WFE 380 / WFE 450-E

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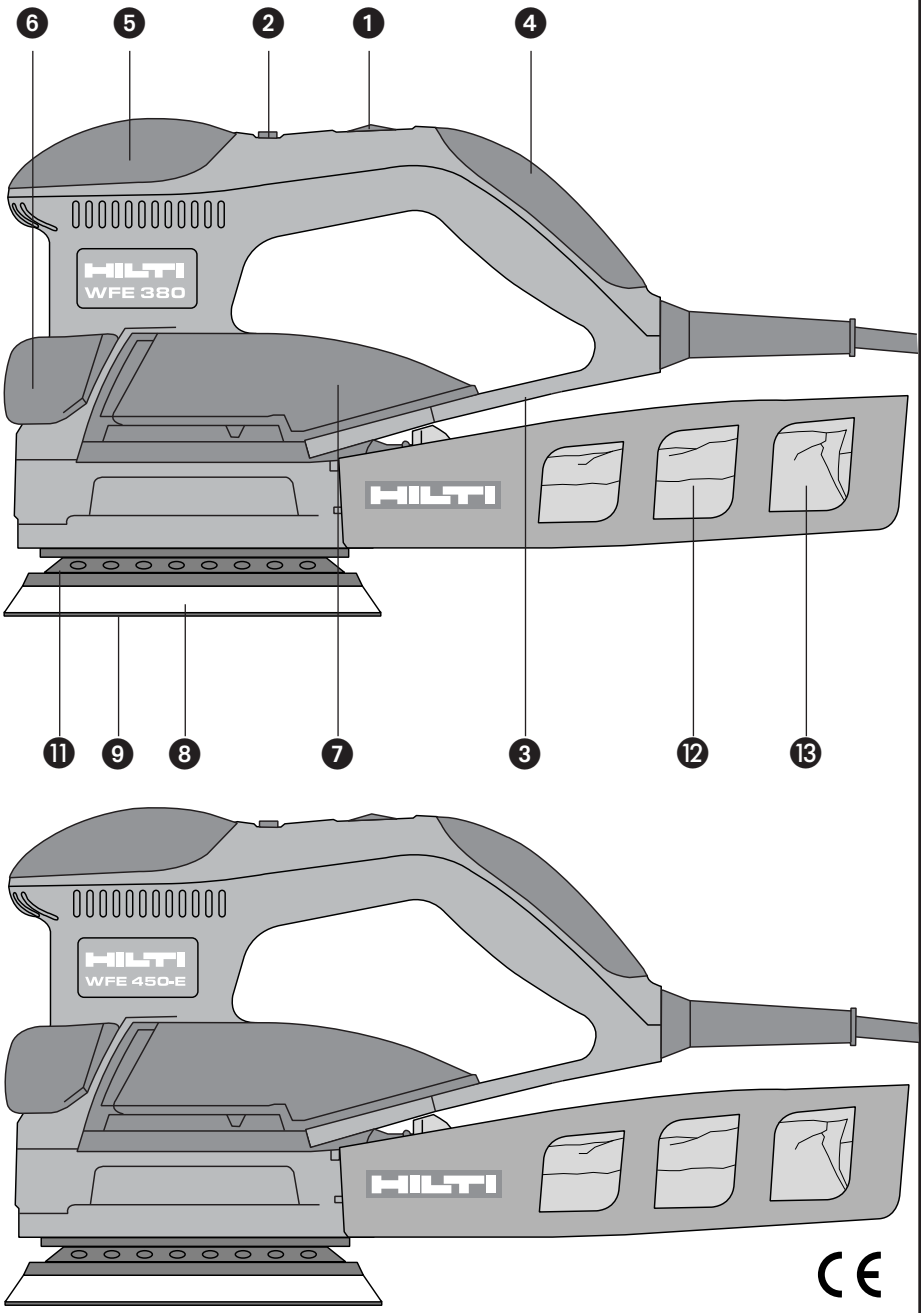

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ORIGINAL OPERATING INSTRUCTIONS
WFE 380 / WFE 450-E random orbit sander

It is essential that the operating instructions are read before the tool is operated for the first time.

Always keep these operating instructions together with the tool.

Ensure that the operating instructions are with the tool when it is given to other persons.

Operating controls 1
❶ On / off switch
❷ Thumbwheel for speed pre-selection

Component parts 1
❸ Type plate
❹ Main grip
❺ Guiding grip
❻ Auxiliary grip
❼ Finishing grip
❽ Sanding plate
❾ Sanding sheet with Velcro-type attachment
❿ Sanding plate fastening screws
⓫ Brake ring
⓬ Dust box
⓭ Dust bag
⓮ Extraction connector / extraction hose
⓯ Positioning aid for sanding sheets

Contents **Page**

1. General information

Indication of hazards
"Caution"
This word is used to draw attention to a hazard or unsafe method or procedure which could lead to personal injury or damage to the machine, material or other property.

Pictograms

Warning signs


General warning


Warning: electricity


Warning: hot surface

Obligation signs


Wear eye protection


Wear ear protection


Wear protective gloves


Wear breathing protection

Symbols


Read the operating instructions before use


Return waste material for recycling

1 The numbers refer to the illustrations. The illustrations can be found on the fold-out cover pages. Keep these pages open while you read the operating instructions.

"The tool" referred to in these operating instructions is always the random orbit sander.

Location of identification data on the tool
The type designation and the serial number can be found on the type plate of the tool. Make a note of this data in your operating instructions and always refer to it when making an enquiry to your Hilti representative or service department.

Type: _____

Serial no.: _____

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2. Description

The WFE 380 / WFE 450-E random orbit sander is an electrically powered tool for sanding wood, wood materials, composite materials, paint, lacquer, plastics, plaster, fillers and similar materials.
The tool has been designed for professional use.
The following items are supplied : power tool with dust box, dust bag, operating instructions and toolbox. The WFE 380 is supplied in a cardboard box.

Correct use

● The tool is designed to use replaceable sanding sheets for sanding the surfaces of materials such as wood, veneer, filler, plastic and plaster.
● The working environment may be on a construction site or in a workshop and may involve renovation, conversion or new building work.
● The working environment should be dry.
● The tool may be operated only when connected to a mains supply providing a voltage and frequency in compliance with the information given on the type plate.
● When using the tool, the workpiece must be secured to prevent movement and the operator must work from a secure stance.
● Sanding metals and materials containing asbestos is not permissible.
● The tool is for hand-held use only.
● Never expose the tool to rain or snow and do not operate it in damp or wet environments or where there is a risk of explosion.
● Do not use the tool for wet sanding.
● The tool must not be changed, modified or manipulated in any way other than as described in the operating instructions.
● To avoid the risk of injury, always use only original Hilti accessories.
● Do not operate the tool without a suitable dust extraction system. The safety and disposal regulations must be observed particularly when sanding materials which present a health hazard (e.g. oak or beech wood, paint containing lead or other harmful substances).

Observe the information given in the operating instructions concerning operation, care and maintenance.

Most important features of the tool

– Class II electrical protection (double insulated) ⧈ (as per EN 60745)
– Vibration absorbing, ergonomic grips
  - main grip
  - guiding grip
  - finishing grip
– Built-in auxiliary grip
– Infinite speed pre-selection
– Sanding plate for universal use, other plates available as accessories.

Conditions to be fulfilled by the user

● The tool is designed for professional use.
● The tool may be operated, maintained and repaired by authorised, trained personnel only. This personnel must be informed, in particular, of the applicable hazards.

3. Technical data

	WFE 380	WFE 450-E
Nominal power rating	380 W	450 W
Nominal voltage ✱	110 V 220 V 230 V 240 V	110 V 220 V 230 V 240 V
Nominal current input	3.6 A 1.8 A 1.7 A 1.6 A	4.2 A 2.3 A 2.2 A 2.1 A
Mains frequency ✱	50–60 Hz	
Stroke rate under no load	5000–10000 /min	
Speed of oscillation	10000–20000 /min	
Sanding plate	150 mm dia.	
Eccentricity	4 mm	
Extraction adapter, outside diameter	30 mm	
Weight as per EPTA-Procedure 01/2003	2.2 kg	

NOTE

The vibration emission level given in this information sheet has been measured in accordance with a standardised test given in EN 60745 and may be used to compare one tool with another. It may be used for a preliminary assessment of exposure. The declared vibration emission level represents the main applications of the tool. However if the tool is used for different applications, with different accessories or poorly maintained, the vibration emission may differ. This may significantly increase the exposure level over the total working period. An estimation of the level of exposure to vibration should also take into account the times when the tool is switched off or when it is running but not actually doing the job. This may significantly reduce the exposure level over the total working period. Identify additional safety measures to protect the operator from the effects of vibration such as: maintain the tool and the accessories, keep the hands warm, organisation of work patterns.

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Noise and vibration information (according to EN 60745)

Typical A-weighted sound power level	93 dB (A)
Typical A-weighted emission sound pressure level	82 dB (A)

For the given sound power level as per EN 60745, the tolerance is 3 dB.

Wear ear protection!

Triaxial vibration value (vibration vector sum)	**WFE 380**	**WFE 450-E**
Surface grinding (a_h)	4.1 m/s²	3.9 m/s²
Uncertainty (K) for triaxial vibration value	1.5 m/s²	1.5 m/s²

✱ The tool is offered in different versions for various mains voltages. Please refer to the information on the type plate for the nominal voltage and nominal current input.

4. Safety instructions

NOTE

The safety rules in section 4.1 contain all general safety rules for power tools which, in accordance with the applicable standards, require to be listed in the operating instructions. Accordingly, some of the rules listed may not be relevant to this tool.

4.1 General Power Tool Safety Warnings

a) **WARNING! Read all safety warnings and all instructions.** Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury. **Save all warnings and instructions for future reference.** The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

4.1.1 Work area safety

a) **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
b) **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
c) **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

4.1.2 Electrical safety

a) **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.
b) **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
c) **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
d) **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.
f) **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.** Use of an RCD reduces the risk of electric shock.

4.1.3 Personal safety

a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
b) **Use personal protective equipment. Always wear eye protection.** Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
c) **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.
d) **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
e) **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
f) **Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.
g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.

4.1.4 Power tool use and care

a) **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
b) **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

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c) **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
d) **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
e) **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.
f) **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
g) **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.

4.1.5 Service

a) **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

4.2 Additional safety precautions

4.2.1 Personal safety

a) **Wear ear protectors.** Exposure to noise can cause hearing loss.
b) **Use auxiliary handle(s), if supplied with the tool.** Loss of control can cause personal injury.
c) **Hold power tool by insulated gripping surfaces, when performing an operation where the sanding plate may contact hidden wiring or its own cord.** Sanding plate contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.
d) **Always hold the tool securely with both hands on the grips provided. Keep the grips clean, dry and free from oil and grease.**
e) **To avoid tripping and falling when working, always lead the sypply cord, extension cord and dust extraction hose away tho the rear.**
f) **Wear protective gloves when changing insert tools. The insert tool may become hot during use.**
g) **Operate the tool only as directed and only when it is in faultless condition.**
h) **Use a dust extraction system and wear respiratory protection and protective goggles.** *Sanding may produce hazardous sanding dust. Sanding dust may be harmful to the lungs and eyes.*
i) **The operator must ensure that hazardous sanding dust is disposed of in accordance with national and regional regulations.** *Hazardous sanding dust is created when sanding materials such as oak or beech wood, paint coatings containing lead or other harmful substances.*
j) **Exercise your fingers during pauses between work to improve the blood circulation in your fingers.**
k) *Dust from material such as paint containing lead, some wood species, minerals and metal may be harmful. Contact with or inhalation of the dust may cause allergic reactions and/or respiratory diseases to the operator or bystanders. Certain kinds of dust are classified as carcinogenic such as oak and beech dust especially in conjunction with additives for wood conditioning (chromate, wood preservative). Material containing asbestos must only be treated by specialists.* **Where the use of a dust extraction device is possible it shall be used. To achieve a high level of dust collection, use a suitable vacuum cleaner of the type recommended by Hilti for wood dust and/or mineral dust together with this tool. Ensure that the workplace is well ventilated. The use of a dust mask of filter class P2 is recommended. Follow national requirements for the materials you want to work with.**
l) **The tool is not intended for use by children, by debilitated persons or those who have received no instruction or training.**
m) **Children must be instructed not to play with the tool.**

4.2.2 Power tool use and care

a) **Secure the workpiece. Use clamps or a vice to hold the workpiece in place.** *The workpiece is thus held more securely than by hand and both hands remain free to operate the tool.*
b) **In the event of a power faillure, switch the tool off and unplug the supply cord.** *This prevents inadvertent starting when the power returns.*

4.2.3 Electrical safety

a) **Check the condition of the supply cord and its plug connections and have it replaced by a qualified electrician if damage is found. Check the condition of the extension cord and replace it if damage is found.**
Do not touch the supply in the event of it suffering damage while working. Disconnect the supply cord plug from the socket. *Damaged supply cords and extension cords present a risk of electric shock.*
b) **Dirty or dusty electric tools should thus be checked at a Hilti service center at regular intervals, especially if used frequently for working on conductive materials.** *Dust (especially dust from conductive materials) or dampness adhering to the surface of the tool may, under unfavorable conditions, present a risk of electric shock.*

4.2.4 Work area

a) **Ensure that the workplace is well lit.**
b) **Ensure that the workplace is well ventilated.** *Poorly ventilated workplaces may be injurious to the health due to exposeure to dust.*

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4.2.5 Personal protective equipment
The user and any other persons in the vicinity must wear suitable eye protection, ear protection and protective gloves when the tool is in use. Breathing protection must be worn if no dust removal system is used.


Wear eye protection


Wear ear protection


Wear protective gloves


Wear breathing protection

5. Before use

It is essential that the safety precautions printed in these operating instructions are read and observed.

The mains supply voltage must comply with the information given on the type plate.

If extension cords are used: Only extension cords of a type approved for the intended application may be used. Check the extension cord and the supply cord for damage at regular intervals.

Extension cords for outdoor use
For outdoor work use only extension cords approved and correspondingly marked as suitable for outdoor use.

Pay attention at all times
Always concentrate on the job. Proceed carefully and do not use the tool if you are distracted from your work.

6. Operation

System
The sanding finish and speed of material removal is determined by the choice of sanding sheet (grit), the speed setting and the pressure applied to the sander. The electric tool, the sanding plate and the sanding sheet form a system. Take care to ensure that the most suitable combination and tool settings are used for the application.

Fitting sanding sheets
Use sanding sheets with an outside diameter of 150 mm and Velcro-type attachment.
Sanding sheets with 6 dust extraction holes (80 mm pitch circle diameter) or 9 holes (8 holes on 120 mm pitch circle and 1 hole in the centre of the sheet) may be used.
● Prevent unintentional starting by disconnecting the supply cord plug from the mains socket.
● Take care to ensure that the dust extraction holes in the sanding sheet are in alignment with the holes in the sanding plate.

Holding the sander - recommended grip positions

For fast removal 7
● Guide the tool with both hands.
● Use the main grip and the built-in auxiliary grip. Pull the auxiliary grip out into the working position (the guiding grip may be used instead of the auxiliary grip).

For finishing work 8
● Guide the tool with one hand.
● Use the finishing grip. This makes it possible to guide the tool precisely and easily with 1 hand close to the surface being sanded and ensures a sensitive touch, for example, for intermediate sanding between coats of paint or fine finishing sanding.

For working on vertical surfaces 9
(e.g. walls, edges, etc.)
● Guide the tool by the finishing grip. The centre of balance of the tool then lies in the hand when working on vertical surfaces. This makes it possible to work safely and without undue fatigue.


CAUTION
Sanding may produce hazardous sanding dust.
Sanding dust may be harmful to the lungs and eyes.
Use a dust extraction system and wear respiratory protection and protective goggles.

Sanding
● Ensure that the tool is switched off.
● Connect the supply cord plug to the mains socket.
● Select the desired speed.
● Place the tool on the workpiece, ensuring that the entire sanding surface is in contact.
● Switch on the tool and move it over the workpiece while applying moderate pressure (approx. 20 N).
● When you are finished working or during pauses between work, we recommend that the tool is lifted away from the workpiece while running and then switched off.

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7. Working with the tool

Setting the sanding speed
The recommended sanding speed (oscillation rate) can be pre-selected by turning the speed pre-selection thumbwheel to the desired setting (infinite adjustment possible). The sanding speed may also be adjusted while the tool is running.
Sanding speed depends on the material to be sanded. The ideal speed can be found by carrying out practical tests (please refer to the product information provided with the sanding sheets and to the table of applications).

Setting	1	6
Speed	low	high

After switching on, the tool then runs at the pre-selected speed.

Sanding sheets
Hilti offers the appropriate sanding sheets for the applications listed under “correct use”. Hilti offers the “Wood Line” in P60 to P180 grit for all wood applications and the “Paint Line” in P40 to P400 grit for paint applications.

Sanding plate
The sanding plate is a wearing part which is not covered by the general warranty conditions.
The tool is fitted in the factory with a universal sanding plate. This sanding plate achieves a very good rate of removal and a good finish. It is equipped with dust extraction holes which combine the most important standards. Select the most suitable sanding plate, depending on the application.

Universal sanding plate	Initial sanding – Wood, wood materials – Filler – Old paint and lacquer – Composite materials – Plastics Preliminary and intermediate sanding – Paint and lacquer
Soft sanding plate	Intermediate and finishing sanding of paint and lacquer. Sanding curved surfaces

Sanding plate brake
The tool is equipped with a sanding plate brake. The brake ring is a wearing part which is not covered by the general warranty conditions.
The sanding plate brake reduces the speed of the sanding plate when idling so that the sander can be brought into contact with the workpiece without risk of kick-back.

Dust extraction

CAUTION

Sanding may produce hazardous sanding dust.
Sanding dust may be harmful to the lungs and eyes.
Use a dust extraction system and wear respiratory protection and protective goggles.

Dust extraction with dust box and dust bag 5
The dust box is a wearing part which is not covered by the general warranty conditions.
Use the dust box with the dust bag supplied with the tool.
Remove dust deposits thoroughly (e.g. use a vacuum cleaner).

Dust extraction using a vacuum cleaner 6
In rare cases under unfavourable circumstances and in conjunction with low air humidity, an electrostatic discharge may occur when a vacuum cleaner is used for dust extraction purposes.
This physical phenomena is not due to any technical fault in the tool. The possibility of an occurrence of this kind can be excluded by using the recommended Hilti W-VC 40 vacuum cleaner. Hilti electric tools and appliances comply with the presently applicable regulations. Should you however, despite observing the Hilti system recommendations, still experience this phenomena, please contact your nearest Hilti service centre, providing a description of the conditions under which the tool and appliance were used.
Remove dust deposits thoroughly (e.g. using a vacuum cleaner).

8. Care and maintenance

CAUTION
Keep the power tool, especially its grip surfaces, clean and free from oil and grease. Do not use cleaning agents which contain silicone.

The outer casing of the tool is made from impactresistant plastic. Sections of the grip are made from a synthetic rubber material. Never operate the tool when the ventilation slots are blocked. Clean the ventilation slots carefully using a dry brush. Do not permit foreign objects to enter the interior of the tool. Clean the outside of the tool at regular intervals with a slightly damp cloth. Do not use a spray, steam pressure cleaning equipment or running water for cleaning. This may negatively affect the electrical safety of the tool.

Sanding plate
Check the sanding plate for wear and dirt. A worn or dirty sanding plate may result in poor attachment of the sanding sheet to the sanding plate. Clean the sanding plate or replace it if necessary (damaged sanding plates must be replaced immediately).

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Replacing the sanding plate 4
● Disconnect the supply cord plug from the mains socket.
● Stand the tool on the grip surfaces so that the grit side of the sanding sheet is visible.
● Remove the sanding sheet.
● Use a suitable tool to release the fastening screws.
● Remove the old sanding plate.
● Clean and check the sanding plate brake. Replace it if necessary and then fit the new sanding plate.
● Hold the sanding plate securely and tighten the 3 fastening screws.
● Check that the sanding plate is fitted correctly (not canted, in contact with the brake ring).
● Use the positioning aid when fitting sanding sheets. This ensures that the dust extraction holes in the sanding sheet are in alignment with the holes in the sanding plate.

Sanding plate brake
If the speed of rotation when idling increases steadily after a period of use, this is an indication that the brake ring of the sanding plate brake has become worn and should be replaced.

Replacing the brake ring 4
● Disconnect the supply cord plug from the mains socket.
● Remove the sanding plate as described at “Replacing the sanding plate”.
● Pull off the old brake ring from the tool housing.
● Take care to ensure that the asymmetrically positioned recesses in the brake ring are in alignment with the four screws in the tool.
● Press the brake ring into the corresponding recesses, ensuring that the snap-in lugs engage securely.
● The sealing lip should then lie flat, indicating that the brake ring has been fitted correctly.
● Fit the sanding plate as described at “Replacing the sanding plate”.

Maintenance
Regularly check all external parts of the tool for damage and ensure that all controls operate faultlessly. Do not operate the tool if parts are damaged or when the controls do not function faultlessly. Have the tool repaired at a Hilti service centre if necessary.
Repairs to the electrical section may be carried out only by a trained electrical specialist.

9. Troubleshooting

Fault	Possible cause	Solution
The tool does not start	Fault in the electric power supply	Plug in another electric tool and check whether it starts.
	Defective supply cord or plug	Have it checked by an electrical specialist and replaced if necessary.
	Fault in the electronics module (e.g. on / off switch defective)	Have it checked by an electrical specialist and replaced if necessary.
The tool does not produce full power	Cross-section of the extension cord is inadequate	Use an extension cord with adequate cross-section.
	Speed pre-selection thumbwheel set too low (1 or 2)	Adjust speed pre-selection to setting 5 or 6.
Poor extraction performance	Sanding sheet not fitted correctly, extraction holes not in alignment	Remove the sanding sheet and refit it correctly.
	Dust bag is full	Dispose of the old dust bag and fit a new bag.
	Extraction connections blocked	Remove the dust box and clean the extraction channel.
Sanding sheet does not remain attached to the sanding plate	Sanding plate is dirty	Clean the sanding plate.
	Velcro-type attachment surface of the sanding plate is worn.	Replace the sanding plate.
Electrostatic discharge	Vacuum cleaner without anti-static equipment used	Use the Hilti WVC 40-M safety vacuum cleaner.
	Break in earth / ground conductor	Check the earth / ground conductor.

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10. Disposal

Most of the materials from which Hilti electric tools are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, Hilti has already made arrangements for taking back your old electric tools for recycling. Please ask your Hilti customer service department or Hilti representative for further information.

Only for EU countries

Disposal of electric tools together with household waste is not permissible!

In observance of European Directive on waste electrical and electronic equipment and its implementation in accordance with national law, electric tools that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

11. Manufacturer's warranty – tools

Please contact your local Hilti representative if you have questions about the warranty conditions.

12. Declaration of conformity (original)

Description:	Random orbit sander
Designation:	WFE 380 / WFE 450-E
Year of design:	2000

We declare, under our sole responsibility, that this product complies with the following directives and standards: until 19th April 2016: 2004/108/EC, from 20th April 2016: 2014/30/EU, 2006/42/EC, 2011/65/EU, EN 60745-1,EN 60745-2-4, EN ISO 12100.

Hilti Corporation, Feldkircherstrasse 100, FL-9494 Schaan

Paolo Luccini
Head of BA
Quality and Process Management
Business Area
Electric Tools & Accessories
05/2015

Tassilo Deinzer
Executive Vice President
Business Unit
Power Tools & Acessories
05/2015

Technical documentation filed at:
Hilti Entwicklungsgesellschaft mbH
Zulassung Elektrowerkzeuge
Hiltistrasse 6
86916 Kaufering
Deutschland

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Hilti Corporation
LI-9494 Schaan
Tel.: +423 / 234 21 11
Fax: +423 / 234 29 65
www.hilti.com

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