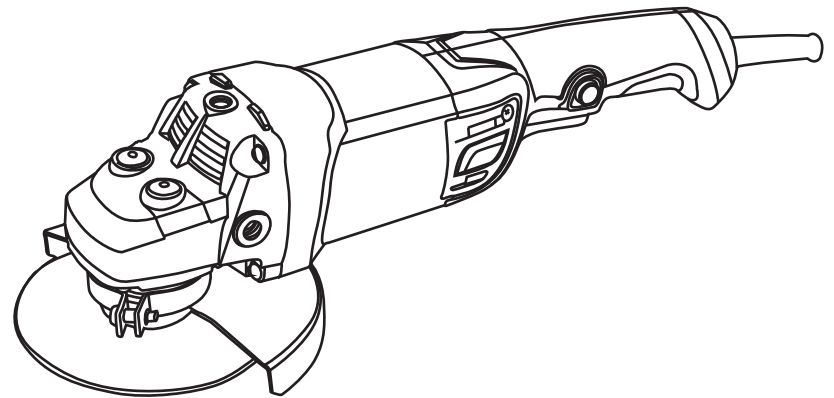


# OPERATING MANUAL

## Angle Grinder

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1252/1501/125C/150A



Read through carefully and understand these instructions before use.

## Safety Notes

### 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

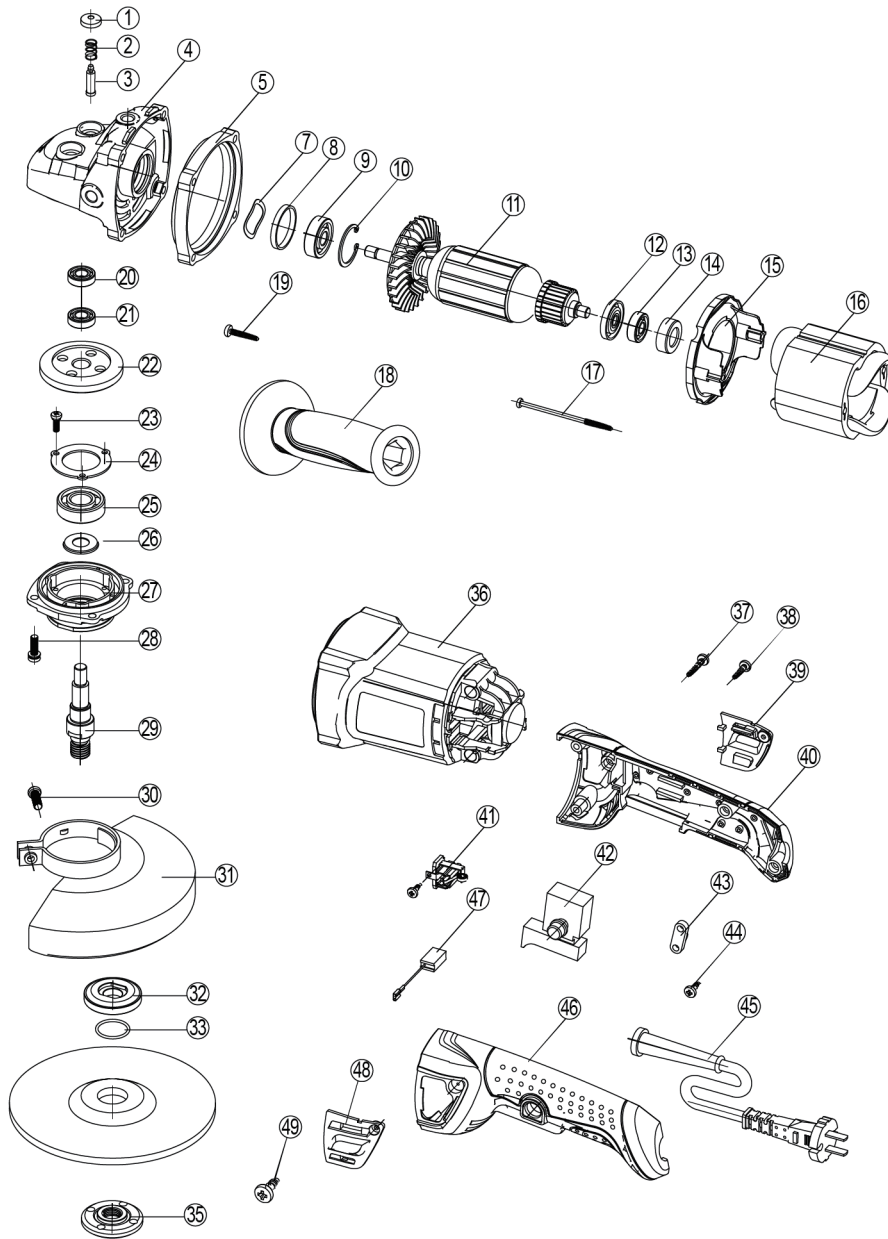
- a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
- b) **Use personal 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.

## EXPLANATION OF GENERAL VIEW

1	FIX PIN CAP	25	BEARING 6202
2	FIX PIN SPRING	26	WOOL WASHER
3	FIX PIN	27	BEARING HOUSING
4	GEARBOX	28	SCREW 4*14
5	FLANGE	29	SPINDLE
6	PINION	30	COVER SCREW
7	#27 WAVE WASHER	31	WHEEL COVER
8	O-RING 6200	32	DOWN FLANGE
9	BEARING 6200	33	FLANGE O-RING
10	#30 LOCK SPRING	35	UP FLANGE
11	ARMATURE	36	MOTOR HOUSING
12	DUST WASHER	37	SCREW ST 4*27
13	BEARING 608	38	SCREW ST 4*16
14	BEARING SLEEVE 608	39	BRUSH CAP
15	FAN GUARD	40	SWITCH HANDLE (R)
16	STATOR	41	BRUSH HOLDER
17	SCREW ST 4*80	42	SWITCH
18	SIDE HANDLE	43	CABLE FLANGE
19	SCREW ST 5*33	44	SCREW ST 4*14
20	BEARING 699	45	CABLE SLEEVE
21	BEARING 699	46	SWITCH HANDLE (L)
22	BIG GEAR		
23	SCREW 4*10		
24	BEARING FLANGE		



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 re-paired.

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 mis-alignment 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.

#### Safety Warnings for Angle Grinder Safety Warnings common for Grinding, Sanding, Wire Brushing or Abrasive Cutting Off Operations

► This power tool is intended to function as a grinder, sander, wire brush or cut-off tool. Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

► This power tool is not recommended for polishing. Operations for which the power tool was not designed may create a hazard and cause personal injury.

► Do not use accessories which are not specifically designed and recommended by the tool manufacturer. Just because the accessory can be attached to your power tool, it does not assure safe operation.

► The rated speed of the accessory must be at least equal to the maximum speed marked on the power tool. Accessories running faster than their rated speed can break and fly apart.

► The outside diameter and the thickness of your accessory must be within the capacity rating of your power tool. Incorrectly sized accessories cannot be adequately guarded or controlled.

► The arbor size of wheels, flanges, backing pads or any other accessory must properly fit the spindle of the power tool. Accessories with arbor holes that do not match the mounting hardware of the power tool will run out of balance, vibrate excessively and may cause loss of control.

► Do not use a damaged accessory. Before each use inspect the accessory such as abrasive wheels for chips and cracks, backing pad for cracks, tear or excess wear, wire brush for loose or cracked wires. If power tool or accessory is dropped, inspect for damage or install an undamaged accessory. After inspecting and installing an accessory, position yourself and bystanders away from the plane of the rotating accessory and run the power tool at maximum no-load speed for one minute. Damaged accessories will normally break apart during this test time.

- ▶ **Wear personal protective equipment.** Depending on application, use face shield, safety goggles or safety glasses. As appropriate, wear dust mask, hearing protectors, gloves and workshop apron capable of stopping small abrasive or workpiece fragments. The eye protection must be capable of stopping flying debris generated by various operations. The dust mask or respirator must be capable of filtering particles generated by your operation. Prolonged exposure to high intensity noise may cause hearing loss.
- ▶ **Keep bystanders a safe distance away from work area. Anyone entering the work area must wear personal protective equipment.** Fragments of workpiece or of a broken accessory may fly away and cause injury beyond immediate area of operation.
- ▶ **Hold power tool by insulated gripping surfaces only, when performing an operation where the cutting accessory may contact hidden wiring or its own cord.** Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and shock the operator.
- ▶ **Position the cord clear of the spinning accessory.** If you lose control of the power tool, the cord may be cut or snagged and your hand or arm may be pulled into the spinning accessory.
- ▶ **Never lay the power tool down until the accessory has come to a complete stop.** The spinning accessory may grab the surface and pull the power tool out of your control.
- ▶ **Do not run the power tool while carrying it at your side.** Accidental contact with the spinning accessory could snag your clothing, pulling the accessory into your body.
- ▶ **Regularly clean the power tool's air vents.** The motor's fan will draw the dust inside the housing and excessive accumulation of powdered metal may cause electrical hazards.
- ▶ **Do not operate the power tool near flammable materials.** Sparks could ignite these materials.
- ▶ **Do not use accessories that require liquid coolants.** Using water or other liquid coolants may result in electrocution or

#### Additional safety instructions for grinding and cutting off operations

- ▶ **Use only wheel types that are recommended for your power tool and the specific guard designed for the selected wheel.** Wheels for which the power tool was not designed cannot be adequately guarded and are unsafe.
- ▶ **The guard must be securely attached to the power tool and positioned for maximum safety, so the least amount of wheel is exposed towards the operator.** The guard helps to protect operator from broken wheel fragments and accidental contact with wheel.
- ▶ **Wheels must be used only for recommended applications. For example: do not grind with the side of the cut-off wheel.** Abrasive cut-off wheels are intended for peripheral grinding; side forces applied to these wheels may cause them to shatter.
- ▶ **Always use undamaged wheel flanges that are of correct size and shape for your selected wheel.** Proper wheel flanges support the wheel thus reducing the possibility of wheel breakage. Flanges for cut-off wheels may be different from grinding wheel flanges.
- ▶ **Do not use worn down wheels from larger power tools.** Wheels intended for larger power tools are not suitable for the higher speed of a smaller tool and may burst.

#### Additional safety warnings specific for abrasive cutting off operations

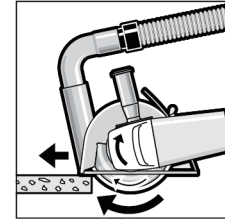
- ▶ **Do not "jam" the cut-off wheel or apply excessive pressure. Do not attempt to make an excessive depth of cut.** Overstressing the wheel increases the loading and susceptibility to twisting or binding of the wheel in the cut and the possibility of kickback or wheel breakage.
- ▶ **Do not position your body in line with and behind the rotating wheel.** When the wheel, at the point of operation, is moving away from your body, the possible kickback may propel the spinning wheel and the power tool directly at you.
- ▶ **Do not position your body in line with and behind the rotating wheel.** When the wheel, at the point of operation, is moving away from your body, the possible kickback may propel the spinning wheel and the power tool directly at you.

#### Cutting Stone

- ▶ **Provide for sufficient dust extraction when cutting stone.**
- ▶ **Wear a dust respirator.**
- ▶ **The machine may be used only for dry cutting/grinding.**

For cutting stone, it is best to use a diamond cutting disc.

When using the cutting guide with dust extraction protection guard 21, the vacuum cleaner must be approved for vacuuming masonry dust. Suitable vacuum cleaners are available from Bosch.



Switch on the machine and place the front part of the cutting guide on the workpiece. Slide the machine with moderate feed, adapted to the material to be worked.

For cutting especially hard material, e.g., concrete with high pebble content, the diamond cutting disc can overheat and become damaged as a result. This is clearly indicated by circular sparking, rotating with the diamond cutting disc.

In this case, interrupt the cutting process and allow the diamond cutting disc to cool by running the machine for a short time at maximum speed with no load.

Noticeable decreasing work progress and circular sparking are indications of a diamond cutting disc that has become dull. Briefly cutting into abrasive material (e.g. lime-sand brick) can re-sharpen the disc again.

#### Information on Structures

Slots in structural walls are subject to the Standard DIN1053 Part1, or country-specific regulations.

These regulations are to be observed under all circumstances. Before beginning work, consult the responsible structural engineer, architect or the construction supervisor.

#### Maintenance and Service

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

- ▶ **In extreme conditions, always use dust extraction as far as possible. Blow out ventilation slots frequently and install a residual current device (RCD).** When working metals, conductive dust can settle in the interior of the power tool. The total insulation of the power tool can be impaired. Please store and handle the accessory(-ies) carefully.

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.

The machine head can be rotated with respect to the machine housing in 90° steps. In this manner, the On/Off switch can be brought into a more convenient position for special working situations, e.g., for cutting operations using the cutting guide with dust extraction protection guard 21 or for left-handed persons.

Completely unscrew the four screws. Rotate the machine head carefully, without removing it from the housing, to the new position. Screw in and tighten the four screws again.

## 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 230V can also be operated with 220V.**

When operating the machine with power from mobile generators that do not have sufficient reserve capacity or are not equipped with suitable voltage control with starting current amplification, loss of performance or untypical behavior can occur upon switching on.

Please observe the suitability of the power generator being used, particularly with regard to the mains voltage and frequency.

### Switching On and Off

To start the power tool, press the On/Off switch 4 forward and then down.

To lock-on the pressed On/Off switch 4, push the On/Off switch 4 further forward.

To switch off the power tool, release the On/Off switch 4, or when it is locked, briefly press the On/Off switch 4 and then release it.

Switch Version without Lock-on

### (country-specific):

To start the power tool, press the On/Off switch 4 forward and then down.

To switch off the machine, release the On/Off switch 4.

- ▶ **Check grinding tools before using. The grinding tool must be mounted properly and be able to move freely. Carry out a test run for at least one minute with no load. Do not use damaged, out-of-centre or vibrating grinding tools. Damaged grinding tools can burst and cause injuries.**

## Working Advice

- ▶ **Exercise caution when cutting slots in structural walls; see Section “Information on Structures”.**

- ▶ **Clamp the workpiece if it does not remain stationary due to its own weight. Do not strain the machine so heavily that it comes to a standstill.**

- ▶ **After heavily straining the power tool, continue to run it at no-load for several minutes to cool down the accessory.**

- ▶ **Grinding and cutting discs become very hot while working; do not touch until they have cooled.**

- ▶ **Do not use the power tool with a cut-off stand.**

### Rough Grinding

- ▶ **Never use a cutting disc for roughing.**

The best roughing results are achieved when setting the machine at an angle of 30° to 40°. Move the machine back and forth with moderate pressure. In this manner, the workpiece will not become too hot, does not discolour and no grooves are formed.

### Flap Disc

With the flap disc (accessory), curved surfaces and profiles can be worked.

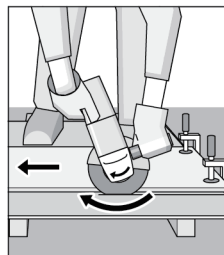
Flap discs have a considerably higher service life, lower noise levels and lower sanding temperatures than conventional sanding sheets.

### Cutting Metal

- ▶ **For cutting with bonded abrasives, always use the protection guard for cutting 14.**

When cutting, work with moderate feed, adapted to the material being cut. Do not exert pressure onto the cutting disc, tilt or oscillate the machine.

Do not reduce the speed of running down cutting discs by applying sideward pressure.



The machine must always work in an upgrinding motion. Otherwise, the danger exists of it being pushed uncontrolled out of the cut.

When cutting profiles and square bar, it is best to start at the smallest cross section.

- ▶ **When wheel is binding or when interrupting a cut for any reason, switch off the power tool and hold the power tool motionless until the wheel comes to a complete stop. Never attempt to remove the cut off wheel from the cut while the wheel is in motion otherwise kickback may occur. Investigate and take corrective action to eliminate the cause of wheel binding.**

- ▶ **Do not restart the cutting operation in the workpiece. Let the wheel reach full speed and carefully reenter the cut. The wheel may bind, walk up or kickback if the power tool is restarted in the workpiece.**

- ▶ **Support panels or any oversized workpiece to minimize the risk of wheel pinching and kickback. Large workpieces tend to sag under their own weight. Supports must be placed under the workpiece near the line of cut and near the edge of the workpiece on both sides of the wheel.**

- ▶ **Use extra caution when making a “pocket cut” into existing walls or other blind areas. The protruding wheel may cut gas or water pipes, electrical wiring or objects that can cause kickback.**

### Safety warnings specific for sanding operations

- ▶ **Do not use excessively oversized sanding disc paper. Follow manufacturers recommendations, when selecting sanding paper. Larger sanding paper extending beyond the sanding pad presents a laceration hazard and may cause snagging, tearing of the disc, or kickback.**

### Safety warnings specific for wire brushing operations

- ▶ **Be aware that wire bristles are thrown by the brush even during ordinary operation. Do not overstress the wires by applying excessive load to the brush. The wire bristles can easily penetrate light clothing and/or skin.**

- ▶ **If the use of a guard is recommended for wire brushing, do not allow any interference of the wire wheel or brush with the guard. Wire wheel or brush may expand in diameter due to work load and centrifugal forces.**

### Additional safety warnings



**Wear safety goggles.**

- ▶ **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.**

- ▶ **Release the On/Off switch and set it to the off position when the power supply is interrupted, e.g., in case of a power failure or when the mains plug is pulled. This prevents uncontrolled restarting.**

- ▶ **Secure the workpiece. A workpiece clamped with clamping devices or in a vice is held more secure than by hand.**

### 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 cutting, roughing and brushing of metal and stone materials with-out the use of water.

For cutting with bonded abrasives, a special cutting guide (accessory) must be used. When cutting in stone, provide for sufficient dust extraction.

With approved sanding tools, the machine can be used for sanding with sanding discs.

### Product Features

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

- 1 Release lever for protection guard
- 2 Spindle lock button
- 4 On/Off switch
- 5 Auxiliary handle (insulated gripping surface)
- 6 Grinder spindle
- 8 Mounting flange with O-ring
- 10 Clamping nut
- 12 Protection guard for grinding
- 13 Grinding disc\*
- 14 Protection guard for cutting\*
- 23 Handle (insulated gripping surface)

**\*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.**

## Noise/Vibration Information

Measured sound values determined according to EN60745.

Typically the A-weighted noise levels of the product are: Sound pressure level 91dB(A); Sound power level 102dB(A). Uncertainty K=3dB.

### Wear hearing protection!

Vibration total values (triax vector sum) determined according to EN60745:

Surface grinding: Vibration emission value  $a_h=9m/s^2$ , Uncertainty  $K=1.5m/s^2$ .

Disk sanding: Vibration emission value  $a_h=5m/s^2$ , Uncertainty  $K=1.5m/s^2$ .

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.

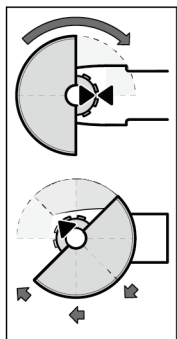
## Assembly

### Mounting the Protective Devices

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

**Note:** After breakage of the grinding disc during operation or damage to the holding fixtures on the protection guard/power tool, the machine must promptly be sent to an after-sales service agent for maintenance (for addresses, see section "After-sales Service and Customer Assistance".

### Protection Guard for Grinding



Place the protection guard 12 onto the spindle collar as shown in the illustration. The triangle marks on the protection guard must correspond with the respective marks on the gear case.

Press the protection guard 12 onto the spindle collar until the shoulder of the protection guard is seated against the flange of the

machine, and turn the protection guard until it can clearly be heard to engage.

Adjust the position of the protection guard 12 to the requirements of the work process. For this, press the release lever 1 upward and turn the protection guard 12 to the required position.

► **Adjust the protection guard 12 in such a manner that sparking is prevented in the direction of the operator.**

► **The protection guard 12 may be turned only upon actuation of the release lever 1! Otherwise the power tool may not continue to be used under any circumstances and must be taken to an after-sales service agent.**

**Note:** The encoding keys on the protection guard 12 ensure that only a protection guard that fits the machine type can be mounted.

### Protection Guard for Cutting

► **For cutting with bonded abrasives, always use the protection guard for cutting 14.**

► **Provide for sufficient dust extraction when cutting stone.**

The protection guard for cutting 14 is mounted in the same manner as the protection guard for grinding 12.

### Cutting Guide with Dust Extraction Protection Guard

The cutting guide with dust extraction protection guard 21 is mounted in the same manner as the protection guard for grinding 12.

### Auxiliary

**Handle/Operate your machine only with the auxiliary handle 5.**

Screw the auxiliary handle 5 on the right or left of the machine head depending on the working method.

### Mounting the Grinding Tools

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

► **Grinding and cutting discs become very hot while working; do not touch until they have cooled.**

Clean the grinder spindle 6 and all parts to be mounted.

For clamping and loosening the grinding tools, lock the grinder spindle with the spindle lock button 2.

► **Actuate the spindle lock button only when the grinder spindle is at a standstill. Otherwise, the machine may become damaged.**

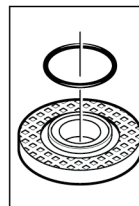
### Grinding/Cutting Disc

Pay attention to the dimensions of the grinding tools. The mounting hole diameter must fit the mounting flange without play. Do not use reducers or adapters.

When using diamond cutting discs, pay attention that the direction-of-rotation arrow on the diamond cutting disc and the direction of rotation of the machine (see direction of rotation arrow on the machine head) agree.

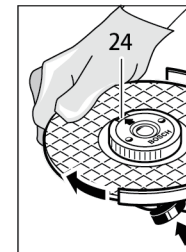
See graphics page for the mounting sequence. To fasten the grinding/cutting disc, screw on the clamping nut 10 and tighten with the twopin spanner; see Section "Quickclamping Nut".

► **After mounting the grinding tool and before switching on, check that the grinding tool is correctly mounted and that it can turn freely. Make sure that the grinding tool does not graze against the protection guard or other parts.**

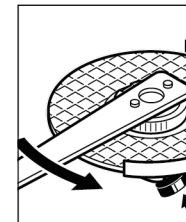


An O-ring (plastic part) is inserted in the mounting flange 8 around the centring collar. If the O-ring is missing or is damaged, it must in all cases be replaced (article number 1600210039) before the mounting flange 8 is mounted.

When screwing on, pay attention that the side of the quick-clamping nut 11 with printing does not face the grinding disc; the arrow must point to the index mark 24.



Lock the grinder spindle with the spindle lock button 2. To tighten the quick-clamping nut, firmly turn the grinding disc in clockwise direction.



A properly attached, undamaged quickclamping nut can be loosened by hand when turning the knurled ring in anticlockwise direction. Never loosen a tight quick-clamping nut with pliers. Always use the twopin spanner. Insert the twopin spanner as shown in the illustration.

### Approved Grinding Tools

All grinding tools mentioned in these operating instructions can be used. The permissible speed [min<sup>-1</sup>] or the circumferential speed [m/s] of the grinding tools used must at least match the values given in the table. Therefore, observe the permissible rotation-/circumferential speed on the label of the grinding tool.

	max. [mm]				
	D	b	d	[min <sup>-1</sup> ]	[m/s]
	115	6	22.2	11000	80
	125	6	22.2	11000	80
	150	6	22.2	9300	80
	115	-	-	11000	80
	125	-	-	11000	80
	75	30	M 14	11000	45

### Rotating the Machine Head

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

