SHALL SH111010AE 7.5AMP 4-1-2 In Variable Speed Angle Grinder Instruction Manual

Contents

SHALL®

SHALL SH111010AE 7.5AMP 4-1-2 In Variable Speed Angle Grinder

7.5AMP 4-1/2 IN
VARIABLE SPEED ANGLE GRINDER

ORIGINAL SAFETY AND OPERATING INSTRUCTIONS

Thank you for buying a SHALL product. Your angle grinder has been engineered and manufactured to SHALL's high standard for dependability, ease of operation, and operator safety. When properly cared for, it will give you years of rugged, trouble-free performance.

WARNING: To reduce the risk of injury, the user must read and understand the operator's manual before using this product.

SAVE THIS MANUAL FOR FUTURE REFERENCE

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INTRODUCTION

- The angle grinder is designed for grinding wood, metal and stone etc when using the appropriate grinding wheel and guard.
- **Warning**! To cut metal and stone the grinder/sander may only be used when the guard (available as an accessory)is mounted.
- The equipment is to be used only for its prescribed purpose. Any other use is deemed to be a case of misuse. The user / operator and not the manufacturer will be liable for any damage or injuries of any kind caused as a result of this.

- Please note that our equipment has not been designed for use in commercial, trade or industrial applications. Our warranty will be voided if the machine is used in commercial, trade or industrial businesses or for equivalent purposes.

GENERAL POWER TOOL SAFETY WARNINGS

GENERAL SAFETY RULES

WARNING!

Read and understand 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**
    - 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.
2. **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.
3. **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

energizing 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.
- Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles. A careless action can cause severe injury within a fraction of a second.

4. **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, and accessories 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.
    - This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
    - Children should be supervised to ensure that they do not play with the appliance.
5. **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.

ANGLE GRINDER SAFETY WARNINGS

SAFETY INSTRUCTIONS FOR ALL OPERATIONS

SAFETY WARNINGS COMMON FOR GRINDING OR ABRASIVE CUTTING-OFF OPERATIONS

- This power tool is intended to function as a grinder or cut-off tool, also can be used to sanding, polishing. 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.
- 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.
- Threaded mounting of accessories must match the grinder spindle thread. For accessories mounted by flanges, the arbour hole of the accessory must fit the locating diameter of the flange. Accessories 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. 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 filtrating 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 the power tool by insulated gripping surfaces only, when performing an operation where the cutting tool may contact hidden wiring. Contact with a “live” wire will also make exposed metal parts of the power tool “live” and could give the operator an electric shock.
- 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 shock.
- Your hand must hold on the handle when you are working. Always use the auxiliary handles supplied with the tool. Loss of control can cause personal injury.

KICKBACK AND RELATED WARNINGS

- Kickback is a sudden reaction to a pinched or snagged rotating wheel, backing pad, brush or any other accessory. Pinching or snagging causes rapid stalling of the rotating accessory which in turn causes the uncontrolled power tool to be forced in the direction opposite of the accessory's rotation at the point of the binding.
- **For example**, if an abrasive wheel is snagged or pinched by the workpiece, the edge of the wheel that is entering into the pinch point can dig into the surface of the material causing the wheel to climb out or kick out. The wheel may either jump toward or away from the operator, depending on direction of the wheel's movement at the point of pinching. Abrasive wheels may also break under these conditions.

Kickback is the result of power tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below.

- Maintain a firm grip on the power tool and position your body and arm to allow you to resist kickback forces. Always use auxiliary handle, if provided, for maximum control over kickback or torque reaction during start-up. The operator can control torque reactions or kickback forces, if proper precautions are taken.
- Never place your hand near the rotating accessory. Accessory may kickback over your hand.
- Do not position your body in the area where power tool will move if kickback occurs. Kickback will propel the tool in direction opposite to the wheel's movement at the point of snagging.
- Use special care when working corners, sharp edges etc. Avoid bouncing and snagging the accessory. Corners, sharp edges or bouncing have a tendency to snag the rotating accessory and cause loss of control or kickback. e. Do not attach a saw chain woodcarving blade or toothed saw blade. Such blades create frequent kickback and loss of control.

SAFETY WARNINGS SPECIFIC FOR GRINDING AND ABRASIVE CUT- TING-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 grinding surface of centre depressed wheels must be mounted below the plane of the guard lip. An improperly mounted wheel that projects through the plane of the guard lip cannot be adequately protected.
- 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 the operator from broken wheel fragments, accidental contact with wheel and sparks that could ignite clothing.
- Wheels must be used only for recommended applications. For example: do not grind with the side of cut-off wheel. Abrasive cut-off wheels are intended for peripheral grinding, side forces applied to these wheels may cause them to shatter.

ADDITIONAL SAFETY WARNINGS SPECIFIC FOR ABRASIVE CUT- TING-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.

- 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 re-enter 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.

SYMBOLS

Danger notices and information are clearly marked throughout these instructions for use. The following symbols are used

-  Hazard symbols with information on prevention of personal injury and property damage.
-  Precaution symbol with information on prevention of harm / damage
-  Notice symbol with information on how to handle the device properly.
-  Double insulated for additional protection
-  Read these operating instructions well before you use the tool
-  Risk of injury when instructions are not followed
-  Risk of electric shock
-  Protect the tool from the damp and never expose it to rain

These symbols identify the required personal protection equipment

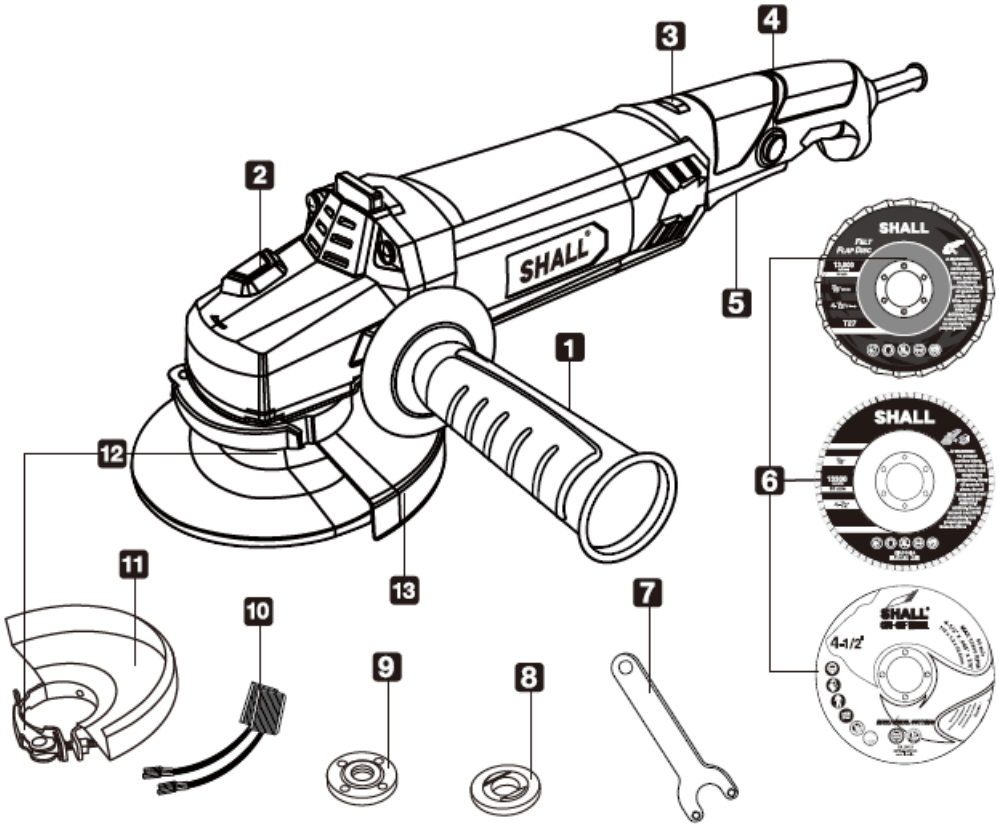
- Wear safety goggles

Wear dust mask

Wear ear defenders

-  Wear safety shoes
-  Wear protective gloves
-  Wear close-fitting work clothes

KNOW YOUR PRODUCT



1. Auxiliary handle
2. Spindle lock button
3. Variable speed dial
4. Lock-on button
5. ON/OFF switch
6. Disc (3pc grinding discs + 3pc cutting discs +2pc felt flap discs)
7. Spanner
8. Inner flange
9. Outer flange
10. Carbon brushes
11. Wheel guard for grinding
12. Guard clamping lever
13. Wheel guard for cutting

Scope of delivery

- Safety and operating manual
- Angle grinder
- Auxiliary handle
- Spanner Wheel guard for cutting
- Wheel guard for grinding
- 3pc 4-1/2″(115mm) flap discs + 3pc 4-1/2 (115mm) cutting discs + 2pc 4-1/2″(115mm) felt flap discs
- 1 pair of carbon brushes

TECHNICAL DATA

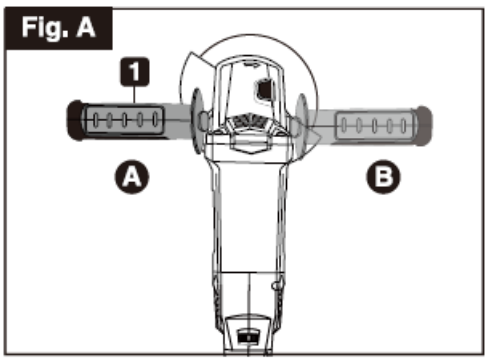
MODEL NO	SH111010AE
CORDED ANGLE GRINDER	
No load speed	3000 – 12000 min·’
Disc bore	7/8 inch (22 mm)
Weight	4.15 lbs (1.88 kg)
Max. wheel diameter	4-1/2 inch (115 mm)
Mounting spindle thread	5/8-11UNG
Rated voltage	120 V~, 60 Hz
Rated power	900W
Protection class	III] / 11

ASSEMBLY

Your angle grinder should never be connected to power supply when you are assembling parts, making adjustments, installing or removing grinding wheels, or when not in use. Disconnecting your grinder will prevent accidental starting that could cause serious injury.

Fitting the auxiliary handle (See Fig. A)

- The angle grinder must not be used without the auxiliary handle (1).
- The auxiliary handle can be secured in any of two positions (A, B).



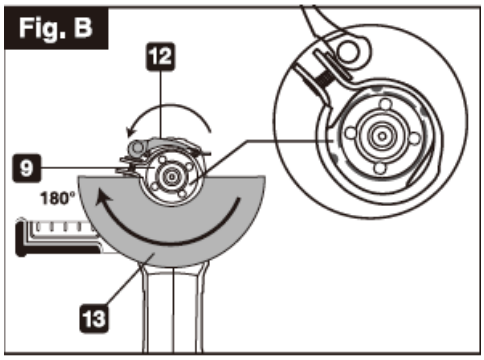
Caution	Suitable for
Left (position A)	Right-handed users
Right (position B)	Left-handed users

Replacing and adjusting the guard REPLACING

- Open the clamp lever (12) on the guard (13).
- Turn the guard (13) through 180° in clockwise direction so that the three guard points towards to the three slots

in the machine head. (See Fig.B).

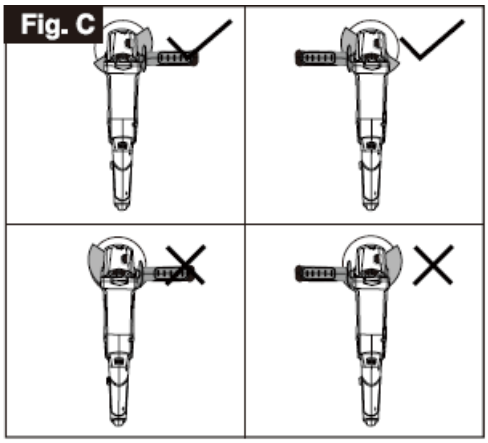
- Remove the guard (13). TO MOUNT: Reverse procedure.



ADJUSTING

- Adjust the guard (13) to protect your hands so that the material being ground is directed away from your body (see Fig. C).
- The position of the guard (13) can be adjusted to any specific working conditions. Undo the clamp lever (12) and turn the cover into the required position.
- Ensure that the guard (13) correctly covers the gear wheel casing.
- Secure the clamp lever (12) again.
- Ensure that the guard (13) is secure.

Take care that the safety device is secure.
Never use the angle grinder without the guard.



Test run for new grinding
Wheels Allow the angle grinder to run in idle for at least 1 minute with the grinding or cutting wheel fitted in place. Vibrating wheels are to be replaced immediately.

OPERATION

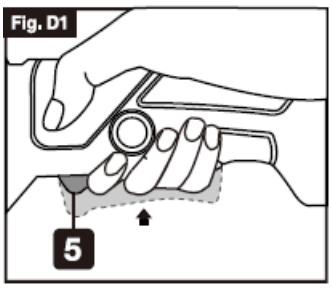
Switching

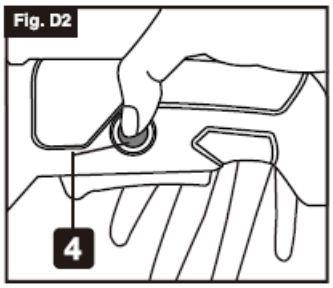
- Before pluging in the angle grinder, familiarise yourself with all the operating features and safety requirements.
- Switch can be locked-on for ease of operator comfort during extended use. Apply caution when using the angle grinder within locked-on and maintain firm grasp on tool.

Switching ON/OFF (See Fig. D1)
To turn your angle grinder ON, depress the switch trigger (5). Release the switch trigger to turn your angle grinder OFF.

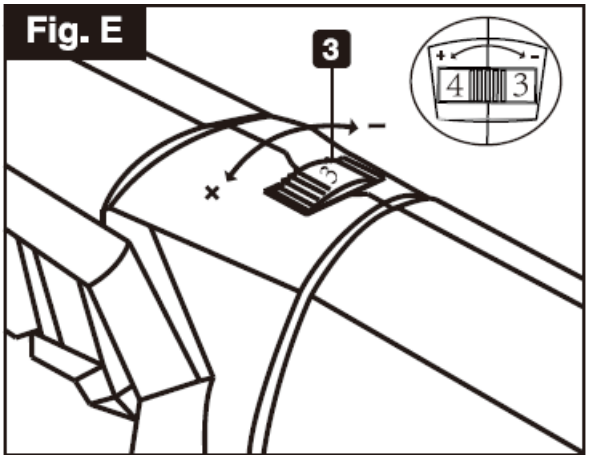
LOCK-ON Feature (See Fig. D2)
Your angle grinder has a lock-on feature that is convenient when continuous operation for extended periods of time is required.

To lock-on, depress the trigger switch, push in the lock button(4)located on the side of the handle, then while holding the lock button pushed in, release the trigger. To release the lock, depress the trigger switch and release it.
Wait until the machine has reached its top speed. You can then position the angle grinder on the workpiece and machine it.





Speed adjusting dial
The rotating speed can be changed by turning the speed adjusting dial (3) to a given number setting from 1 to 6. (See Fig.E) Higher speed is obtained when the dial is turned in the direction of number 6. And lower speed is obtained when it is turned in the direction of number 1.



Refer to the table below for the relationship between the number settings on the dial and the approximate rotating speed.

Number	RPM(/min)	Function
1	3000	sanding
2	4000	
3	7000	
4	9000	grinding Cutting
5	10000	
6	12000	

Caution

- If the tool is operated continuously at low speeds for a long time, the motor will get overloaded and heated up.
- The speed adjusting dial can be turned only as far as 6 and back to 1. Do not force it past 6 or 1, or the speed adjusting function may no longer work.

Grinding/cutting wheels

- Never use a grinding or cutting wheel bigger than the specified diameter.
- Before using a grinding or cutting wheel, check its rated speed.
- The maximum speed of the grinding or cutting wheel used must be higher than the idle speed of the angle grinder.
- Check the direction of rotation when you use diamond cutting wheels. The directional arrow on the diamond cutting wheel must point in the direction in which the tool rotates.

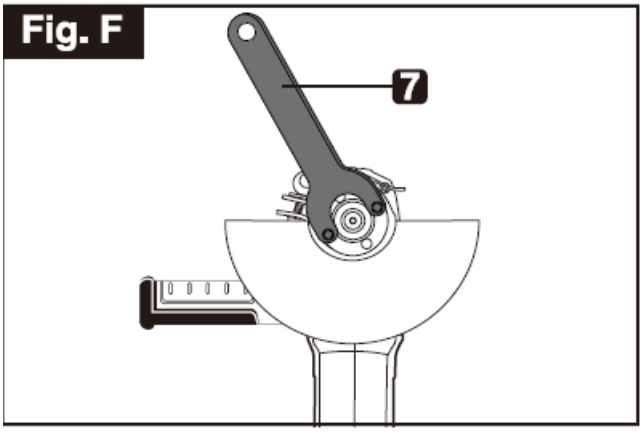
Take special care that the grinding/sanding wheels are properly stored and transported. Ensure that the grinding/sanding wheels are never exposed to shock, jolts or sharp edges (for example during transport or storage in a toolbox). This could cause damage (such as cracks) to the grinding/sanding wheels and place

Changing the grinding/cutting wheels
Use the spanner (7) supplied to change the grinding wheels.

Warning

- Simple wheel change by spindle lock
- Press the spindle lock (2) and allow the grinding wheel to latch in place.
- Open the outer flange with the spanner. (See Fig. F)
- Change the grinding or cutting wheel and tighten the outer flange with the spanner.

Notice
Only ever press the spindle lock when the motor and grinding spindle are at a standstill! You must keep the spindle lock pressed while vou chance the wheel!

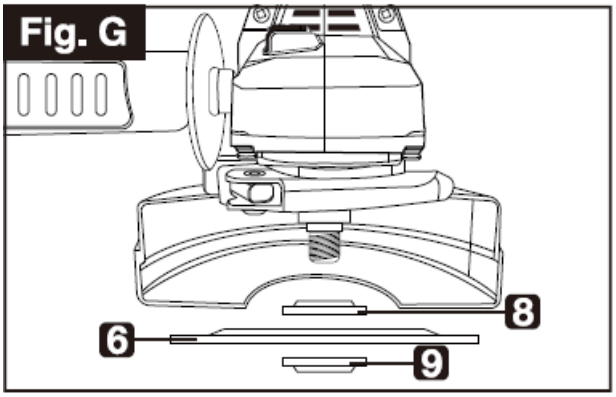


Flange arrangements

when using grinding and cutting wheels (See Fig.G) Be sure that wheel guard (11 or 13) is in place.

- Thread the inner flange (8) onto spindle, then place wheels (6) on the spindle.
- Thread on the outer flange (9) and tighten it using the supplied spanner (7), while holding the spindle lock in.

TO REMOVE: Reverse procedure.



Motor

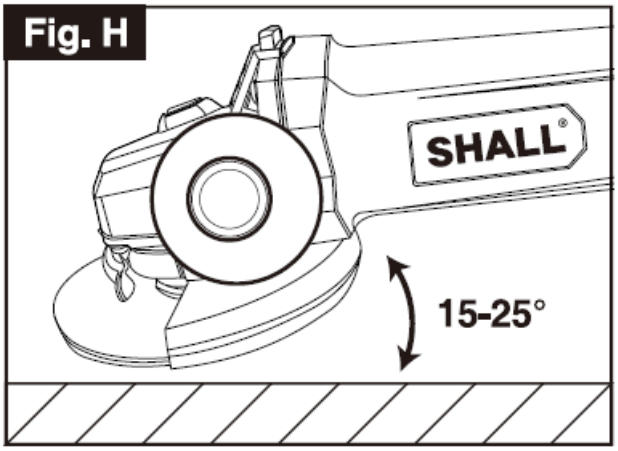
It is vital for the motor to be well ventilated during operation. Be sure, therefore, to keep the ventilation holes clean at all times.

Operating Modes

Rough grinding (See Fig.H)

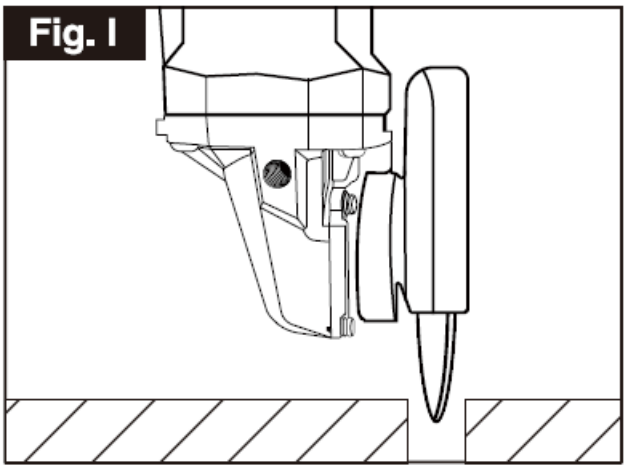
Caution: Use the safety device for sanding/ grinding

For the best rough grinding results, hold the grinding wheel at an angle of between 15° and 25° to the workpiece surface and guide back and forth over the workpiece in steady movements.



Cutting (See Fig.I)
Caution: Use the safety device for abrasive
Cutting When you use the right-angle grinder for cutting purposes, avoid tilting it in the cutting plane. The cutting wheel must have a clean cutting edge.A diamond cutting wheel is best used to cut hard stone.

It is prohibited to use the machine on asbestos materials
Never use a cutting wheel for rough grinding.



CLEANING AND MAINTENANCE

DANGER! Risk of injury! Before any maintenance or cleaning work:

- Always be sure that the tool is switched off and unplugged before attempting to perform inspection or maintenance.
- Let the device cool down.

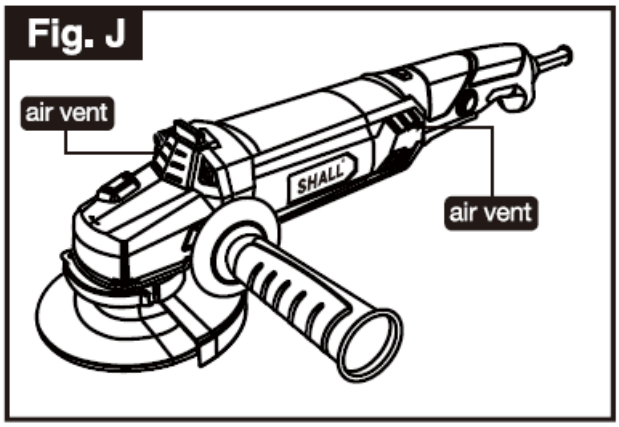
Cleaning
The device must not be sprayed with water or placed in water. Otherwise there is a risk of electric shock.

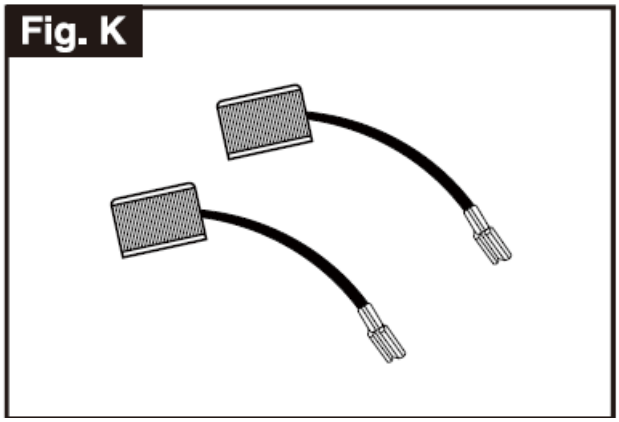
Maintenance

- Keep all safety devices, air vents and the motor housing free of dirt and dust as far as possible. Wipe the equipment with a clean cloth or blow it with compressed air at low pressure.
- We recommend that you clean the device immediately each time you have finished using it.
- Clean the equipment regularly with a moist cloth and some soft soap. Do not use cleaning agents or solvents;

these could attack the plastic parts of the equipment. Ensure that no water can seep into the device. The ingress of water into an electric tool increases the risk of an electric shock.

The tool and its air vents (See Fig.J) have to be kept clean. Regularly clean the tool's air vents or whenever the vents start to become obstructed.





Replacing carbon brushes
When the carbon brushes wear out, the angle grinder will spark and/or stop. Discontinue use as soon as this happens. They should be replaced prior to recommencing use of the angle grinder. Carbon brushes are a wearing component of the angle grinder therefore not covered under warranty. Continuing to use the angle grinder when carbon brushes need to be replaced may cause permanent damage. Carbon brushes will wear out after many uses but when the carbon brushes need to be replaced, take the angle grinder the replacement carbon brushes to an electrician or a power tool repairer for a quick and low cost replacement. Always replace both carbon brushes (See Fig.K) at the same time. Note: SHALL TOOLS not be responsible for any damage or injuries caused by the repair of the angle grinder by an unauthorised person or by mishandling of the angle grinder.

STORING AND TRANSPORT

Storage
Store the device in a dry and dustproof location and out of reach of children.

Transport

- Secure the appliance against slipping.
- If shipping, use the original packaging wherever

TROUBLE SHOOTING

Although your new angle grinder is really very simple to operate, if you do experience problems, please check the following:

1. Sparking visible through the housing air vents, A small amount of sparking may be visible through the housing vents. This is normal and does not indicate a problem.
2. If your grinder wheel wobbles or vibrates, check that outer flange is tight; check that the wheel is correctly located on the flange plate.
3. If there is any evidence that the wheel is damaged do not use as the damaged wheel may disintegrate, remove it and replace with a new wheel. Dispose of old wheels sensibly.
4. If working on aluminum or a similar soft alloy, the wheel will soon become clogged and will not grind effectively.

DISPOSAL

Disposal of the appliance

 This product has been marked with a symbol relating to removing electric and electronic waste. This means that this product shall not be discarded with household waste but that it shall be returned to a collection system. It will then be recycled or dismantled in order to reduce the impact on the environment. Electric and electronic equipment can be hazardous for the environment and for human health since they contain hazardous substances.

Disposal of the packaging

 The packaging consists of cardboard and correspondingly marked plastics that can be recycled. Make these materials available for recycling.

Documents / Resources

	SHALL SH111010AE 7.5AMP 4-1-2 In Variable Speed Angle Grinder [pdf] Instruction Manual SH111010AE 7.5AMP 4-1-2 In Variable Speed Angle Grinder, SH111010AE, 7.5AMP 4-1-2 In Variable Speed Angle Grinder, Variable Speed Angle Grinder, Speed Angle Grinder, Angle Grinder, Grinder

References

- User Manual