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GSB Professional

20-2 | 20-2 RE | 20-2 RCE | 20-2 RET



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

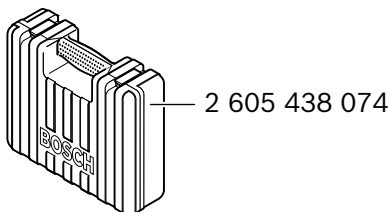
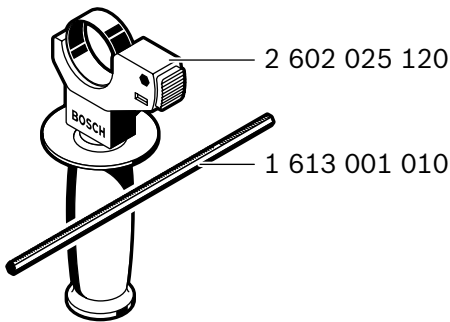
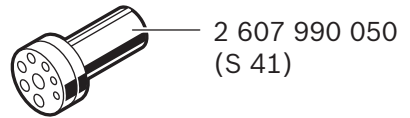
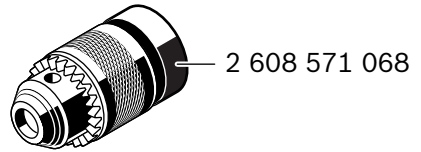
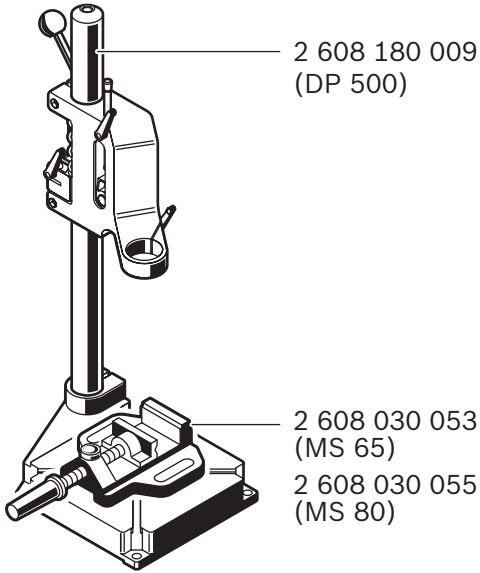
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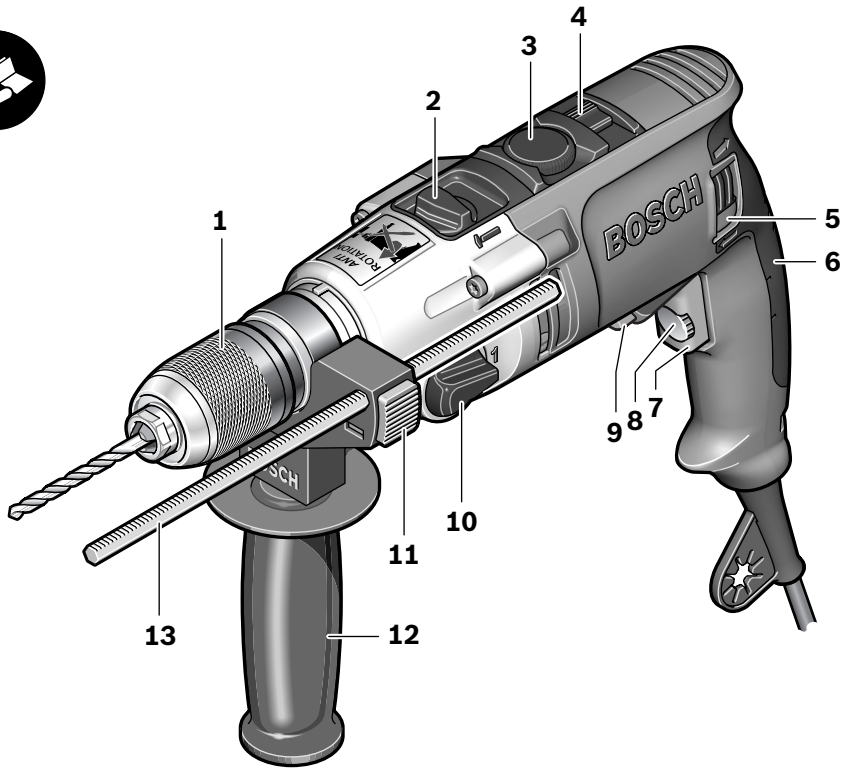
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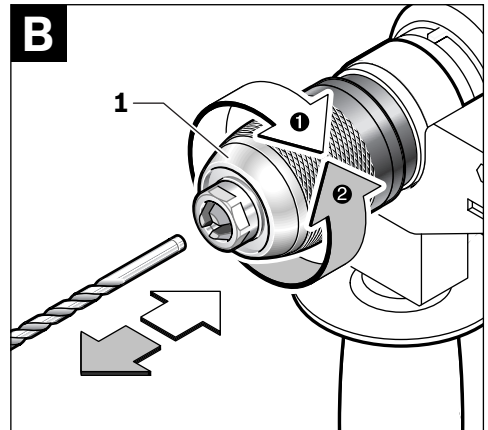
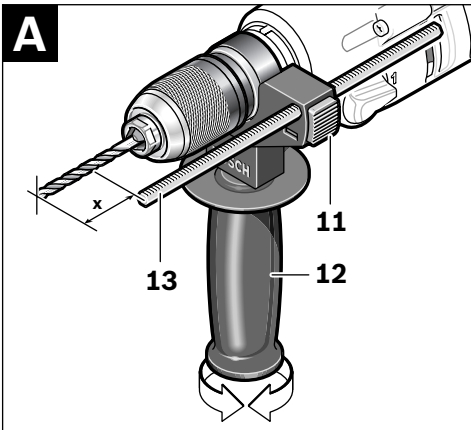
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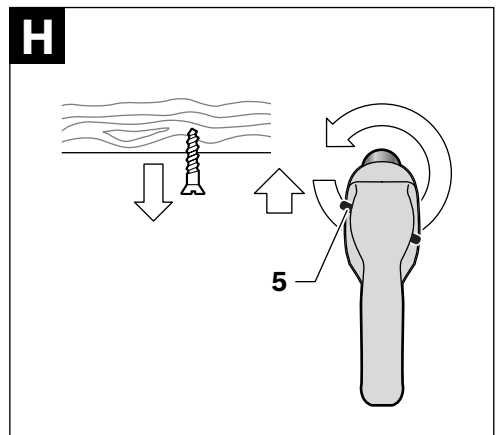
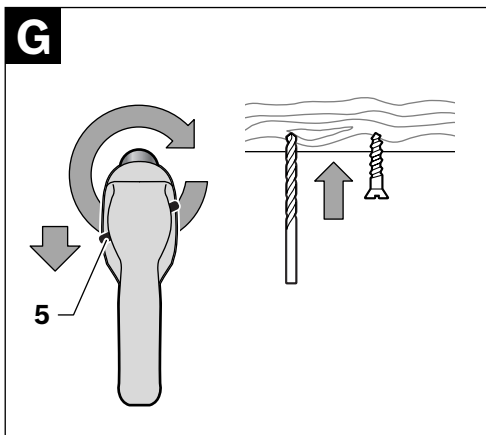
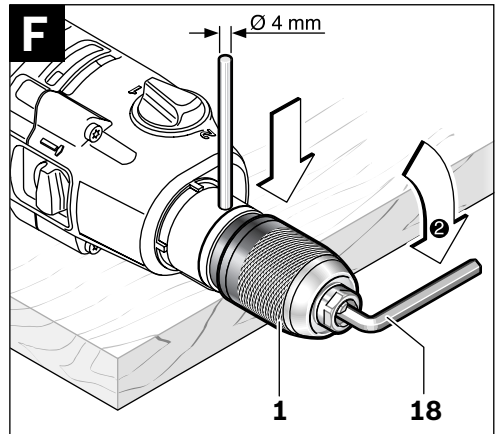
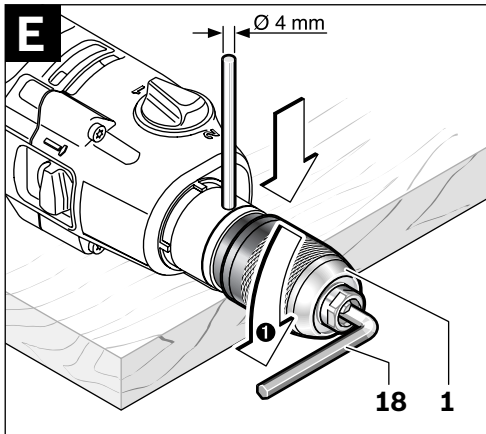
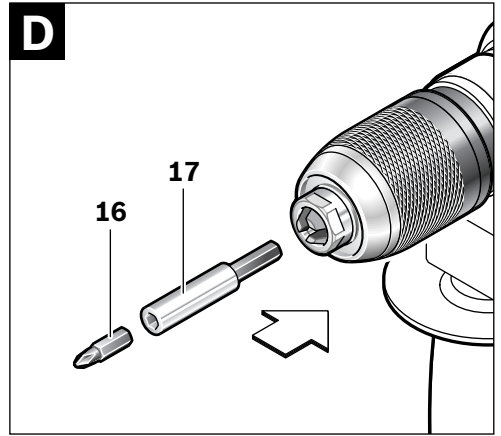
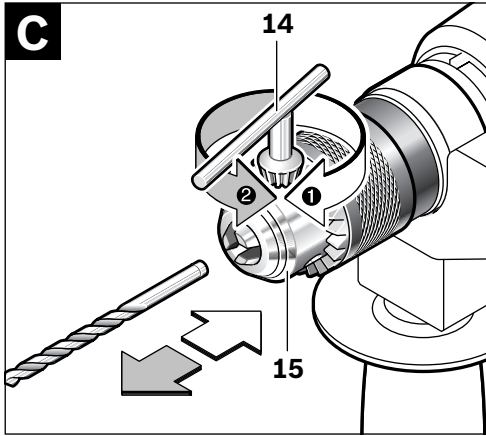






**GSB 20-2 RET
Professional**





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.

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.

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 and 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.

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) 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.

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.

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.

Machine-specific Safety Warnings

- ▶ **Wear hearing protection when using impact drills.** The influence of noise can lead to loss of hearing.
- ▶ **Always use the auxiliary handle supplied with the machine.** Loss of control can cause personal injury.
- ▶ **Use appropriate 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.
- ▶ **Switch off the power tool immediately when the tool insert jams. Be prepared for high reaction torque that can cause kickback.** The tool insert jams when:
 - the power tool is subject to overload or
 - it becomes wedged in the workpiece.
- ▶ **Hold the power tool only by the insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord.** Contact with a “live” wire will also make exposed metal parts of the power tool “live” and shock the operator.
- ▶ **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.
- ▶ **Do not work materials containing asbestos.** Asbestos is considered carcinogenic.

- ▶ **Take protective measures when dust can develop during working that is harmful to one's health, combustible or explosive.** Example: Some dusts are regarded as carcinogenic. Wear a dust mask and work with dust/chip extraction when connectable.
- ▶ **Keep your workplace clean.** Blends of materials are particularly dangerous. Dust from light alloys can burn or explode.
- ▶ **Always wait until the machine has come to a complete stop before placing it down.** The tool insert can jam and lead to loss of control over the power tool.
- ▶ **Never use the machine with a damaged cable. Do not touch the damaged cable and pull the mains plug when the cable is damaged while working.** Damaged cables increase the risk of an electric shock.

- 4 "Drilling/screwdriving" selector switch (GSB 20-2 RET)
- 5 Rotational direction switch (GSB 20-2 RE/ GSB 20-2 RCE/GSB 20-2 RET)
- 6 Soft grip
- 7 On/Off switch
- 8 Thumbwheel for speed preselection (GSB 20-2 RE)
- 9 Lock-on button for On/Off switch
- 10 Gear selector
- 11 Button for depth stop adjustment
- 12 Auxiliary handle*
- 13 Depth stop*
- 14 Chuck key
- 15 Key type drill chuck
- 16 Screwdriver bit*
- 17 Universal bit holder*
- 18 Allen Key**

*The accessories illustrated or described are not included as standard delivery.

**Commercially available (not included in the delivery scope)

Functional Description



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

While reading the operating instructions, unfold the graphics page for the machine and leave it open.

Intended Use

The machine is intended for impact drilling in brick, concrete and stone as well as for drilling in wood, metal and plastic. Machines with electronic control and right/left rotation are also suitable for screwdriving and thread-cutting.

Product Features

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

- 1 Keyless chuck
- 2 "Drilling/Impact Drilling" selector switch
- 3 Thumbwheel for electronic speed preselection (GSB 20-2 RCE/GSB 20-2 RET)

Technical Data

Impact Drill	GSB ... Professional	20-2	20-2 RE	20-2 RE	20-2 RCE	20-2 RET
Article number	0 601 ...	19B 0..	19B 4..	19B 5..	19B 7..	19B 9..
Rated power input	W	750	800	800	1010	1010
Output power	W	350	420	420	475	475
No-load speed						
– 1st gear	rpm	1100	0–1100	0–1100	0–1100	0–1100
– 2nd gear	rpm	3000	0–3000	0–3000	0–3000	0–3000
Rated speed						
– 1st gear	rpm	740	0–740	0–740	0–1100	0–1100
– 2nd gear	rpm	1 930	0–1 930	0–1 930	0–3 000	0–3 000
Impact frequency at no-load	bpm	48000	48000	48000	48000	48000
Rated torque (1st/2nd gear)	Nm	4.4/1.7	5.2/2.0	5.2/2.0	3.9/1.5	3.9/1.5
Electronic torque control		–	–	–	–	●
Speed preselection		–	●	●	●	●
Constant electronic control		–	–	–	●	●
Right/left rotation		–	●	●	●	●
Dual gear feature		●	●	●	●	●
Key type drill chuck		●	●	–	–	–
Keyless drill chuck		–	–	●	●	●
Fully automatic spindle locking (Auto-lock)		–	–	●	●	●
Spindle collar dia.	mm	43	43	43	43	43
Maximum drilling diameter (1st/2nd gear)						
– Brickwork	mm	22/16	22/16	22/16	22/16	22/16
– Concrete	mm	20/13	20/13	20/13	20/13	20/13
– Steel	mm	13/8	13/8	13/8	16/8	16/8
– Wood	mm	40/25	40/25	40/25	40/25	40/25
Chuck clamping range	mm	1.5–13	1.5–13	1.5–13	1.5–13	1.5–13
Weight according to EPTA-Procedure 01/2003	kg	2.5	2.5	2.5	2.6	2.6
Protection class		□/II	□/II	□/II	□/II	□/II

The values given are valid for nominal voltages [U] of 230/240 V. For lower voltage and models for specific countries, these values can vary.

Please observe the article number on the type plate of your machine. The trade names of the individual machines may vary.

Noise/Vibration Information

Measured values determined according to EN 60745.

Typically the A-weighted noise levels of the product are: Sound pressure level 99 dB(A); Sound power level 110 dB(A). Uncertainty K=3 dB.

Wear hearing protection!

	0 601 ...	19B 0..	19B 4..	19B 5.. 19B 7.. 19B 9..
Vibration total values (triax vector sum) determined according to EN 60745:				
Drilling into metal:				
Vibration emission value a_h	m/s ²	6	6	7
Uncertainty K=	m/s ²	1.5	1.5	1.6
Impact drilling into concrete:				
Vibration emission value a_h	m/s ²	17	17	19
Uncertainty K=	m/s ²	1.5	1.5	2.3
Screwdriving:				
Vibration emission value a_h	m/s ²	–	< 2.5	< 2.5
Uncertainty K=	m/s ²	–	1.5	1.5

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.

Declaration of Conformity

We declare under our sole responsibility that the product described under “Technical Data” is in conformity with the following standards or standardization documents: EN 60745 according to the provisions of the directives 2004/108/EC, 98/37/EC (until Dec. 28, 2009), 2006/42/EC (from Dec. 29, 2009 on).

Technical file at:
Robert Bosch GmbH, PT/ESC,
D-70745 Leinfelden-Echterdingen

Dr. Egbert Schneider Senior Vice President Engineering	Dr. Eckerhard Strötgen Head of Product Certification
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ppa. [Signature] *i.v. [Signature]*

07.08.2007, Robert Bosch GmbH, Power Tools Division
D-70745 Leinfelden-Echterdingen

Assembly

Auxiliary Handle (see figure A)

- ▶ **Operate your machine only with the auxiliary handle 12.**

The auxiliary handle **12** can be set to any position for a secure and low-fatigue working posture.

Turn the bottom part of the auxiliary handle **12** in counterclockwise direction and swivel the auxiliary handle **12** to the desired position. Then retighten the bottom part of the auxiliary handle **12** by turning in clockwise direction.

Adjusting the Drilling Depth (see figure A)

The required drilling depth **X** can be set with the depth stop **13**.

Press the button for the depth stop adjustment **11** and insert the depth stop into the auxiliary handle **12**.

Pull out the depth stop until the distance between the tip of the drill bit and the tip of the depth stop correspond with the desired drilling depth **X**.

The knurled surface of the depth stop **13** must face upward.

Changing the Tool

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

Keyless Chuck (see figure B)

The drill spindle is locked when the On/Off switch **7** is not pressed. This makes quick, convenient and easy changing of the tool in the drill chuck possible.

Open the keyless chuck **1** by turning in rotation direction **⌚**, until the tool can be inserted. Insert the tool.

Firmly tighten the collar of the keyless chuck **1** by hand in rotation direction **🕒** until the locking action ("click") is no longer heard. This automatically locks the chuck.

The locking is released again to remove the tool when the collar is turned in the opposite direction.

Key Type Drill Chuck (see figure C)

- ▶ **Wear protective gloves when changing the tool.** The drill chuck can become very hot during longer work periods.

Open the key type drill chuck **15** by turning until the tool can be inserted. Insert the tool.

Insert the chuck key **14** into the corresponding holes of the key type drill chuck **15** and clamp the tool uniformly.

Screwdriver Tools (see figure D)

When working with screwdriver bits **16**, a universal bit holder **17** should always be used. Use only screwdriver bits that fit the screw head.

For driving screws, always position the "Drilling/Impact Drilling" selector switch **2** to the "Drilling" symbol.

Replacing the Drill Chuck

- ▶ **Before any work on the machine itself, pull the mains plug.**
- ▶ **For power tools without spindle lock, the drill chuck must be replaced by an authorized after-sales service agent for Bosch power tools.**

Removing the Drill Chuck (see figure E)

Disassemble the auxiliary handle and set the gear selector **10** to the centre position between the 1st and 2nd gear.

Insert a steel pin with a diameter of \varnothing 4 mm and approx. 50 mm of length into the drill hole on the spindle neck in order to lock the drill spindle.

Clamp the short end of an Allen key **18** into the keyless chuck **1**.

Place the machine on a stable surface (e.g. a workbench). Hold the machine firmly and loosen the keyless chuck **1** by turning the Allen key **18** in rotation direction **⌚**. Loosen a tight-seated keyless chuck by giving the long end of the Allen key **18** a light blow. Remove the Allen key from the keyless chuck and completely unscrew the keyless chuck.

Mounting the Drill Chuck (see figure F)

The keyless chuck is mounted in reverse order.

- ▶ **Remove the steel pin from the drill hole on the spindle neck after mounting is completed.**



The drill chuck must be tightened with a tightening torque of approx. 35–40 Nm.

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.**

Reversing the Rotational Direction (see figures G–H)

(GSB 20-2 RE/GSB 20-2 RCE/GSB 20-2 RET)

- ▶ **Actuate the rotational direction switch 5 only when the machine is at a standstill.**

The rotational direction switch 5 is used to reverse the rotational direction of the machine. However, this is not possible with the On/Off switch 7 actuated.

Right rotation: For drilling and driving in screws, push the rotational direction switch 5 downward on the left side and at the same time upward on the right side.

Left rotation: For loosening and unscrewing screws and nuts, push the rotational direction switch 5 upward on the left side and at the same time downward on the right side.

Setting the Operating Mode



Drilling and Screwdriving

Set the selector switch 2 to the “Drilling” symbol.



Impact Drilling

Set the selector switch 2 to the “Impact drilling” symbol.

The selector switch 2 engages noticeably and can also be actuated with the machine running.

Gear Selection, Mechanical

- ▶ **The gear selector 10 can be actuated at standstill or when the machine is running. However, this should not be done while operating at full load or maximum speed.**

Two speed ranges can be preselected with the gear selector 10.



Gear I:

Low speed range; for working with large drilling diameter or for driving in screws.



Gear II:

High speed range; for working with small drilling diameter.

If the gear selector 10 cannot be fully engaged, lightly rotate the drive spindle with the drill bit by twisting the drill chuck.

Switching On and Off

To **start** the machine, press the On/Off switch 7 and keep it depressed.

To lock the **pressed** On/Off switch 7, press the lock-on button 9.

To **switch off** the machine, release the On/Off switch 7 or when it is locked with the lock-on button 9, briefly press the On/Off switch 7 and then release it.

Safety Clutch



To limit dangerous reaction torque, the machine is equipped with a safety clutch (anti-rotation).

- ▶ **If the tool insert becomes caught or jammed, the drive to the drill spindle is interrupted. Because of the forces that occur, always hold the power tool firmly with both hands and provide for a secure stance.**
- ▶ **If the power tool jams, switch the machine off and loosen the tool insert. When switching the machine on with the drilling tool jammed, high reaction torques can occur.**

Adjusting the Speed/Impact Frequency (GSB 20-2 RE/GSB 20-2 RCE/GSB 20-2 RET)

The speed/impact rate of the switched on power tool can be variably adjusted, depending on how far the On/Off switch **7** is pressed.

Light pressure on the On/Off switch **7** results in low speed/impact rate. Further pressure on the switch increases the speed/impact rate.

Preselecting the Speed/Impact Frequency (GSB 20-2 RE)

With the thumbwheel for speed preselection **8**, the required speed/impact frequency can be preselected even during operation.

The required speed/impact frequency depends on the material and the working conditions, and can be determined through practical testing.

Electronic Speed Preselection (GSB 20-2 RCE/GSB 20-2 RET)

With the thumbwheel for electronic speed preselection **3**, the required speed/impact frequency can be selected even if the machine is running.

The required speed/impact frequency depends on the material and the working conditions, and can be determined through practical testing.

Constant Electronic Control (GSB 20-2 RCE/GSB 20-2 RET)

The constant electronic control keeps the preselected speed and impact rate nearly constant between no-load and load conditions.

Electronic Torque Limitation/Speed Preselection (Torque Control) (GSB 20-2 RET)



Drilling with speed preselection: Set the selector switch **4** to the “Drilling” symbol. The required speed can be selected with the thumbwheel **3**; it can also be adjusted during operation.



Screwdriving with torque limitation: Set the selector switch **4** to the “Screwdriving” symbol. The effective torque at the drill spindle can be variable adjusted with the thumbwheel **3** during operation:

I=low torque, III=high torque.

The maximum speed is automatically adapted to the adjusted torque.

If the preselected torque is reached during screwdriving, the machine switches off; the drilling tool no longer rotates. If the load on the machine is then removed with the On/Off switch **7** still pressed, the drilling tool continues to run only at very low speed for safety reasons.

After briefly releasing the On/Off switch **7**, the next screw can be driven in with the same torque.



For **screwdriving without torque limitation**, turn the thumbwheel **3** to the right stop. This setting is required, when the torque in position **III** is not sufficient.

Working Advice

► **Apply the power tool to the screw/nut only when it is switched off.** Rotating tool inserts can slip off.

Tips

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

For drilling in tiles, set the selector switch **2** to the “Drilling” symbol. Do not switch over to the symbol “Impact Drilling” or work with impact until after drilling through the tile.

Use carbide tipped drill bits when working in concrete, masonry and brick wall.

For drilling in metal, use only perfectly sharpened HSS drill bits (HSS=high-speed steel). The appropriate quality is guaranteed by the Bosch accessories program.

Twist drills from 2,5–10 mm can easily be sharpened with the drill bit sharpener (see accessories).

Soft Grip

The gripping surface (soft grip) **6** reduces the danger of slipping and thereby improves the grip on the machine and the handling.

At the same time, the rubber coating achieves a vibration-reducing effect.

Maintenance and Service

Maintenance and Cleaning

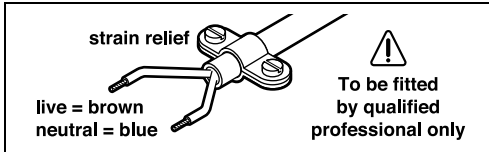
- ▶ **Before any work on the machine itself, pull the mains plug.**
- ▶ **For safe and proper working, always keep the machine and ventilation slots clean.**

If the machine should fail despite the care taken in manufacturing and testing procedures, repair should be carried out by an after-sales service centre for Bosch power tools.

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

WARNING! Important instructions for connecting a new 3-pin plug to the 2-wire cable.

The wires in the cable are coloured according to the following code:



Do **not** connect the blue or brown wire to the earth terminal of the plug.

Important: If for any reason the moulded plug is removed from the cable of this power tool, it must be disposed of safely.

After-sales service and customer assistance

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

Our customer consultants answer your questions concerning best buy, application and adjustment of products and accessories.

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Fax: +64 (0800) 428 570
Outside AU and NZ:
Phone: +61 (03) 9541 5555
www.bosch.com.au

Disposal

The machine, accessories and packaging should be sorted for environmental-friendly recycling.

Only for EC countries:



Do not dispose of power tools into household waste!

According the European Guideline 2002/96/EC for Waste Electrical and Electronic Equipment and its implementation into national right,

power tools that are no longer usable must be collected separately and disposed of in an environmentally correct manner.

Subject to change without notice.