



GBH 220 Professional



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GERMANY

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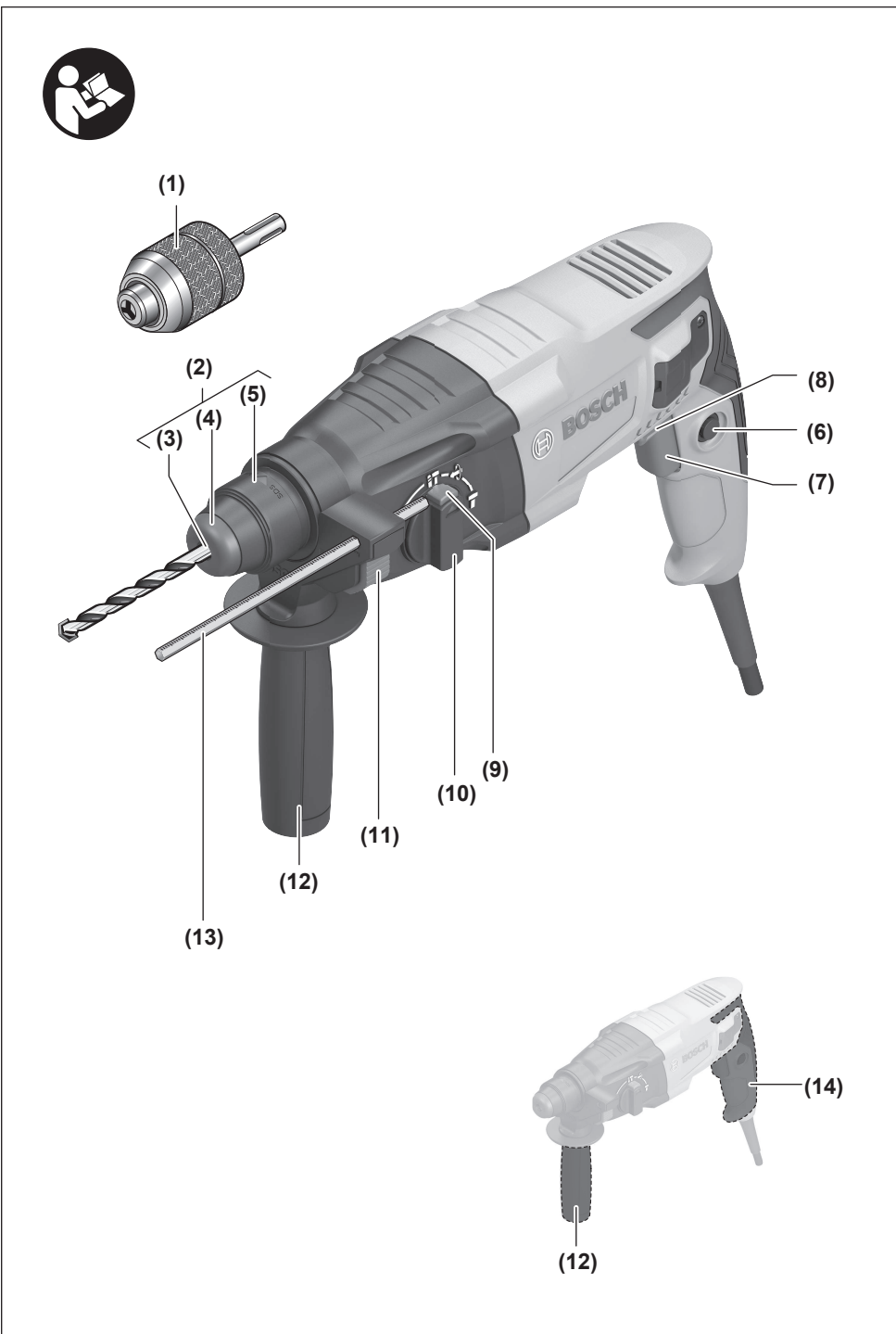
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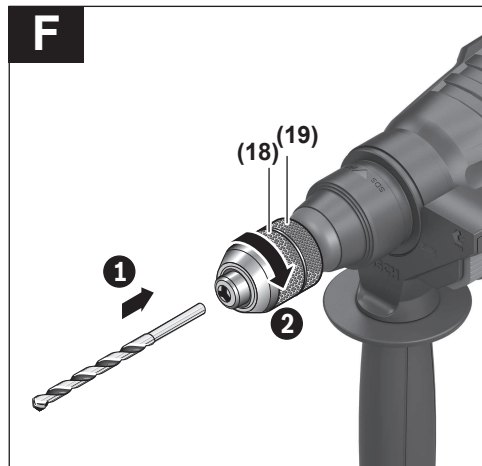
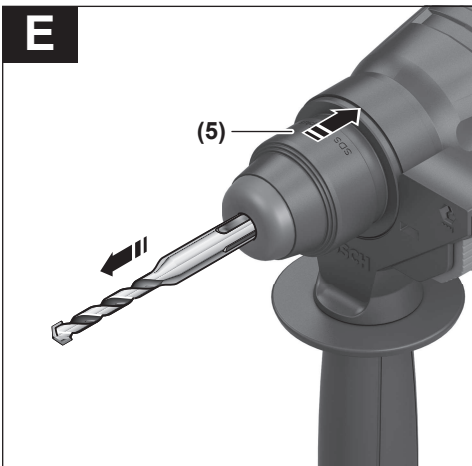
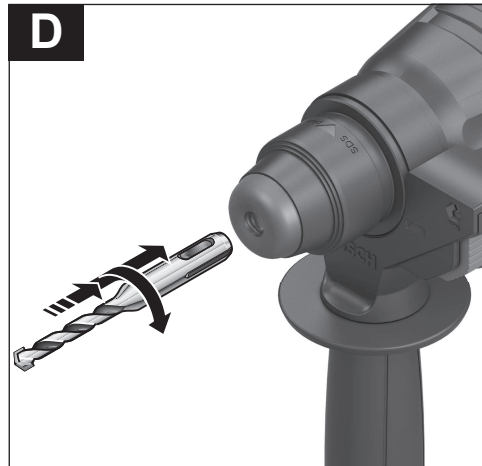
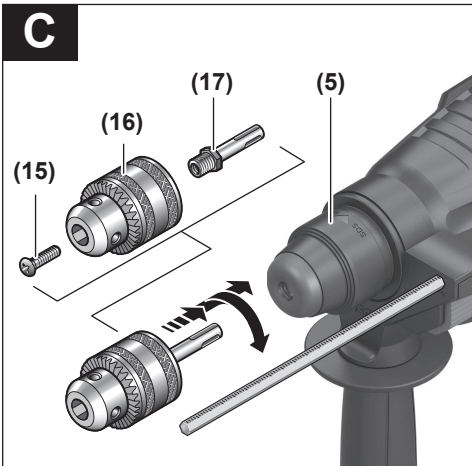
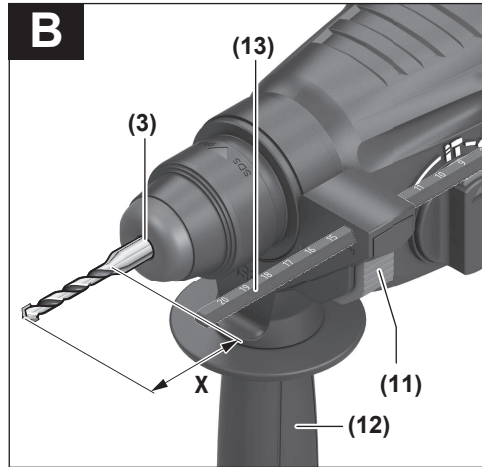
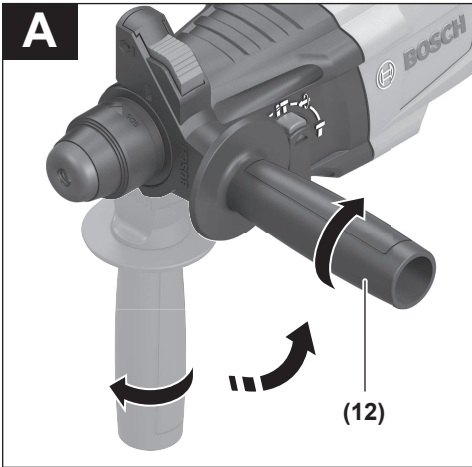


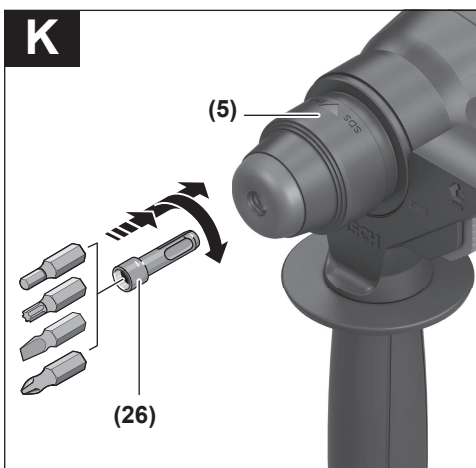
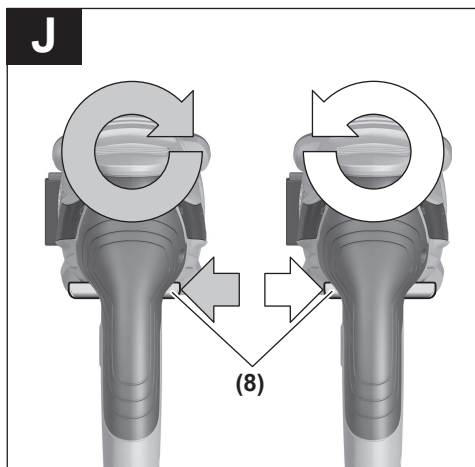
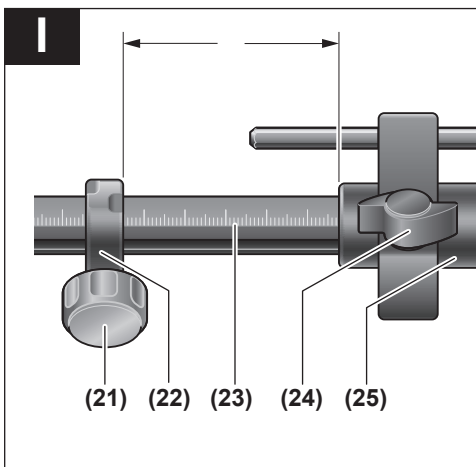
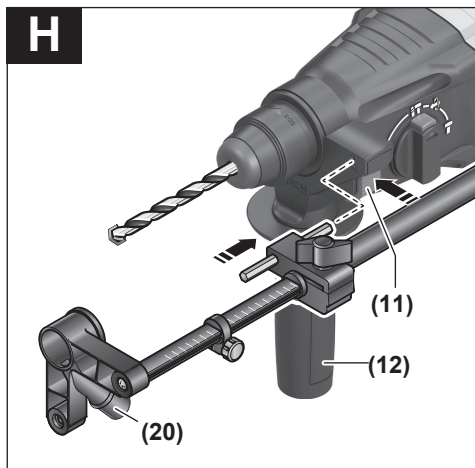
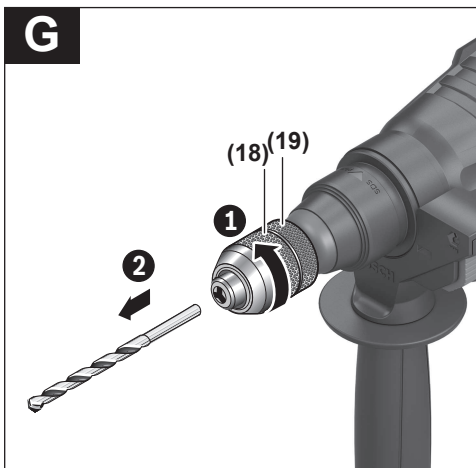
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en Original instructions









English

Safety instructions

General Power Tool Safety Warnings

⚠ 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.

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 or fumes.
- ▶ **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 shock.
- ▶ **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.
- ▶ **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.

Personal safety

- ▶ **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 injuries.
- ▶ **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 tools.
- ▶ **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.**

formed. Use of the power tool for operations different from those intended could result in a hazardous situation.

Service

- ▶ **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.

Hammer and Drill Safety Warnings

Safety instructions for all operations

- ▶ **Wear ear protectors.** Exposure to noise can cause hearing loss.
- ▶ **Use the auxiliary handle(s).** Loss of control can cause personal injury.
- ▶ **Brace the tool properly before use.** This tool produces a high output torque and without properly bracing the tool during operation, loss of control may occur resulting in personal injury.
- ▶ **Hold the power tool by insulated gripping surfaces, when performing an operation where the cutting accessory or fasteners may contact hidden wiring or its own cord.** Cutting accessory or fasteners contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.

Safety instructions when using long drill bits

- ▶ **Never operate at higher speed than the maximum speed rating of the drill bit.** At higher speeds, the bit is likely to bend if allowed to rotate freely without contacting the workpiece, resulting in personal injury.
- ▶ **Always start drilling at low speed and with the bit tip in contact with the workpiece.** At higher speeds, the bit is likely to bend if allowed to rotate freely without contacting the workpiece, resulting in personal injury.
- ▶ **Apply pressure only in direct line with the bit and do not apply excessive pressure.** Bits can bend causing breakage or loss of control, resulting in personal injury.

Additional safety information

- ▶ **Use auxiliary handle(s), if supplied with the tool.** Loss of control can cause personal injury.
- ▶ **Hold the power tool firmly with both hands and make sure you have a stable footing.** The power tool can be more securely guided with both hands.
- ▶ **Switch the power tool off immediately if the application tool becomes blocked. Be prepared for high torque reactions which cause kickback.** The application tool becomes blocked when it becomes jammed in the workpiece or when the power tool becomes overloaded.
- ▶ **Secure the workpiece.** A workpiece clamped with clamping devices or in a vice is held more secure than by hand.
- ▶ **Use suitable detectors to determine if utility lines are hidden in the work area or call the local utility company for assistance.** Contact with electric lines can lead to fire and electric shock. Damaging a gas line can lead to

explosion. Penetrating a water line causes property damage or may cause an electric shock.

- ▶ **Always wait until the power tool has come to a complete stop before placing it down.** The application tool can jam and cause you to lose control of the power tool.

Products sold in GB only:

Your product is fitted with an 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.

Product Description and Specifications



Read all the safety and general instructions.

Failure to observe the safety and general instructions may result in electric shock, fire and/or serious injury.

Please observe the illustrations at the beginning of this operating manual.

Intended Use

The power tool is intended for hammer drilling in concrete, brick and stone, as well as for light chiselling work. It is also suitable for drilling without impact in wood, metal, ceramic and plastic. Power tools with electronic control and right/left rotation are also suitable for screwdriving.

Product Features

The numbering of the product features refers to the diagram of the power tool on the graphics page.

- (1) Keyless chuck^{A)}
- (2) SDS-plus drill chuck
- (3) SDS-plus tool holder
- (4) Dust protection cap
- (5) Locking sleeve
- (6) Lock-on button for on/off switch
- (7) On/off switch
- (8) Rotational direction switch
- (9) Release button for impact/mode selector switch
- (10) Impact/mode selector switch
- (11) Button for depth stop adjustment
- (12) Auxiliary handle (insulated gripping surface)
- (13) Depth stop
- (14) Handle (insulated gripping surface)
- (15) Securing screw for keyed chuck^{A)}
- (16) Keyed chuck^{A)}

- (17) SDS-plus shank for drill chuck^{A)}
- (18) Front sleeve of the keyless chuck
- (19) Rear sleeve of the keyless chuck
- (20) Saugfix suction opening^{A)}
- (21) Saugfix clamping screw^{A)}
- (22) Saugfix depth stop^{A)}
- (23) Saugfix telescopic tube^{A)}
- (24) Saugfix wing bolt^{A)}
- (25) Saugfix guide tube^{A)}
- (26) Universal holder with SDS-plus shank^{A)}

A) Accessories shown or described are not included with the product as standard. You can find the complete selection of accessories in our accessories range.

Technical Data

Rotary hammer		GBH 220
Article number		3 611 BA6 0..
Rated power input	W	720
Impact rate	min ⁻¹	0-4800
Impact energy per stroke according to EPTA-Procedure 05:2016	J	2.0
No-load speed	min ⁻¹	0-2000
Tool holder		SDS-plus
Spindle collar diameter	mm	48.5
Max. drilling diameter		
– Concrete ^{A)}	mm	22
– Steel	mm	13
– Wood	mm	30
Weight according to EPTA-Procedure 01:2014	kg	2.3
Protection class		□ / II

A) optimum performance with drilling diameter 6–12 mm
The specifications apply to a rated voltage [U] of 230 V. These specifications may vary at different voltages and in country-specific models.

Assembly

- Pull the plug out of the socket before carrying out any work on the power tool.

Auxiliary handle

- Do not operate your power tool without the auxiliary handle (12).

Swivelling the auxiliary handle (see figure A)

You can swivel the auxiliary handle (12) to any angle for a safe work posture that minimises fatigue.

- Turn the lower gripping end of the auxiliary handle (12) anticlockwise and swivel the auxiliary handle (12) into the required position. Then turn the lower gripping end of

the auxiliary handle (12) clockwise to retighten it. Make sure that the retaining strap of the auxiliary handle slots into the corresponding groove of the housing.

Setting the drilling depth (see figure B)

You can use the depth stop (13) to set the required drilling depth X.

- Press the button for depth stop adjustment (11) and insert the depth stop into the auxiliary handle (12). The fluting on the depth stop (13) must face downwards.
- Insert the SDS-plus application tool into the SDS-plus tool holder (3) to the stop. Otherwise, the movability of the SDS-plus drilling tool can lead to incorrect adjustment of the drilling depth.
- Pull the depth stop far enough out that the distance between the drill bit tip and the edge of the depth stop corresponds to the required drilling depth X.

Selecting Drill Chucks and Tools

Hammer drilling and chiselling require SDS-plus application tools that are inserted into the SDS-plus drill chuck.

For drilling without impact in wood, metal, ceramic and plastic as well as for screwdriving, tools without SDS-plus are used (e.g. cylindrical shank drill bits). For these tools, a keyless chuck or a keyed chuck are required.

Inserting/removing the keyless chuck/keyed chuck

Fitting the keyless chuck/keyed chuck (see figure C)

- Screw the SDS-plus shank (17) into a keyless chuck (1)/keyed chuck (16). Secure the keyless chuck (1)/keyed chuck (16) using the securing screw (15). **Note that the securing screw has a left-hand thread.**

Inserting the keyless chuck/keyed chuck (see figure C)

- Clean and lightly grease the insertion end of the shank.
- Insert the keyless chuck/keyed chuck with the adapter shank into the tool holder with a turning motion until it automatically locks.
- Check that it is locked by pulling the keyless chuck/keyed chuck.

Removing the keyless chuck/keyed chuck

- Push the locking sleeve (5) back and remove the keyless chuck (1)/keyed chuck (16).

Changing the Tool

The dust protection cap (4) largely prevents the penetration of drilling dust into the tool holder during operation. When inserting the tool, make sure that the dust protection cap (4) does not become damaged.

- Replace a damaged dust protection cap immediately. **It is recommended that you have use an after-sales service for this.**

Changing the tool (SDS plus)

Inserting SDS-plus application tools (see figure D)

The SDS-plus drill chuck enables you to change the application tool easily and conveniently without needing to use additional tools.

- Clean and lightly grease the insertion end of the application tool.
- Insert the application tool into the tool holder while turning it until it locks automatically.
- Check the latching by pulling the tool.

As a requirement of the system, the SDS-plus application tool can move freely. This causes a certain radial run-out at no-load, which has no effect on the accuracy of the drill hole, as the drill bit centres itself upon drilling.

Removing SDS-plus application tools (see figure E)

- Push the locking sleeve (5) back and remove the application tool.

Changing the tool (without SDS plus)

Inserting the application tool (see figure F)

Note: Application tools that do not have SDS plus must not be used for hammer drilling or chiselling. Tools without SDS plus and their drill chucks are damaged by hammer drilling or chiselling.

- Insert the keyless chuck (1).
- Hold the rear sleeve (19) of the keyless chuck (1) firmly and turn the front sleeve (18) anti-clockwise until the tool can be inserted. Insert the tool.
- Hold the rear sleeve of the keyless chuck (1) and firmly tighten the front sleeve by hand in a clockwise direction until it stops clicking. This will automatically lock the drill chuck.
- Check that it is seated securely by pulling the tool.

Note: If the tool holder was unscrewed all the way, a scraping sound may be heard while retightening the tool holder and it may not fully tighten.

In this case, turn the front sleeve in the opposite direction to the arrow by one full turn. This will allow the tool holder to be fully tightened.

- Turn the impact/mode selector switch (10) to the "drilling" position.

Removing the application tool (see figure G)

- Hold the rear sleeve (19) of the keyless chuck firmly in place. Open the tool holder by turning the front sleeve in the direction of the arrow until the tool can be removed.

Dust extraction with the dust extraction attachment (accessory)

Dust/Chip Extraction

The dust from materials such as lead paint, some types of wood, minerals and metal can be harmful to human health. Touching or breathing in this dust can trigger allergic reactions and/or cause respiratory illnesses in the user or in people in the near vicinity.

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

- Use a dust extraction system that is suitable for the material wherever possible.
- Provide good ventilation at the workplace.
- It is advisable to wear a P2 filter class breathing mask.

The regulations on the material being machined that apply in the country of use must be observed.

- **Avoid dust accumulation at the workplace.** Dust can easily ignite.

Fitting the dust extraction attachment (see figure H)

For dust extraction, the dust extraction attachment (accessory) is required. When drilling, the dust extraction attachment retracts so that the attachment head is always close to the surface at the drill hole.

- Press the button for depth stop adjustment (11) and remove the depth stop (13). Press the button (11) again and insert the dust extraction attachment into the auxiliary handle (12) from the front.
- Connect an extraction hose (diameter 19 mm, accessory) to the suction opening (20) of the dust extraction attachment.

The dust extractor must be suitable for the material being worked.

When extracting dust that is dry, especially detrimental to health or carcinogenic, use a special dust extractor.

Setting the drilling depth on the dust extraction attachment (see figure I)

You can also set the required drilling depth X when the dust extraction attachment is fitted.

- Push the SDS-plus application tool into the SDS-plus tool holder (3) as far as it will go. Otherwise, the movability of the SDS-plus drilling tool can lead to incorrect adjustment of the drilling depth.
- Loosen the wing bolt (24) on the dust extraction attachment.
- Without switching it on, press the power tool firmly against the surface you wish to drill. The SDS-plus application tool must be touching the surface.
- Position the guide tube (25) of the dust extraction attachment in its holder such that the head of the dust extraction attachment rests on the surface to be drilled. Do not slide the guide tube (25) further than necessary over the telescopic tube (23), so that as much as possible of the scale remains visible on the telescopic tube (23).
- Retighten the wing bolt (24). Loosen the clamping screw (21) on the depth stop of the dust extraction attachment.
- Slide the depth stop (22) onto the telescopic tube (23) so that the distance X shown in the illustration matches your required drilling depth.
- Tighten the clamping screw (21) in this position.

Operation

- **Products that are only sold in AUS and NZ:** Use a residual current device (RCD) with a nominal residual current of 30 mA or less.

Start-up

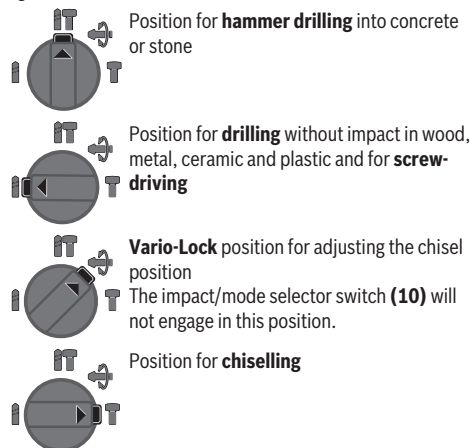
- **Pay attention to the mains voltage. The voltage of the power source must match the voltage specified on the rating plate of the power tool. Power tools marked with 230 V can also be operated with 220 V.**

Setting the Operating Mode

The operating mode of the power tool is selected using the impact/mode selector switch (10).

- To change the operating mode, press the release button (9) and turn the impact/mode selector switch (10) until it clicks into the required position.

Note: Only change the operating mode when the power tool is switched off. Otherwise, the power tool may become damaged.



Setting the Rotational Direction (see figure J)

The rotational direction switch (8) is used to change the rotational direction of the power tool. However, this is not possible while the on/off switch (7) is being pressed.

- **Only operate the rotational direction switch (8) when the power tool is not in use.**

Always set the rotational direction to clockwise rotation for hammer drilling, drilling and chiselling.

- **Clockwise:** To drill and to drive in screws, press the rotational direction switch (8) all the way to the left.
- **Anticlockwise:** To loosen and unscrew screws and nuts, press the rotational direction switch (8) all the way to the right.

Switching On/Off

- To **switch on** the power tool, press the on/off switch (7).
- To **lock** the on/off switch (7), press and hold it while also pushing the lock-on button (6).

- To **switch off** the power tool, release the on/off switch (7). If the on/off switch (7) is locked, press the switch first and then release it.

Adjusting the Speed/Impact Rate

- Adjust the speed/impact rate of the power tool when it is on by pressing in the on/off switch (7) to varying extents.

Applying light pressure to the on/off switch (7) results in a low rotational speed/impact rate. Applying increasing pressure to the switch increases the speed/impact rate.

Overload clutch

- **If the application tool jams or snags, the power transmission to the drill spindle will be interrupted. Always hold the power tool firmly with both hands to withstand the forces this may create and adopt a position with stable footing.**
- **Switch the power tool off immediately and remove the application tool if the power tool becomes blocked. Switching on when the drilling tool is blocked may cause high torque reactions.**

Practical Advice

- **Only apply the power tool to the screw/nut when the tool is switched off.** Rotating tool inserts can slip off.

Changing the chiselling position (Vario-Lock)

You can lock the chisel in 13 different positions, so you can select the optimum working position for each task.

- Insert the chisel into the tool holder.
- Turn the impact/mode selector switch (10) to the "Vario-Lock" position.
- Turn the application tool to the required chisel position.
- Turn the impact/mode selector switch (10) to the "chiselling" position. With this, the tool holder is locked.
- Set the rotational direction for chiselling to clockwise.

Chiselling with lock function

To chisel for extended periods without pressing the on/off switch (7), lock the on/off switch in "chiselling" operating mode.

- To **lock** the power tool, press the on/off switch (7) down fully whilst simultaneously pressing the lock-on switch (6).
- To switch the lock off, press the lock-on button (6) again.

Note: If you switch to a different operating mode while the on/off switch is locked, the power tool will switch off.

Inserting screwdriver bits (see figure K)

- **Only apply the power tool to the screw/nut when the tool is switched off.** Rotating tool inserts can slip off.

A universal holder (26) with SDS-plus shank (accessory) is required to work with screwdriver bits.

- Clean and lightly grease the insertion end of the shank.
- Insert the universal holder into the tool holder while turning it until it locks automatically.
- Check that it is locked by pulling the universal holder.

- Insert a screwdriver bit in the universal holder. Only use screwdriver bits that fit the screw head.
- To remove the universal holder, slide the locking sleeve **(5)** backwards and remove the universal holder **(26)** from the tool holder.



Do not dispose of power tools along with household waste.

Maintenance and Service

Maintenance and Cleaning

► **Pull the plug out of the socket before carrying out any work on the power tool.**

► **To ensure safe and efficient operation, always keep the power tool and the ventilation slots clean.**

In order to avoid safety hazards, if the power supply cord needs to be replaced, this must be done by **Bosch** or by an after-sales service centre that is authorised to repair **Bosch** power tools.

► **Replace a damaged dust protection cap immediately. It is recommended that you have use an after-sales service for this.**

- Clean the tool holder **(3)** after each use.

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. You can find explosion drawings and information on spare parts at: www.bosch-pt.com

The Bosch product use advice team will be happy to help you with any questions about our products and their accessories.

In all correspondence and spare parts orders, please always include the 10-digit article number given on the nameplate of the product.

India

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New Delhi – 110064
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Bosch Service Center
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Near to Ram Mandir Railway Station
Mumbai – 400063
Mobile: 09819952950

You can find further service addresses at:

www.bosch-pt.com/serviceaddresses

Disposal

The power tool, accessories and packaging should be recycled in an environmentally friendly manner.

