



MANUAL

HTC 650 E Classic

Translation of manual in original language



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

Trademarks

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EC Declaration of conformity

Manufacturer:	HTC Sweden AB Box 69 SE-614 22 Söderköping
Type of equipment:	Grinding Machine
Make:	HTC
Trademark:	HTC 650 Classic E
Year of manufacture:	See machine name plate
Serial number:	See machine name plate

As the manufacturer, we hereby declare under our sole responsibility that the above product with serial numbers from 2004 and onward conforms to the applicable regulations in directives MD 2006/42/EC, EMC 2004/108/EC as well as LVD 2006/95/EC. The following standards have been used as a basis: ISO 5349-1:2001, ISO 5349-2:2001, ISO 20643:2005, ISO 3741.

The product was CE marked in 2006. The technical documentation is available from the manufacturer.

Original of the EC declaration of conformity (Swedish). Other languages are translations of the original of the EC declaration of conformity.

Söderköping 01.01.10



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1 Introduction

1.1 General

The HTC 650 Classic E is a grinder that can be used to grind, strip, clean and polish concrete, natural stone and terrazzo floors. The machine's area of application depends on the choice of tool.

Read the manual carefully, so you are totally familiar with the machine before you start to use it. Contact your local retailer for further information. For contact information, see Contact Information at the start of the manual.

1.2 Liability

Even though every effort has been made to make this manual as complete and accurate as possible, we bear no responsibility for incorrect or missing information. HTC reserves the right to change the descriptions contained in this manual without prior notice.

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

1.3 Manual

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

1.3.1 Safety explanations - explanation of symbols

A number of symbols are used in the manual to highlight the most important sections, see below. It is important that you carefully read through the descriptions of the symbols in order to avoid the risk of both material damage and personal injury. There are also other symbols indicating practical tips. These are to help you use the machine in the easiest and most effective way.

The following symbols are used in the document to indicate where special attention is needed.



Warning!

This symbol means **Warning!** and indicates a risk of personal injury or material damage in the event of incorrect use of the machine. 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 the machine.

**Note!**

This symbol means **Note!** and indicates a potential risk of material damage in the event of incorrect use of the machine. 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 machine.

**Tip!**

This symbol means **Tips!** and implies the inclusion of tips and advice on effective use of the machine or ways of reducing wear and tear to the machine. If you see this symbol next to a text, you should read through the text to make your work easier and to extend the service life of the machine.

1.4 Transportation

Always make sure that the grinder is securely anchored to its surroundings and the grinding head is lowered against the surface. Make sure that the securing straps, or other equipment used for anchoring during transport, are tightened over non-moving parts, e.g. the grinder's chassis.

When lifting the grinder, lifting straps must be used. These must be attached well-secured in the lifting eyes provided. Only use lifting straps approved for lifting equipment.

Do not transport the grinder on sloping surfaces, e.g. loading ramps, without securing it by the lifting eyes for example with a winch. This is a safety measure in case the grinder starts to roll out of control. Also make sure that people (including operator) in the vicinity are at a safe distance in order to prevent personal injury, in the event that the grinder starts to roll out of control.

1.5 On delivery

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

- Grinding machine
- Manual disc
- Locking key for control cabinet
- Hammer EZ system
- Splash guard

1.6 Unpacking the equipment



Warning!

Read carefully through the safety instructions and user manual before using the equipment.

- Check the packaging and equipment carefully on delivery for any possible transportation damage. If there is any sign of damage, contact your retailer and report it. Report packaging damage to the transport company as well.
- Check that the delivery matches the order. If there are any discrepancies, contact your retailer.
- When lifting the grinder, lifting straps must be used. These must be attached well-secured in the lifting eyes provided. Only use lifting straps approved for lifting equipment.

1.7 Machine name plate

The machine name plate provides the following information. The model and serial number must be specified when ordering spare parts for the machine.



 	1	
	2	
	3	
	4	
	5	8
	6	9
	7	10
11		Made in Sweden

Figure 1-1. Machine name plate

1. Model
2. Model number
3. Serial number
4. Year of manufacture
5. Power (kW)
6. Voltage (V)
7. Current (A)
8. Frequency (Hz)
9. Rotational speed (r.p.m.)

10. Weight (kg)
11. Address field

1.8 Handling and storage

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

When lifting the grinder, lifting straps must be used. These must be attached well-secured in the lifting eyes provided. Only use lifting straps approved for lifting equipment.

1.9 Vibration and noise



Warning!

Always use hearing protection when using the machine.

1.9.1 Hand and arm vibrations

Hand and arm-weighted vibration level [m/s^2] for HTC 650 Classic E have been measured using equipment approved in accordance with ISO 5349-1:2001. Measurement uncertainty for the measuring equipment is given as $\pm 2\%$.

The machine has been tested in accordance with ISO 5349-2:2001 and ISO 20643:2005 in order to identify the operations that contribute to the most frequent vibration exposures. At vibration levels $> 2.5 \text{ m/s}^2$, the exposure time should be limited in accordance with the table below. For vibration levels $> 5 \text{ m/s}^2$, immediate measures must be taken by the employer to ensure that the exposure time does not exceed the time specified in the table below.

Identified work conditions	Measured values [m/s^2]	Daily permitted exposure (number of hours)
Grinding/polishing	2,28	Unrestricted
Floor preparation (T-rex)	5,58	6,42

1.9.2 Sound power level

This machine is tested for noise in accordance with ISO 3741. For information on the sound power level, see the table in chapter Tekniska data, page [28](#).

2 Safety

2.1 General

This chapter contains all of the warnings and observations that should be taken into consideration for HTC 650 Classic E.

2.2 Warnings



Warning!

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



Warning!

Never use the machine in an environment where there is 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 within a 15-metre radius of the machine. If loose objects get under the grinding head, these may be flung out and cause personal injury.



Warning!

Use safety equipment such as safety shoes, safety glasses, protective gloves, respiratory protection and hearing protection.



Warning!

Always make sure that a dust extractor is connected to the grinder during dry grinding to prevent, as far as possible, exposing the operator, people in the vicinity, the grinder and other equipment to dust particles. Exposure to dust particles can cause personal injury and also damage to physical equipment.



Warning!

Only start the machine with the grinding head lowered.



Warning!

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



Warning!

Always use hearing protection when using the machine.

**Warning!**

During grinding, the tools become very hot. Tip the machine back and allow it to stand for a short while. Use protective gloves when removing the tools.

**Warning!**

Always remove the weights before changing tools, to prevent the machine from tipping back.

**Warning!**

There is a risk of crush injuries when handling the weights, as these are heavy. Therefore, the weights should always be handled with great care.

**Warning!**

Disconnect the electrical supply when cleaning, changing tools or repairing the machine.

**Warning!**

The machine may only be used and moved on horizontal surfaces. There is a risk of crush injuries if the machine starts to roll.

**Warning!**

The machine must be connected to a residual current device.

**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!**

The machine may only be used when the splash guard is fitted.

**Warning!**

When working on an elevated surface where there is a risk of falling, the edges of the surface must be secured. The values for the machine's thrust and load capacity as well as the driving speed are given in the table for the machine's technical data in the chapter "Technical Data".

2.3 Notes

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

**Note!**

If the machine is stored in a cold area (below zero), it must be kept in a warm area (above zero) for at least two hours before use.

**Note!**

When dry grinding, a suitable dust extractor should be used. For available models of dust extractors, go to HTC's website www.htc-floorsystems.com for more information.

**Note!**

The dust extractor's suction hose must be connected to the appropriate socket on the machine. Adjust the dust extractor to match the grinder's capacity.

**Note!**

Do not use the emergency stop switch to stop the machine, except in emergencies.

**Note!**

As long as the emergency stop switch is pressed in, the machine cannot be started. Reset by turning the switch 45° clockwise so that it pops out again. The machine can then be restarted.

**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!**

When wet grinding, the water tank must be filled with water. Only use cold water with no chemical additives.

3 Machine description

3.1 General machine description

HTC 650 E Classic is designed for grinding small to medium-sized spaces and has a frequency converter, which means that the RPM and the grinding discs' direction of rotation can be regulated using buttons on the control panel. 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 is a perfect choice for removing coverings and for grinding concrete floors according to the HTC Superfloor method, which is an environmentally-friendly method for grinding and polishing concrete floors.

The machine is constructed from a number of main components, see Figure 3-1, page [9](#) and Figure 3-2, page [10](#). It can be combined with weights for adjusting the grinding pressure, which makes the machine perfect for those with high demands for flexibility.

The handle can be set at several different angles, select a position that suits you best.

The grinding cover has a connection for an external suction hose used for dry grinding.

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

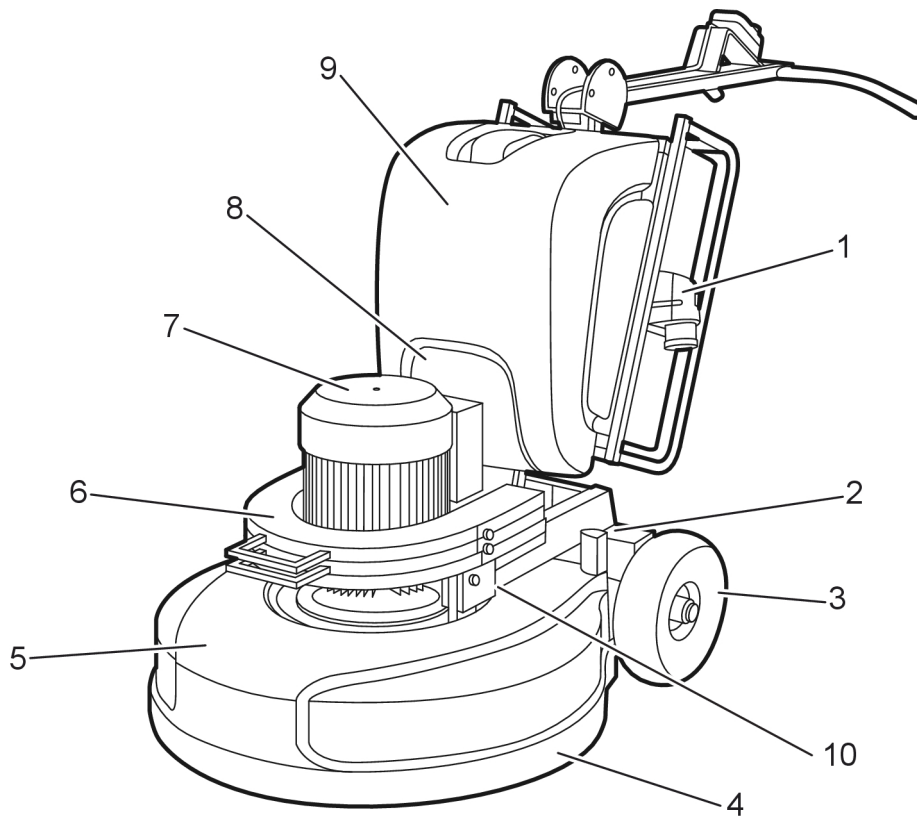


Figure 3-1. The front of the machine

1. Electrical connection
2. Tap for wet grinding
3. Wheels
4. Splash guard
5. Grinding cover
6. Weights
7. Motor
8. Lifting frame
9. Water tank
10. Tap for wet grinding

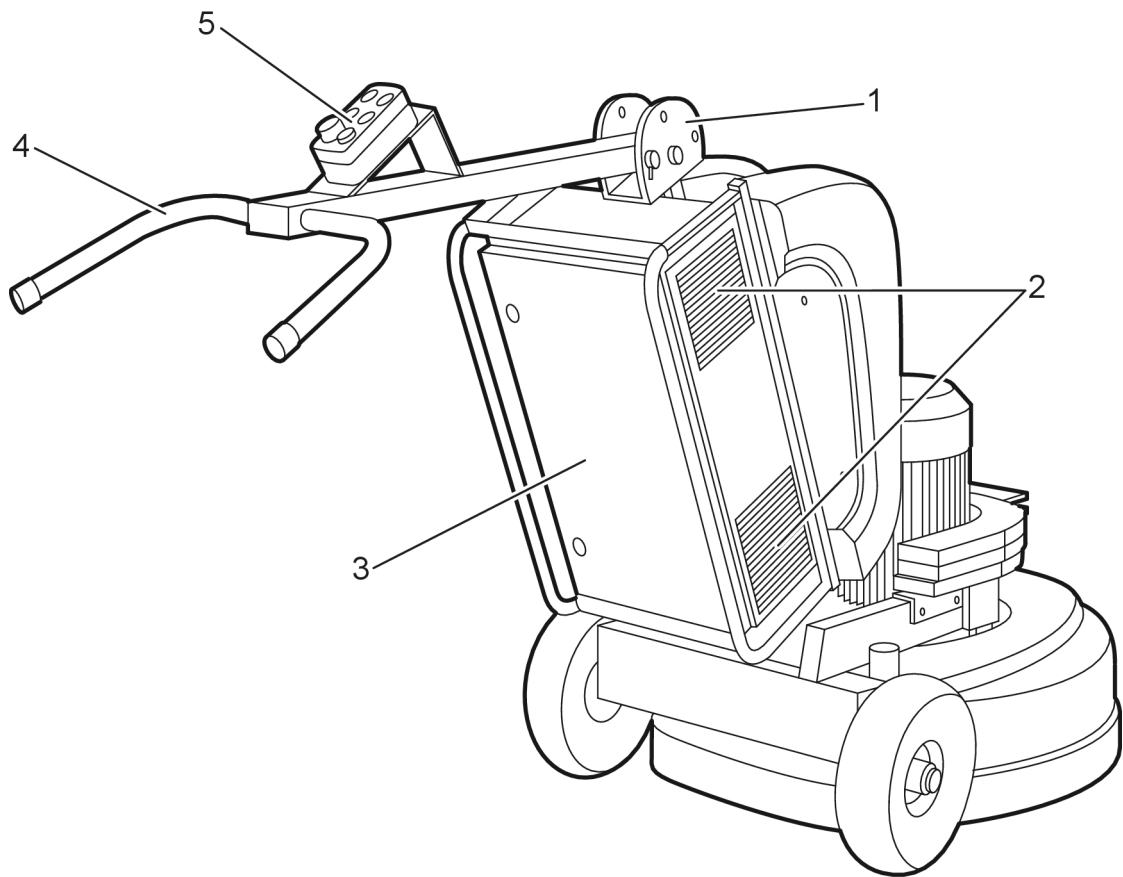


Figure 3-2. The machine's rear

1. Handle lock
2. Filter
3. Control cabinet
4. Handle
5. Control panel

3.2 Description of controls - Control panel

The picture below shows the machine's control panel:

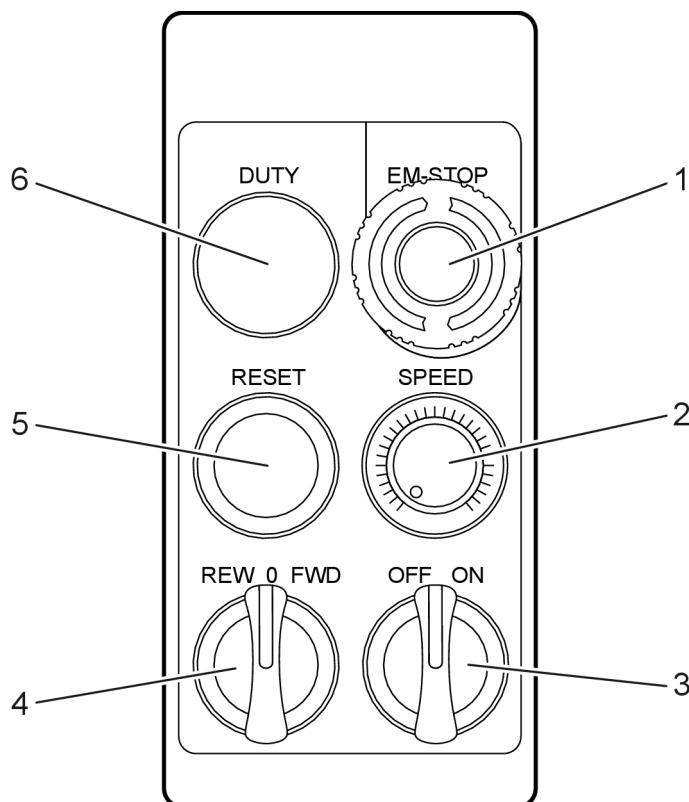


Figure 3-3. Control panel

1. **EM-STOP** - Emergency stop switch: In an emergency, press the switch to cut the power to the machine.
2. **SPEED** - Rotation speed: Regulates the rotational speed of the machine's grinding discs.
3. **ON/OFF** - Start/stop the machine's functions: Turn the knob to "ON", to activate the machine's functions and to prepare for starting. Turn the knob to "OFF", to switch off the machine's functions.
4. **REW/FWD** - Start/stop the grinding discs' rotation and direction of rotation. Turn the knob to "0", to stop the rotation.
5. **RESET** - Resetting the electronics: If the machine experiences an error, it can be reset by pressing and holding the button in for two seconds. Any error code is shown on the frequency converter's display inside the electrical cabinet, see Electronic error codes, page [25](#).
6. **DUTY** - Standby indicator: Indicates that the machine's functions have been activated. Lights when the ON/OFF knob is turned to "ON".

4 Operation

4.1 General

The following section describes how to change tools and how to operate the grinding machine. This section does not deal with the technical aspects of grinding, such as selection of grinding tools, etc.

For choice of tool, go to HTC's website www.htc-floorsystems.com for more information.

**Warning!**

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

**Warning!**

Never use the machine in an environment where there is a risk of explosion or fire. Familiarise yourself with and follow the relevant fire safety regulations when using the machine.

**Warning!**

Secure the area around the machine. No unauthorised persons should be within a 15-metre radius of the machine. If loose objects get under the grinding head, these may be flung out and cause personal injury.

**Warning!**

Use protective equipment such as safety shoes, safety goggles, protective gloves, mouth mask and hearing protection.

**Warning!**

Only start the machine with the grinding head lowered.

**Warning!**

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

**Tip!**

Check the minimum recommended cable area before using an extension cord. You will find the recommended cable area under Technical Data.

4.2 Handle setting

The appropriate working height is set with the help of the adjustable handle. Release the handle, by pulling the locking pin on the handle lock, see Figure 3-2, page 10. Adjust the handle to the desired position and secure it, by inserting the locking pin again.

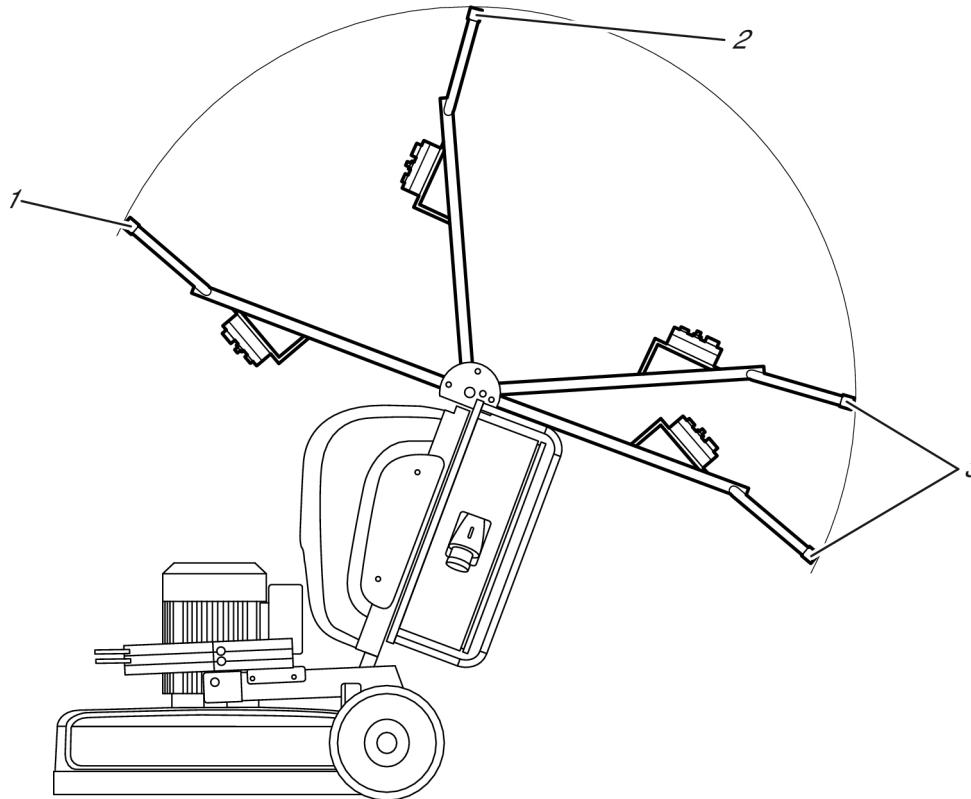


Figure 4-1. Handle settings

1. **Forward position** - used during transport, as the machine takes up significantly less space.
2. **Rear position** - used for tipping the machine to make tool replacement easier.
3. **Working position** - the working height can be adjusted to two positions using the machine's adjustable handle.

4.3 Handling weights

The machine can be equipped with three weights to make it easy to change the machine's grinding pressure, see Figure 4-2, page 14. When all three weights are mounted, they provide additional grinding pressure that increases the grinding effect. When using a tool with a high removal rate, such as T-Rex™, we recommend a low grinding pressure.



Note!

Too high a grinding pressure combined with an incorrect grinding tool may cause damage to both the machine and the floor.

**Note!**

Always dismantle the weights when you change tools, to make tipping the machine easier.

**Warning!**

There is a risk of crush injuries when handling the weights, as these are heavy. Therefore, the weights should always be handled with great care.

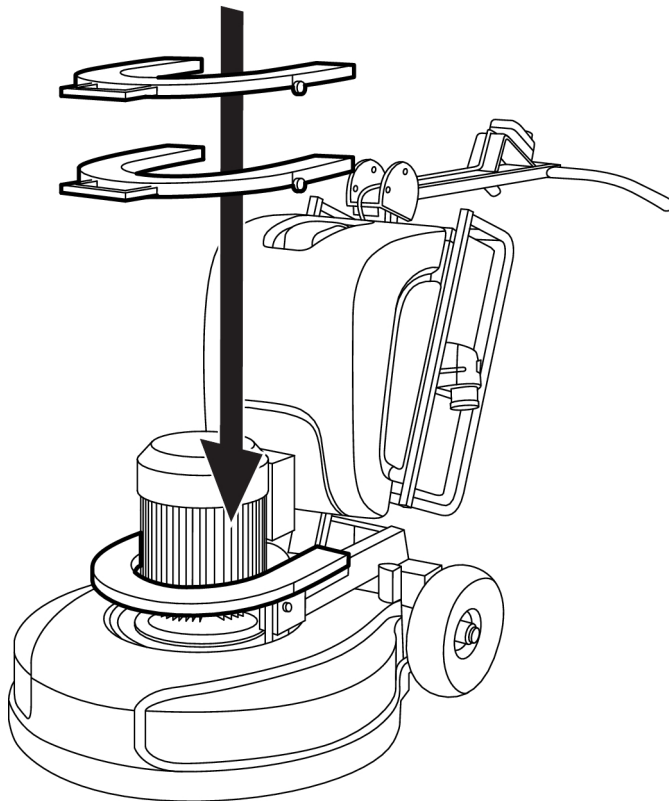


Figure 4-2. Handling weights

4.4 Access to grinding tools

**Warning!**

Always remove the weights before changing tools, to prevent the machine from tipping back.

**Warning!**

During grinding, the tools become very hot. Tip the machine back and allow it to stand for a short while. Use protective gloves when removing the tools.

**Warning!**

Disconnect the electrical supply when cleaning, carrying out maintenance, changing tools or repairing the machine.

1. Set the handle to the rear position - see Figure 4-1, page [13](#)
2. Removing the weights.
3. Tip the machine backwards carefully so that it rests on the floor.

4.5 Fitting and replacing grinding tools

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

**Warning!**

Disconnect the electrical supply when cleaning, carrying out maintenance, changing tools or repairing the machine.

**Warning!**

During grinding, the tools become very hot. Tip the machine back and allow it to stand for a short while. Use protective gloves when removing the tools.

4.5.1 Fitting grinding tools

1. Slide the grinding tool diagonally, from above, down into the appropriate guide slot on the tool holder, see Figure 4-3, page 16. Then push the tool fully into the guide slot.

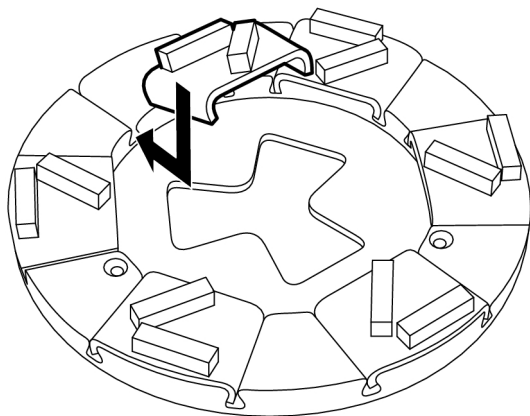


Figure 4-3. Fitting grinding tools

2. Lock the grinding tool into the tool holder by giving it a few light taps with a rubber hammer - see Figure 4-4, page 16.

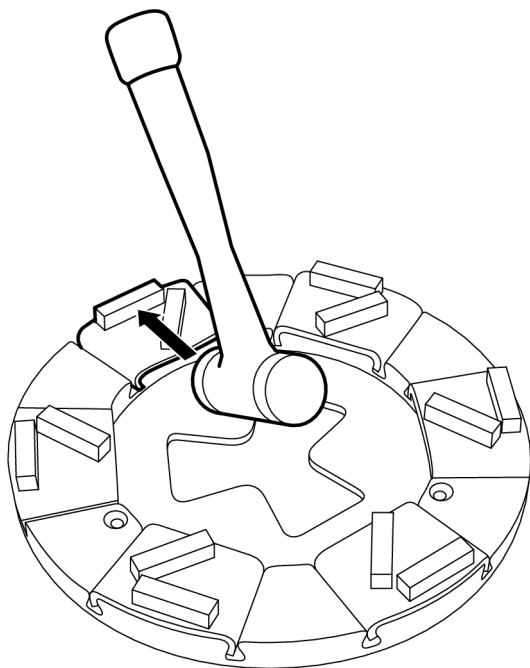


Figure 4-4. Removing grinding tools

4.5.2 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 4-5, page 17. Then draw the tool up out of the guide slot.

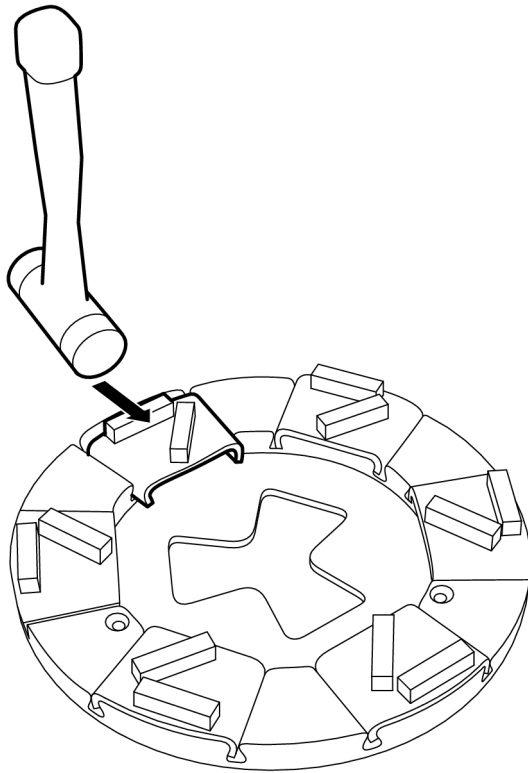


Figure 4-5. Removing grinding tools

2. Slide the grinding tool diagonally, from above, down into the appropriate guide slot on the tool holder, see Figure 4-3, page 16. 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 4-4, page 16.

4.6 Preparations for dry grinding

**Note!**

The dust extractor's suction hose must be connected to the appropriate socket on the machine. Adjust the dust extractor to match the grinder's capacity.

1. Connect a dust extractor to the machine. For available models of dust extractors, go to HTC's website www.htc-floorsystems.com for more information.

**Note!**

The dust extractor's suction hose must be connected to the appropriate socket on the machine. Adjust the dust extractor to match the grinder's capacity.

**Note!**

The dust extractor can be connected to both sockets found on the protective cover for the machine. If you only use one of the sockets, the socket not in use should be covered. Adjust the dust extractor to match the grinder's capacity.

2. Inspect the floor carefully and remove any objects sticking up, such as reinforcement rods or bolts, and any debris that could get caught in the machine.
3. Attach the appropriate tool to the machine, see under Fitting grinding tools, page [16](#)
4. Set the handle to the working position, see Figure 4-1, page [13](#).

4.7 Preparations for wet grinding

**Tip!**

Never use a dust extractor, as it may cause blockages in the dust extractor's suction hose.

1. Always use liquid suction when wet grinding.
2. Inspect the floor carefully and remove any objects sticking up, such as reinforcement rods or bolts, and any debris that could get caught in the machine.
3. Attach the appropriate tool to the machine, see under Fitting grinding tools, page [16](#)
4. Set the handle to the working position, see Figure 4-1, page [13](#).

**Warning!**

Only use cold water with no chemical additives.

5. Fill the tank with cold water.
6. Connect the water hose to the water connection.
7. Turn the tap on the machine on to start the water supply.
8. Turn in the opposite direction to turn the water off.
9. Turn the tap on the machine's left side to the open position, position 10 Figure 3-1, page 9.
10. Turn the tap to the closed position when wet grinding is finished, position 10 Figure 3-1, page 9.

4.8 Operation

The machine's functions can be controlled using on the control panel, see Figure 3-3, page 11.

During operation, the operator pushes the grinder forwards over the floor surface.

4.8.1 Standby

To activate the machine's functions, turn the ON/OFF knob to the right. When the knob is in this position, the green Standby light (DUTY) is lit, indicating that the machine is in standby mode.

4.8.2 Emergency stop switch

The emergency stop switch, (EM-Stop) must only be used in an emergency, because it shortens the service life of the machine's electrical components.

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



Note!

Do not use the emergency stop switch to stop the machine, except in emergencies.



Note!

As long as the emergency stop switch is pressed in, the machine cannot be started. Reset by turning the switch 45° clockwise so that it pops out again. The machine can then be restarted.

4.8.3 Starting the machine

For a description of the control panel, see Figure 3-3, page [11](#).

1. Make sure the emergency stop switch has not been activated.
2. Insert the cable.
3. Start the dust extractor if dry grinding is to be done.
4. Turn the ON/OFF knob to the right.
5. Start the grinding discs rotation, by turning the REW/FWD knob to the desired direction of rotation.
6. Set the speed for the grinding discs using the Speed knob.
7. The machine has now started.

4.9 Making operation easier

In order to keep the suction hose for the dust extractor and the power cable out of the working area and/or path of the machine, the hose and cable can be arranged as shown in the picture below.

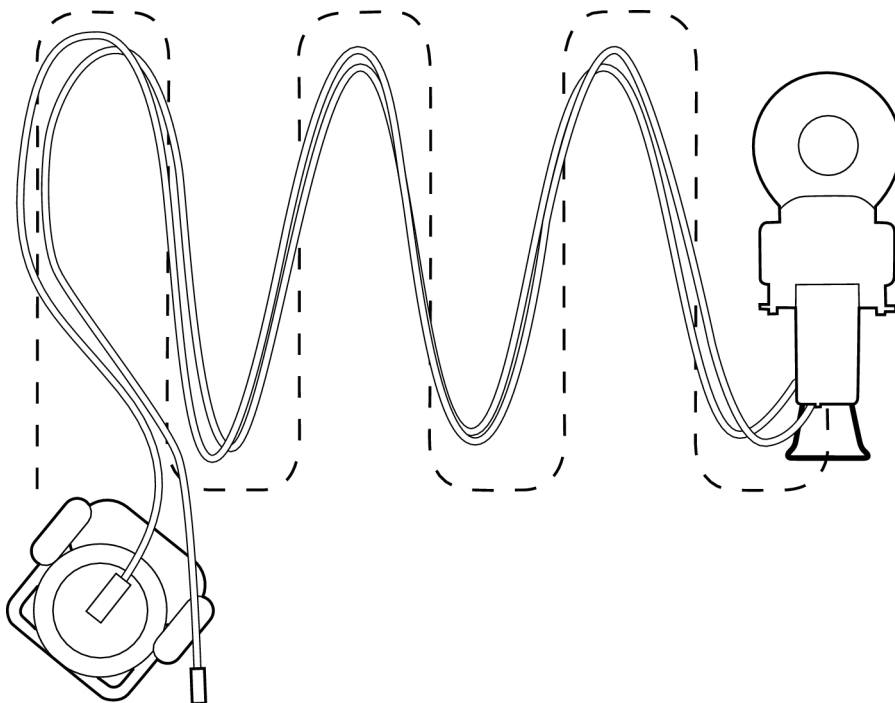


Figure 4-6. Making operation easier



Tip!

By arranging the hose and cable as shown in the picture, you avoid disruptive stoppages caused by having to re-position the cable and hose.

5 Maintenance and repairs

5.1 General

We recommend regular inspections of all seals.



Warning!

Disconnect the electrical supply when cleaning, carrying out maintenance, changing tools or repairing the machine.



Warning!

Use protective equipment such as safety shoes, safety goggles, protective gloves, mouth mask and hearing protection.

5.2 Cleaning



Warning!

Do not rinse off the machine using a high-pressure washer, as moisture can penetrate to the electrical parts and damage the drive system.

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

5.3 Daily

- Wash the machine if it is used for wet grinding.
- Check for wear to the grinding tools – abnormal or uneven wear may indicate a damaged grinding holder.
- Check the tool holder and grinding holder to ensure that no damage or cracks have arisen. Replace the parts if there is any damage.

5.4 Every week

- Wash the machine.
- 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.
- Check that the upper belt is whole, by turning the large disc in one direction or the other. If there is resistance the belt is whole, if the disc rotates freely the belt is broken.

**Tip!**

Recondition all the grinding holders at the same time.

5.5 Every month (or after 100 hours)

- Tighten anything that may have vibrated loose.
- Check that the grinding cover is whole and undamaged.
- Check the upper belt and replace if necessary.
- Check the seals on the shafts on which the upper belt runs and replace if necessary.
- Scrape and vacuum-clean the parts shielded by the grinding cover.
- Test run and listen for any dissonance from the bearings.
- Clean or, if necessary, replace the filter to the electrical cabinet.

5.6 Repairs

Any repairs that may be required must be carried out by a HTC Service Centre that 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.

5.7 Spare parts

To ensure rapid delivery of spare parts, always specify the model, the machine's serial number and the spare part number when ordering. Information on the model and serial number can be found on the machine's name plate.

Information on spare part numbers can be found in the machine's spare parts list which is available to read or print out from the accompanying digital media.

Only original tools and spare parts from HTC may be used. Otherwise, neither the CE marking nor the warranty will be valid.

6 Troubleshooting

6.1 General

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 front of the manual.

6.2 The machine will not start

- Check if the emergency stop switch have been pressed. Reset the switch by turning it 45°.
- Check that the machine is connected correctly to the mains supply. Check that there is full voltage on the motor's phase/phases.
- Check the fuses and contactors in the control cabinet.
- Check fuses in control cabinet and on batteries.
- Check the error code on the frequency converter's display. For corrective measures, see Electronic error codes, page [25](#).

6.3 The machine vibrates or wears the tools unevenly

- Check that there is movement between the chassis and grinding head. If necessary, loosen one of the two pins in order to increase the play between the chassis and the grinding head.
- Check the belts, replace if necessary.
- Check the condition of the grinding holders. If the grinder holders need reconditioning, contact HTC for information about spare parts.

6.4 The machine is grinding at an angle

- Recondition the grinding holder. See under The machine vibrates or wears the tools unevenly, page [23](#).
- Check that the upper belt is undamaged. Try to turn the large disc in one direction or the other, there should be resistance. If it turns freely, the belt is broken and must be replaced.

6.5 The machine stops during operation

- Check the error code in the display on the frequency converter, see Electronic error codes, page [25](#).

6.6 The fuse trips 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.

6.7 The machine cannot cope

- Heavy load. Press the handle down slightly so that the grinding head eases slightly away from the surface being ground..
- Sticky coating on the surface being ground. Run half of the machine on the surface to be cleaned and half on the clean surface. This removes any residue from the tools.
- 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.



Tip!

Check the minimum recommended cable area before using an extension cord. You will find the recommended cable area under Technical Data.

7 Electronic error codes

7.1 General

In the event of an error, the error code is shown in the display. The most common error codes that may occur on the frequency converter, in the control cabinet, are listed below. In the event of other errors, contact the HTC Service Centre.

7.2 Hitachi

7.2.1 SJ200

Error code	Cause	Action
E01	Excess current at constant speed.	The machine is running too fast or with too great a load. Lower the speed, lower the load by changing the position of the weights and check your tools. Check mechanical inertia, spin the grinding discs.
E02	Excess current during deceleration.	See E01
E03	Excess current during acceleration.	See E01
E04	Excess current under other conditions.	See E01
E05	Overload.	See E01
E08	Internal EEPROM error due to overheating or interference	Open the control cabinet and ventilate. Check the filter and the cooling fans in the cabinet. Let the frequency converter cool down before restarting.
E09	Under-voltage.	The connection cable is too long, poor connection or too many consumers connected to the mains. Change socket, use shorter cables and lower the speed.
E10	Internal current supply error	Contact HTC Service Centre.
E11	Internal processor fault	Reset the electronics using the Reset procedure.
E13	Anti-restart switch tripped	Check the operation when starting the machine, see Starting the machine, page 20.
E14	Earth fault	Check the motor's cables and connections.
E15	Excess voltage	Mains voltage too high or disturbance in the mains supply. Check the supply voltage, change socket.
E21	Excess temperature	See E08.
E22	Internal processor error	Contact HTC Service Centre.
E30	Internal communications error	Contact HTC Service Centre.

7.2.2 Resetting the frequency converter

- Press and hold the "RESET" button in for two seconds.

7.2.3 Checking the last error code

1. Press FUNC, D01 is shown in the display.
2. Press "arrow up", until D08 is shown in the display.
3. Press FUNC, the error code is shown in the display.
4. Press FUNC again, the current frequency is shown in the display.
5. Press FUNC once again, the motor voltage is shown in the display.
6. Press FUNC once again, the voltage of the DC bus is shown in the display.

Press "arrow up", until D09 is shown in the display, in order to see the previous error codes.

7.3 Omron

7.3.1 MX2

Error code	Cause	Action
E01	Excess current at constant speed	The machine is running too fast or with too great a load. Lower the speed, lower the load by changing the position of the weights and check your tools. Check mechanical inertia, spin the grinding discs.
E02	Excess current during deceleration	See E01
E03	Excess current during acceleration	See E01
E04	Excess current under other conditions	See E01
E05	Overload	See E01
E08	Internal EEPROM error due to overheating or interference	Open the control cabinet and ventilate. Check the filter and the cooling fans in the cabinet. Let the frequency converter cool down before restarting.
E09	Under-voltage	The connection cable is too long, poor connection or too many consumers connected to the mains. Change socket, use shorter cables and lower the speed.
E10	Internal current supply error	Contact HTC Service Centre.
E11	Internal processor fault	Reset the electronics using the Reset procedure.

Error code	Cause	Action
E13	Anti-restart switch tripped	Check the operation when starting the machine, see Starting the machine, page 20.
E14	Earth fault	Check the motor's cables and connections.
E15	Excess voltage	Mains voltage too high or disturbance in the mains supply. Check the supply voltage, change socket.
E21	Excess temperature	See E08.
E22	Internal processor error	Contact HTC Service Centre.
E30	Internal communications error	Contact HTC Service Centre.

7.3.2 Resetting the frequency converter

- Press and hold the "RESET" button in for two seconds.

7.3.3 Checking the last error code

1. Press the "Set key" button, D001 is shown in the display.
2. Press the "arrow up" button, until D081 is shown in the display.
3. Press the "Set key" button, the error code is shown in the display.
4. Press the "arrow up" button, the frequency at the time of the error is shown in the display.
5. Press the "arrow up" button, the motor current during the error is shown in the display.
6. Press the "arrow up" button, the voltage of the DC bus during the error is shown in the display.
7. Press the "arrow up" button, the operating time accumulated up to the time of the error is shown in the display.
8. Press the "arrow up" button, the time accumulated with the voltage connected up to the time of the error is shown in the display.



Figure 7-1. "Set key" button

8 Tekniska data

I tabellen nedan visas maskinens tekniska data.

	HTC 650 E Classic EU	HTC 650 E Classic MS EU	HTC 650 E Classic US	HTC 650 E Classic NO
Motor	7,5 kW	5,5 kW	7,5 kW	7,5 kW
Ström	16 A	16 A	16 A	30 A
Spänning	3 x 380-415 V	3 x 400 V	3 x 440-480 V	3 x 200-240 V
Total maskinvikt	325 kg	325 kg	325 kg	325 kg
Chassivikt	144 kg	144 kg	144 kg	144 kg
Vikt, sliphuvud	183 kg	183 kg	183 kg	183 kg
Vikter	3 x 20 kg	3 x 20 kg	3 x 20 kg	3 x 20 kg
Slipdiameter	680 mm	680 mm	680 mm	680 mm
Sliptryck, med vikter	168-188-208-228 kg	168-188-208-228 kg	168-188-208-228 kg	168-188-208-228 kg
Varvtal	359 - 1618 r.p.m	899 r.p.m	359 - 1618 r.p.m	359 - 1618 r.p.m
Vattentank	50 liter	50 liter	50 liter	50 liter
Slipskivor	3 x 230 mm	3 x 230 mm	3 x 230 mm	3 x 230 mm
Rekommenderad minsta kabelarea	2,5 mm ²	2,5 mm ²	2,5 mm ²	6 mm ²
Ljudtrycksnivå, medelvärde över tid enligt ISO 3741, mätosäkerhet enligt klass 1 mätinstrument för ljudnivåmätare	97 dBA	97 dBA	97 dBA	97 dBA

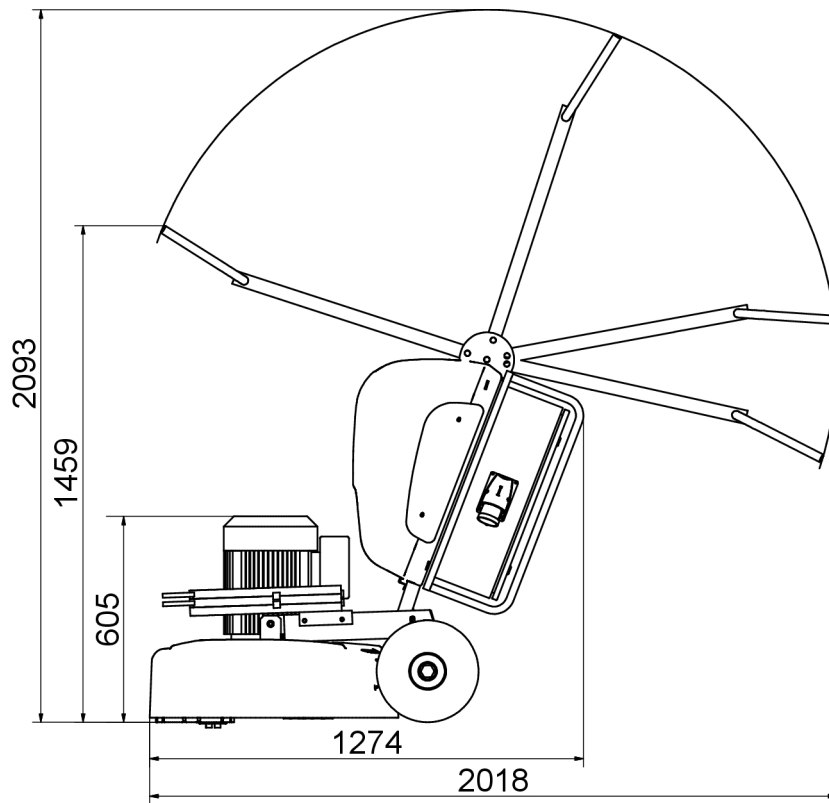


Figure 8-1. Maskinens höjd- och längdmått i millimeter

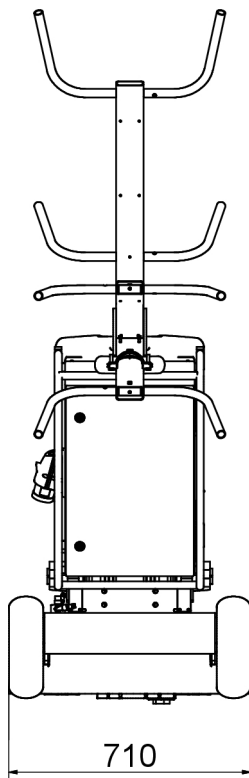


Figure 8-2. Maskinens breddmått i millimeter

9 Environment

HTC products are constructed mainly of recyclable metal and plastic. The main materials used are listed below.



Warning!

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

9.1 Chassis

Frame	Electro-galvanised steel
Handle	Plastic covered steel
Wheels	Polyurethane-filled rubber wheels
Cover	ABS plastic
Motor	Aluminium

9.2 Grinding head

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

9.3 Electrical system

Control cabinet	Stainless steel
Cables	Copper conductors with PVC covering

9.4 Recycling

Plastic components can be recycled by sorting as hard plastics. Electronics can be deposited as electronic waste. The machine or machine components can also be returned to HTC Sweden AB. For recycling and scrapping of components, see the applicable national regulations for each country.

10 Warranty and CE marking

10.1 Warranty

This warranty only covers manufacturing defects. HTC bears no responsibility for damage that arises or occurs during transportation, unpacking or use. In no instance and under no circumstances shall the manufacturer be held responsible for damage and defects caused by incorrect use, corrosion or use outside 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 terms specified in their terms of sale, delivery and warranty. If there is any uncertainty regarding warranty terms, please contact your retailer.

10.2 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 interference and also that it must be immune to electromagnetic interference in its surroundings.

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

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