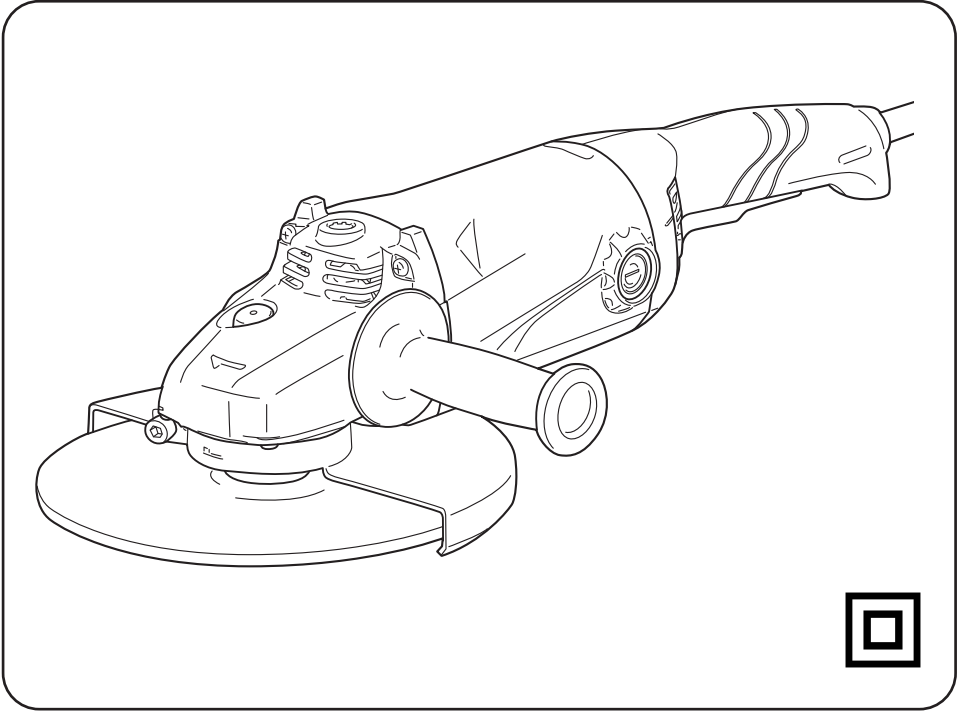


AG182 , AG232 , AG235

OWNER'S OPERATING MANUAL

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ENGLISH

THANK YOU FOR BUYING OUR PRODUCT.  
To ensure your safety and satisfaction, carefully read through this OWNER'S MANUAL before using the product.

General power tool safety warnings

**⚠ WARNING** 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.

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 or 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 a 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 and clothing 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.
- h) Do not let familiarity gained from frequent use of tools. Do not 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
  - 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 remove the battery pack, if detachable, 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 and accessories. 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.
  - h) Keep handles and grasping surfaces dry, clean and free from oil and grease. Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.
- 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 Common for Grinding Operations:  
a) This power tool is intended to function as a grinder 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.

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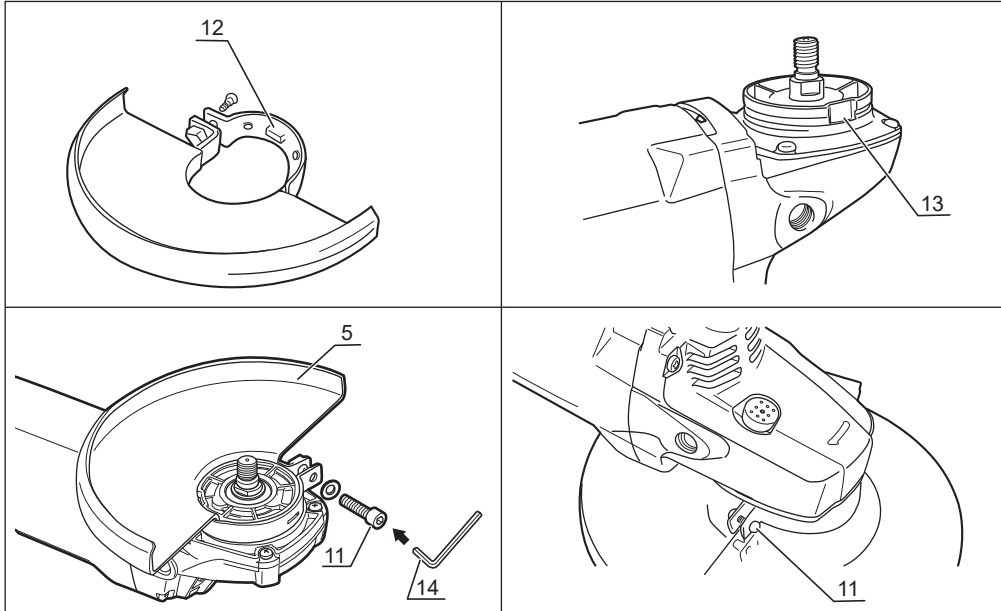
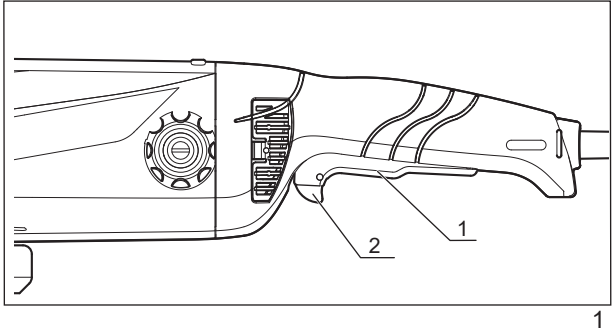
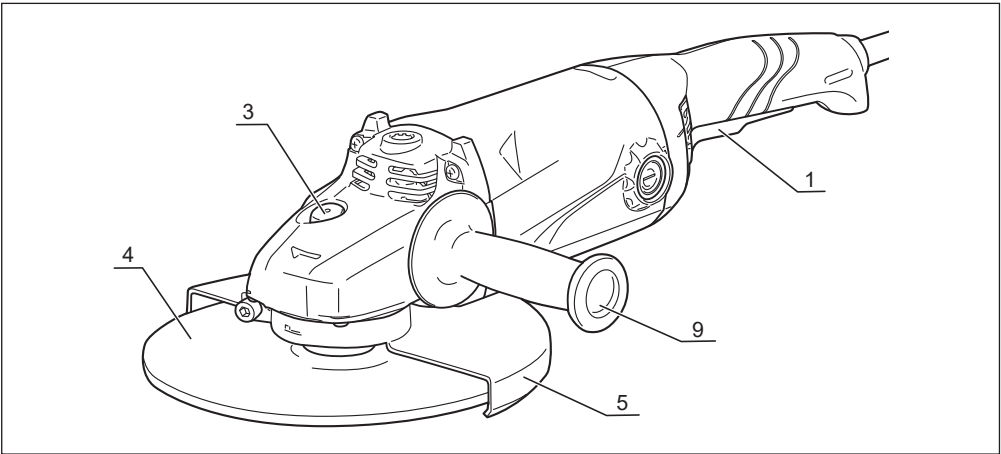
- b) Operations such as sanding, wire brushing, polishing or cutting-off are not recommended to be performed with this power tool. Operations for which the power tool was not designed may create a hazard and cause personal injury.
- c) Do not use accessories which are not specifically designed and recommended by the tool manufacturer. Just because the accessory can be attached to your power tool, it does not assure safe operation.
- d) 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.
- e) 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.
- f) 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.
- g) 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.
- h) 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.
- i) 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.
- j) Hold the 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 could give the operator an electric shock.
- k) Position the cord clear of the spinning accessory. If you lose control, the cord may be cut or snagged and your hand or arm may be pulled into the spinning accessory.
- l) 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.
- m) 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.

- n) 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.
- o) Do not operate the power tool near flammable materials. Sparks could ignite these materials.
- p) Do not use accessories that require liquid coolants. Using water or other liquid coolants may result in electrocution or shock.

**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.

- a) 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.
- b) Never place your hand near the rotating accessory. Accessory may kickback over your hand.
- c) 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.
- d) 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 Operations:  
a) 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.  
b) 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.  
c) 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.



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- d) **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.
- e) **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.
- f) **Do not use worn down wheels from larger power tools.** Wheel intended for larger power tool is not suitable for the higher speed of a smaller tool and may burst.

#### INSTRUCTIONS FOR SAFE HANDLING

1. Make sure that the tool is only connected to the voltage marked on the rating plate.
2. Never use the tool if its cover or any bolts are missing. If the cover or bolts have been removed, replace them prior to use. Maintain all parts in good working order.
3. Never touch the blade, drill bit, grinding wheel or other moving parts during use.
4. Never start a tool when its rotating component is in contact with the work piece.
5. Grinding wheels must be stored in a dry place. Do not put any object on the wheels. Grinding wheels must not be used for any operation other than grinding. Grinding wheels must be stored and handled with care in accordance with the manufacturer's instruction.
6. Ensure that the wheel is fitted in accordance with this manual.
7. Ensure that the grinding wheel is correctly mounted and tightened before use and run the tool at no-load speed for 30 seconds in a safe position. Stop immediately if there is considerable vibration or if other defects are detected. If this condition occurs, check the tool to determine the cause.
8. Check that the work piece is properly supported.
9. Do not remove the soft paper in the center of the grinding wheel. (If the paper has been previously removed, insert some soft paper or rubber between grinding wheel and flange.)
10. Grip the tool securely with both hands while operating.

#### SPECIFICATIONS

<b>AG182</b>	
Grinding wheel	180 mm (7") x 6mm (1/4")
Input	2,200 W
Spindle thread	M14 X 2.0
Rated speed	8,500 min <sup>-1</sup>
Dimensions	481mm (18-15/16")x106mm (4-11/64")x132mm (5-13/64")
Net weight	4.5 kg (9.9 lbs.)
<b>AG232</b>	
Grinding wheel	230 mm (9") x 6mm (1/4")
Input	2,200 W
Spindle thread	M14 X 2.0
Rated speed	6,600 min <sup>-1</sup>
Dimensions	481mm (18-15/16")x106mm (4-11/64")x132mm (5-13/64")
Net weight	4.6 kg (10.1 lbs.)
<b>AG235</b>	
Grinding wheel	230 mm (9") x 6mm (1/4")
Input	2,500 W
Spindle thread	M14 X 2.0
Rated speed	6,600 min <sup>-1</sup>
Dimensions	481mm (18-15/16")x106mm (4-11/64")x132mm (5-13/64")
Net weight	4.9 kg (10.8 lbs.)

Do not use wheels having a Maximum permissible circumferential speed below 4,850 m/min.

#### DESCRIPTION

- |                              |                           |
|------------------------------|---------------------------|
| 1. Trigger                   | 8. Spindle shaft          |
| 2. Safety lock               | 9. Aux. handle            |
| 3. Spindle lock              | 10. Wrench                |
| 4. Grinding Wheel (Optional) | 11. Hex. socket head bolt |
| 5. Wheel guard               | 12. Projection            |
| 6. Disc flange               | 13. Groove                |
| 7. Clamp nut                 | 14. Hex. key wrench       |
|                              | 15. Antidust filter       |

#### STANDARD ACCESSORIES

Aux. handle, Wrench, Hex. key wrench

#### APPLICATIONS

(Use only for the purposes listed below.)

1. Grinding

#### TRIGGER (Fig. 1)

This tool is started and stopped by squeezing and releasing the trigger (1). To prevent the tool from being started accidentally, the trigger can only be operated if the safety lock (2) is pushed forward first. It is not necessary to maintain pressure on the safety lock once the trigger has been moved from its releasing position. For continuous operation, push forward the safety lock while the trigger is being squeezed. Squeeze again to release the lock.

#### ATTACHING THE WHEEL GUARD (Fig. 2)

1. Insert the projection (12) on the inside of the wheel guard clamp into the vertical groove (13) of gear case cover.
2. Rotate the wheel guard to the position as shown in Fig. 2.
3. Tighten the hex.socket head bolt (11) and the washer of wheel guard clamp with the hex. key wrench (14).

#### ATTACHING THE GRINDING WHEEL (Fig. 3)

1. Attach the disc flange (6), the grinding wheel (4) and the clamp nut (7) to the spindle shaft (8). Be sure the disc flange is properly seated on the spindle shaft.
2. While pressing the spindle lock (3) on the gear case, rotate the wheel until it is locked in place.
3. Tighten the clamp nut clockwise with the wrench (10).

**CAUTION!**  
Do not tighten excessively since this can cause cracks in the grinding wheel.

**CAUTION!**  
When using grinding wheels which are less than 3.5 mm thick, the clamp nut should be set reversely as shown in fig. 4.

**WARNING!**  
Check carefully whether or not there are cracks in the wheel. Replace a cracked wheel immediately.

#### AUX. HANDLE

The aux. handle (9) can be attached to either side of, or the upper part of, the gear case.

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#### OPERATING

**KEEP THE WHEEL GUARD IN PLACE. NEVER COVER AIR VENTS SINCE THEY MUST ALWAYS BE KEPT OPEN FOR PROPER MOTOR COOLING.**

#### GRINDING (Fig. 5)

The key to efficient operating is controlling the pressure and surface contact between the grinding wheel and work-piece. Flat surfaces are ground at an acute angle, (usually 10 to 20 degrees) to the workpiece. Allow the grinding wheel to reach full speed before starting to grind. Too great an angle causes concentration of pressure on a small area which may gouge or burn the work surface.

#### ANTIDUST FILTER CLEANING (Fig.6)

After use, remove the 2 antidust filters (15) and clean any dust or other debris that has accumulated on the filters. If the filters continued to be used while clogged with dust, etc., it will prevent cooling air from flowing, which could cause the motor to overheat.

#### (Removal)

Push the hook (A) in the direction of arrow ①, then slide antifilter in the direction of arrow ② to remove.

#### (Attachment)

Insert antidust filter tabs (B) into holes (C) and slide the filter in the direction of arrow to attach.

#### MAINTENANCE

After use, check the tool to make sure that it is in top condition.

It is recommended that you take this tool to an Authorized Service Center for a thorough cleaning and lubrication at least once per year.

**DO NOT MAKE ANY ADJUSTMENTS WHILE THE MOTOR IS IN MOTION.**

**ALWAYS DISCONNECT THE POWER CORD FROM THE RECEPTACLE BEFORE CHANGING REMOVABLE OR EXPENDABLE PARTS (BLADE, BIT, SANDING PAPER ETC.), LUBRICATING OR WORKING ON THE UNIT.**

#### WARNING!

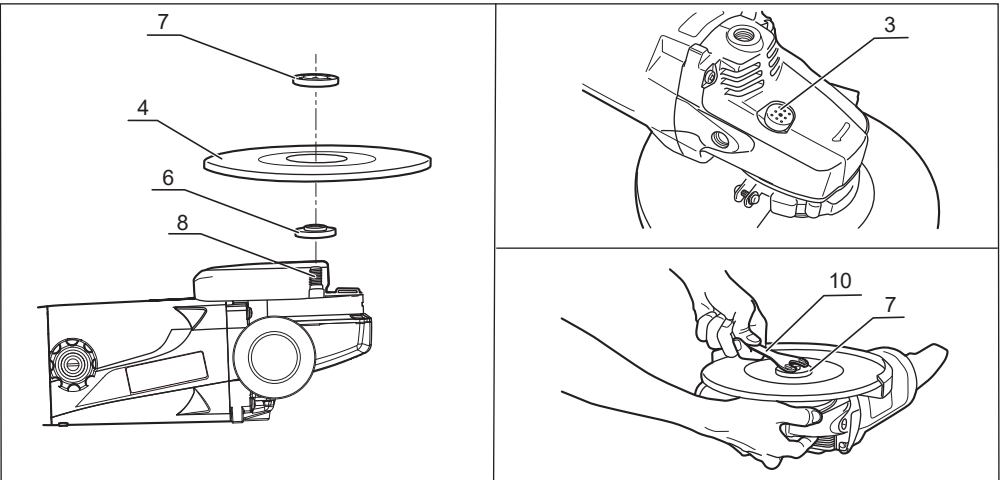
To ensure safety and reliability, all repairs should be performed by an **AUTHORIZED SERVICE CENTER** or other **QUALIFIED SERVICE ORGANIZATION**.

**SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.**

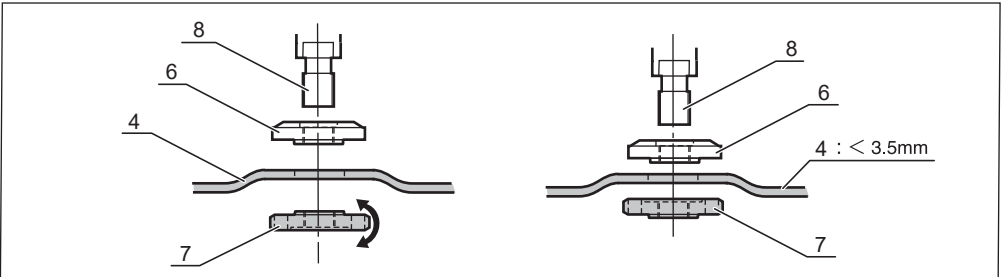
**WARNING** Always wear dust mask, ear protection and eye protection "

**WARNING** To reduce the risk of injury, user must read instruction manual "

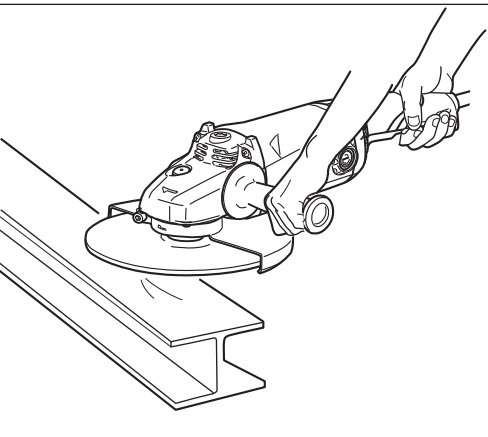
**Class II construction tool in which protection against electric shock does not rely on basic insulation only, but in which additional safety precaution, such as double insulation or reinforced insulation, are provided "**



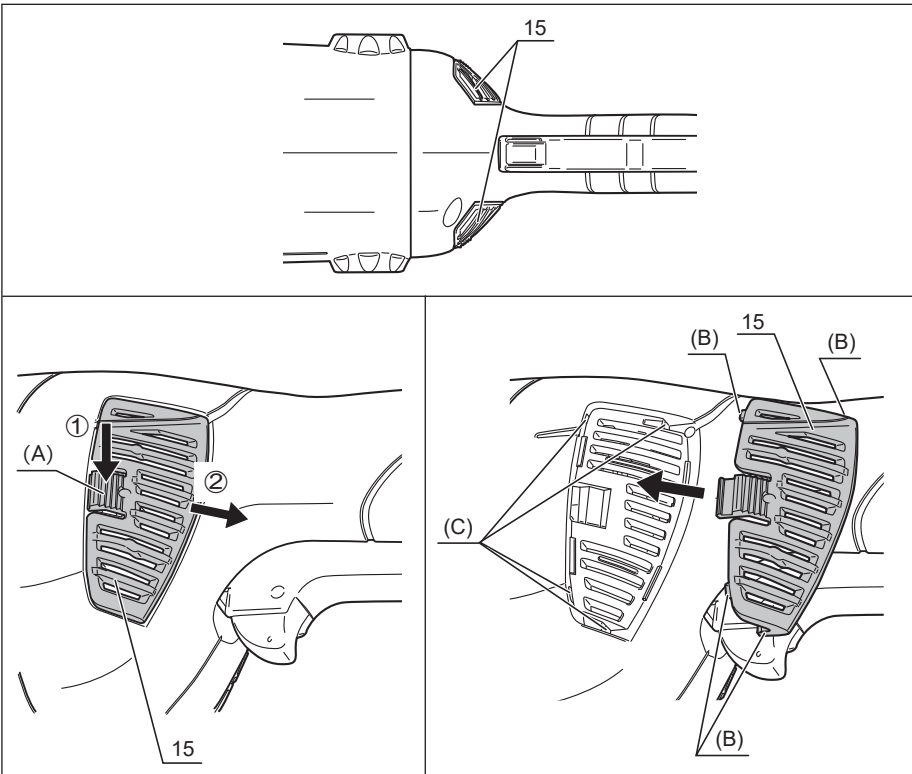
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