

GAZELLE®

GM4580

Die Grinder
User Manual



EN

Read through carefully and understand these instructions before use.

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 anyway. 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 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 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 switch does not turn it on or 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.

Safety instructions for all operations:

Safety Warnings Common for Grinding:

- 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.**
- 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. Grinding 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 controlled.**
- f) **The arbour size of wheels, sanding drums or any other accessory must properly fit the spindle or collet of the power tool. 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) **Mandrel mounted wheels, sanding drums, cutters or other accessories must be fully inserted into the collet or chuck. If the mandrel is insufficiently held and/or the overhang of the wheel is too long, the mounted wheel may become loose and be ejected at high velocity.**
- h) **Do not use a damaged accessory. Before each use inspect the accessory such as abrasive wheels for chips and cracks, sanding drum 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.**
- i) **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.**
- j) **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.**
- k) **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.**
- l) **Always hold the tool firmly in your hand(s) during the start-up. The reaction torque of the motor, as it accelerates to full speed, can cause the tool to twist.**
- m) **Use clamps to support workpiece whenever practical. Never hold a small workpiece in one hand and the tool in the other hand while in use. Clamping a small workpiece allows you to use your hand(s) to control the tool. Round material such as dowel rods, pipes or tubing have a tendency to roll while being cut, and may cause the bit to bind or jump toward you.**
- n) **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.**
- o) **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.**
- p) **After changing the bits or making any adjustments, make sure the collet nut, chuck**

or any other adjustment devices are securely tightened. Loose adjustment devices can unexpectedly shift, causing loss of control, loose rotating components will be violently thrown.

- q) **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.
- r) **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.
- s) **Do not operate the power tool near flammable materials.** Sparks could ignite these materials.
- t) **Do not use accessories that require liquid coolants.** Using water or other liquid coolants may result in electrocution or shock.

Further safety instructions for all operations

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.

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.** The operator can control kickback forces, if proper precautions are taken.
- b) **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.
- c) **Do not attach a toothed saw blade.** Such blades create frequent kickback and loss of control.
- d) **Always feed the bit into the material in the same direction as the cutting edge is exiting from the material (which is the same direction as the chips are thrown).** Feeding the tool in the wrong direction causes the cutting edge of the bit to climb out of the work and pull the tool in the direction of this feed.
- e) **When using rotary files, cut-off wheels, high-**

speed cutters or tungsten carbide cutters, always have the work securely clamped. These wheels will grab if they become slightly canted in the groove, and can kickback. When a cut-off wheel grabs, the wheel itself usually breaks. When a rotary file, high-speed cutter or tungsten carbide cutter grabs, it may jump from the groove and you could lose control of the tool.

Additional safety instructions for grinding operations

Safety warnings specific for grinding operations:

- a) **Use only wheel types that are recommended for your power tool and only for recommended applications.** For example: do not grind with the side of a cut-off wheel. Abrasive cut-off wheels are intended for peripheral grinding, side forces applied to these wheels may cause them to shatter.
- b) **For threaded abrasive cones and plugs use only undamaged wheel mandrels with an unrelieved shoulder flange that are of correct size and length.** Proper mandrels will reduce the possibility of breakage.
- c) **Do not "jam" a 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 snagging of the wheel in the cut and the possibility of kickback or wheel breakage.
- d) **Do not position your hand in line with and behind the rotating wheel.** When the wheel, at the point of operation, is moving away from your hand, the possible kickback may propel the spinning wheel and the power tool directly at you.
- e) **When wheel is pinched, snagged 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 pinching or snagging.
- f) **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.
- g) **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.
- h) **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.

Symbol



WARNING



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



Always Wear eye protection



Class II tool

TECHNICAL DATA

This product is a hand-held die grinder powered by single phase series motor.
This product is suitable for grinding metal materials or similar materials with wheel point under general environmental conditions.
The performance and specifications of this product are shown in the table below:

Model		GM4580
Rated Power Input	W	550
Rated Speed	/min	9000-26700
Max. Grinding Wheel Dia.	mm	Ø25
Max. Collet Size	mm	6
Net Weight	kg	1.6

Due to the continuing program of research and development, the specifications herein are subject to change without prior notice.

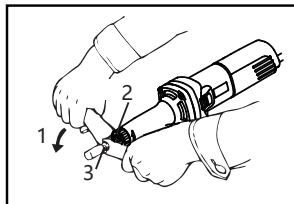
INSTRUCTIONS FOR OPERATION

• Installing or Removing the Wheel Point

CAUTION:

Always be sure that the tool is switched off and unplugged before installing or removing the wheel point.

Loosen the clamping nut and insert the wheel point into the collet nut. Use a wrench to hold the spindle and use another wrench to tighten the clamping nut securely.

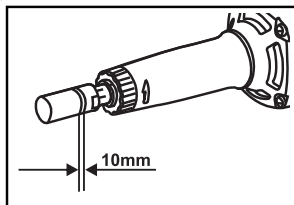


1. Tighten
2. Spindle
3. Collet Nut

The wheel point should not be mounted more than 10 mm from the collet nut. Exceeding this distance could cause vibration or a broken shaft.

Tighten the gland nut securely with a wrench.

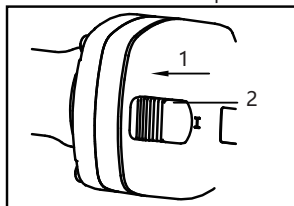
To remove the wheel point, follow the installation procedures in reverse.



• Switch Operation

To start the tool, push the switch knob forward until it cannot be pushed and press down to lock the switch.

To stop, press down the rear of the switch and the switch will return to OFF position automatically.



1. Forward
2. Switch Knob

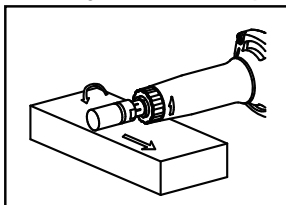
• Operation

Turn the tool on without the wheel point making any contact with the workpiece until the wheel point attains full speed. Hold this tool firmly and correctly with hands. Then apply the wheel point to the workpiece gently. To obtain a good performance,

move the tool back and forth regularly.

CAUTION:

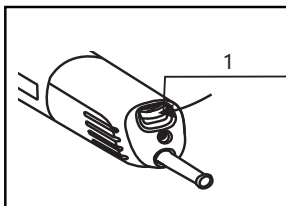
Excessive force in grinding operation will not only reduce the efficiency of the machine, but also easily wear the wheel point.



• Adjusting Speed

Turn the speed controller in the direction as the figure shows to adjust the speed with power constant.

Higher speed is obtained when the dial is turned in the direction of number Max. And lower speed is obtained when it is turned in the direction of number 1.



1. Speed Controller

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

speed.	Number Speed (rpm)
1	9000
2	13000
3	17500
4	21500
5	25000
Max	26700

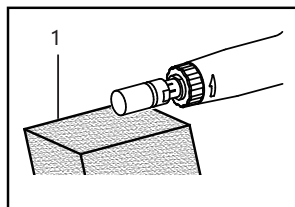
CAUTION:

1. Only turn the speed controller between 1 and max, or the controller may not work.

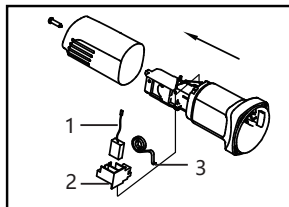
2. The motor maybe over-load and the tool may fail to work if the tool keeps running at a low speed.

• Grinding of wheel point

When the wheel point becomes "loaded" with various bits and particles, you should grind the wheel point with slip stone.



1. Slip Stone



1. Carbon Brush
2. Carbon Brush Holder
3. Coil Spring

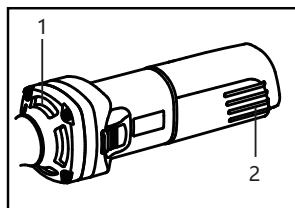
MAINTENANCE AND CARE

CAUTION:

Always be sure that the tool is switched off and unplugged before attempting to perform inspection or maintenance.

• Clean the air vents

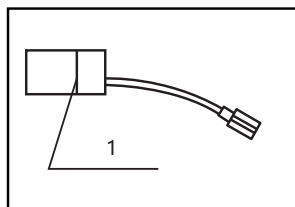
The tool and its air vents have to be kept clean. Regularly clean the tool's air vents or whenever the vents start to become obstructed.



1. Air Outlet
2. Air Inlet

• Replace the Carbon Brushes

Check the carbon brushes regularly. Replace when they wear down to the limit mark. Keep the carbon brushes clean and free to slip in the holders. Both carbon brushes should be replaced at the same time.

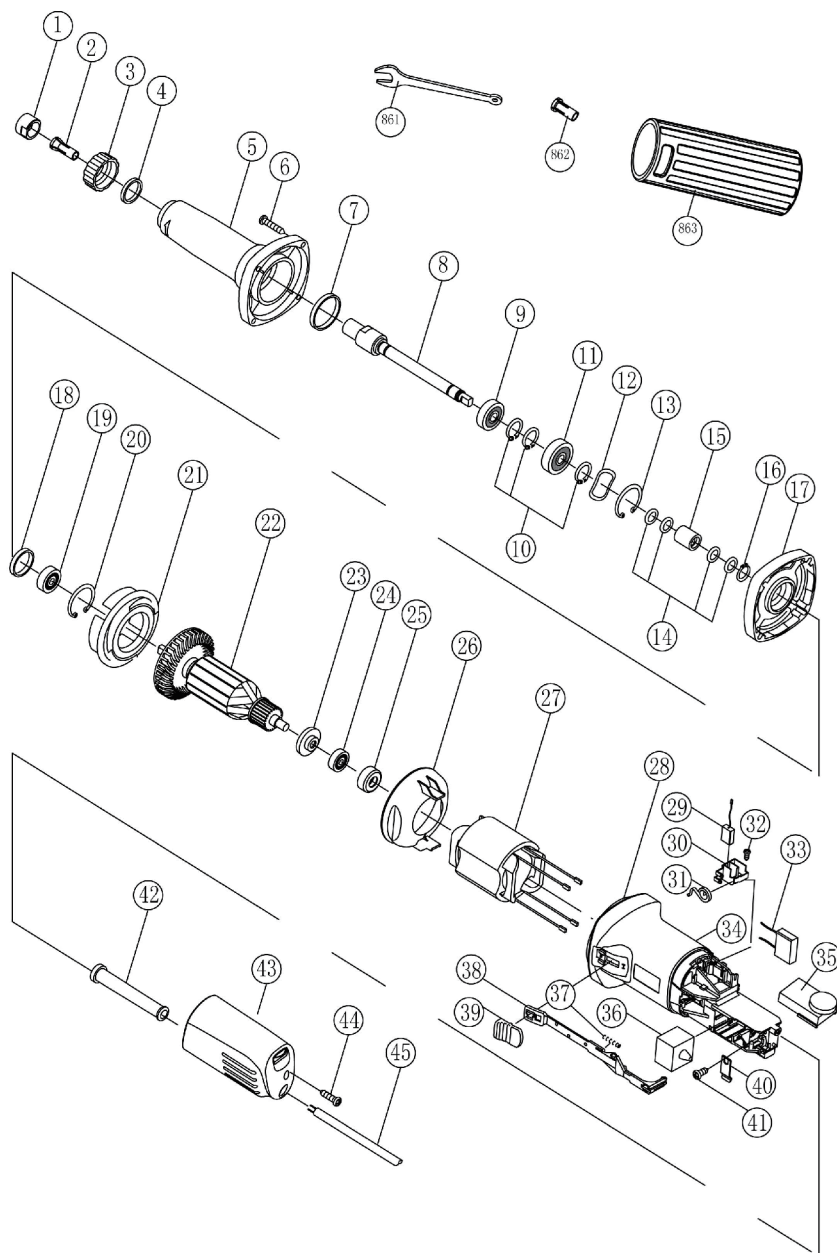


1. Limit Mark

Use a screwdriver to remove the rear cover. Disconnect the carbon brush from the brush holder, then draw the coil spring and take out the worn carbon brush and replace new one; Press the coil spring and reconnect the carbon brush with the brush holder. And then tighten the rear cover securely.

EXPLANATION OF GENERAL VIEW

1	Collet Nut	26	Baffle Plate
2	Collet	27	Stator Assembly
3	Cover	28	Motor Housing
4	Seal	29	Carbon Brush
5	Barrel	30	Carbon Brush Holder
6	Pan Head Tapping Screw ST4×35	31	Belleville Spring
7	Damping Washer (30×33×4)	32	Pan Head Tapping Screw ST2.9×9
8	Drive Spindle	33	Capacitor
9	Ball Bearing 6000ZZ	34	Nameplate
10	Circlip for Shaft 10	35	Speed Adjusting Dial Ass'y
11	Ball Bearing 6200ZZ	36	Switch
12	Wave Spring Washer 29	37	Spring for Switch Lever (4.2×0.5×27)
13	Circlip for Hole 30	38	Switch Lever
14	O Ring (5.6×1.5)	39	Switch Knob
15	Coupling	40	Strain Relief
16	Circlip for Shaft 8	41	Pan Head Tapping Screw ST4×12
17	Gear Housing Cover	42	Cord Guard
18	Seal (22×25.2×4)	43	Rear Cover
19	Ball Bearing 608ZZ	44	Pan Head Tapping Screw ST4.2×19
20	Circlip for Hole	45	Cord
21	Guide Plate	861	Wrench
22	Armature Assembly	862	Collet
23	Insulation Washer	863	Barrel Guard
24	Ball Bearing 607ZZ		
25	Bearing Cover (19×21.2×8.6)		



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