



MANUAL
HTC 1500 iXT





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Always specify the model and serial number when asking questions about your product.

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Declaration of conformity

In accordance with EMC 2004/108/EC, LVD 2006/95/EC, MD 2006/42/EC

Type of equipment	Grinder
Make	HTC
Trademark	HTC 1500 ixT
Manufacturer	HTC Sweden AB
	Box 69
	614 22 Söderköping

The product was CE marked in 2008.

As the manufacturer, we hereby declare under sole responsibility that the product conforms with the terms of the directives listed above.

Sten Jeansson, CEO

Table of contents

1. Introduction.....	1
1.1 General.....	1
1.2 Liability.....	1
1.3 Manual.....	1
1.3.1 Safety instructions – explanation of symbols.....	1
1.4 Transportation.....	2
1.5 On delivery.....	2
1.6 Unpacking the machine.....	3
1.7 Serial number.....	3
1.8 Handling and storage.....	3
1.9 Vibrations and noise.....	3
2. Safety.....	4
2.1 General information.....	4
2.2 Warnings.....	4
2.3 Observations.....	6
3. Machine description.....	9
3.1 General machine description.....	9
3.2 Description of controls.....	12
3.2.1 Control panel - left	12
3.2.2 Control panel - right.....	14
3.3 Seat.....	16
3.3.1 Adjusting the seat.....	16
3.4 Safety bar.....	17
3.5 Mist Cooler System.....	18

4. Operation.....	19
4.1 General information.....	19
4.2 Handling the grinding head.....	20
4.3 Access to grinding tools.....	20
4.4 Fitting and replacing grinding tools.....	21
4.4.1 Fitting grinding tools.....	21
4.4.2 Changing grinding tools.....	22
4.5 Prepare before grinding.....	23
4.6 Handling Longopac.....	23
4.6.1 Removing the full refuse bag.....	24
4.6.2 Fitting Longopac.....	24
4.7 Filter cleaning.....	25
4.7.1 Opening and closing the butterfly valves manually.....	25
4.7.2 Automatic filter cleaning (AUT = standard mode).....	26
4.7.3 Manual filter cleaning (MAN).....	26
4.7.4 Emptying mode (EMPTY).....	27
4.8 Changing absolute filters.....	28
4.9 Changing tube filter/cartridge filter.....	29
4.10 Changing valves.....	30
4.11 Battery.....	31
4.11.1 Charging the battery.....	31
4.12 Mist Cooler System.....	32
4.13 Operation.....	32
4.13.1 Main switch.....	32
4.13.2 Emergency stop switch.....	33
4.13.3 Starting the machine.....	33
4.13.4 Stopping the machine.....	35
 5. Maintenance and repairs.....	 36
5.1 General information.....	36
5.2 Cleaning.....	36
5.3 Daily.....	36
5.3.1 Check the tube filter/cartridge filter.....	37
5.3.2 Checking the absolute filter.....	37
5.4 Every week.....	38
5.4.1 Checking the valve.....	38
5.5 Every month (or 100 hours).....	38
5.6 Repairs.....	39

6. Troubleshooting.....	40
6.1 General information	40
6.1.1 The machine will not start.....	40
6.1.2 Grinding motors will not start.....	40
6.1.3 The dust separator will not start.....	40
6.1.4 Forward motion motors will not start.....	40
6.1.5 The machine vibrates or wears the tool unevenly.....	41
6.1.6 The machine is grinding at an angle.....	41
6.1.7 The machine stops immediately after starting.....	41
6.1.8 The fuses trip frequently.....	41
6.1.9 The machine cannot cope.....	41
6.1.10 The grinding head cannot be raised/ lowered.....	42
7. Electronic error codes.....	43
7.1 General information.....	43
7.2 Resetting the frequency converter.....	44
8. Spare parts.....	46
8.1 Grinding head 1.....	46
8.2 Grinding head 2.....	48
8.3 Grinding holder.....	52
8.4 Discharge cover.....	54
8.5 Dust separator.....	56
8.6 Bottom cone.....	60
9. Technical data.....	62
10. Environment.....	64
11. Warranty and CE Marking.....	65
11.1 Warranty	65
11.2 CE marking.....	65

1. Introduction

1.1. General

The HTC 1500 ixT (i = industrialised system, x = four grinding discs/grinding heads, T = two grinding heads) is a grinding machine with integrated dust separator used for grinding, coarse grinding, preparing and polishing concrete, natural stone and terrazzo floors. Simply fit the tool that is applicable to the task. The dust sucked up is collected in two bags under the dust separator.

Read through this manual carefully so that you know how to use and maintain the machine before using it. Contact your retailer for more information. For contact information, see Contact Information at the start of the manual.

1.2. Liability

Although every effort has been made to ensure that the information in this manual is correct and complete, we accept no responsibility for errors or omissions. HTC reserves the right to change the descriptions contained in this manual without prior notice.

This manual is protected by copyright law and no part of it may be copied or used in any way without the written approval of HTC.

1.3. Manual

In addition to general functions, this manual deals with areas of application and maintenance of the grinder.

1.3.1. Safety instructions – explanation of symbols

In order to clearly mark particularly important sections, there are a number of symbols in the manual – see below. In order to avoid both personal injury and material damage as much as possible, it is extremely important to read and understand the text next to these symbols particularly carefully. Practical tips are also marked with a symbol. These tips are to make it easier to use the machine and to get maximum benefit from it.

The following symbols are used in the document to highlight for the reader when to be observant.



This symbol means **Warning!** and indicates a risk of personal injury or material damage in the event of incorrect use of the machine or associated equipment. If you see this symbol next to a section of text, you must pay particular attention when reading through the text and not carry out any operations of which you are unsure. This is for your own and other users' safety and to avoid damage to machinery or other equipment.



This symbol means **Note!** and indicates a potential risk of material damage in the event of incorrect use of the machine or associated equipment. If you see this symbol next to a section of text, you must pay particular attention when reading through the text and not carry out any operations of which you are unsure. This is to avoid damage to the machinery or other equipment.



This symbol means **Tip!** You can get tips and advice on ways to make operating your machine or associated equipment easier, and to avoid wear. If you see this symbol next to a section of text, you should read through the text to make your work easier and to extend the service life of the machine.

1.4. Transportation

The machine is best transported secured to a load pallet. The grinding head must be raised and secured or fully lowered.

1.5. On delivery

The following items are included on delivery. Contact your retailer if anything is missing.

- Grinder
- Manual
- Locking key for control cabinet

- Charging cable
- Hammer EZ system

1.6. Unpacking the machine



Warning!

Read through the safety instructions and the manual carefully before use.

- Check carefully to see if the packaging or machine has been damaged during delivery. If there are signs of damage, contact your retailer and report the damage. Report any external damage to the transport company as well.
- Check that the delivery matches your order. If you have any questions, contact your retailer.

1.7. Serial number

The serial number is stamped on the top of the grinding head's right lifting arm. This information is required when ordering spare parts for the machine.

1.8. Handling and storage

The machine should be stored in a heated, dry area when not in use. Otherwise the machine may be damaged by condensation and cold.

1.9. Vibrations and noise



Warning!

Always wear hearing protection when using the machine.

The machine is tested in accordance with ISO 8662-4 and ISO 11202 with regard to vibrations and noise. The average value is 0.65 m/s² for vibrations in connection with acceleration. The average value for the sound level when rough grinding concrete is 97dB. This value varies depending on the choice of tool and the type of floor.

2. Safety

2.1. General information

This chapter contains all the warnings and observations that should be taken into consideration for HTC 1500 ixT.

2.2. Warnings



Warning!

The machine may only be used or repaired by personnel who have received the requisite theoretical and practical training and who have read the user manual.



Warning!

Under no circumstances may the machine be operated sideways on a sloping surface, as the machine could tip over. Always reverse down an inclined surface.



Warning!

Under no circumstances is it permitted to stand in front of the grinding head when it is raised, as it may accidentally drop down if not properly secured.



Warning!

Under no circumstances is it permitted to stand in front of/near the dust separator when it is being lowered into the service position.



Warning!

There is a risk of crushing when towing the machine, as the brake must be released to enable the machine to roll.



Warning!

Never use the machine in an environment with a risk of explosion or fire. Familiarise yourself with the fire-protection instructions for the working area and follow them.



Warning!

Secure the area around the machine. No unauthorised persons should be allowed within a 15-metre radius of the machine. If a loose object were to catch under the grinding head, it could be flung out and cause personal injury.



Warning!

Use protective equipment such as shoes with steel toecaps, safety goggles, protective gloves, protective mask and ear protectors.



Warning!

The dust sucked up is harmful if inhaled. Follow local regulations and use breathing protection.



Warning!

The machine may only be started with the grinding head lowered. The rotating disc must be touching the floor and the correct tool must be fitted.



Warning!

The machine must be connected to a residual current device.



Warning!

The tool becomes very hot during use. Leave the machine to stand for a short while and use protective gloves when removing the tools.

**Warning!**

Disconnect the electrical supply and raise the grinding head when changing tools or repairing the machine.

**Warning!**

The machine must only be used and moved on level surfaces. There is a risk of crushing if the machine starts to roll.

**Warning!**

Inspect the floor carefully and remove any objects sticking up and any loose rubbish that may otherwise get stuck in the machine and cause personal injury or damage to the machine.

**Warning!**

Do not clean the machine using a high-pressure washer, otherwise moisture may penetrate electrical elements and damage the machine's drive system.

**Warning!**

There is a risk of crushing when locking the bar. Ensure that you do not place your fingers between the bar and the foot pedal.

**Warning!**

During charging, oxyhydrogen gas always forms in the battery. An open flame or spark in the vicinity of the batteries could cause an explosion.

2.3. Observations

**Note!**

The machine may only be used to grind and polish natural stone, terrazzo, concrete, or other materials stated in this manual or that are approved by HTC.



Note!

Only original tools and spare parts from HTC may be used for the machine. If not, neither the CE marking nor the warranty will be valid.



Note!

For the CE marking to be valid, the instructions in this manual must be followed.



Note!

The machine must only be lifted using the intended lifting eye.



Note!

The machine should be stored in a dry, warm (plus degrees) location when not in use.



Note!

If the machine is stored in a cold (minus degrees) location, it must be placed in a warm (plus degrees) location for at least two hours before use.



Note!

After removing glue and wet grinding, always lift up the grinding heads so that they do not stick to the floor and damage machine components and the floor when restarting.



Note!

Check the bar each time you lift to avoid the grinding head being damaged or causing injury or damage.



Note!

Leakage currents can run down the batteries, as the batteries are exposed to dust. Keep the batteries clean to avoid discharging.



Note!

The stickers on the control panel must be replaced if the text becomes illegible.



Note!

The charging cable for the three-phase socket must only be used for charging and must not, under any circumstances, be used for grinding .

3. Machine description

3.1. General machine description

The HTC 1500 ixT has been designed and developed for industrial grinding in both small and large spaces. It is used to grind, coarse grind, prepare and polish concrete, natural stone and terrazzo floors or other materials specified in this manual or material recommended by HTC.

The machine has been integrated with two dust separators that suck up the dust into Longopac bags, which are sealed and discarded once the maximum dust quantity is reached. It is made up of a number of main components. see Figure 3-1 on page 10 and Figure 3-2 on page 11. The driver's seat has been ergonomically designed, providing the driver with a good working environment and an overview of all controls.

The machine can easily be equipped with a large number of grinding tools, depending on the material to be ground. For the different tools, see HTC's Product Catalogue under the Grinding Guide tab.

The machine is equipped with a Mist Cooler system for effective cooling of the grinding tools. This system enables a very fine water mist to be diffused through a nozzle onto the floor surface, which cools the tools, making the grinding much more effective.

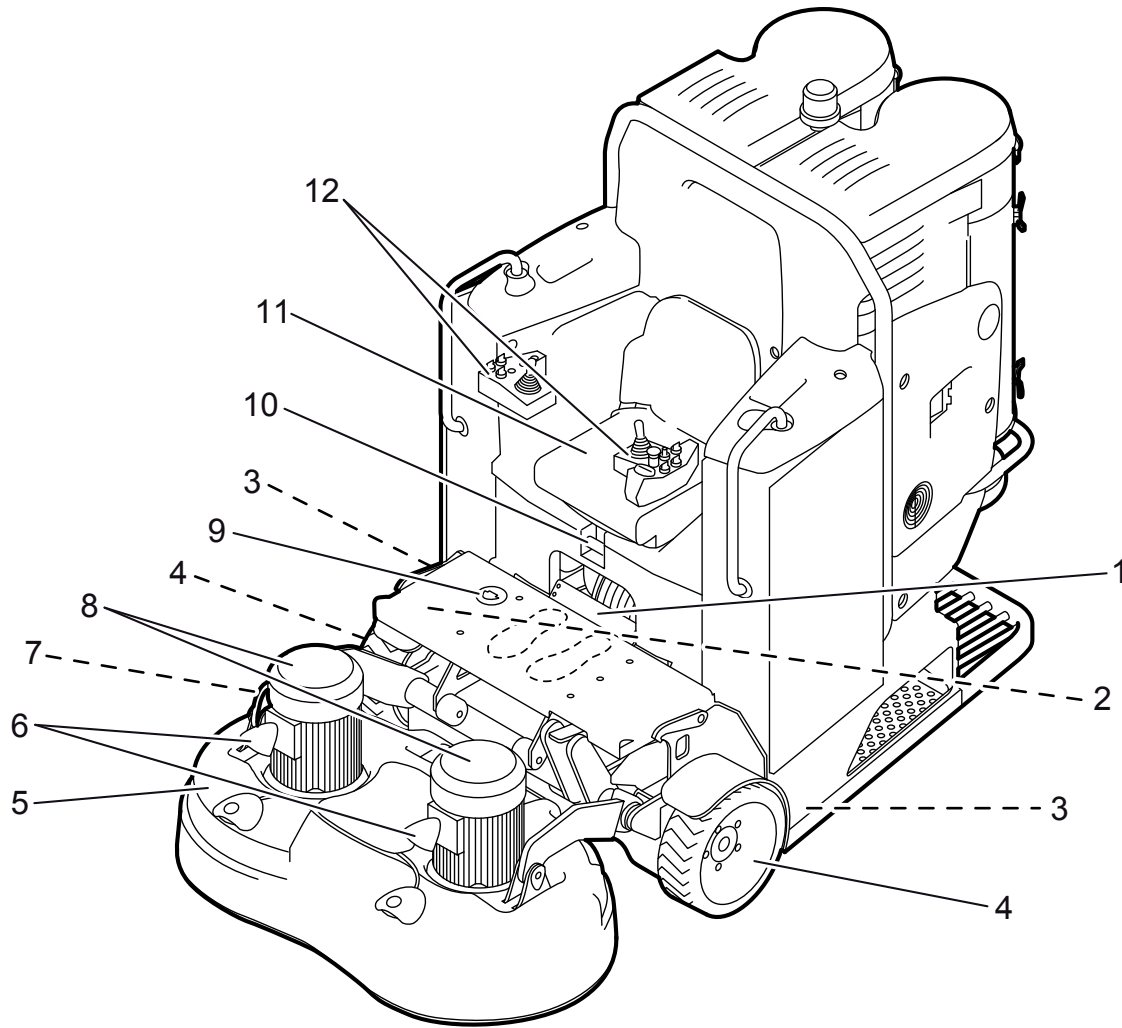


Figure 3-1 The front of the machine

1. Safety bar
2. Water tank
3. Drive motor
4. Wheel
5. Grinding cover
6. Headlight
7. Serial number
8. Grinding motor
9. Filler cap water
10. Lifting eye
11. Seat
12. Control panels

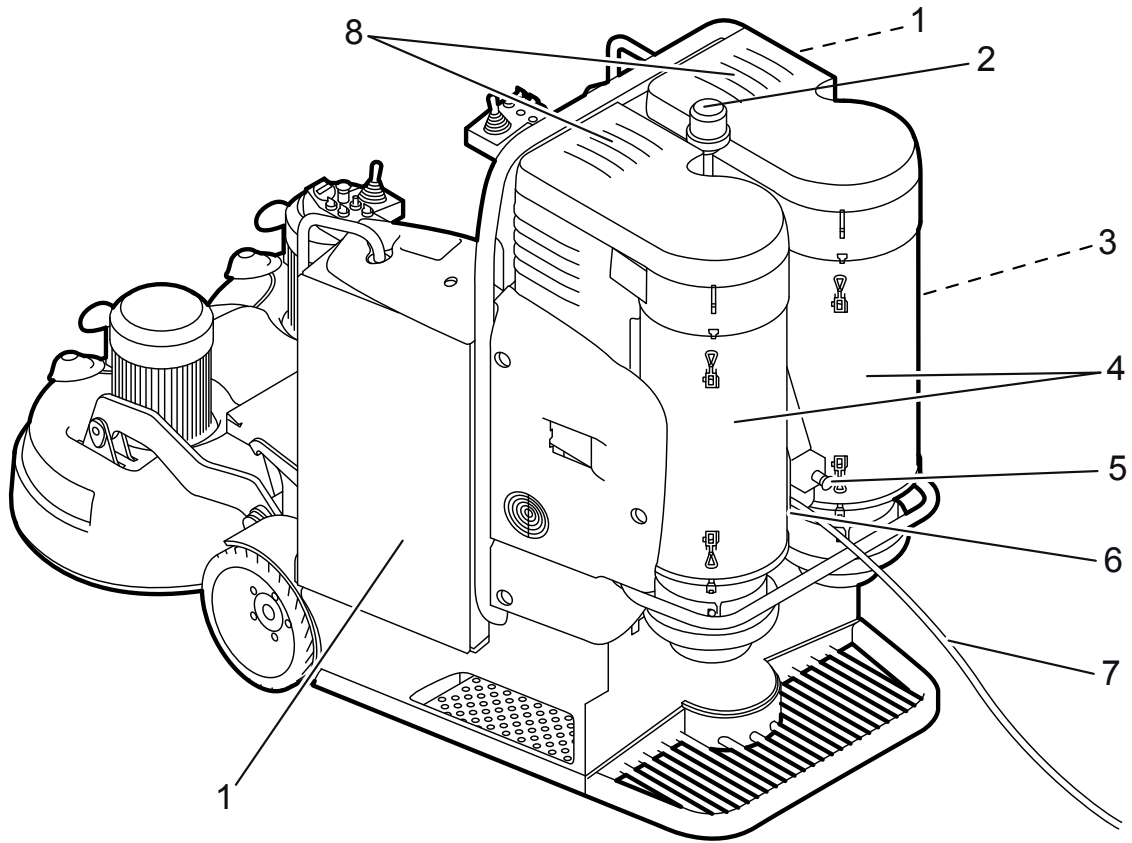


Figure 3-2 Machine rear

1. Control cabinet
2. Warning light
3. Main switch
4. Dust separator
5. Emergency stop switch
6. Work light
7. Cable
8. Control cabinet dust separator

3.2. Description of controls

3.2.1. Control panel - left

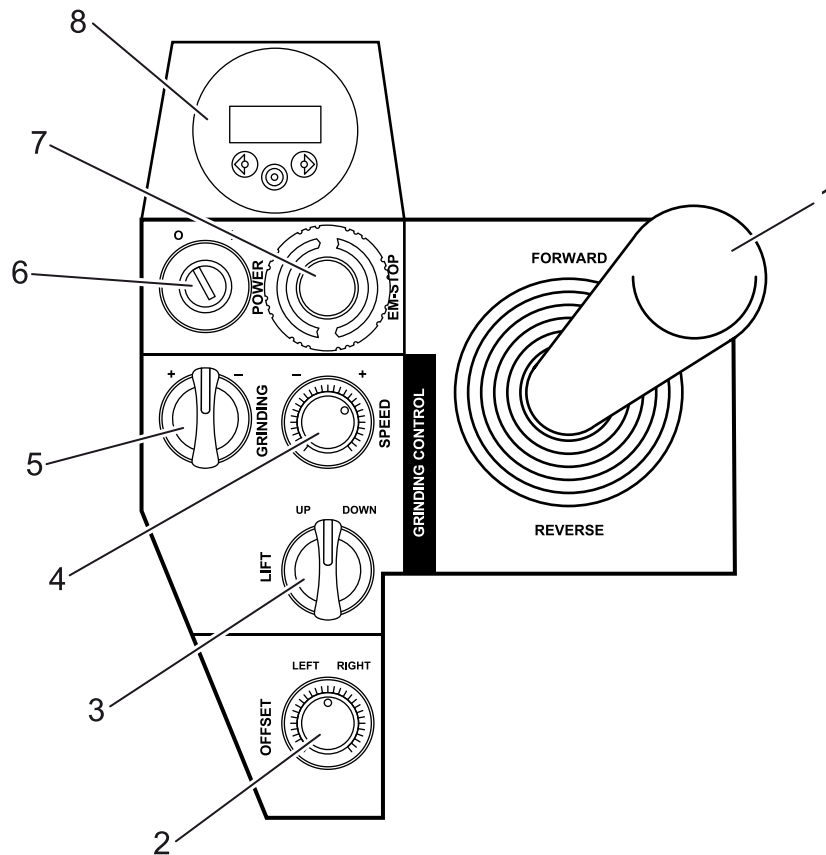


Figure 3-3 Control panel - left

1. Joystick for movement forwards/backwards
2. Controls for adjusting steering
3. Knob for lifting/raising the grinding head
4. Control for rotation speed
5. Knob for starting/stopping the grinding motors
6. Ignition key
7. Emergency stop switch
8. Display

Joystick for movement forwards/backwards (FORWARD/REVERSE)

- Push the joystick away from you to move the machine forwards. Pull the joystick towards you to move the machine backwards.

Controls for adjusting steering (OFFSET)

- Turn the control to the left/right to adjust any veering tendencies, see Figure 3-3 on page 12.

Knob for lifting/lowering the grinding head (LIFT)

- Turn the knob to "UP" to lift the grinding head. Turn to "DOWN" to lower the grinding head and for "moving position".

Control for rotation speed (SPEED)

- Turn the knob to "+"/"-" to increase/reduce the rotation speed of the machine's grinding discs.

Knob for starting/stopping the rotation of the grinding discs (GRINDING)

- Turn the knob to "I" to start the grinding discs' rotation. Turn the knob to "O" to stop the rotation.

Ignition key (POWER)

- Turn the ignition key to "I" to activate the machine's functions and prepare for starting. Turn the ignition key to "O" to switch off the machine's functions.

Emergency stop switch (EM-STOP)

- Press the switch in an emergency to cut the power to the machine.

Display

The display shows power consumption for the grinding motor that uses the most power during use. You can also view information on the speed of the machine, the rotation speed of the grinding discs, error codes, etc.

3.2.2. Control panel - right

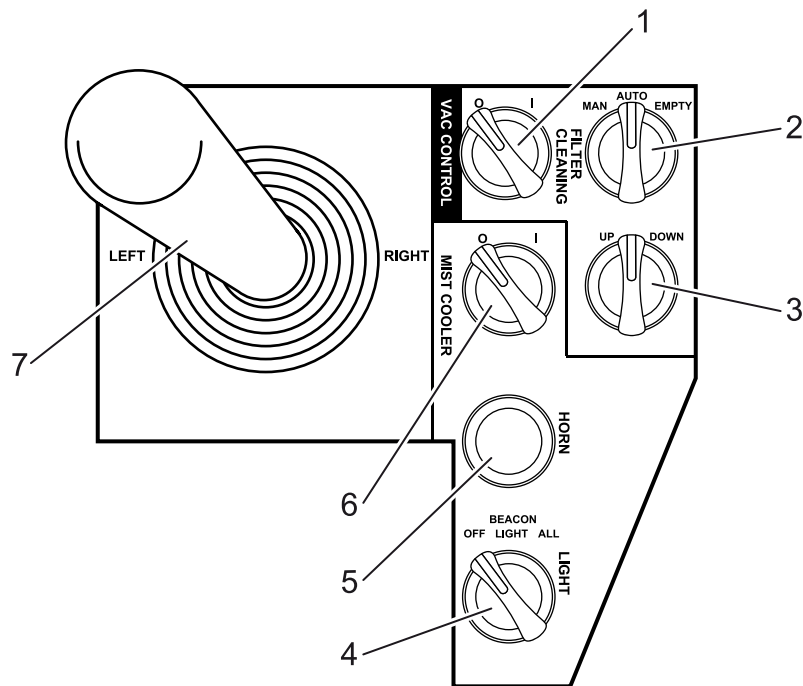


Figure 3-4 Control panel - right

1. Knob for starting/stopping the dust separator
2. Knob for cleaning and emptying the filter
3. Knob for raising/lowering the dust separator
4. Knob for lighting
5. Knob for sound signal
6. Knob for starting/stopping the Mist Cooler system
7. Joystick for movement left/right

Knob for starting/stopping the dust separator (VAC CONTROL)

- Turn the knob to "I" to start the dust separator's functions. Turn the knob to "O" to switch off the functions.

Knob for cleaning and emptying the filter (FILTER CLEANING)

The filter can be cleaned/emptied manually or automatically as follows:

- Turn the knob to "MAN". The valve is closed and the filter must be cleaned manually.
- Turn the knob to "AUT". The filter is cleaned and emptied automatically as per the pre-programmed time interval.
- Turn the knob to "EMPTY" when changing the bag. The valve is opened.

Knob for raising/lowering the dust separator (UP/DOWN)

The dust separator can be raised and lowered to provide better access for servicing and maintenance.

- Turn the knob to "DOWN" to lower the dust separator. Turn to "UP" to raise it again.

Knob for lighting (LIGHT)

The machine is equipped with a headlights, work light and warning light.

- Turn the knob to "OFF" to switch off all the lights.
- Turn the knob to "BEACON LIGHT" to start the flashing warning light.
- Turn the knob to "ALL" to switch on all the lights.

Knob for sound signal (HORN)

- Press the button to activate the sound signal.

Knob for starting/stopping the Mist Cooler system (MIST COOLER)

- Turn the knob to "I" to start the Mist Cooler system. Turn the knob to "O" to switch off the system.

Joystick for movement left/right (LEFT/RIGHT)

- Push the joystick to the right (RIGHT) or left (LEFT) to select the direction of movement.

3.3. Seat

**Warning!**

You can trap your fingers when adjusting the seat. Avoid the risk of trapping by ensuring your fingers are not in the way of the levers when adjusting the seat.

3.3.1. Adjusting the seat

In order to achieve the maximum possible safety and driver comfort, the seat is equipped with a safety belt and can be adjusted as below.

- Pull lever C up and move the back rest forward or back to the required position. Then release the lever and ensure it is locked by checking that the back rest cannot be moved. Turn wheel A to adjust the back curvature support.
- Adjust the seat's suspension by pulling out lever D away from you. Pump the lever up or down until the arrow is in the middle. This indicates that the seat's suspension has been adjusted to your weight. Then push the lever back to its original position.
- Pull lever E up to move the position of the seat backwards or forwards. Note that the seat must always be in the rear position when lifting the machine.
- Loosen hexagonal nut B under the round cover in order to adjust the height of the armrest. Then tighten the nut. Adjust the angle by turning wheel F. Adjust the neck rest G by pushing it up or down.

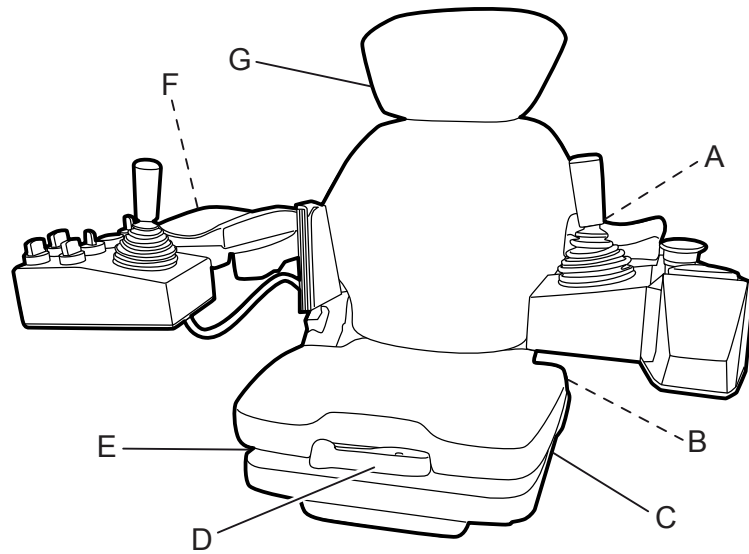


Figure 3-5 Adjusting the seat

3.4. Safety bar

The machine is equipped with a foot pedal (A) that functions as a mechanical safety bar for the grinding head. When transporting the machine and changing tools, the grinding head must always be in the raised position.

- Raise the grinding head and ensure that the bar (B) is in the locked position.
- Lower the grinding head by pressing the pedal (A) in order to release the bar (B).

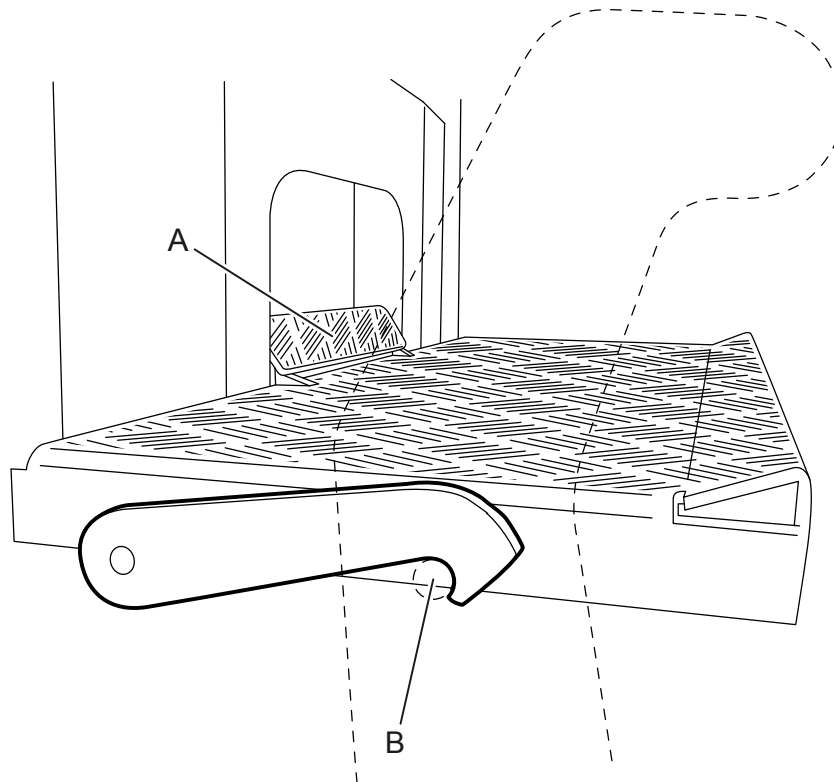


Figure 3-6 Safety bar



Warning!

There is a risk of trapping when locking the bar. Ensure that you do not place your fingers between the bar and the foot pedal.



Note!

Check the bar each time you lift to avoid the grinding head being damaged or causing injury or damage.

3.5. Mist Cooler System

The Mist Cooler system consists of a water tank, particle filter, pump, pressure equaliser, nozzles and drainage valve. The system is powered by 230 V and can only be used when the machine is connected to the mains power.

Refill with water via the filler cap in the water tank, see Figure 3-1 on page 10.

4. Operation

4.1. General information

The following section describes how to change tools and how to operate the grinder. This section does not deal with the technical aspects of grinding, such as selection of grinding tools, etc. For choice of tools, see HTC's Product Catalogue under the Grinding Guide tab.



Warning!

The machine may only be used or repaired by personnel who have received the requisite theoretical and practical training and who have read the user manual.



Warning!

Never use the machine in an environment with the risk of explosion or fire. Familiarise yourself with the fire-protection instructions for the working area and follow them.



Warning!

Secure the area around the working area. No unauthorised persons should be allowed within a 15-metre radius of the machine. If a loose object were to catch under the grinding head, this could be flung out and cause personal injury.



Warning!

Use protective equipment such as shoes with steel toecaps, safety goggles, protective gloves, protective mask and ear protectors.



Warning!

The machine must only be started with the grinding head down. The rotating disc must be touching the floor and the correct tool must be fitted.

**Warning!**

The machine must only be used and moved on level surfaces. There is a risk of crushing if the machine starts to roll.

**Warning!**

Under no circumstances may the machine be operated sideways on a sloping surface, as the machine could tip over. Always reverse down an inclined surface.

**Tip!**

Check the minimum recommended cable area before using an extension cord. You will find the recommended cable area under Technical data on page 62.

4.2. Handling the grinding head

**Warning!**

Under no circumstances is it permitted to stand under the grinding head when it is raised, as it may accidentally drop down if not properly secured.

In order to be able to replace tools and when transporting the machine, the grinding head must always be raised.

The grinding head can be raised/lowered using the knob on the left control panel - see Figure 3-3 on page 12.

4.3. Access to grinding tools

**Warning!**

The tool becomes very hot during use. Leave the machine to stand for a short while and use protective gloves when removing the tools.



Warning!

Disconnect the electrical supply and raise the grinding head when changing tools or repairing the machine.

- Raise the grinding head to access the tools, see Knob for lifting/lowering the grinding head (LIFT) on page 13.
- Ensure the bar is in the locked position, see under Safety bar on page 17.



Warning!

There is a risk of crushing when locking the bar. Ensure that you do not place your fingers between the bar and the foot pedal.

4.4. Fitting and replacing grinding tools



Warning!

Disconnect the electrical supply and raise the grinding head when changing tools or repairing the machine.



Warning!

The tool becomes very hot during use. Leave the machine to stand for a short while and use protective gloves when removing the tools.

As the machine is equipped with the patented EZchange tool system, fitting and replacing grinding tools is quick and easy. The tool systems consists of wings on which diamond grinding tools are fitted without the need for screws.

4.4.1. Fitting grinding tools

1. Slide the grinding tool diagonally from above down into the appropriate guide slot on the tool holder, see Figure 4-1 on page 22. Then push the tool fully into the guide slot.

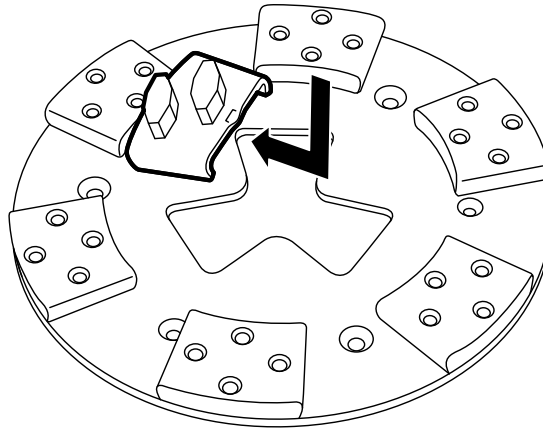


Figure 4-1 Fitting grinding tools

2. Lock the grinding tool into the tool holder by giving it a few light taps with a rubber hammer, see Figure 4-2 on page 22.

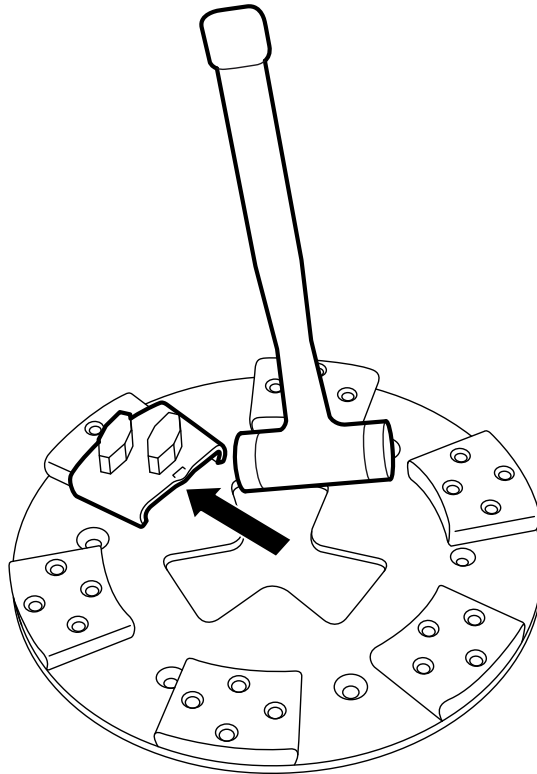


Figure 4-2 Locking grinding tools

4.4.2. Changing grinding tools

1. Remove the grinding tool by giving it a few light taps with a rubber hammer so the locking mechanism releases, see Figure 4-3 on page 23. Then draw the tool up out of the guide slot.

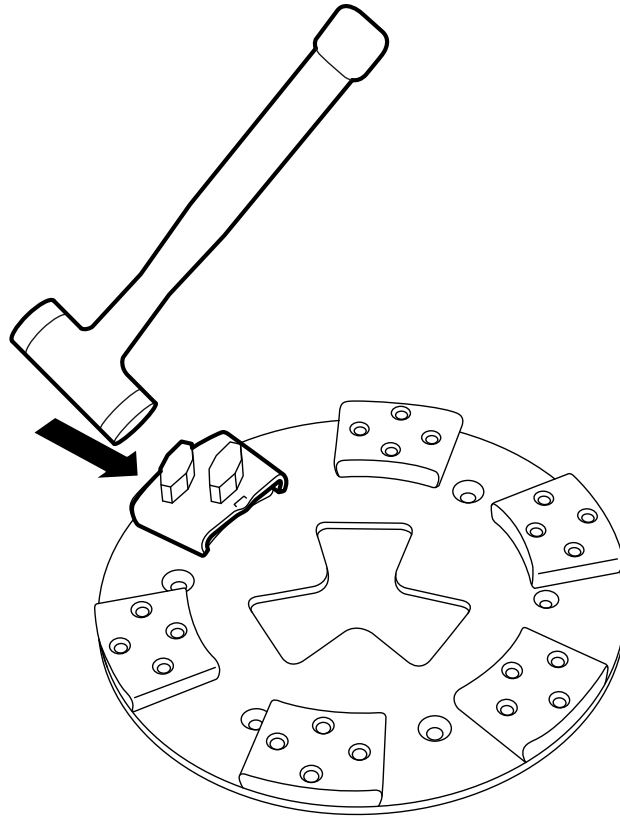


Figure 4-3 Removing grinding tools

2. Slide the grinding tool diagonally from above down into the appropriate guide slot on the tool holder - see Figure 4-1 on page 22. Then push the tool fully into the guide slot.
3. Lock the grinding tool into the tool holder by giving it a few light taps with a rubber hammer - see Figure 4-2 on page 22.

4.5. Prepare before grinding

1. Inspect the floor carefully and remove any protruding objects, such as reinforcement rods or bolts, and any loose debris that could get stuck in the machine.
2. Attach the appropriate tool to the machine, see under Fitting grinding tools on page 21.

4.6. Handling Longopac

The dust separator is equipped with Longopac-brand refuse bags, which are sealed and discarded once the maximum amount of dust is reached.

4.6.1. Removing the full refuse bag

1. Seal the filled bag with a tie at the top.
2. Seal the new bag with a tie at the bottom.
3. Cut off the bag between the ties.

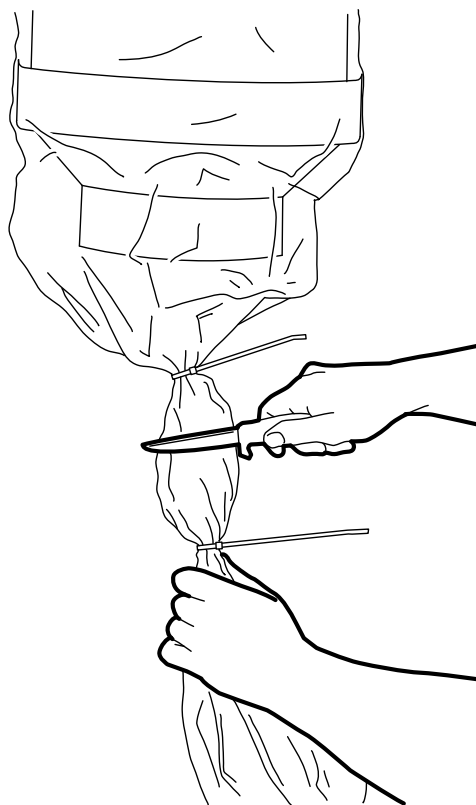


Figure 4-4 Cut off the bag

4. Discard the full bag.
5. Pull down the roll of bags to the recommended length, around 500 mm.

4.6.2. Fitting Longopac

1. Loosen the clip around the bottom cone.
2. Lift the Longopac holder slightly and turn it until it loosens from its fitting.

**Tip!**

The Longopac holder is attached by a bayonet fitting.

3. Put the new Longopac roll in place in the holder.

4. Push the roll down into the intended slot.
5. Cut off the band around the roll on delivery.
6. Fit the Longopac holder by turning it until it locks into place.
7. Secure the Longopac holder using the clip.
8. Seal the bag with a tie at the bottom.
9. Pull down the Longopac roll to the recommended length, around 500 mm.

4.7. Filter cleaning

Filter cleaning/emptying is carried out manually or automatically, see Knob for cleaning and emptying the filter (FILTER CLEANING) on page 15.

- Choose which mode of filter cleaning you want to use during work. Turn the knob for filter cleaning to the required position.



Tip!

The recommended position for filter cleaning is automatic (AUT).

4.7.1. Opening and closing the butterfly valves manually

When the suction power decreases, manual filtering may be carried out. The butterfly valves must then be closed. Once cleaning is complete, they must be opened.

1. Close the valves by pulling up the two red controls on each side of the seat.
2. Open the valves by pushing the controls down.

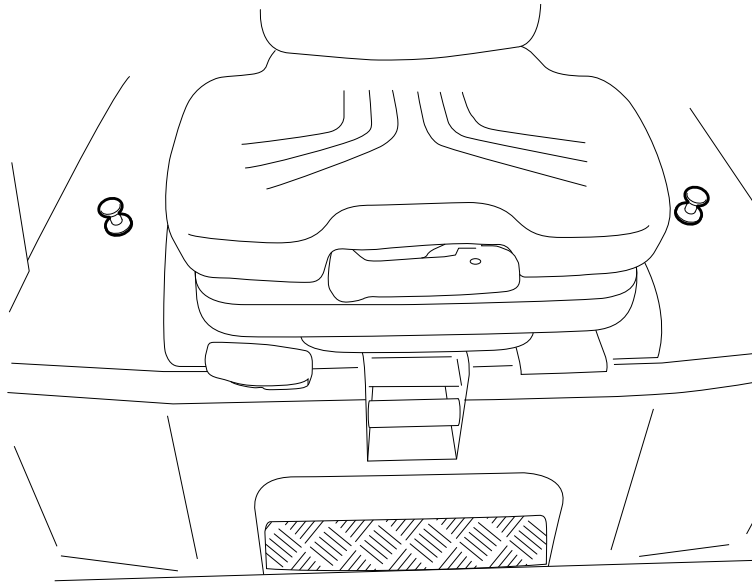


Figure 4-5 Controls for operating the butterfly valves

4.7.2. Automatic filter cleaning (AUT = standard mode)

Automatic filter cleaning means that the filters are cleaned automatically at pre-programmed time intervals.

- Turn the knob for filter cleaning to AUT in order to select automatic filter cleaning.



Note!

If the filters need to be cleaned more often than the pre-programmed interval, the filters are clogged. Empty or clean the filter manually, see Emptying mode (EMPTY) on page 27 and Manual filter cleaning (MAN) on page 26.

4.7.3. Manual filter cleaning (MAN)

- Turn the knob for filter cleaning to MAN to run the dust separator without automatic filter cleaning.



Note!

If the filters are cleaned automatically despite the machine being set to MAN, the filters are clogged. You should then clean the filters manually by carrying out a manual filter cleaning. If this does not help, wash the filters.

4.7.4. Emptying mode (EMPTY)

Emptying mode is used when replacing Longopac and for manual filter cleaning (MAN).

- Turn the knob to EMPTY to open the butterfly valves. After one minute, the knob turns to AUT.
- Turn the knob to MAN to return to normal operation more quickly, and then back to AUT to run the automatic programme.

4.8. Changing absolute filters

In order to make replacing filters and other maintenance work easier, the dust separator can be lowered to the service position, see Figure 4-6 on page 28.

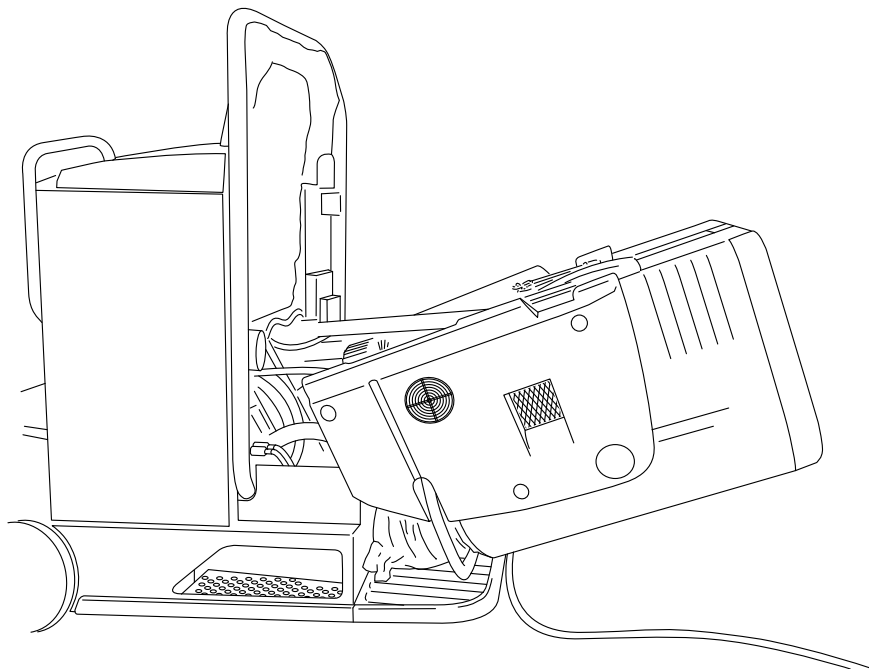


Figure 4-6 Lowering the dust separator to the service position



Warning!

The dust sucked up is harmful if inhaled. Follow local regulations and use breathing protection.



Warning!

Under no circumstances is it permitted to stand in front of/near the dust separator when it is being lowered into the service position.

1. Lower the dust separator, see Knob for raising/lowering the dust separator (UP/DOWN) on page 15.
2. Loosen the quick fastener holding the absolute filter in place.
3. Pull out the absolute filter.
4. Note how the absolute filter fits in the suction system.

**Tip!**

An arrow on the absolute filter shows which side of the filter should be facing upwards once the filter has been fitted in the dust separator.

5. Discard the old absolute filter.
6. Push in the new absolute filter.
7. Secure the absolute filter using the quick fastener.

4.9. Changing tube filter/cartridge filter

1. Remove the top cover; for location, see Dust separator on page 56.
2. Remove the side cover; for location, see Dust separator on page 56.
3. Lower the dust separator, see Knob for raising/lowering the dust separator (UP/DOWN) on page 15.
4. Loosen the hose located on the top of the dust separator.
5. Loosen the two quick fasteners holding the bottom cone in place.
6. Remove the bottom cone; for location, see Bottom cone on page 60.
7. Loosen the two quick fasteners holding the cyclone top in place.
8. Remove the cyclone top
9. Unfold the edges of the filter that are folded over the bottom and top edge of the cylindrical section.
10. Pull out the filter.
11. Discard the used filter.
12. Insert the new filter into place.
13. Fold the edges of the filter over the top edge of the cylindrical section.

14. Raise the dust separator.
15. Fold the edges of the filter over the bottom edge of the cylindrical section.
16. Lower the dust separator again.
17. Replace the cyclone top.
18. Secure the cyclone top using the two quick fasteners.
19. Replace the bottom cone.
20. Secure the bottom cone using the two quick fasteners.
21. Push the hose into place.
22. Replace the side cover.
23. Replace the top cover.

4.10. Changing valves

1. Pull out the absolute filter.
2. Loosen the eight screws holding the valve in place. The valve is located under the absolute filter.
3. Lift up the valve slightly.
4. Pull out the contact.
5. Lift out the valve from the dust separator.
6. Discard the old valve.
7. Place the new valve in the dust separator.
8. Connect the valve cable to the dust separator.
9. Tighten the eight screws securely to keep the valve in place.
10. Push in the absolute valve.
11. Secure the absolute filter using the quick fastener.

4.11. Battery

The machine is equipped with two 12 V batteries connected in series, located under the dust separator at the back of the chassis. This means that you can carry out certain functions without connecting the machine to the mains power. For instance, you can transport the machine around 500 mm, raise/lower the grinding head and the dust separator and turn on the headlight and work light.



Note!

Leakage currents can run down the batteries, as the batteries are exposed to dust. Keep the batteries clean to avoid discharging.

4.11.1. Charging the battery

The batteries are charged automatically when the machine is connected to mains power. It takes around two hours until the batteries to be fully charged.

The batteries can also be charged through a 16A three-phase socket using the charging cable that accompanies this machine.



Warning!

During charging, oxyhydrogen gas always forms in the battery. An open flame or spark in the vicinity of the batteries could cause an explosion.



Note!

The charging cable for the three-phase socket must only be used for charging and must not, under any circumstances, be used for grinding .

4.12. Mist Cooler System

- The water is refilled via the tank cap in the water tank, see Figure 3-1 on page 10.
- Start the system, see Figure 3-4 on page 14.
- Empty the water tank by turning the tap, see Figure 4-7 on page 32.

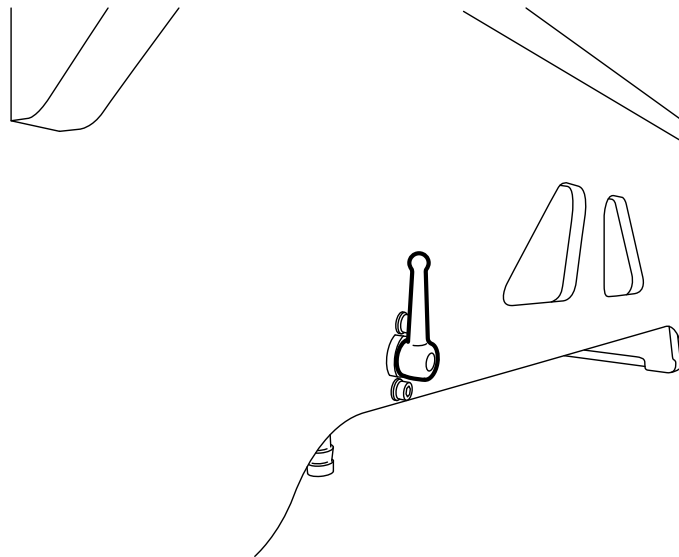


Figure 4-7 Tap for emptying the water tank

4.13. Operation

The machine's functions are operated using the controls on the control panels, see Figure 3-3 on page 12 and Figure 3-4 on page 14.

4.13.1. Main switch

The machine is equipped with a red main switch on the right between the chassis and the dust separator, see Figure 4-8 on page 33. It must always be pulled out at the end of the working day and when replacing tools and carrying out maintenance on the machine.

- Push the main switch into its socket before starting the machine.

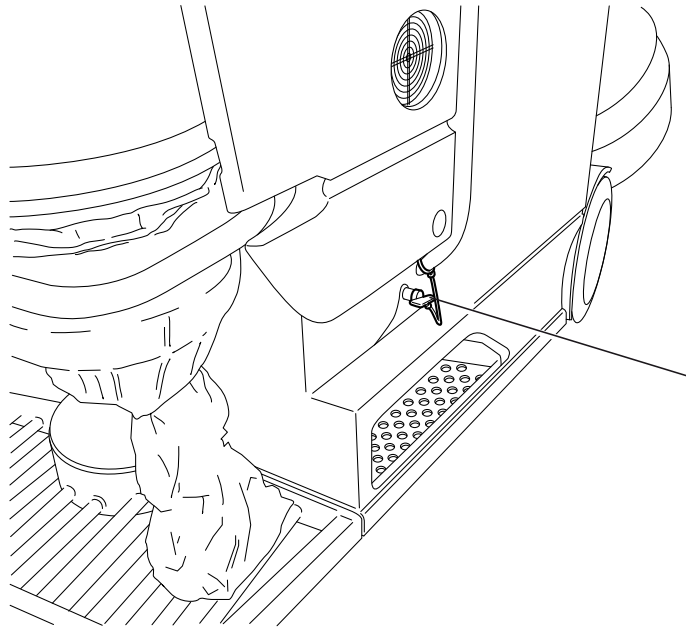


Figure 4-8 Main switch

4.13.2. Emergency stop switch

The machine is equipped with two emergency stop switches, one between the suction devices on the dust separator and one on the left control panel, see Figure 3-2 on page 11 and Figure 3-3 on page 12. These must only be used in an emergency.

When the switch is pressed, all electrically-powered equipment on the machine is turned off.



Note!

Do not use the emergency stop switches to stop the machine other than in emergencies, as it causes wear to the contactor.



Tip!

As long as the emergency stop switches (EM-STOP) are pressed, the machine cannot be started. Reset by turning the switches 45° so that they pop out again. The machine can then be restarted.

4.13.3. Starting the machine

For a description of the control panel, see Figure 3-3 on page 12 and Figure 3-4 on page 14.



Note!

The ignition key must be in "O" position when the cable is connected to an electrical socket.

1. Pull out the cable. Ensure that at least two turns are left on the cable winder as a safety margin. Release the cable slowly back until it locks.
2. Plug the cable into an electrical socket, see Figure 4-9 on page 34.
3. Secure the strain relief device in a suitable position in order to take the strain off the cable, see Figure 4-9 on page 34.

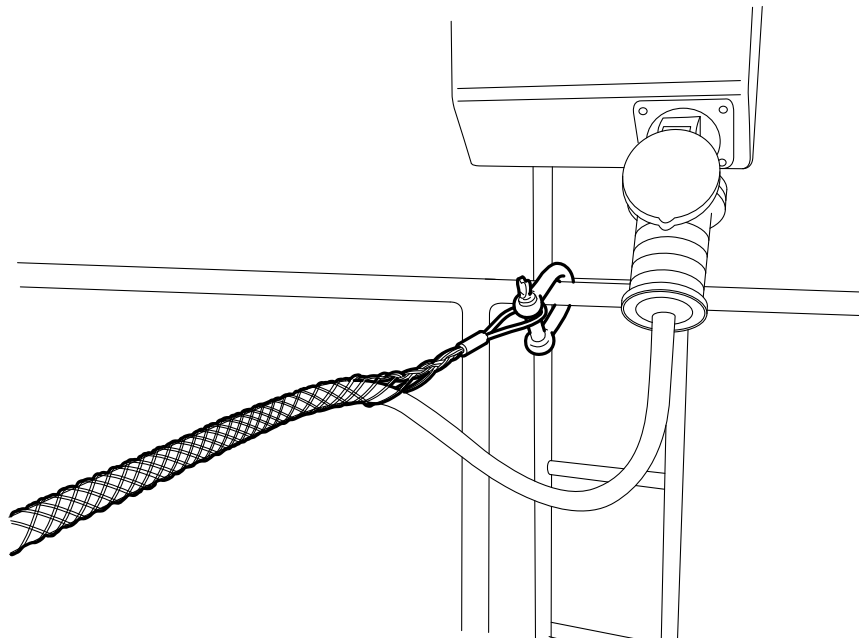


Figure 4-9 Cable and strain relief device

4. Check if the emergency stop switches have been pressed. Reset the switches by turning them 45°.
5. Place your feet on the foot marks indicated, see Figure 4-10 on page 35.

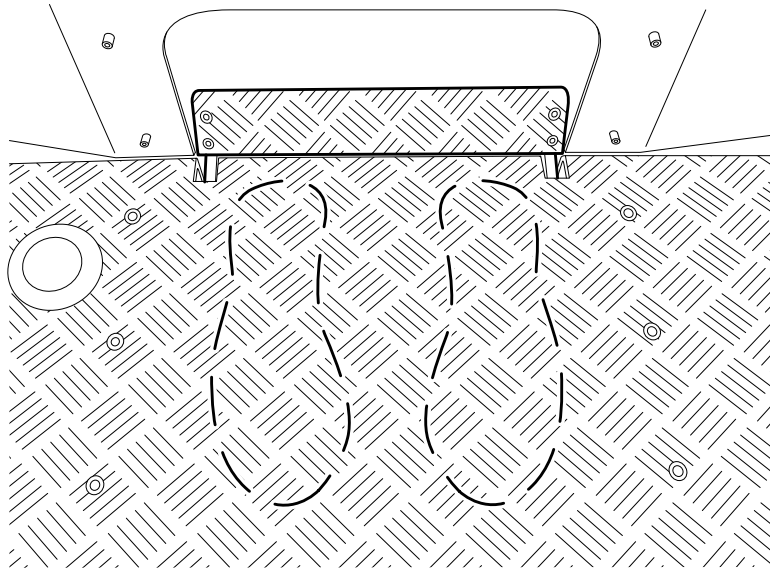


Figure 4-10 Foot marks

6. Start the dust separator.
7. Turn the ignition key to "I".
8. Check that the grinding head is lowered.
9. Adjust the speed of the grinding discs.
10. Start the grinding discs rotating.
11. The machine is now ready for use.

4.13.4. Stopping the machine

1. Stop the grinding discs rotating.
2. Switch off the dust separator.
3. Turn the ignition key to "O".
4. Wind the cable by pulling on it so that the locking catch releases. The cable rewinds by means of the spring force of the cable winder.

5. Maintenance and repairs

5.1. General information

We recommend regular inspections of all seals.



Warning!

Disconnect the electrical supply and raise the grinding head when changing tools or repairing the machine.



Warning!

Use protective equipment such as shoes with steel toecaps, safety goggles, protective gloves, protective mask and ear protectors.

5.2. Cleaning



Warning!

Do not clean the machine using a high-pressure washer, otherwise moisture may penetrate electrical elements and damage the machine's drive system.

- Vacuum the control cabinet, if required.
- Always clean the machine after use with a damp sponge or cloth.

5.3. Daily

1. Check for grinding tool wear – abnormal or uneven wear may indicate a damaged grinding holder.
2. Check the tool holder and grinding holder to ensure that no damage or cracks have arisen. Replace the parts if there is any damage.
3. Check that the cable is intact and clean.
4. Clean the batteries.
5. Check that there is no rubbish/metal flakes caught in the wheels.

6. Check that the mechanical safety bar for the grinding head is functioning by raising the grinding head and pressing the pedal.

5.3.1. Check the tube filter/cartridge filter

1. Check the filter by first lowering the dust separator into the service position, see Figure 4-6 on page 28.
2. Then undo the quick fasteners holding the bottom cone in place.
3. Use a torch to see the filter.



Tip!

The surface of the filter should be dull. If the surface is shiny, the filter is clogged.

4. If the filter is clogged or broken, it needs replacing, see Changing tube filter/cartridge filter on page 29.

5.3.2. Checking the absolute filter

1. Loosen the quick fastener holding the absolute filter in place.
2. Pull out the filter.
3. Note how the filter is fitted in the dust separator.



Tip!

An arrow on the absolute filter shows which side of the filter should be facing upwards once the filter has been fitted in the dust separator.

4. Check if the filter is dirty or discoloured.



Note!

Discolouration on the top of the absolute filter indicates that the tube/cartridge filter or pre-separator are not functioning as they should. If the absolute filter is dirty on the underside, the filter is broken.

5. If the filter is dirty or discoloured, it needs replacing. See Changing absolute filters on page 28. Then check the tube/partridge filter.
6. Push in the new absolute filter.
7. Secure the absolute filter using the quick fastener.

5.4. Every week

1. Wash the machine.
2. Check the grinding holders. Remove the tools and run the machine in mid air at the slowest speed. If the grinding holders oscillate or wobble significantly, they are damaged.
3. Clean the fans.



Tip!

Recondition all the grinding holders at the same time.

5.4.1. Checking the valve

1. Remove the top cover
2. Remove the side cover
3. Replace the top cover.
4. Turn the knob for filtering mode to MAN.
5. Start the machine.
6. Undo the hose at the intake pipe for the valve housing by removing the clip.
7. Feel with your hand under the intake pipe for the valve housing. If you can feel suction, this means that the valve is broken.
8. Change the valve if it is broken. Contact your retailer for service.

5.5. Every month (or 100 hours)

1. Check the fasteners of all bolts and screws. Tighten if required.

2. Remove the grinding cover and check that it is undamaged.
3. Scrape and vacuum-clean the parts shielded by the grinding cover.
4. Check the fans in the dust separator, clean the filters and replace if necessary.
5. Test run and listen for any dissonance from the bearings.
6. Clean the particle filter for the Mist Cooler system.

5.6. Repairs

Any repairs that may be required must be carried out by a HTC Service Centre, which has trained service personnel and uses HTC original parts and accessories. Contact your retailer if your machine requires servicing. For contact information, see Contact Information at the start of the manual.

6. Troubleshooting

6.1. General information

This chapter describes all the faults that may occur and how to deal with them. If the fault cannot be dealt with, or if there are other faults, contact your nearest retailer. See Contact Information at the start of the manual.

6.1.1. The machine will not start

- Check if the emergency stop switches have been pressed. Reset the switches by turning them 45°.
- Check that the main switch is in its socket, see Figure 4-8 on page 33.
- Check fuses in control cabinet and on batteries.

6.1.2. Grinding motors will not start

- Check error codes in the display.
- Check fuses in the control cabinet.
- Check if the connection to the mains power is correct, that all phases are present and that the voltage is correct.
- Reset the electronics by turning the ignition key to "O". Wait 10 seconds and restart the machine.
- Check that the sensors for indicating whether the grinding head is lowered are intact and correctly adjusted.

6.1.3. The dust separator will not start

- Check error codes in the display.
- Check fuses in the control cabinet.
- Check if the connection to the mains power is correct, that all phases are present and that the voltage is correct.
- Reset the electronics by turning the ignition key to "O". Wait 10 seconds and restart the machine.

6.1.4. Forward motion motors will not start

- Joysticks must be in the central position for the machine to start.
- The seat switch must be activated.
- Check error codes in the display.

- Reset the electronics by turning the ignition key to "O". Wait 10 seconds and restart the machine.

6.1.5. The machine vibrates or wears the tool unevenly

- Recondition the grinding holder by replacing the sleeve (112332 on page 53) and shock absorber (112247 on page 53).
- Disconnect the grinding head and check that the lifting arms for the grinding head can swing with a certain amount of play towards each other.
- Check that the sensors for "moving position" are intact and correctly adjusted (maximum play = 2 mm).

6.1.6. The machine is grinding at an angle

- Recondition the grinding holder. See under The machine vibrates or wears the tool unevenly on page 41.
- Disconnect the grinding head and check that the lifting arms for the grinding head can swing with a certain amount of play towards each other.
- Check that the sensors for "moving position" are intact and correctly adjusted (maximum play = 2 mm).

6.1.7. The machine stops immediately after starting

- The overload indicator lights up because the speed of the grinding discs is too high. Reduce the speed and try again.
- Check the error code in the display on the frequency converter, see Electronic error codes on page 43.

6.1.8. The fuses trip frequently

- The load is too high on the distribution box to which the machine is connected. Use a different socket or reduce the speed of the machine.
- Check the tools. Ensure that the correct tools are used, that they are in working order and that they are correctly fitted.

6.1.9. The machine cannot cope

- Heavy load. Check that the sensors for indicating whether the grinding head is lowered are intact and correctly adjusted.
- Check the tools. Ensure that the correct tools are used, that they are in working order and that they are correctly fitted.

- Voltage drop. Check that the cable area meets HTC's recommendations.

6.1.10. The grinding head cannot be raised/lowered

- Check that the main switch is in its socket, see Figure 4-8 on page 33.
- Check that the sensors are intact and correctly adjusted.

7. Electronic error codes

7.1. General information

All the warning and error codes that may occur in the frequency converter in the control cabinet are listed below. In the event of other error codes, contact HTC Service.

Table 7-1: Warning and error codes generated by the frequency converter

Code	Cause	Action
0001	Excess current	Review tool selection. Reduce the grinding speed. Check that the grinding head is moving freely. Check the motor cable and connector. Check the motor.
0002	Excess voltage	Check if the power supply is showing static or transient excess voltage.
0003	Excess temperature in the converter.	Check the cabinet cooling system. Ensure that the cabinet is clean. Check the converter's cooling fan.
0004	Short circuit in motor or motor cable.	Check the motor cable and connector. Check the motor.
0006	Under-voltage	Check supply fuses and mains fuses.
0009	Motor temperature too high due to overload.	Check that the grinding head/suction motor is moving freely. Check the motor's cooling flanges and fan.
0010	Panel dropout	Check panel connection.
0012	Locked motor	Check that the grinding head is moving freely.
0014	External fault: thermocontact in the dust separator's motor	Check motor temperature and thermocontact in the dust separator.
0015	External fault: thermocontact in the dust separator's motor	Check motor temperature and thermocontact in the dust separator.
0016	Earth fault	Check the motor cable and connector. Check the motor.
0022	Phase failure on supply in.	Check supply fuses. Check if there is a lack of symmetry in the mains supply.
0028	Interruption to field bus communication.	Contact HTC Service.
0034	Phase failure in motor.	Check the motor cable and connector. Check the motor.
0035	Incorrect supply and motor cable connections.	Contact HTC Service.

Code	Cause	Action
2001	Output current limiter active	Check that the grinding head is moving freely. Check the motor cable and connector. Check the motor.
2002	The DC excess voltage regulator is active	Check if the power supply is showing static or transient excess voltage.
2003	The DC under-voltage regulator is active	Check if the power supply is showing static or transient under-voltage.
2005	Interruption to field bus communication	Check the field bus connections.
2008	Communication fault, panel	Check panel connections.
2009	Excess temperature in the converter	Check the cabinet cooling system. Ensure that the cabinet is clean. Check the converter's cooling fan.
2010	High motor temperature	Check that the grinding head/suction motor is moving freely. Check the motor's cooling flanges and fan.
2012	The motor is operating in the locking range	Check that the grinding head is moving freely.
2019	ID operation active	Contact HTC Service.
2023	Emergency stop command active	Check that it is safe to continue operation. Reset the emergency stop switches to normal mode.
2026	The voltage in the interlink is oscillating	Check supply fuses. Check if there is a lack of symmetry in the mains supply. Check transients in mains supply.

7.2. Resetting the frequency converter

1. Switch off the machine by turning the ignition key to "O" and wait 10 seconds.
2. Start the machine by turning the ignition key to "I".

8. Spare parts

8.1. Grinding head 1

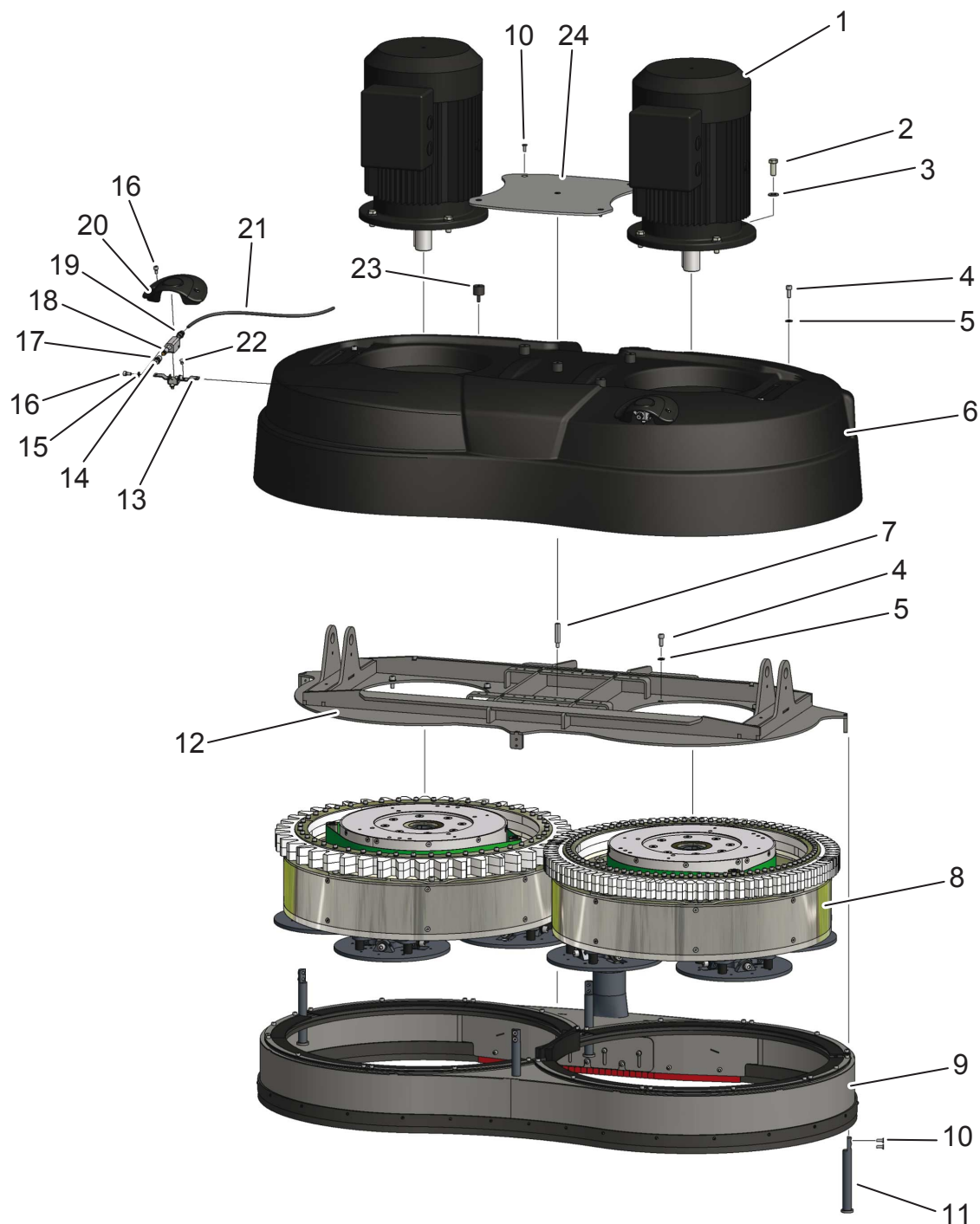


Table 8-1: Grinding head 1, spare parts list

Pos.	Description	Item number	Quantity
1	Motor 11 kW	110476	2
2	Screw M6SH M12x30 8.8 galv.	310128	8
3	Washer BRB M12	310057	8
4	Screw MC6S M8x20 8.8 galv.	310161	12
5	Washer BRB M8	310077	12
6	Cover	112638	1
7	Spacer screw DSS M6010045	310382	1
8	Grinding head 1500	500328	2
9	Discharge cover complete	500361	1
10	Screw MFTS M6x16 10.9 galv.	310292	13
11	Glide axle, collar	500348	4
12	Grinding holder complete 1500	500336	1
13	Nozzle connection	111489	2
14	Nozzle RXT 0060 B1	111397	2
15	Washer BRB M6	310012	4
16	Screw MC6S M6x12 8.8 galv.	310030	8
17	Filter VEF 0138T1B	111398	2
18	Nozzle connection	111488	2
19	Hose coupling 1511 6/4 1/4	111523	2
20	Nozzle cover	111487	2
21	Rubber hose PAS64-100	111399	2
22	Pop rivet 4.8x12	310084	6
23	Shock absorber 25.20 M6	112719	5
24	Foot plate	500354	1

8.2. Grinding head 2

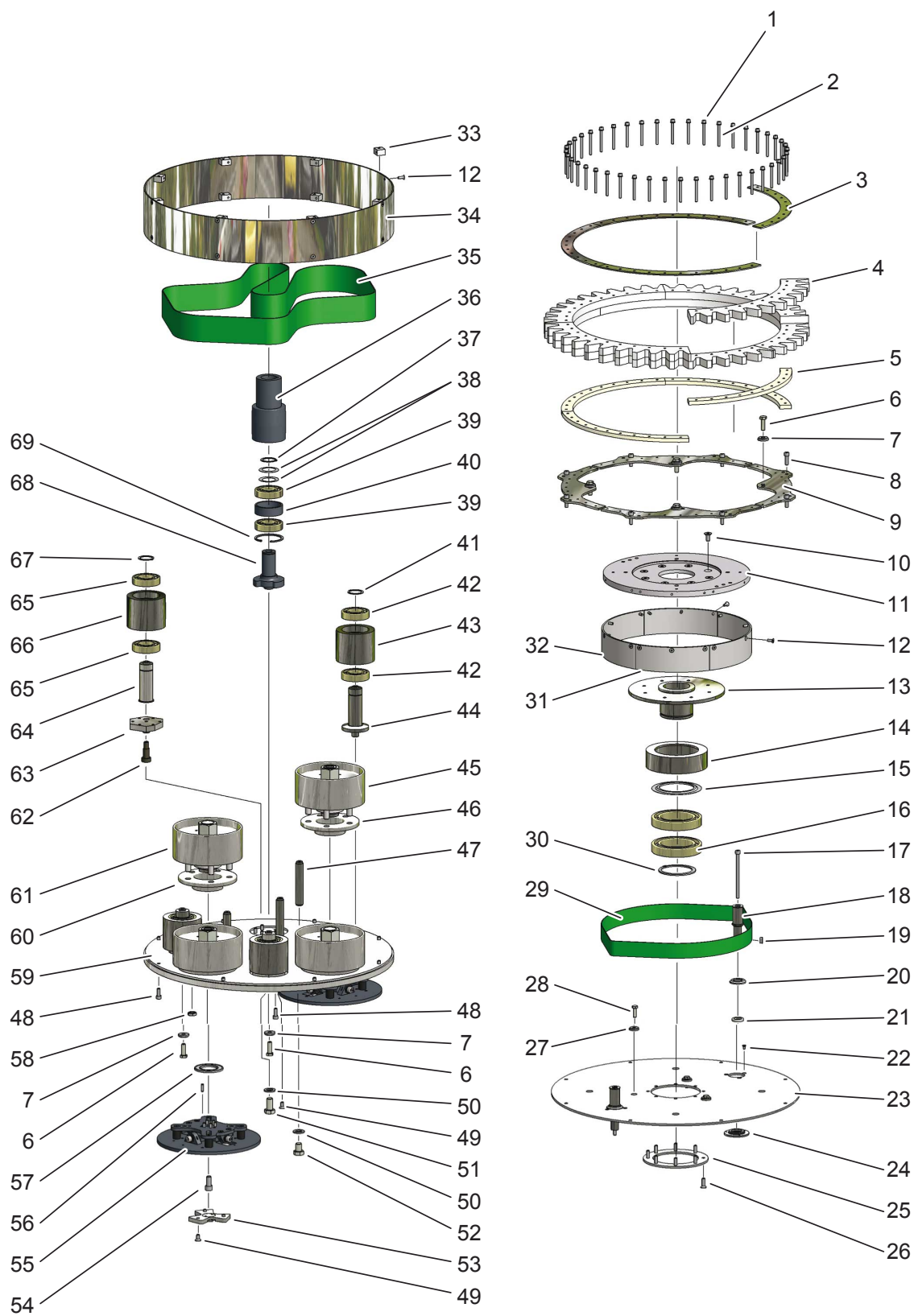


Table 8-2: Grinding head 2, spare parts list

Pos.	Description	Item number	Quantity
1	Screw MC6S M6x60 8.8 galv.	310383	44
2	Washer BRB M6	310012	44
3	Intermediate plate, tooth synchronisation	500326	4
4	Toothed segment, tooth synchronisation	500324	8
5	Distance segment, tooth synchronisation	500327	4
6	Screw M6SH M10x30 8.8 galv.	310066	8
7	Washer TBR SB M10	310042	8
8	Screw MC6S M8x25 8.8 galv.	310065	8
9	Fixing plate, tooth synchronisation	500325	4
10	Screw MF6S M10x20 10.9 galv.	310078	8
11	Motor plate	111072	1
12	Screw MFTS M6x16 10.9 galv.	310292	30
13	Hub motor plate	111076	1
14	Bearing cup	110917	1
15	Nilos ring 6017 JV	110950	1
16	Ball bearing 6017-2RS1 C3	§110951	2
17	Screw MC6S M8x120 12.9 galv.	310235	2
18	Axle journal	110931	2
19	Wedge RK 6x6x16	310221	2
20	Gamma ring	110949	2
21	Radial seal	110948	2
22	Screw MFTS M5x10 8.8 galv.	310265	6
23	Top metal plate	111070	1
24	Distance washer	110929	2
25	Cover centre hub	110921	1
26	Screw MFTS M8x25 8.8 galv.	310130	8
27	Washer TBR SB M8	310015	3
28	Screw M6SH M8x25 8.8 galv.	310001	3
29	Top belt Poly-v	111296	1
30	Circlip	310166	1
31	Belt ring part 2	111449	2
32	Belt ring part 1	111448	2
33	Fixing boss	110928	16
34	Edging strip	111069	1
35	Inner belt	112621	1
36	Centre hub 6207	500289	1
37	Circlip SGA 35	310038	1

Pos.	Description	Item number	Quantity
38	Disc springs	112620	2
39	Ball bearing 6207 2RS C3	110078	2
40	Distance centre hub 6207	500286	1
41	Circlip SGA 35	310038	2
42	Ball bearing 6207 2RS C3	110078	4
43	Press wheel	110933	2
44	Axle belt tightener, bottom	110932	2
45	Hub package	111235	2
46	Distance hub	110927	1
47	Axle bearing	110925	3
48	Screw MC6S M8x20 8.8 galv.	310161	23
49	Screw MFTS M8x16 8.8 galv.	310070	17
50	Washer BRB M16	310032	4
51	Screw M6SH M16x30 8.8 galv.	310170	1
52	Screw M6SH M16x20 8.8 galv.	310231	3
53	Cross complete	110967	4
54	Screw MC6S M12x25 8.8 galv.	310175	4
55	Cardan grinding holder complete 270	112251	4
56	CP 6H8x20	310046	24
57	Seal	110960	1
58	Nut MLM M14x1.5 galv.	310169	20
59	Lower plate	500288	1
60	Distance hub	110927	1
61	Hub package	111526	2
62	Fitting bolt 16xM12x25	310167	2
66	Press wheel	110933	2
67	Circlip SGA 35	310038	2
68	Axle centre hub	500287	1
69	Circlip SGH 72	319342	1

8.3. Grinding holder

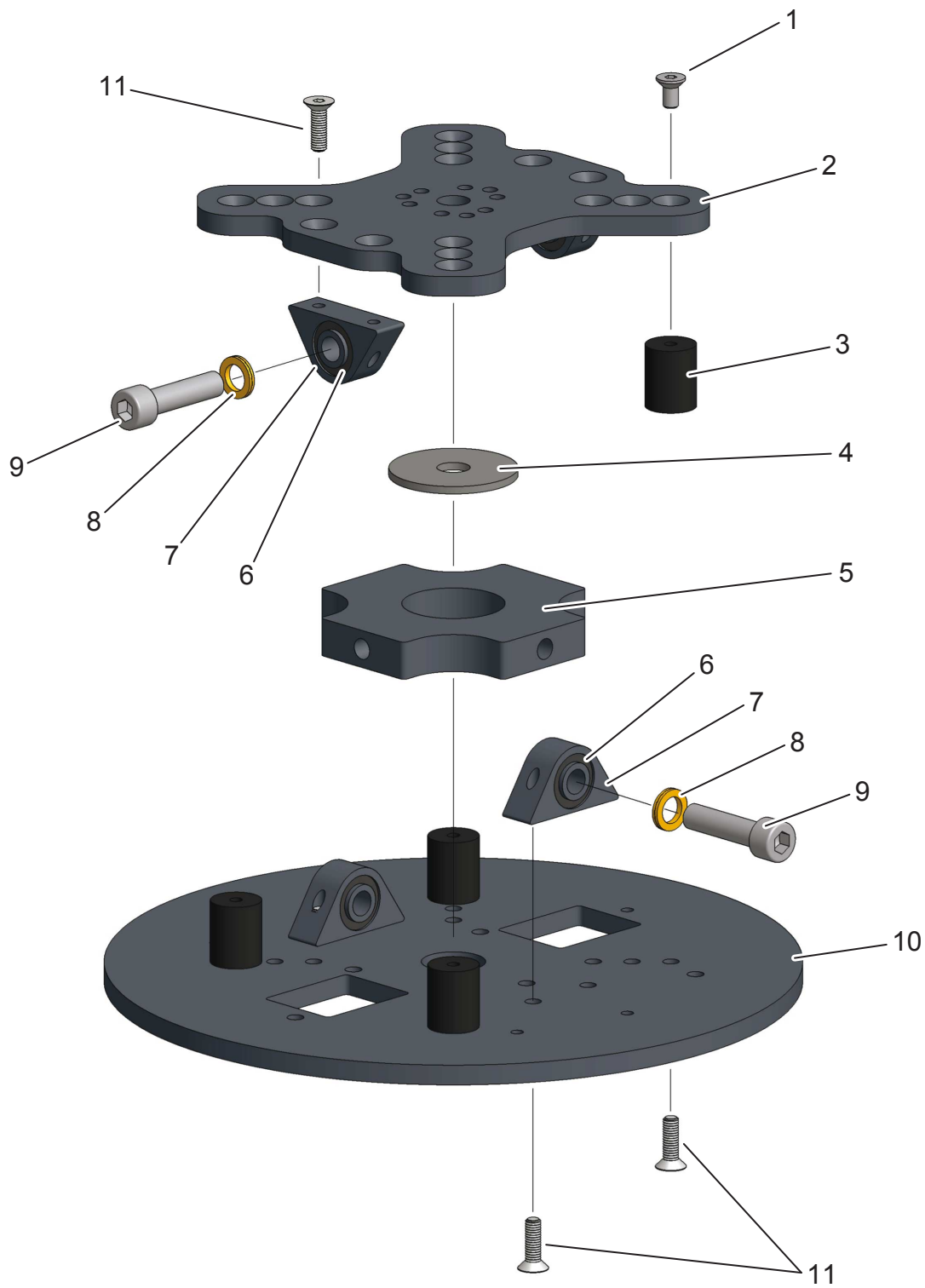


Table 8-3: Grinding holder, spare parts list

Pos.	Description	Item number	Quantity
1	Screw MF6S M6x12 10.9 galv.	310323	8
2	Grinding holder, upper	112239	1
3	Shock absorber 20x25 M6	112247	4
4	Washer	112243	1
5	Universal joint	112241	1
6	Universal bushing	112332	4
7	Cardan lug	112371	4
8	Washer NL M10 FZG/DELTA	310302	4
9	Screw MC6S M10x35 8.8 galv.	310301	4
10	Grinding holder	112242	1
11	Screw M6x20 10.9 galv.	310013	8

8.4. Discharge cover

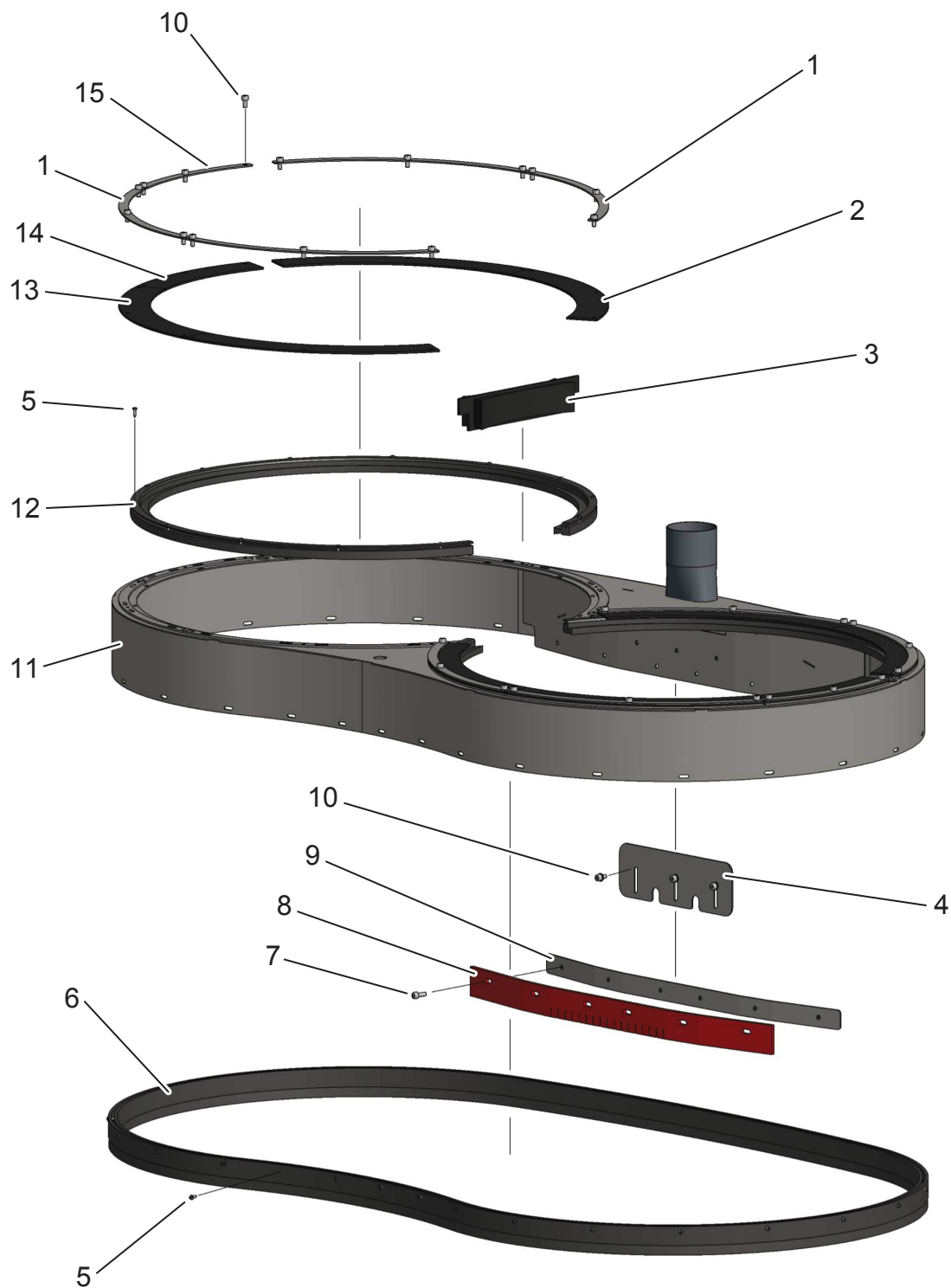


Table 8-4: Discharge cover, spare parts list

Pos.	Description	Item number	Quantity
1	Epdm holder	500389	8
2	Epdm seal	500390	8
3	Brush strip centre, floating cover	500375	1
4	Flap suction nozzle, floating cover	500372	1
5	Screw RTS 3.5x13	310307	55
6	Brush strip FBL 1340 (15), floating cover	500376	1
7	Screw MC6S M6x16 8.8 galv.	310082	6
8	Dust scraper	500360	1
9	Dust scraper holder	500359	1
10	Screw MC6S M6x12 8.8 galv.	310030	33
11	Floating plate cover	500363	1
12	Brush strip FBL 1331 (10), floating cover	500374	2
13	Dust scraper EPDM	500392	2
14	Epdm holder	500393	

8.5. Dust separator

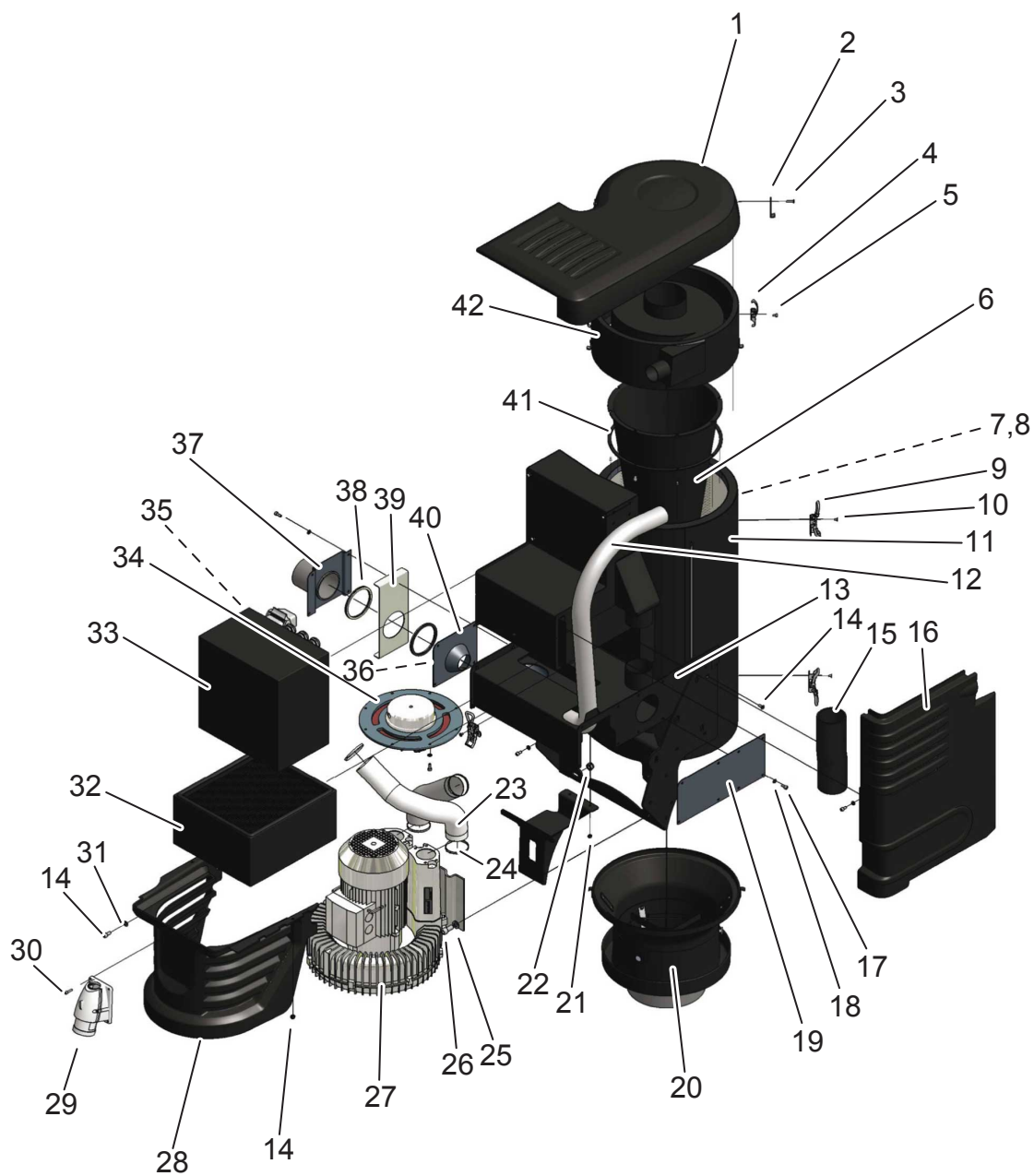


Table 8-5: Dust separator, spare parts list

Pos.	Designation	Part number	Number
1	Top cover	112513	1
2	Hook	112472	2
3	Plastic screw	310148	4
4	Eccentric lock	112321	2
5	Screw MC6S M5x8 8.8 galv.	310139	12
6	Cyclone	112512	1
7	Cartridge filter	112820	1
8	Tube filter	112505	1
9	Lock catch	112501	5
10	Screw MF6S M5x8	310028	15
11	Can package	112403	1
12	Hose 2" Pu-black	112516	1
13	Distribution box	112407	1
14	Withdrawn		
15	Hose 3" Pu-black	112511	1
16	Side cover	112282	1
17	Screw MC6S M6x12 8.8 galv.	310030	12
18	Washer BRB M6	310012	36
19	Cover plate	112480	1
20	Bottom cone	see Bottom cone on page 60	1
21	Withdrawn		
22	Withdrawn		
23	Hose 2.5" Pu-black	112517	1
24	Wire clamp 2.5"	112529	4
25	Washer BRB M12	310057	4
26	Screw MC6S M12x25 8.8 galv.	310175	4
27	Side channel fan	112514	1
28	Withdrawn		
29	Withdrawn		
30	Withdrawn		
31	Withdrawn		
32	Absolute filter	112506	1
33	Control cabinet	112693-112694	1
34	Valve	112405	1
35	Screw MC6S M6x10 8.8 galv.	310005	4
36	Withdrawn		

Pos.	Designation	Part number	Number
37	Withdrawn		
38	Withdrawn		
39	Withdrawn		
40	Withdrawn		
41	Cyclone ring	112473	1
42	Cyclone top	112404	1

8.6. Bottom cone

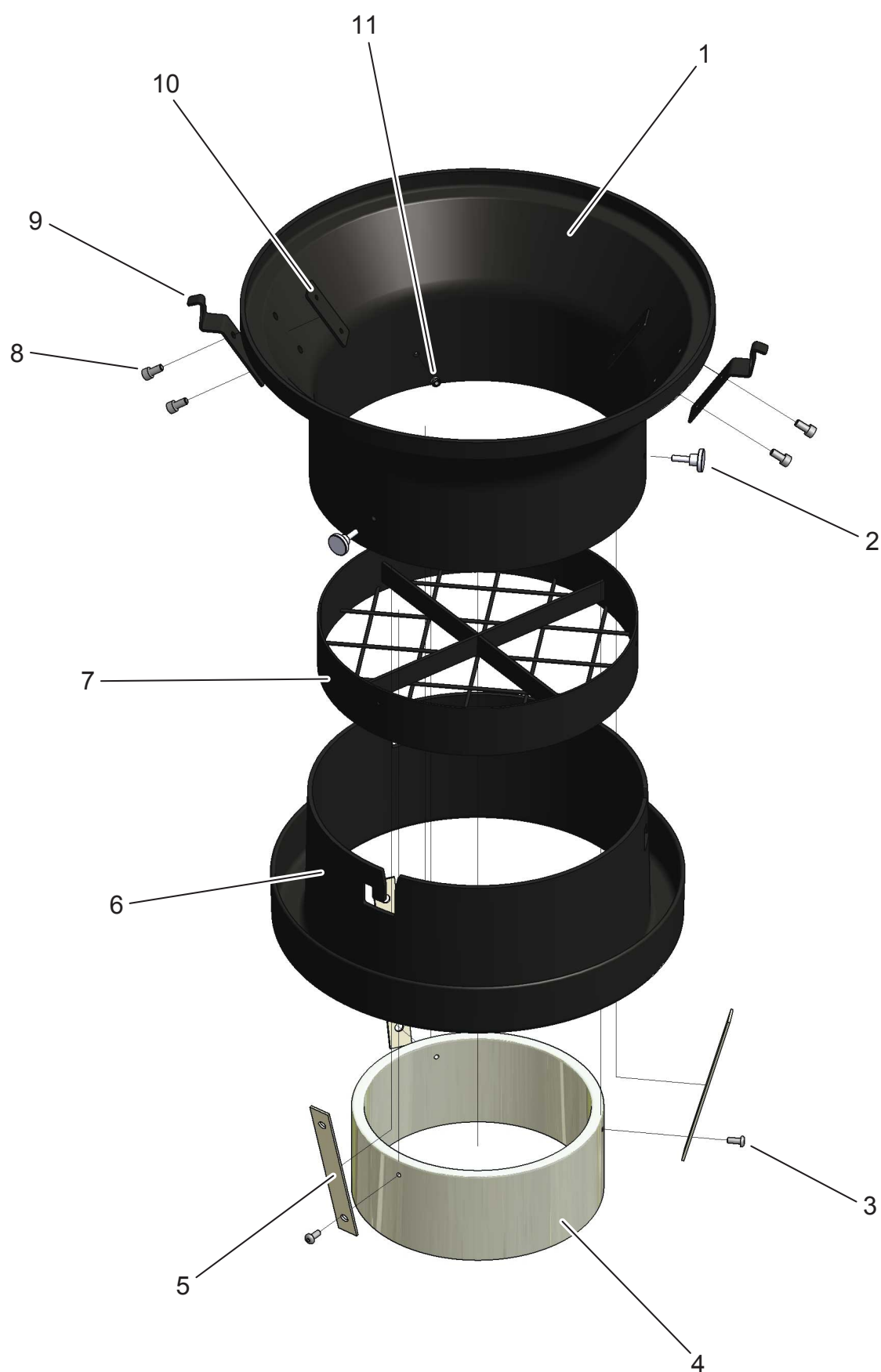


Table 8-6: Bottom cone, spare parts list

Pos.	Description	Item number	Quantity
1	Bottom cone	112246	1
2	Bayonet element	112504	3
3	Screw K6S M5x12	310343	3
4	Weight	112423	1
5	Belts, weight	112599	3
6	Longopac holder	112329	1
7	Bottom net	112406	1
8	Screw MC6S M6x12	310030	4
9	Plate hooks bottom cone	112470	2
10	Plate hooks bottom cone reinforcement	112471	2
11	Lock nut LM6M M5	310262	3

9. Technical data

The table below shows the machine's technical data.

	HTC 1500 ixT
Output, grinding motor	2x11 kW
Suction effect	2x3 kW
Power consumption	63 A
Machine weight	1,900 kg
Weight, grinding head	530 kg
Grinding width	1,380 mm
Grinding pressure	500 kg
RPM	300-2,000 rpm
Water tank	24.5 litres
Cable winder	42 m
Grinding discs	8x270 mm
Recommended minimum cable area	16 mm ²

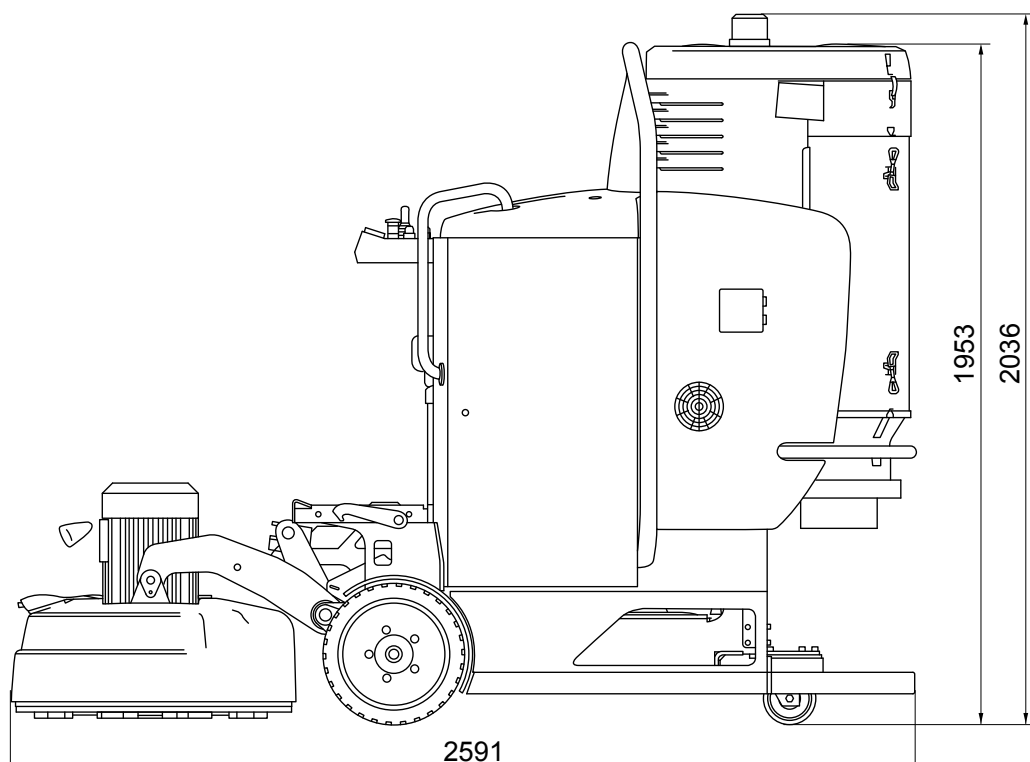


Figure 9-1 Height and length of the machine in millimetres

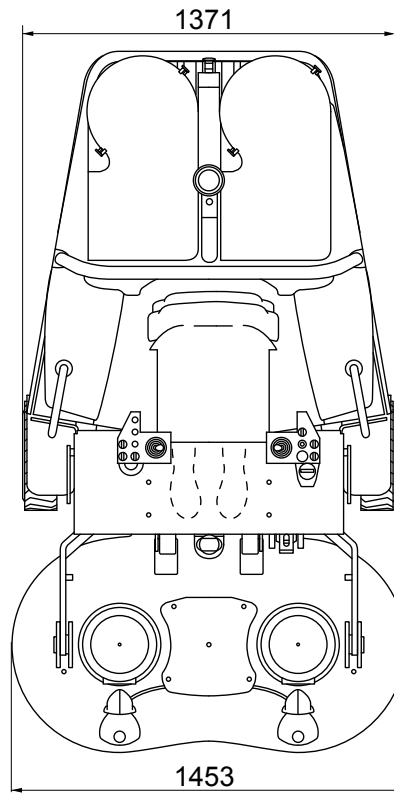


Figure 9-2 Width of the machine in millimetres

10. Environment

HTC's products consist largely of recyclable metals and plastic. The main materials used are listed below.

Chassis	
Frame	Steel, electro-galvanised/powder-coated metal
Drive wheel	Solid rubber wheels with steel rims
Cover	ABS-plastic
Swivel wheel	Polyurethane wheels with steel rims

Grinding head	
Lower cover	Aluminium
Cover	ABS plastic
External plate and steel components	Electro-galvanised metal
Belts	Rubber and polyamide
Other components	Untreated steel

Electrical system	
Cables	Copper conductors with PVC covering
Batteries	Lead/acid

Plastic components can be recycled by sorting under hard plastics. Electronics can be submitted as electronic waste. The dust extractor or its components can, of course, also be returned to HTC Sweden AB.

11. Warranty and CE Marking

11.1. Warranty

This warranty only covers manufacturing defects. HTC bears no responsibility for damage that arises or occurs during transportation, unpacking or use. In no case and under no circumstances shall the manufacturer be held responsible for damage and defects caused by incorrect use, corrosion or use over and above the prescribed specifications. The manufacturer is not responsible for indirect damage or costs under any circumstances. For complete information on the manufacturer's warranty period, see HTC's current warranty terms.

Local distributors may have special warranty conditions specified in their terms of sale, delivery and warranty. If you are unsure regarding warranty terms, please contact your retailer.

11.2. CE marking

CE marking of a product guarantees its free movement within the EU area in accordance with EU regulations. CE marking also guarantees that the product fulfils various directives (the EMC Directive and other possible requirements in so-called directives for new procedures) in accordance with these regulations. This machine carries the CE mark in accordance with the Low Voltage Directive (LVD), the Machinery Directive and the EMC Directive. The EMC Directive states that electronic equipment must not disturb its surroundings with electromagnetic radiation and that it must also be immune to electromagnetic interference in the surroundings.

This machine is classified for use in environments such as heavy industry, light industry and homes. See the Manufacturer's Declaration of Conformity, which shows that the machine is harmonised with the EMC Directive.

