

# OPERATING MANUAL BDC-654

VERSION 2.0

**EC DECLARATION OF CONFORMITY**

in accordance with Appendix II sub A of Directive 2006/42/EC

**BLASTRAC B.V.**

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We declare under our sole responsibility that the machine as described below conforms with the Health and Safety requirements of the European Directive for machine Safety.

In case of changes to the machine without our written authorization this declaration loses its validity.

**Model: Blastrac**

**BDC-654-0000**

**Serial number: xxxxxxxx**

1. satisfies the conditions set out in the Machine Directive (Directive 2006/42/EC); Low voltage directive (2006/95/EC, as last amended; EMC directive 2004/108/EC, as last amended)
2. satisfies the following harmonized standards:  
NEN-EN 292-1, NEN-EN 60335-1, NEN-EN 60335-2-69, NEN-EN 55014, NEN-EN 55014-2 and NEN-EN 61000-3-2

Nieuwegein 8-feb-2010

  
Michiel Kalisvaart



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## 1. Introduction

It is important that all persons who are working or maintaining this machine read the manual carefully and understand it fully.

Keep this manual near to the machine, so it can always be consulted.  
Only authorized and trained personnel may operate this machine.

## 2. Machine description

The Blastrac dust collector BDC-654 can only be used for dry cleaning.  
It should **only be** used for removing **not-inflammable dust or substances**.  
The BDC-654 must **not** be used for **carcinogenic or asbestos substances**.

The machine is designed for usage in conditions according to classification **M** (see below).

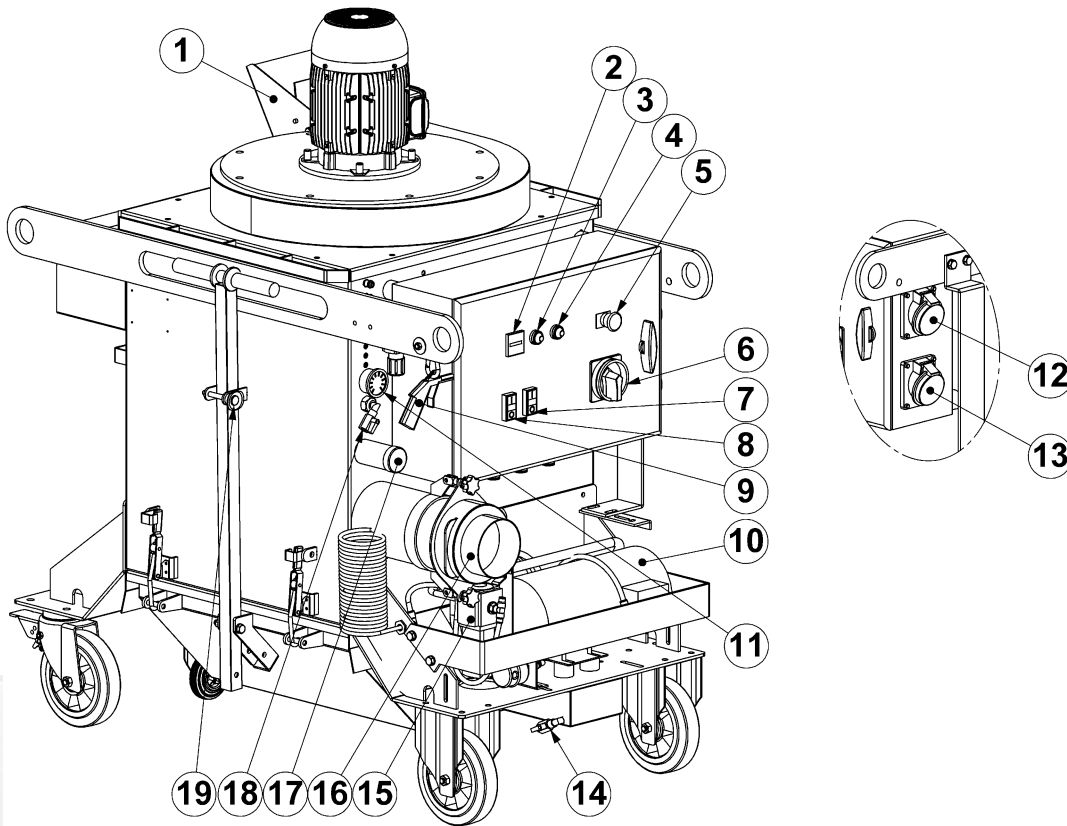
| Classification acc. standard EN 60335-2-69 – Annexe AA |  |
|--|--|
| Class  | Designation  |
| L  | (Low risk ) for separating dust with an exposure limit value of over 1 mg/m <sup>3</sup> , depending on the volume occupied.   |
| M<br>(BDC-654)   | (Medium risk ) for separating dust with an exposure limit value of over 0,1 mg/m <sup>3</sup> , depending on the volume occupied.  |
| H  | (High risk ) for separating al dust with an exposure limit value lower than 0,1 mg/m <sup>3</sup> , depending on the volume occupied. including carcinogenic and pathogenic dusts. |

| Dust emissions into the environment |   |
|-------------------------------------|---|
| Class                               | Value of performance  |
| L                                   | Retains at least 99,1 % of particles measuring $\geq 3 \mu\text{m}$ |
| M                                   | Retains at least 99,9 % of particles measuring $\geq 3 \mu\text{m}$ |
| H                                   | Class H13 HEPA filter in accordance with EN1822                     |

### Application

The BDC-654 is especially designed to be used in combination with Blastrac machines.

Contact Blastrac B.V. for the correct execution and combinations.



|           |   |           |   |
|-----------|---|-----------|---|
| <b>1</b>  | Deflector, deflects the air stream upwards. The pressure of the airflow can be regulate to adjust the position of the valve inside the deflector.       | <b>11</b> | Manometer, shows the pressure of the air tank. The pulse to clean the filters must be given at 7 bar. |
| <b>2</b>  | Hour counter Shows the working time of the Dust collector in hours. Registration of the working hours enables to follow a correct maintenance schedule. | <b>12</b> | 32A, 5 pole   |
| <b>3</b>  | Motor failure light   | <b>13</b> | 63A, 5 pole   |
| <b>4</b>  | Phase incorrect light   | <b>14</b> | Drain box. This box collect the drain water of the water separator. Empty the box regular.            |
| <b>5</b>  | Emergency shut down switch  | <b>15</b> | Water separator with automatic drain.   |
| <b>6</b>  | Main switch   | <b>16</b> | Hose adapter, 5" (Ø127mm) and 6" (Ø150mm)   |
| <b>7</b>  | Fan ON / OFF  | <b>17</b> | Hose connection 2" (Ø51mm)  |
| <b>8</b>  | Compressor ON / OFF   | <b>18</b> | Drain valve. Open this drain valve regular to remove water from the air tank.                         |
| <b>9</b>  | Air pistol  | <b>19</b> | Quick release pin. Put this pin into the hole at bottom of the handle.                                |
| <b>10</b> | Compressor  |           |   |



### 3. Safety

Before operating the machine, the personnel must be familiar with the safety instructions given in this manual. Keep this manual near to the machine, so that it may always be consulted.

#### Safety precautions – general

- It should **only** be used for removing **not-inflammable dust or substances**.
- The unit should not be used near flammable gasses or substances.
- The BDC-654 must **not** be applied for **carcinogenic or asbestos substances**.
- The voltage on the identification plate must comply with the power supply.
- Do not use the unit when it is damaged.
- Do not use damaged extension cables.
- Do not pull the power supply cable over sharp edges, fold the cable or clamp it.
- Never use this machine for sucking water or liquids.
- Acids, acetone or solvents can damage the machine.
- During a standstill of the machine, pull out the plug.
- Don't pull out the power supply cable out by the wire, but by the connector.
- Use only original Blastrac parts.
- The dust collector must be yearly overhauled by a skilled technician.

#### Safety precautions – with regard to transport

- When transporting the dust collector do so in such a manner that damage due to the effects of the use of force or incorrect loading and unloading is avoided.
- Before the dust collector is removed from the hazardous zone, take precautions to prevent dust from escaping. Always close the inlet of the dust collector with the appropriate plug.

#### Safety precautions – with regard to maintenance

- To allow the user to carry out maintenance operations, the dust collector must be disassembled, cleaned and inspected as far as reasonably possible, without causing hazards for the maintenance staff or other people.
- The suitable precautions include decontamination before disassembling the dust collector, adequate filtered ventilation of the exhaust air from the room in which it is disassembled, cleaning of the maintenance area and suitable personal protection.
- The external parts of the dust collector must be decontaminated by cleaning and vacuuming methods, de-dusted before being taken out from the hazardous zone. All parts of the dust collector must be considered as contaminated when they are removed from the hazardous zone and appropriate actions must be taken to prevent dust from dispersing.
- When maintenance or repair procedures are carried out, all the contaminated elements that cannot be properly cleaned, must be destroyed.
- These elements must be disposed of in sealed bags according to the applicable regulations and in accordance with the local laws governing the disposal of such material.
- This procedure must also be followed when the filters have to be disposed.
- Compartments that are not dust-tight must be opened with suitable tools and thoroughly cleaned.

#### Safety regulations

The following sticker is placed on the machine.





Meanings of these symbols are:

- Ear protection is obliged
- Safety glasses with lateral protection are obliged
- CE-mark on this machine
- Safety shoes obliged
- Consult the manual before operating the machine

Personnel must tie back long hair and not wear loose clothing or jewellery including rings.

Wear gloves and dust mask during operating the machine.

- Persons who are not operating the machine must not be permitted to stay in the surrounding area of the machine.
- Don't change anything on the machine. Use always cables which are approved and safety earthed (extend) cables. The machine is always equipped with an earthed connection, do not change this and use always earthed cables with an earthed plug.
- Connect the main power supply cable to an installation with an earth leakage circuit breaker.
- Inspect and test the electrical components regularly. The electrical components have to satisfy to the requirements which apply to these components.
- Always call a skilled electrician or your distributor when you have questions about the safety of the electrical components.
- Work on electrical equipment or operating materials may only be undertaken by a skilled electrician or by trained persons under the guidance and supervision of a skilled electrician as well as in accordance with the electrical engineering regulations.
- Pull out the main plug during inspections and repair operations on the machine.
- Never operate the machine when the surface is wet.
- Never use the machine in the rain.



## 4. Before operation

Before using the machine it is essential to inspect the machine.

It is not permitted to use the machine if the machine safety is not according to the checkpoints below.

### Checkpoints of electrical safety

- Use only extension cables for extending the main cable that are sized and marked in accordance with the overall power consumption of the machine.
- Electrical cables must be rolled entirely off of the reels.
- Any damage to electric cables is not permitted.
- Use an electrical power supply connection with earth connection.
- The main switch of the machine should be put to 'Off' before connecting to the power supply.

## 5. Operation

### Starting / stopping the machine

- Connect the dust hose to the machine.
- Connect the dust collector to the power supply.
- Switch on the main switch.
- Switch on first the compressor motor.
- Secondly switch on the fan motor.
- Carry out these actions in opposite sequence to stop the machine.

### Work with the machine

- Regularly check the contents of the dust-bin.
- Regularly open the drain valve (item 17 page 5) to remove water from the air tank.
- Regularly open the drain valve (item 13 page 5) to remove the collected water of the water separator.

### Interrupting work

- When temporarily interrupting the work (1/2 hour – 1 hour), turn off the fan unit only. Pulse cleaning of the filter system will continue and will increase the life-time of the filter cartridges.
- During a longer stand still of the dust collector, first switch off the fan unit. Let the pulse cleaning cycle run for +/- 5 minutes. Switch off the compressor unit and Main-switch.
- Disconnect the power-supply cable.
- Prevent unauthorized persons from getting access to the dust collector or take measurements to prevent unauthorized working with the equipment.





## 6. Maintenance

Pay attention to Chapter 3 "**Safety**" during maintenance and repair works.

Failures due to inadequate or incorrect maintenance may generate very **high repair costs** and long standstill periods of the dust collector. **Regular** maintenance therefore is imperative.

Operational safety and service life of the dust collector depend, among other things, on proper maintenance.

The following table shows recommendations about time, inspection and maintenance for the normal use of the dust collector.

| Operating hours/<br>time period  | Inspection points, maintenance instructions   |
|----------------------------------|---|
| 12 h after repairing             | Check all accessible screw connections for tight seat.  |
| Daily and prior to starting work | Check all safety devices working adequate.<br>Check the function of the residual current operated device.<br>Check the hose connections for tightness and fixed seat.<br>Check the hose to the filter for damages.<br>Make sure that the dust bin of the filter is emptied<br>Check the electric connections for sediments of dirt or foreign bodies.<br>Check the electric motors for dirt and other contaminants. |
| Annually                         | Full overhaul and cleaning of the complete dust collector.  |

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 once a year.

Due to different working conditions it can't be foreseen how frequently inspections for wear check's, inspection, maintenance and repair works ought to be carried out. Prepare a suitable inspection schedule considering your own working conditions and experience.

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

**Prior to any repair works on the dust collector and its drives, secure the dust collector against unintentional switching on. Put the dust collector to its safety off position. Also make sure there is no air pressure on the pulse system.**

**Follow additional operating and maintenance of OEM if included during your service and maintenance work.**



### Further is advised:

Store the cleaned and dry machine in a dry and humid free room. Protect the electrical motors from moisture, heat, dust and shocks.

All repair work must to be done by qualified Blastrac personnel, this to guarantee a safe and reliable machine.

Any guarantee on the machine is expired when:

- Non original Blastrac parts have been used
- Repair work is not done by qualified Blastrac personnel
- Changes, add on's or conversions are undertaken without written permission of Blastrac BV

### Filter replacement

By mounting new filter cartridges pay attention that their gasket at the upper side lies firm at the sheet steel of the filter chamber. A tilt of the filter cartridge result in leakage and they suction contaminants in the clean part and consequently blow they backwards in the outer air.

### Pulse system

The Dust collector is provided with a air pulse cleaning system which increases the life of the filter cartridges.

The system works by use of pressurized air, built up by a compressor

The air is leaded through a water separator to the pulse system.

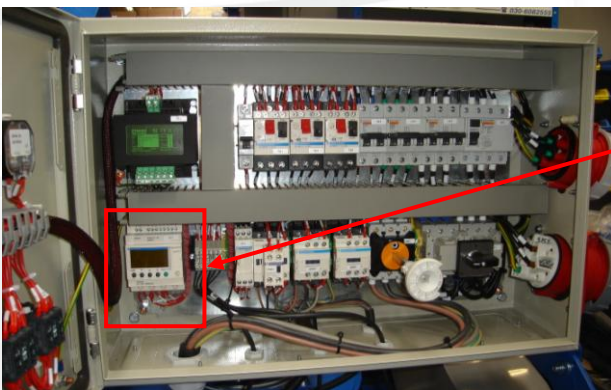
The cooled air passes a control valve, which regulates the systems pressure , and then builds up pressure in the pulse tank.

Normally the pressure in the system lies between 6 and 7 bar. The safety valve mounted on the compressor is activated at approximately 10 bar.

This provision is to ensure that when there is a defect in the Control valve, the pressure in the pulse tank remains within safe limits.

If the pressure of 7 bar is not reached, it is possible that either the filter of the water separator or the air filter of the compressor is dirty.

When there is pressure but the pulse system does not function, there might be a problem in the electrical system which controls the pulsing system. Check the wiring and the PLC-settings.

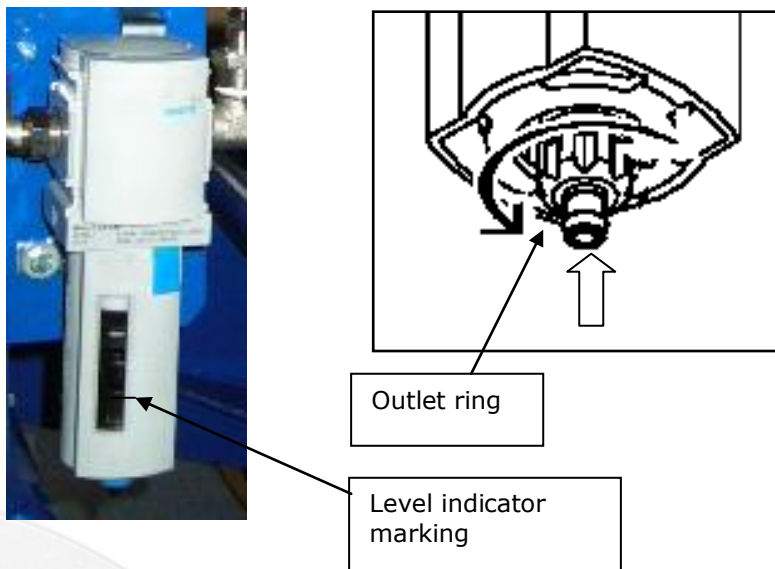


Advised is to take contact with Blastrac Support in order to prevent operational problems.

### Water separator

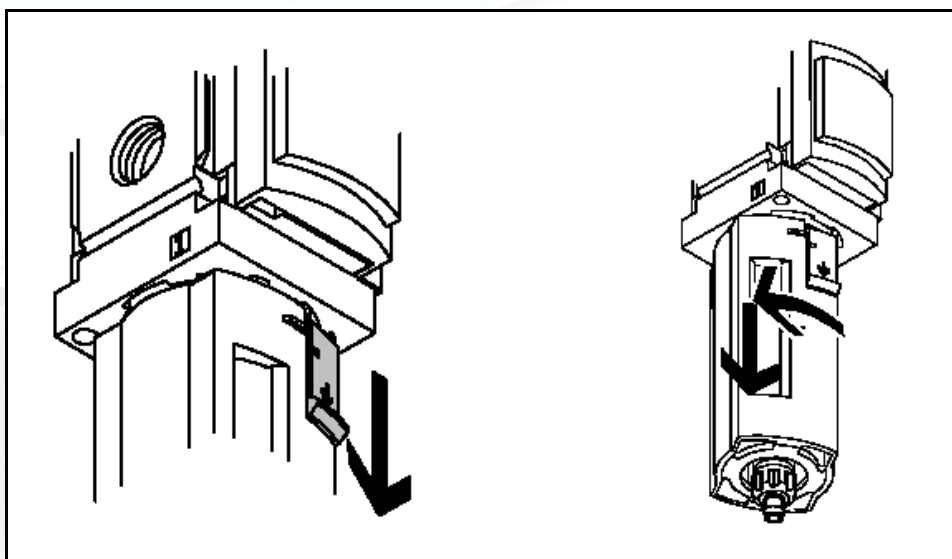
Periodically check the level indicator of the water separator.

If there is condensate level approximately 10 mm below the level indicator marking (see figure below) then either press in or turn the outlet ring as shown on figure below.



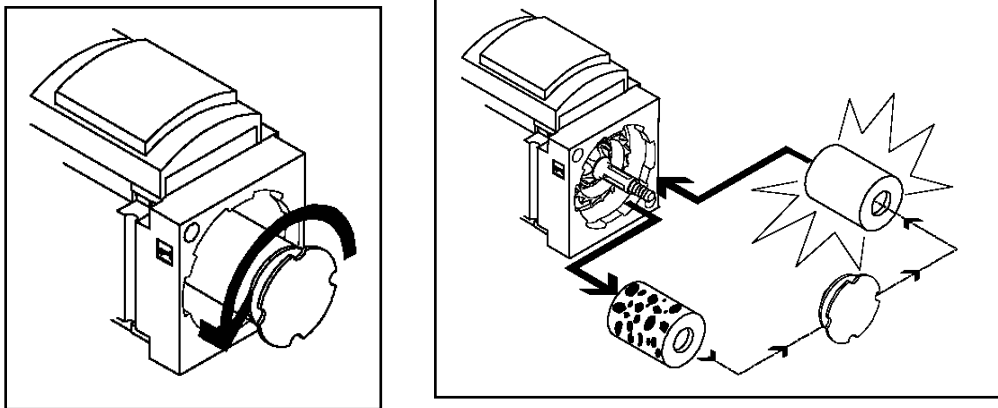
In case of less air flow as mentioned in the paragraph above, replace the filter of the water separator as following:

Push unlocking slide down and turn filter bowl in anti-clockwise direction. Then pull filter bowl away from the separator.



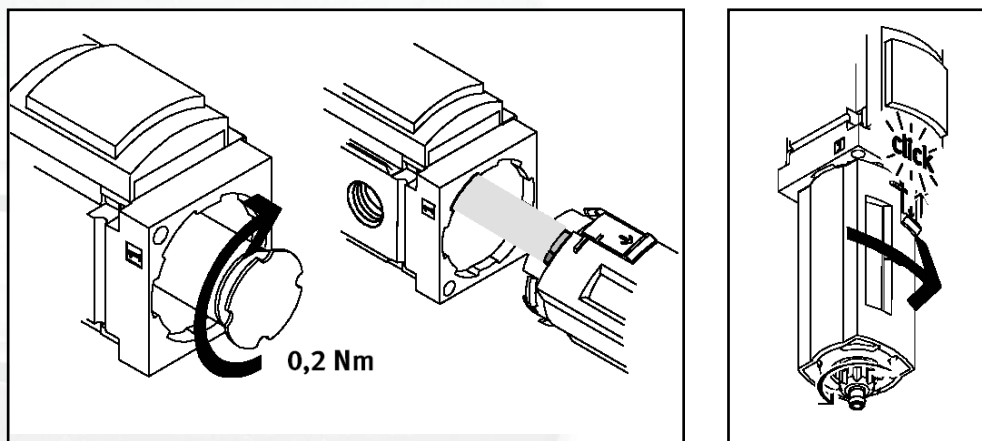


Turn the filter screw loose and replace the dirty filter by a new one as shown on figure below. Hold the new filter element only at the lower end .



Fasten the filter screw and place the filter bowl back . Make sure the locking pin points towards the large recess.

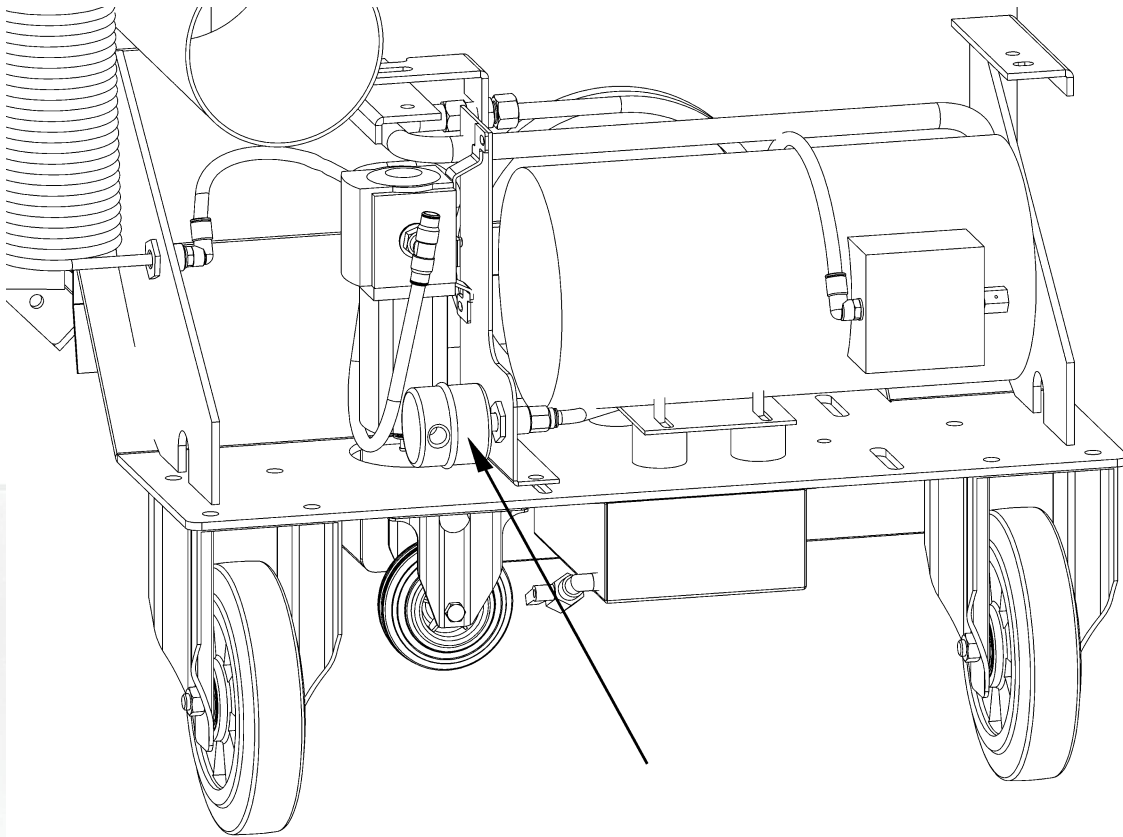
When fastening the filter bowl, make sure you hear a clear snap.





## Compressor

Replacement or cleaning of the air filter of the compressor is depending on the environment in which the Dust collector is operating.





## 7. Technical data

|  | <b>BDC-654</b>          |
|--|-------------------------|
| Power consumption                        | 4.5 kW                  |
| Electrical connection                    | 400-440V / 50-60Hz      |
| Air stream 50Hz<br>(hose 5" at the end)  | 920 m <sup>3</sup> /hr  |
| Air stream 60 Hz<br>(hose 5" at the end) | 1104 m <sup>3</sup> /hr |
| Dust hose connection                     | Ø51 and Ø130 mm         |
| Dust bin capacity                        | 87.5 L                  |
| Filter surface                           | 27.6m <sup>2</sup>      |
| Length                                   | 1332 mm                 |
| Width                                    | 855 mm                  |
| Height                                   | 1500 mm                 |
| Weight                                   | 370 kg                  |
| Noise level (at 1 mtr. distance)         | Up to 80 dB(A)          |

The electrical diagrams of the electrical system are placed inside of the control panel.

Design and specifications are subject to change without notice by Blastrac BV



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