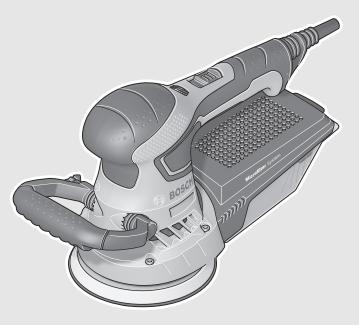
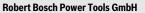




WEU





70538 Stuttgart GERMANY

www.bosch-pt.com

1609 92A 1PF (2014.11) 0 / 86 **WEU**



PEX

400 AE | 4000 AE



BOSCH

- de Originalbetriebsanleitung
- en Original instructions
- fr Notice originale
- es Manual original
- **pt** Manual original
- it Istruzioni originali
- nl Oorspronkelijke gebruiksaanwijzing
- da Original brugsanvisning

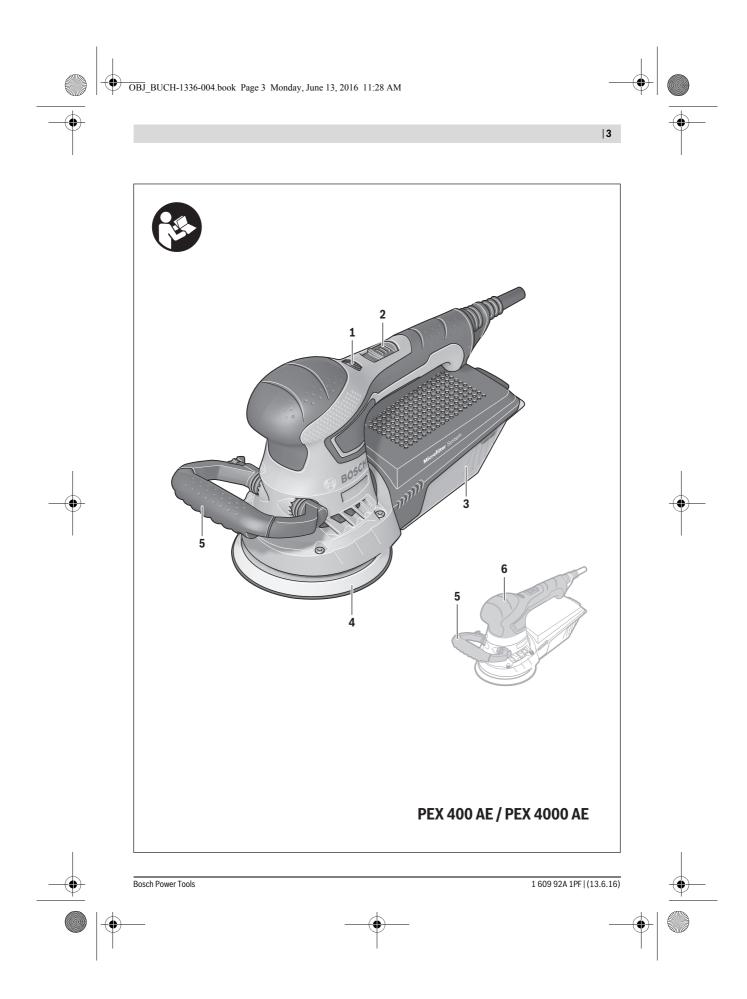
- **sv** Bruksanvisning i original
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- fi Alkuperäiset ohjeet
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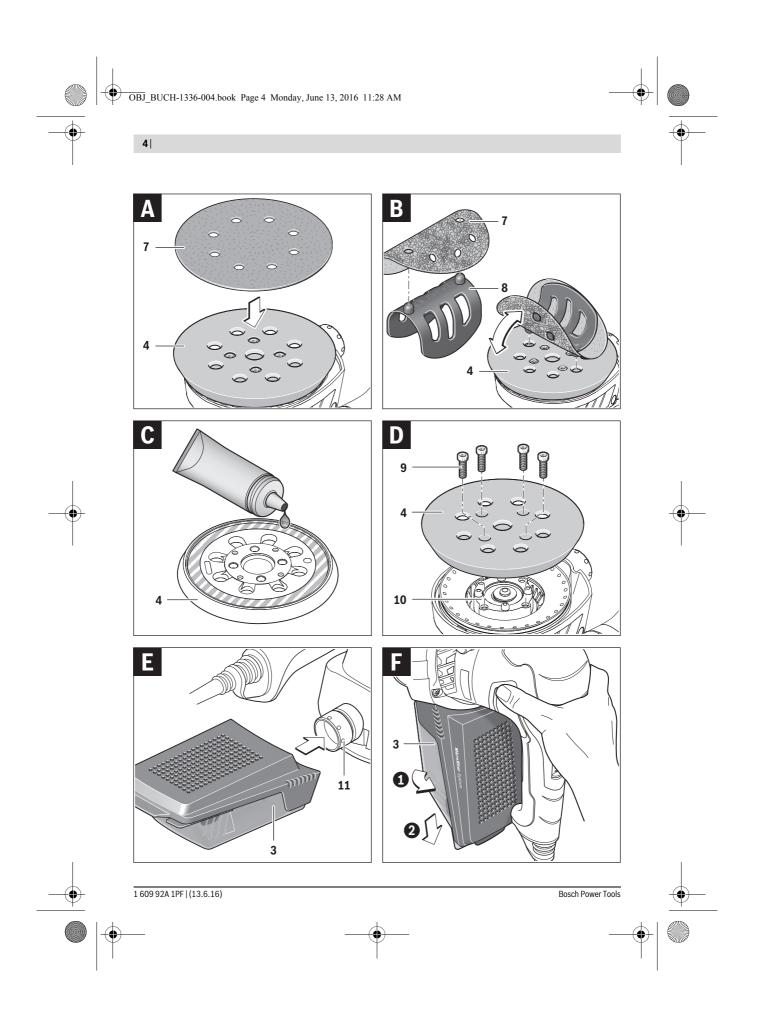


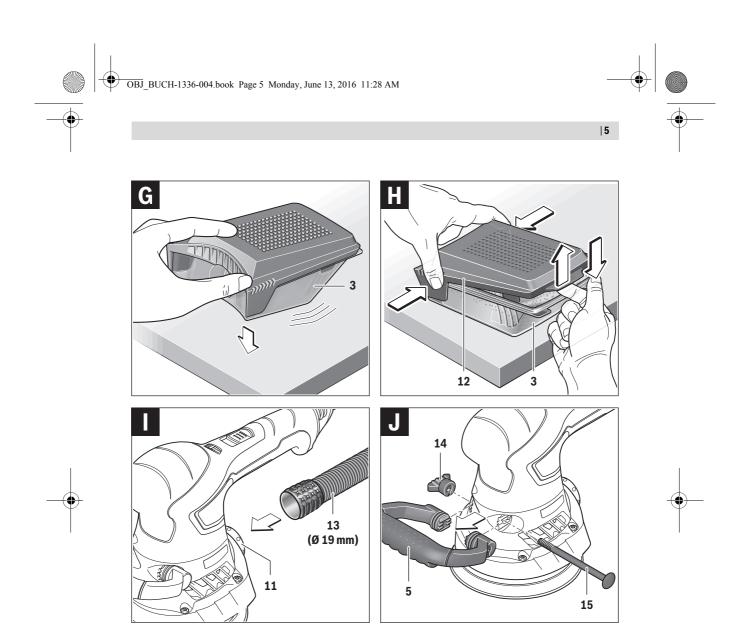


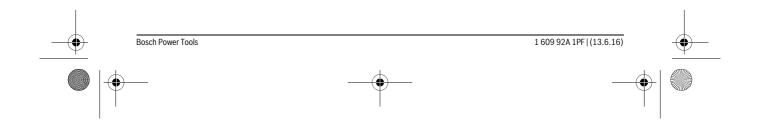






















Wartung und Reinigung

- ► Ziehen Sie vor allen Arbeiten am Elektrowerkzeug den Netzstecker aus der Steckdose.
- ► Halten Sie das Elektrowerkzeug und die Lüftungsschlitze sauber, um gut und sicher zu arbeiten.

Wenn ein Ersatz der Anschlussleitung erforderlich ist, dann ist dies von Bosch oder einer autorisierten Kundendienststelle für Bosch-Elektrowerkzeuge auszuführen, um Sicherheitsgefährdungen zu vermeiden.

Kundendienst und Anwendungsberatung

Der Kundendienst beantwortet Ihre Fragen zu Reparatur und Wartung Ihres Produkts sowie zu Ersatzteilen. Explosionszeichnungen und Informationen zu Ersatzteilen finden Sie auch unter:

www.bosch-pt.com

Das Bosch-Anwendungsberatungs-Team hilft Ihnen gerne bei Fragen zu unseren Produkten und deren Zubehör.

www.bosch-do-it.de, das Internetportal für Heimwerker und Gartenfreunde.

www.1-2-do.com

In der Heimwerker-Community 1-2-do.com können Sie Produkttester werden, Ideen sammeln oder sich mit anderen Heimwerkern austauschen.

www.dha.de, das komplette Service-Angebot der Deutschen Heimwerker Akademie.

Geben Sie bei allen Rückfragen und Ersatzteilbestellungen bitte unbedingt die 10-stellige Sachnummer laut Typenschild des Elektrowerkzeuges an.

Deutschland

Robert Bosch Power Tools GmbH Servicezentrum Elektrowerkzeuge Zur Luhne 2

37589 Kalefeld - Willershausen

Unter www.bosch-pt.de können Sie online Ersatzteile bestellen oder Reparaturen anmelden.

Kundendienst: Tel.: (0711) 40040480

Fax: (0711) 40040481

E-Mail: Service zentrum. Elektrowerk zeuge @de.bosch.comAnwendungsberatung: Tel.: (0711) 40040480

Fax: (0711) 40040482

E-Mail: Anwendungsberatung.pt@de.bosch.com

Unter www.bosch-pt.at können Sie online Ersatzteile bestellen.

Tel.: (01) 797222010 Fax: (01) 797222011

E-Mail: service.elektrowerkzeuge@at.bosch.com

Unter www.bosch-pt.com/ch/de können Sie online Ersatzteile bestellen.

Tel.: (044) 8471511 Fax: (044) 8471551

E-Mail: Aftersales.Service@de.bosch.com

Luxemburg

Tel.: +32 2 588 0589 Fax: +32 2 588 0595

E-Mail: outillage.gereedschap@be.bosch.com

Entsorgung

Elektrowerkzeuge, Zubehör und Verpackungen sollen einer umweltgerechten Wiederverwertung zugeführt werden. Werfen Sie Elektrowerkzeuge nicht in den Hausmüll!

Nur für EU-Länder:



Gemäß der Europäischen Richtlinie 2012/19/EU über Elektro- und Elektronik-Altgeräte und ihrer Umsetzung in nationales Recht müssen nicht mehr gebrauchsfähige Elektrowerkzeuge getrennt gesammelt und einer umweltgerechten Wiederverwertung zugeführt werden.

Änderungen vorbehalten.

English

Safety Notes

General Power Tool Safety Warnings

AWARNING 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 mainsoperated (corded) power tool or battery-operated (cordless)

Work area safety

- ► Keep work area clean and well lit. Cluttered or dark areas invite accidents
- ▶ 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
- ► Keep children and bystanders away while operating a **power tool.** Distractions can cause you to lose control.

Electrical safety

- ▶ 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.
- ► 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.

































- ▶ Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric
- ▶ 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 and moving parts. Damaged or entangled cords increase the risk of electric shock.
- ▶ 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.
- ▶ 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.

- ▶ 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.
- ► 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 inju-
- ▶ 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.
- ► 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.
- ▶ Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
- ▶ 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.
- ▶ 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.

Power tool use and care

- ▶ 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.
- ▶ 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.
- ▶ 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.

- ▶ 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.
- ▶ 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
- ▶ Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- ▶ 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.

► 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.

Safety Warnings for Sander

- ▶ Use the machine only for dry sanding. Penetration of water into the machine increases the risk of an electric shock.
- ▶ Pay attention that no persons are put at risk through sparking. Remove any combustible materials in the vicinity. Sparking occurs when sanding metal materials
- ► Caution, fire hazard! Avoid overheating the object being sanded as well as the sander. Always empty the dust collector before taking breaks. In unfavourable conditions, e.g., when sparks emit from sanding metals, sanding debris in the dust bag, micro filter or paper sack (or in the filter sack or filter of the vacuum cleaner) can self-ignite. Particularly when mixed with remainders of varnish, polyurethane or other chemical materials and when the sanding debris is hot after long periods of working.
- ▶ When working with the machine, always hold it firmly with both hands and provide for a secure stance. The power tool is guided more secure with both hands.
- ▶ Secure the workpiece. A workpiece clamped with clamping devices or in a vice is held more secure than by hand.
- ▶ Products sold in GB only: Your product is fitted with a BS 1363/A approved electric plug with internal fuse (ASTA approved to BS 1362).

If the plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place by an authorised customer service agent. The replacement plug should have the same fuse rating as the original plug. The severed plug must be disposed of to avoid a possible shock hazard and should never be inserted into a mains socket elsewhere.

Products sold in AUS and NZ only: Use a residual current device (RCD) with a rated residual current of 30 mA or

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Product Description and Specifications



Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Intended Use

The machine is intended for dry sanding of wood, plastic, metal, filler as well as coated surfaces.

Machines with electronic control are also suitable for polishing

Product Features

The numbering of the product features refers to the illustration of the machine on the graphics page.

- 1 Thumbwheel for orbit frequency preselection
- 2 On/Off switch
- 3 Dust box, complete (Microfilter System)
- 4 Sanding plate
- **5** Auxiliary handle (insulated gripping surface)
- 6 Handle (insulated gripping surface)
- 7 Sanding sheet*
- 8 Alignment aid for sanding sheet*
- 9 Screws for sanding plate
- 10 Sanding-plate base
- 11 Extraction outlet
- 12 Filter element (Microfilter System)
- 13 Vacuum hose*
- 14 Wing nut
- 15 Screw for auxiliary handle

Technical Data

Random Orbital Sander		PEX 400 AE PEX 4000 AE			
Article number		3 603 CA4			
Preselection of orbital stroke rate		•			
Rated power input	W	350			
No-load speed n ₀	min ⁻¹	2000-10600			
No-load orbital stroke rate	min ⁻¹	4000-21200			
Orbit diameter	mm	5			
Sanding plate diameter	mm	125			
Weight according to EPTA- Procedure 01:2014	kg	1.9			
Protection class		□/II			
The values given are valid for a naminal valtage [11] of 220 V. For differ					

The values given are valid for a nominal voltage [U] of 230 V. For different voltages and models for specific countries, these values can vary.

Noise/Vibration Information

Sound emission values determined according to EN 60745-2-4.

Typically the A-weighted noise levels of the product are: Sound pressure level 80 dB(A); Sound power level 91 dB(A). Uncertainty K = 3 dB.

Wear hearing protection!

Vibration total values a_h (triax vector sum) and uncertainty K determined according to EN 60745:

 $a_h = 8.0 \text{ m/s}^2$, $K = 1.5 \text{ m/s}^2$.

The vibration 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 insertion tools or is 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 pat-

Declaration of Conformity

We declare under our sole responsibility that the product described under "Technical Data" is in conformity with all relevant provisions of the directives 2011/65/EU, 2014/30/EU, 2006/42/EC including their amendments and complies with the following standards: EN 60745-1, EN 60745-2-4, EN 50581.

Technical file (2006/42/EC) at: Robert Bosch Power Tools GmbH, PT/ETM9, 70538 Stuttgart, GERMANY

Henk Becker **Executive Vice President**

Stuttgart, 01.01.2017

Helmut Heinzelmann **Head of Product Certification**

flut Bea i.V. Kille Robert Bosch Power Tools GmbH 70538 Stuttgart, GERMANY



















^{*}Accessories shown or described are not part of the standard delivery scope of the product. A complete overview of accessories can be found in our accessories program.









Assembly

▶ Before any work on the machine itself, pull the mains plug.

Selecting the Sanding Sheet

Select a sanding sheet with the appropriate grain as required for the desired surface removal rate. Bosch sanding sheets are suitable for paint, wood and metal.

	Operational area	Application	Grain size	
ng)	- Coarse sanding down with high	 Sanding old paint, varnish and filler 	extra coarse	40
Removal (coarse sanding)	material removal Removal of old paint	Removal of thin coats Pre-sanding rough, unplaned surfaces	coarse	60
ation ediate ng)	Light sanding downLight sanding of surfaces for	Face sanding and planing of irregularitiesRemoving score marks from coarse-sanding	medium	80
reparation sanding down - Light sanding down - Light sanding of surfaces for continued processing - Light sanding down - Light sanding	 Evening out/touching up before applying paint/varnish 	fine	120	
Sanding	Intermediate varnish sandingLight sanding of coating de-	Removal of fibres from surfacesFine sanding before staining or glazing	very fine	180
Fine Sa	fects	- Light sanding of primer prior to coating	extra fine	240

Replacing the Sanding Sheet (see figures A - B)

To remove the sanding sheet 7, lift it from the side and pull it off of the sanding plate 4.

When attaching a new sanding sheet, remove any dust or debris from the sanding plate 4, e.g., with a brush.

The surface of the sanding plate 4 is fitted with Velcro backing for quick and easy fastening of sanding sheets with Velcro ad-

Press the sanding sheet 7 firmly against the bottom side of the sanding plate 4.

To ensure optimum dust extraction, pay attention that the punched holes in the sanding sheet match with the holes in

The alignment aid 8 can be used for alignment of the sanding sheet **7** on the sanding plate **4**. Place the sanding sheet with the Velcro facing upward on the alignment aid. Press the cams of the alignment aid into two holes of the sanding plate and roll off the sanding sheet from the alignment aid. Press the sanding sheet firmly against the sanding plate.

Selection of the Sanding Plate

Depending on the application, the machine can be equipped with sanding plates of different hardness:

- Sanding plate, medium (black): Suitable for all sanding work; universally usable.
- Sanding plate, soft (grey, accessory): Suitable for intermediate and fine sanding, incl. on convex surfaces.

Replacing the Sanding Plate (see figures C-D)

Note: Replace a damaged sanding plate 4 immediately.

Pull off the sanding sheet or the polishing accessory. Unscrew the four screws 9 completely and remove the sanding plate 4. Clean the upper side of the new sanding plate 4. Apply a thin coat of synthetic grease to the outer ring hatched grey in the

Attach the new sanding plate **4** and tighten the four screws

Note: A damaged sanding-plate base 10 may be changed only by an authorised after-sales service agent for Bosch power

Dust/Chip Extraction

▶ Dusts from materials such as lead-containing coatings, some wood types, minerals and metal can be harmful to one's health. Touching or breathing-in the dusts can cause allergic reactions and/or lead to respiratory infections of the user or bystanders.

Certain dusts, such as oak or beech dust, are considered as carcinogenic, especially in connection with wood-treatment additives (chromate, wood preservative). Materials containing asbestos may only be worked by specialists.

- As far as possible, use a dust extraction system suitable for the material.
- Provide for good ventilation of the working place.
- It is recommended to wear a P2 filter-class respirator.

Observe the relevant regulations in your country for the materials to be worked.

▶ Prevent dust accumulation at the workplace. Dusts can easily ignite.





















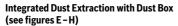












Attach the dust box 3 onto the extraction outlet 11 until it latches.

The filling level of the dust box 3 can easily be checked through the transparent container.

To empty the dust box 3, pull it off toward the bottom with a twisting motion.

Before opening the dust box 3, it is recommended to loosen the dust from the filter element by gently striking it against a firm support (as shown in the figure).

Hold the dust box 3 firmly, fold the filter element 12 upward and empty the dust box. Clean the thin plates of the filter element 12 with a soft brush.

Note: To ensure optimum dust extraction, empty the dust box 3 in good time and clean the filter element 12 at regular inter-

When working vertical surfaces, hold the power tool in such a manner that the dust box 3 faces downward.

External Dust Extraction (see figure I)

Mount a vacuum hose 13 onto the extraction outlet 11. Connect the vacuum hose 13 with a vacuum cleaner. An overview for the connection of various vacuum cleaners can be found at the end of these instructions.

The vacuum cleaner must be suitable for the material being worked.

When vacuuming dry dust that is especially detrimental to health or carcinogenic, use a special vacuum cleaner.

When working vertical surfaces, hold the power tool in such a manner that the vacuum hose faces downward.

Auxiliary Handle (see figure J)

The auxiliary handle 5 enables convenient handling and optimal distribution of power, especially at high removal rates.

For sanding close to edges, the auxiliary handle can be removed. Unscrew wing nut 14 and pull screw 15 out of the housing. Now, pull off the auxiliary handle 5 toward the front.

To remount the auxiliary handle 5, slide it from the front onto the housing in such a manner that the studs of the handle engage into the recesses of the housing. Firmly tighten the auxiliary handle with the screw 15 and the wing nut 14.

Operation

Starting Operation

▶ Observe correct mains voltage! The voltage of the power source must agree with the voltage specified on the nameplate of the machine. Power tools marked with 230 V can also be operated with 220 V.

Switching On and Off

To start the machine, push the On/Off switch 2 forward so that the "1" is indicated on the switch.

To switch off the machine, push the On/Off switch 2 toward the rear so that the "0" is indicated on the switch.

To save energy, only switch the power tool on when using it.

Preselecting the Orbital Stroke Rate

With the thumbwheel for preselection of the orbital stroke $rate \, {\bf 1}, you \, can \, preselect \, the \, required \, orbital \, stroke \, rate, \, even \,$ during operation.

- 1-2 Low stroke rate
- 3-4 Medium stroke rate
- 5-6 High stroke rate

The required stroke rate depends on the material and the working conditions and can be determined through practical

After longer periods of working at low stroke rate, allow the machine to cool down by running it for approx. 3 minutes at maximum stroke rate with no load.

Working Advice

- ▶ Before any work on the machine itself, pull the mains
- ▶ Wait until the machine has come to a standstill before placing it down.

Sanding Surfaces

Switch the machine on, place it with the complete sanding surface on the surface to be worked and move the machine with moderate pressure over the workpiece.

The removal capacity and the sanding pattern are mainly determined by the selection of the sanding sheet, the preselected orbital stroke rate and the applied pressure.

Only flawless sanding sheets achieve good sanding capacity and extend the service life of the machine.

Pay attention to apply uniform sanding pressure; this increases the working life of the sanding sheets.

Intensifiying the sanding pressure does not lead to an increase of the sanding capacity, but to increased wear of the machine and the sanding sheet.

A sanding sheet that has been used for metal should not be used for other materials.

Use only original Bosch sanding accessories.

Rough Sanding

Attach a sanding sheet with coarse grain.

Apply only light pressure to the machine so that it runs at a higher stroke rate and high material removal is achieved.

Fine Sanding

Attach a sanding sheet with fine grain.

By lightly varying the application pressure or changing the orbital stroke rate, the sanding plate stroke rate can be reduced whereby the orbital action is maintained.

With moderate pressure, move the machine in a circular pattern or alternately in lengthwise and crosswise directions over the workpiece. Do not tilt the machine to avoid sanding through the workpiece (e.g. when sanding veneer).

After finishing the working procedure, switch the power tool off.

For the polishing of weathered paint or buffing out scratches (e.g., acrylic glass), the machine can be equipped with appro-































priate polishing accessories such as lamb's wool bonnet, polishing felt or sponge (accessories).

Select a low stroke rate (setting 1-2) for polishing in order to avoid excessive heating of the surface.

Apply the polish onto a somewhat smaller surface than you intend to polish. Work the polishing agent in with a suitable polishing tool applying it crosswise or with circular motion and moderate pressure.

Do not allow the polishing agent to dry out on the surface, otherwise the surface can become damaged. Do not subject the surface to be polished to direct sunlight.

Clean the polishing accessories regularly to ensure good polishing results. Wash out polishing accessories with a mild detergent and warm water; do not use paint thinner.

Application Table

The data in the following table are recommended values.

The most favourable combination for working is best determined by practical testing.

Application	Grain Size (course sanding/ fine sanding)	Oscillation Rate
Roughening varnish	180/240	2/3
Touching up varnish	120/240	4/5
Removing varnish	40/60	5
Softwood	40/240	5/6
Hardwood	60/240	5/6
Veneer	180/240	2-4
Aluminium	80/240	4/5
Steel	40/240	5
Derusting steel	40/120	6
Stainless steel	80/240	5
Masonry, stone	80/240	5/6

Maintenance and Service

Maintenance and Cleaning

- ▶ Before any work on the machine itself, pull the mains
- ▶ For safe and proper working, always keep the machine and ventilation slots clean.

If the replacement of the supply cord is necessary, this has to be done by Bosch or an authorized Bosch service agent in order to avoid a safety hazard.

After-sales Service and Application Service

Our after-sales service responds to your questions concerning maintenance and repair of your product as well as spare parts. Exploded views and information on spare parts can also be found under:

www.bosch-pt.com

Bosch's application service team will gladly answer questions concerning our products and their accessories.

In all correspondence and spare parts order, please always include the 10-digit article number given on the type plate of the machine.

Great Britain

Robert Bosch Ltd. (B.S.C.) P.O. Box 98 Broadwater Park North Orbital Road Denham

Uxbridge UB 9 5HJ

At www.bosch-pt.co.uk you can order spare parts or arrange the collection of a product in need of servicing or repair. Tel. Service: (0844) 7360109

E-Mail: boschservicecentre@bosch.com

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