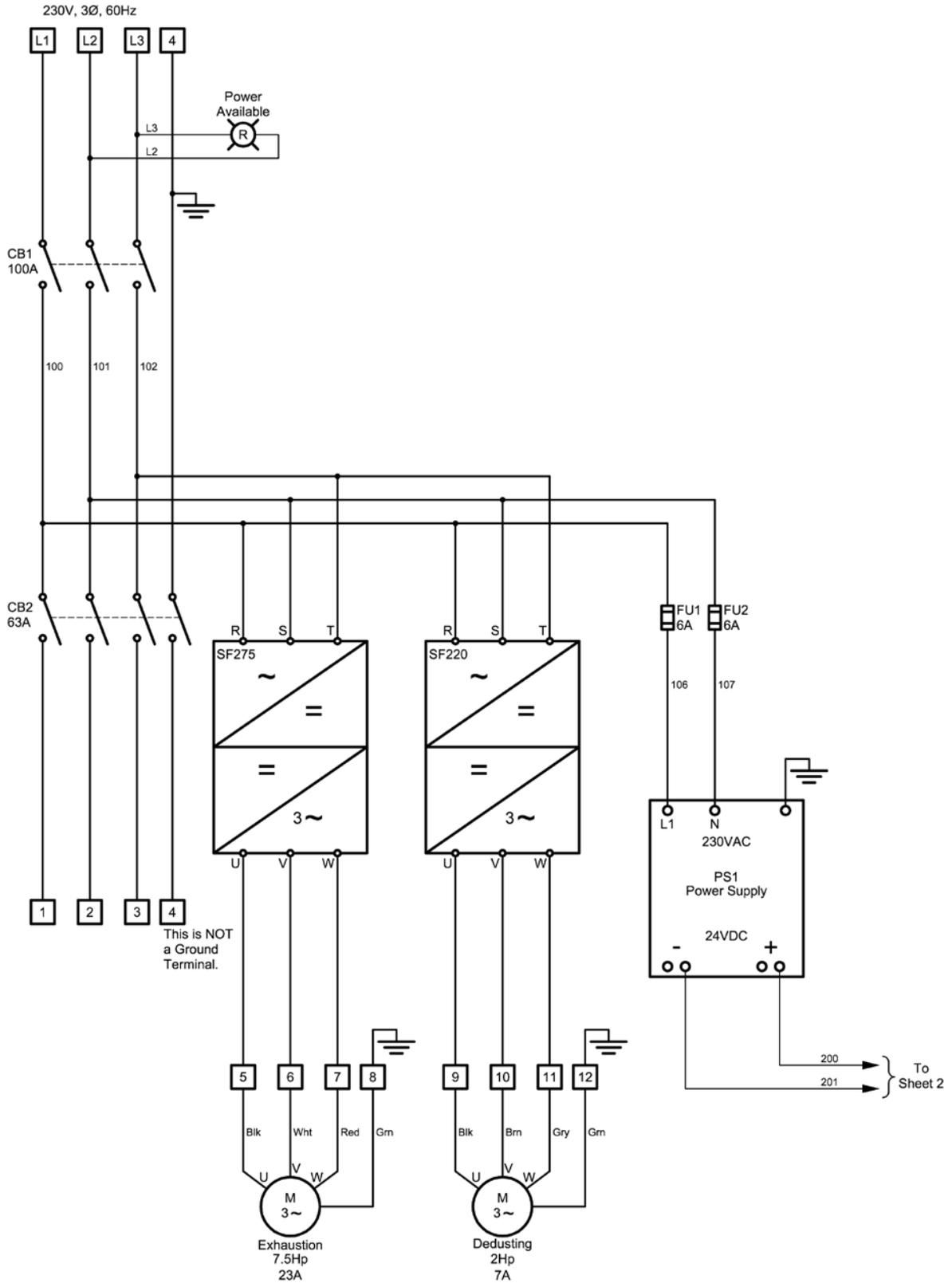


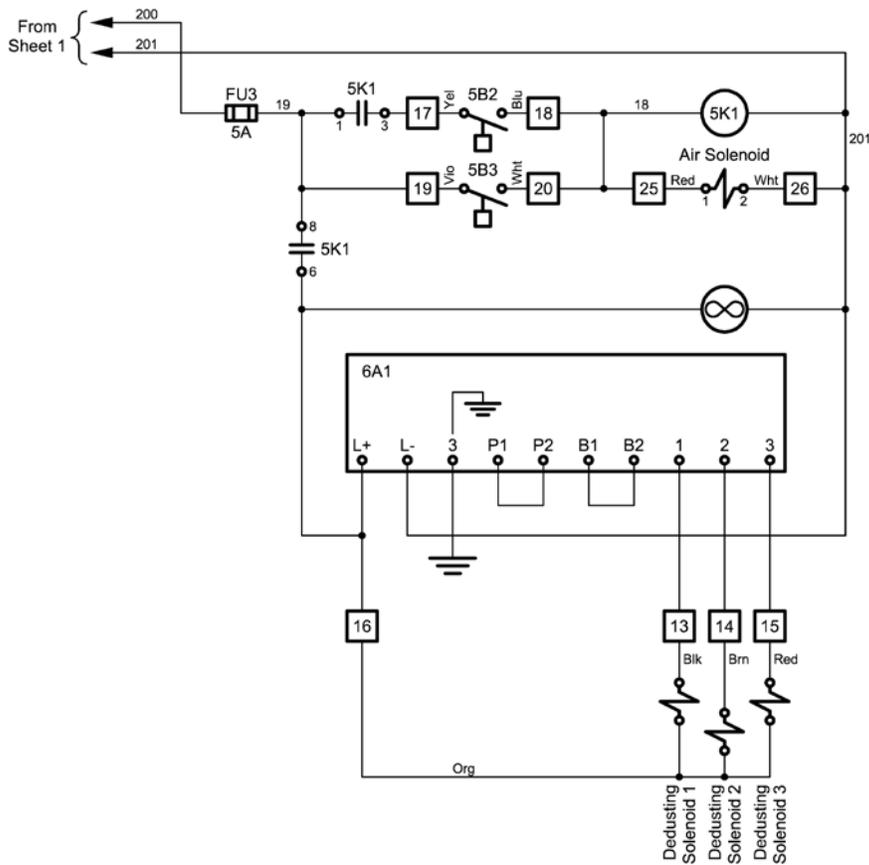
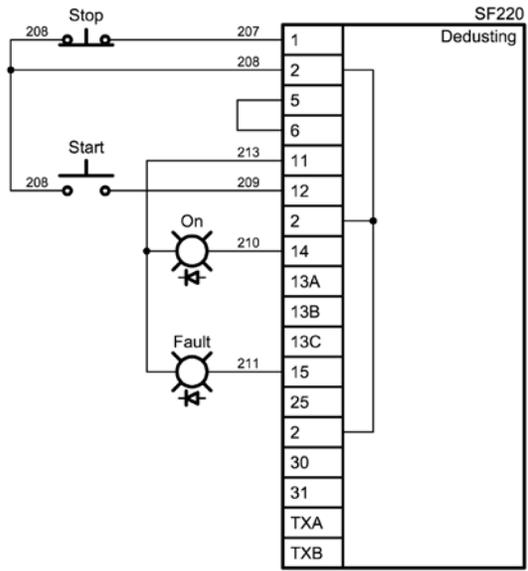
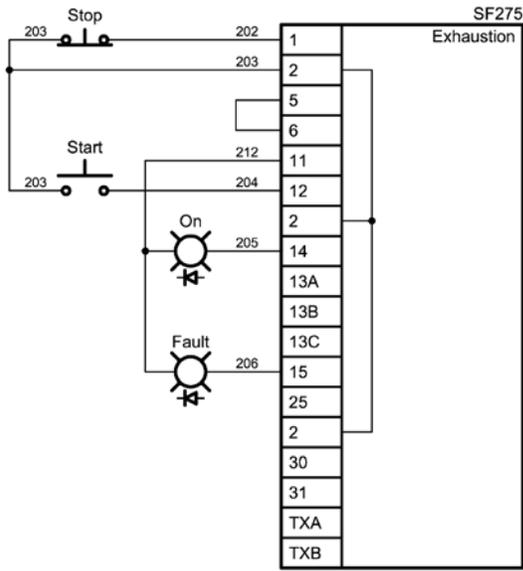
The electrical parts of the machine must be inspected regularly. Please note in particular the specified recurring inspections according VBG 4 or other local regulations. Defects such as loose connections or scorched cables must be rectified immediately. Call a skilled electrician or an IMPACTS customer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



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.

8.2 Circuit Diagram DC3324





Chapter 9.0 Error Diagnostics

9.1 Fault Diagnosis Dust Collector

9.2 Fault Diagnosis Electrical System

9.1 Fault Diagnosis Dust Collector



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.

Fault	Possible Cause	Failure Corrective Actions
Filter gives off dust (Silencer Section Outlet)	Filter cartridge damaged	Check clean gas section and replace damaged cartridge
Filter gives off dust (Dirt Gas Side)	No depression	Check Belt tension and direction of rotation
	Throttle closed	Open Throttle
	Filter cartridge clogged	Check Differential Pressure not exceeding a max. 1.5 kPa.
	No Pulse Cleaning	Check function of Pilot valves, Pulse valves and Timer card
	Wrong direction of rotation	Check direction and switch
	Dust Bin	Check Dust Bin Seal and replace when compressed or broken
	Overload	Clean out Dust Bin
	External Dust Hose	Replace if worn or broken
	Internal Suction hose	Replace if worn or broken
High Vibrations	Unbalance of Fan Blade caused by dust	Remove Dust Hose on the blower Inlet check and remove dust sticking to the blower blades.
	Loose screws with the blower or compressor drive sections	Check for loose screws and tighten up
Unusual noise	Bearing damaged	Check drive bearing unit and locate bearing being damaged
	Wrong Belt tension	Check Belt tension, adjust, or replace older belt showing cracks
	Motor Bearing damaged	Replace Motor Bearings

9.2 Fault Diagnosis Electrical System



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.



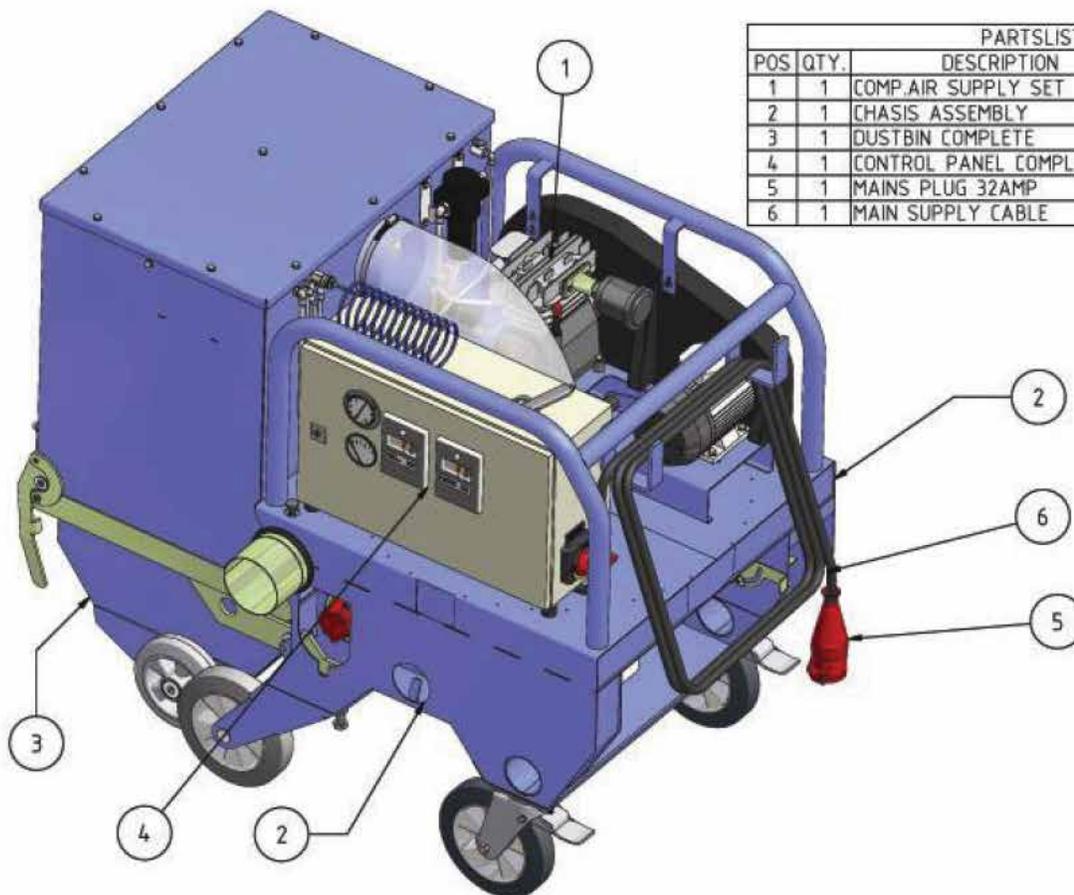
Work on the electrical parts of the equipment may only be undertaken by a skilled electrician or by a trained person under the guidance and supervision of a skilled electrician in accordance with the electrical engineering regulations.

Fault	Possible Cause	Failure Corrective Actions
Motor does not start	Power supply failure	Check power supply showing all
Blower Motor does not start up	Main cable is broken or damaged	Disconnect from Power supply and measure cable wires
	Missing Phase (LEAD)	Check power supply
Timer board doesn't work	Faulty Switch or relays	Diagnosis and replacement by electrician
	No Control Voltage	Check Transformer Secondary Side
	No Control Voltage	Transformer or Fuse of of transformer damaged
Timer board works but differential pressure is too high	Pulse time out or pulse time misadjusted	Onboard Fuse broken
		Readjust Pulse Time Out to 15-20 sec. max.
		Readjust Pulse Time so differential pressure of pulse system is at 2-3 Bar Max.
Motor stops during operation	Current too high power supply circuit breaker disengaged	Disconnect plug
		Reset circuit breaker or replace fuse
		In cold environment
	Motor is damaged	Check Motor

Chapter 10.0 Spare Parts

- 10.1 Overview
- 10.2 Chassis
- 10.3 Front Bin Lift Assembly
- 10.4 Running Gear Assembly
- 10.5 Blower Assembly
- 10.6 Dust Bin Assembly
- 10.7 Air System

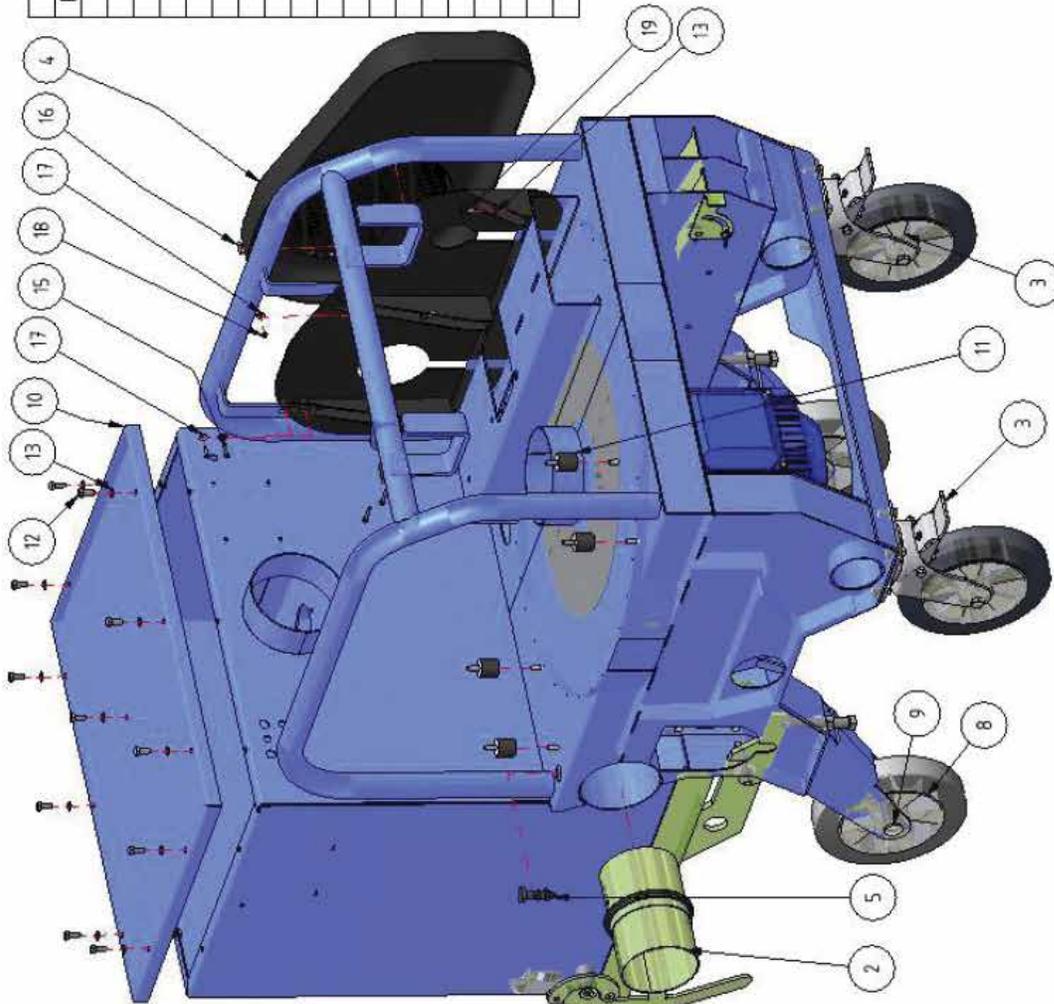
10.1 Overview



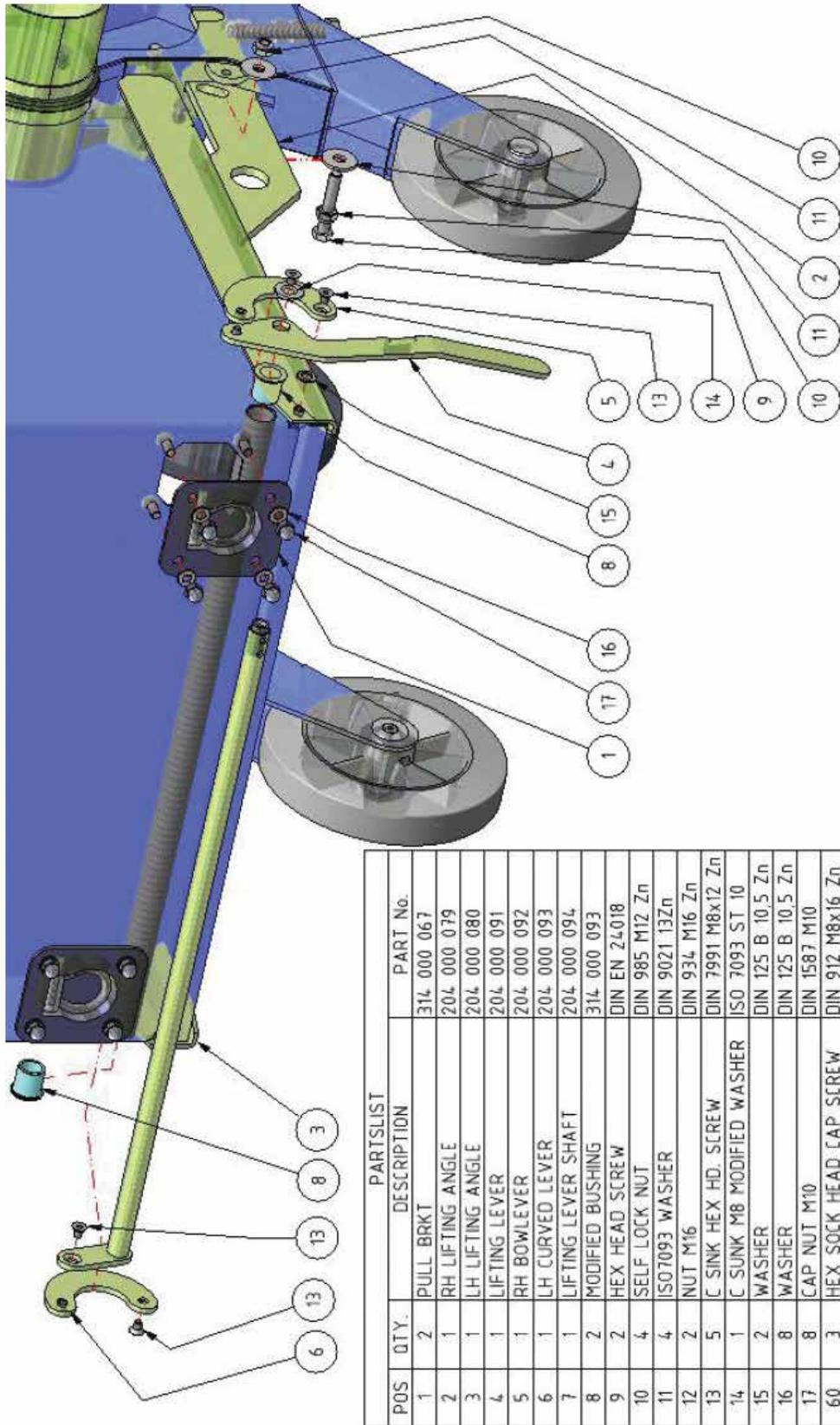
PARTSLIST			
POS	QTY.	DESCRIPTION	PART No.
1	1	COMP.AIR SUPPLY SET	BM N301206
2	1	CHASIS ASSEMBLY	BM N301164
3	1	DUSTBIN COMPLETE	204 000 107
4	1	CONTROL PANEL COMPLETE	BM N400835
5	1	MAINS PLUG 32AMP	603 000 005
6	1	MAIN SUPPLY CABLE	602 000 014

10.2 Chassis

PARTSLIST			
POS	QTY.	DESCRIPTION	PART No.
1	1	THROTTLE VALVE SHAFT	204 000 088
2	1	HOSE CONNECTOR 130	204 000 099
3	2	SWIVEL CASTER WITH BRAKE	304 000 021
4	1	BELT GUARD COMPLETE	204 000 109
5	1	LOCK BOLT GN617.1	311 000 022
6	1	THROTTLE PLATE 65	204 000 090
7	1	THROTTLE PLATE 80mm	204 000 089
8	2	WHEEL 250x25	304 000 035
9	2	WHEEL BOLT	204 000 082
10	1	COVER FILTERHOUSING	204 000 096
11	5	SHOCK ABSORBER	685 603 00
12	30	HEX HEAD SCREW	DIN EN 2-4.018 M8x20 Zn
13	36	WASHER	DIN 125-1 B 8 4 Zn
14	1	WASHER	DIN 9021 8 4 Zn
15	2	TAPPING SCREW	DIN ISO 14-79-F ST 4-2x19
16	1	C.SUNK HD.SCREW SLOTTED	ISO 2009 M5x20
17	3	WASHER	DIN 9021 ST 5 Zn
18	1	NUT M5	DIN 985 M5 Zn
19	3	HEX SOCK HEAD CAP SCREW	DIN 912 M8x16 Zn



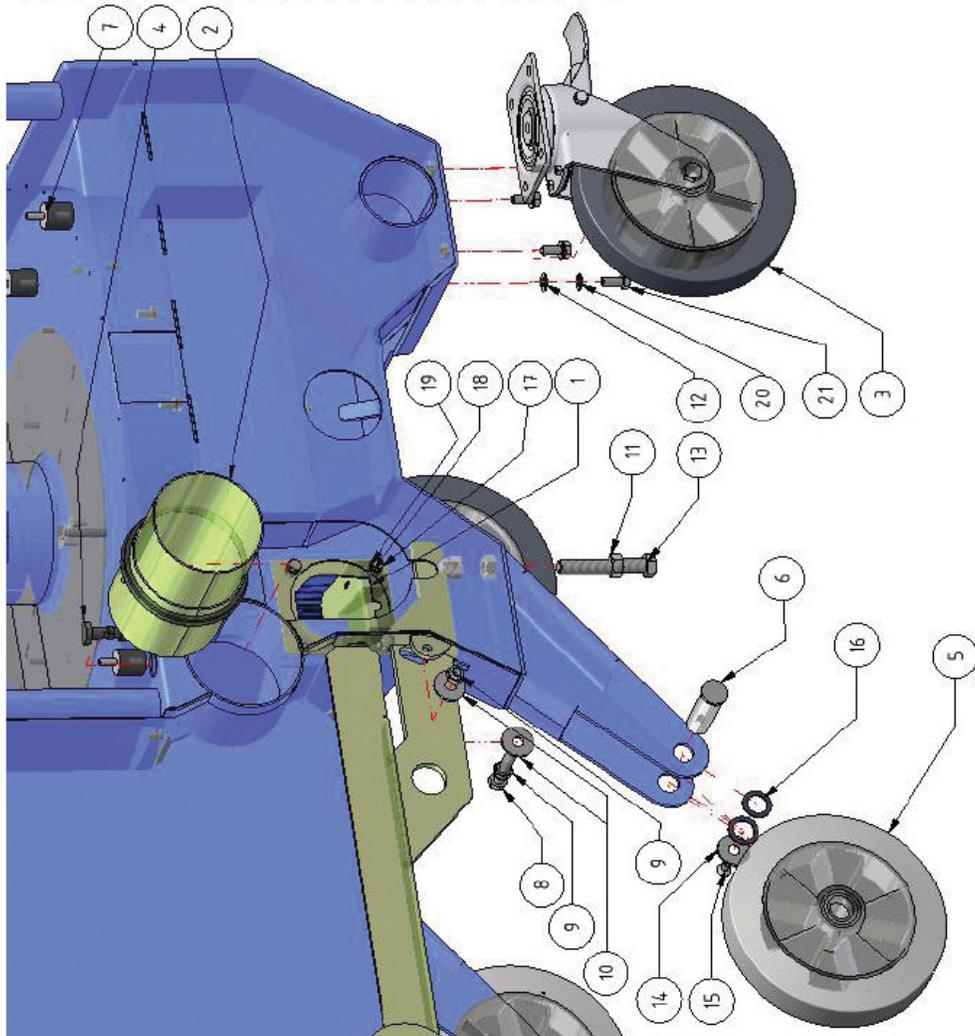
10.3 Front Bin Lift Assembly



POS	QTY.	DESCRIPTION	PART No.
1	2	PULL BRKT	314 000 067
2	1	RH LIFTING ANGLE	204 000 079
3	1	LH LIFTING ANGLE	204 000 080
4	1	LIFTING LEVER	204 000 091
5	1	RH BOWLEVER	204 000 092
6	1	LH CURVED LEVER	204 000 093
7	1	LIFTING LEVER SHAFT	204 000 094
8	2	MODIFIED BUSHING	314 000 093
9	2	HEX HEAD SCREW	DIN EN 24018
10	4	SELF LOCK NUT	DIN 985 M12 Zn
11	4	ISO7093 WASHER	DIN 9021 13Zn
12	2	NUT M16	DIN 934 M16 Zn
13	5	C SINK HEX HD. SCREW	DIN 7991 M8x12 Zn
14	1	C SUNK M8 MODIFIED WASHER	ISO 7093 ST 10
15	2	WASHER	DIN 125 B 10.5 Zn
16	8	WASHER	DIN 125 B 10.5 Zn
17	8	CAP NUT M10	DIN 1587 M10
60	3	HEX SOCK HEAD CAP SCREW	DIN 912 M8x16 Zn

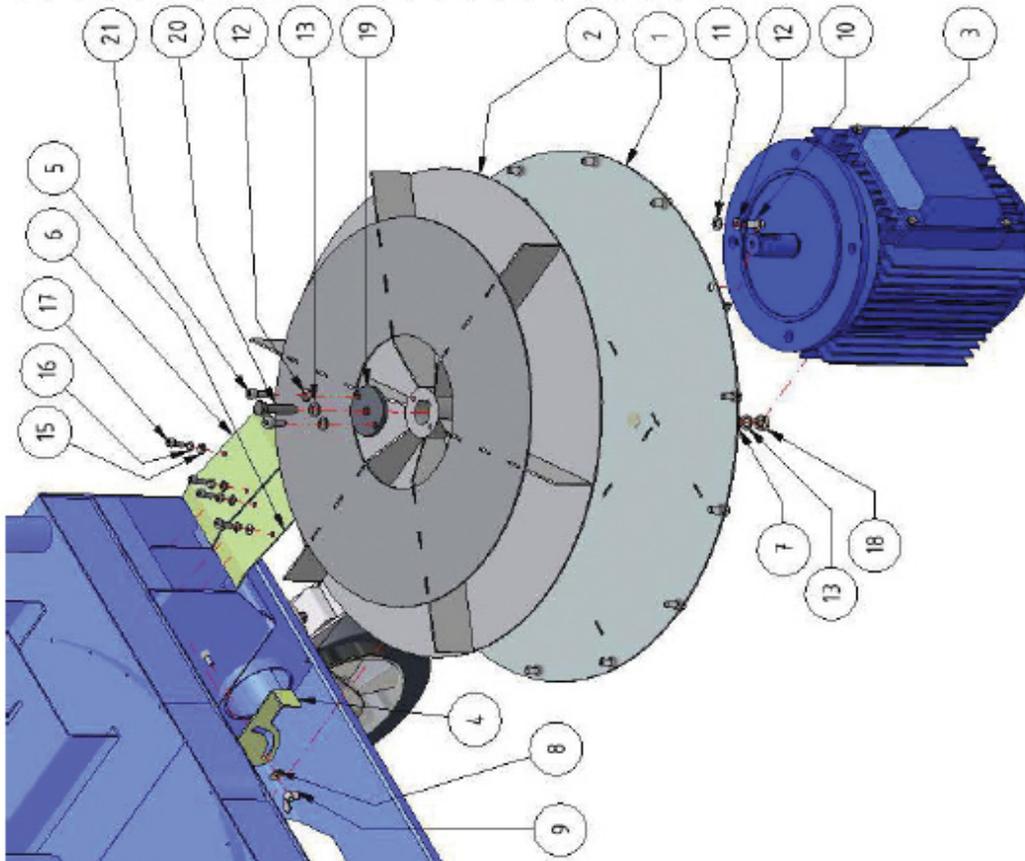
10.4 Running Gear Assembly

PARTSLIST			
POS	QTY.	DESCRIPTION	PART No.
1	1	SOCKET BRKT 32AMP	204.00C.101
2	1	HOSE CONNECTOR 130	204.00C.099
3	2	SWIVEL CASTER WITH BRAKE	304.00C.021
4	1	LOCK BOLT GN617.1	311.000.022
5	2	WHEEL 250x25	304.00C.035
6	2	WHEEL BOLT	204.00C.082
7	5	SHOCK ABSORBER	685.603.00
8	2	HEX HEAD SCREW	DIN EN 24018
9	4	SELF LOCK NUT	DIN 985 M12 Zn
10	4	ISO7093 WASHER	DIN 9021 13Zn
11	2	NUT M16	DIN 934 M16 Zn
12	8	WASHER	DIN 125 B 10.5 Zn
13	2	HEX HEAD BOLT	DIN EN 24018 M16x100 Zn
14	2	C SUNK M8 MODIFIED WASHER	ISO 7093M2
15	2	C SUNK HEAD SCREW	DIN 7991 M8x16 Zn
16	4	WASHER	DIN988 25x35x2
17	4	HEX HEAD SCREW	DIN EN 24018 M8x20 Zn
18	4	WASHER	DIN 125-1 B 8.4 Zn
19	4	LOCK WASHER	DIN 128 A8 Zn
20	8	LOCK WASHER 10mm	DIN 128 A10 Zn
21	8	HEX HEAD BOLT	DIN EN 24018 M10x25 Zn



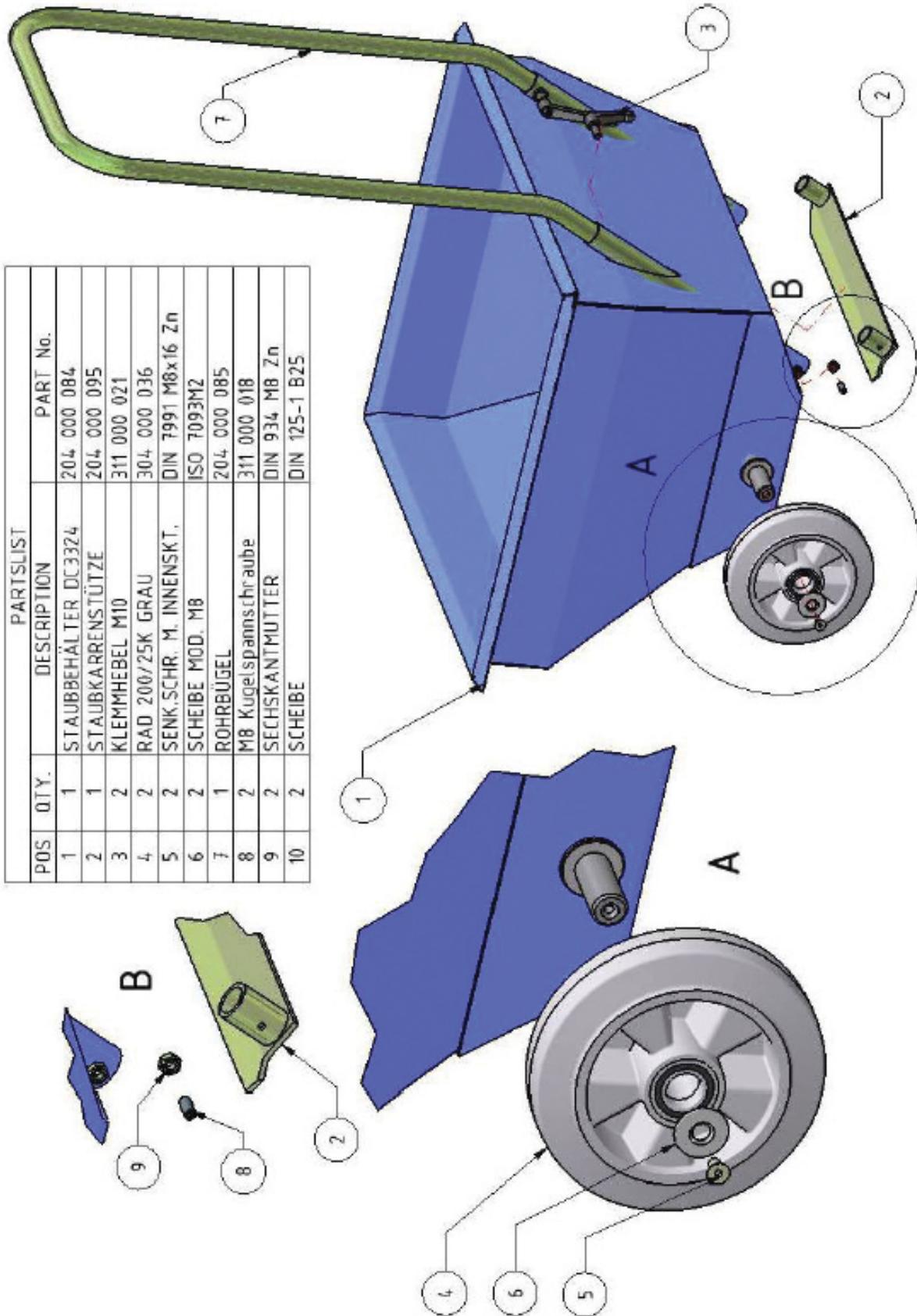
10.5 Blower Assembly

PARTSLIST			
POS	QTY	DESCRIPTION	PART No.
1	1	MOTOR SUPPORT	204 000 086
2	1	FAN BLADE ASSY	204 000 071
3	1	MOTOR	601 000 019
4	1	THROTTLE VALVE SHAFT	204 000 088
5	1	THROTTLE PLATE 65	204 000 090
6	1	THROTTLE PLATE 80mm	204 000 089
7	4	WASHER	DIN 125 B 10,5 Zn
8	1	WASHER	DIN 9021 6,4 Zn
9	1	WING NUT	DIN 315 M6 Zn
10	14	HEX HEAD SCREW	DIN EN 24018 M8x20 Zn
11	17	WASHER	DIN 125-1 B 8,4 Zn
12	17	LOCK WASHER	DIN 128 A8 Zn
13	4	LOCK WASHER 10mm	DIN 128 A10 Zn
14	8	HEX HEAD BOLT	DIN EN 24018 M10x25 Zn
15	4	WASHER	DIN 125-1 B6 Zn
16	4	LOCK WASHER	DIN 128 A6 Zn
17	4	HEX SOCK HEAD CAP SCREW	DIN 912 M6x20
18	4	HEX NUT M10	DIN 934 M10
19	1	SHEET STEEL PLATE	204 000 108
20	1	HEX HEAD BOLT	DIN EN 24018 M10x50 Zn
21	2	HEX SOCK.HD.CAP SCREW	DIN 912 M8x20

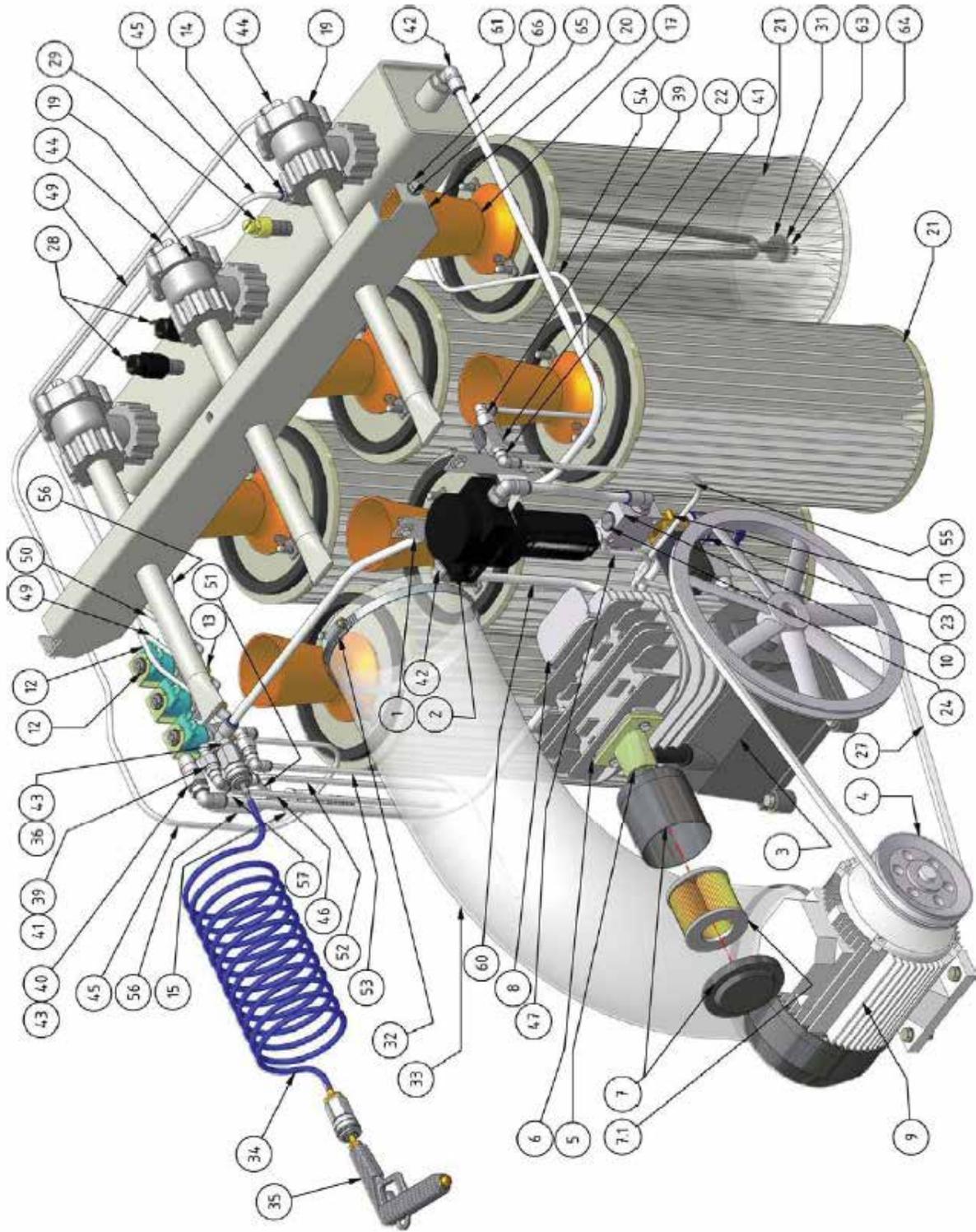


10.6 Dust Bin System

PARTSLIST			
POS.	QTY.	DESCRIPTION	PART No.
1	1	STAUBBEHÄLTER DC3324	204 000 084
2	1	STAUBKARRENSTÜTZE	204 000 095
3	2	KLEMMHEBEL M10	311 000 021
4	2	RAD 200/25K GRAU	304 000 036
5	2	SENK.SCHR. M. INNENSKT.	DIN 7991 M8x16 Zn
6	2	SCHEIBE MOD. M8	ISO 7093M2
7	1	ROHRBÜGEL	204 000 085
8	2	M8 Kugelspannschraube	311 000 018
9	2	SECHSKANTMUTTER	DIN 934 M8 Zn
10	2	SCHEIBE	DIN 125-1 B25



10.7 Air System



PATSLIST				PATSLIST			
POS	QTY.	DESCRIPTION	PART No.	POS	QTY.	DESCRIPTION	PART No.
30	1	CHECK VALVE 10MM	314 000 027	1	1	BRKT FOR AIR FILTER FG64	314 000 090
31	6	RUBBER WASHER	314 000 114	2	1	AIR FILTER G1/2	314 000 050
32	2	HOSE CLAMP 160mm	311 000 032	3	1	COMPRESSOR	305 000 006
33	1	DUCTING HOSE 160DIA	307 000 026	4	1	MOTOR PULLEY 50Hz	302 000 029
34	1	COMPR. AIR HOSE (COIL)	314 000 019	NA	1	MOTOR PULLEY 60 Hz	302 000 021
35	1	AIR GUN	314 000 064	5	1	FILTER CONNECTOR COMPRESSOR	204 000 100
36	1	AIR SUPPLY SOCKET	314 000 065	6	1	SEAL COMP. INLET	314 000 115
37	1	BULK HD.CONNECTOR	314 000 043	7	1	COMP.AIR FILTER COMPLETE	314 000 026
38	1	REDUCER	314 000 063	7.1	1	FILTER ELEMENT	314 000 051
39	4	ELLBOW CONNECTOR G 1/4-6	314 000 045	8	1	AIR COOLER	314 000 049
40	1	ELLBOW CONNECTOR G3/8-10	314 000 036	9	1	COMP MOTOR	601 000 020
41	4	ELLBOW 1/4-6	314 000 030	10	1	3 WAY AIR SPLITTER	314 000 074
42	5	ELLBOW CONNECTOR	314 000 046	11	1	AIR CONTROL VALVE	314 000 073
43	4	ELLBOW 3/8-10	314 000 035	12	3	DC PILOT VALVE	612 000 040
44	6	ELLBOW CONNECTOR A G1/8-6	314 000 013	13	3	AIR SILENCER	314 000 008
45	1	HOSE P.GAUGE 1	307000005 15	14	2	STRAIGHT CONNECTOR G1/4-6	314 000 044
46	1	HOSE P. GAUGE 2	307000005 21	15	1	FILTER D.P.HOSE	306 000 010
47	1	HOSE FILTER DRAIN	307000005 23	16	6	CARTRIDGE SUP BRKT. A	204 000 061A
48	1	HOSE CV 1	307000005 16	17	6	VENTURI PU TYPE	204 000 057
49	1	HOSE CV 2	307000005 17	18	1	AIR MANIFOLD DC4025	204 000 097
50	1	HOSE CV 3	307000005 18	19	3	RC AIR-VALVE	314 000 057
51	1	HOSE DIF P D.GAS 1	307000005 20	20	1	AIR PULSE SYSTEM	204 000 087
52	1	HOSE DIF P. D.-GAS 2	307000005 22	21	6	FILTER CARTRIDGE CLASS C	306 000 002
53	1	HOSE DIF.P. CL.-GAS	307000005 25	22	1	BALL VALVE	314 000 058
54	1	HOSE DRAIN 1	307000005 19	23	1	PNEUMATIC SILENCER	314 000 060
55	1	HOSE DRAIN 2	307000005 24	24	1	PLUG	314 000 070
56	1	HOSE P RES 1	307000007 9	25	1	PIPE CONNECTOR A3/8	314 000 099
57	1	HOSE P RES 2	307000007 12	26	1	SEAL COMP. OUT	314 000 116
58	1	HOSE P RES 3	307000007 1	27	1	COMP. DRIVE BELT	301 000 014
59	1	HOSE P RES 4	307000007 11	28	2	PRESSURE SWITCH	314 000 055
60	1	HOSE D RES 5	307000007 10	29	1	SAFETY VALVE	314 000 052
61	1	HOSE P RES 6	307000007 8				

Notes



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