

GAZELLE[®]

GM4590 GM4570 Angle Grinder User Manual



GENERAL POWER TOOL SAFETY

WARNINGS



WARNING Read all safety warnings, and all instructions. 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.

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.*

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 Operations:

- a) **This power tool is intended to function as a grinder . 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.** *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) **The dimensions of the accessory mounting must fit the dimensions of the mounting hardware 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) **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 applications. The dust mask or respirator must be capable of filtering particles generated by the particular application. 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.*

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 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 with both hands on the power tool and position your body and arms 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, segmented diamond wheel with a peripheral gap greater than 10 mm or toothed saw blade.** *Such blades create frequent kickback and loss of control.*

Additional safety instructions for grinding operations

Safety Warnings Specific for Grinding Operations:

- a) **Use only wheel types that are specified 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.
- d) **Wheels must be used only for specified 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. Flanges for cut-off wheels may be different from grinding wheel flanges.*
- 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.*

UK power plug warnings:

Your product is fitted with an BS 1363-1 approved electric plug with internal fuse approved to BS 1362. If the plug is not suitable for your socket, it should be removed and an appropriate plug should be fitted in its place by an authorized customer service agent. The replacement plug should have the same fuse rating as the original plug.

The severed plug must be disposed of to avoid a possible shock hazard and should never be inserted into a mains socket elsewhere.

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 angle grinder powered by single phase series motor.

This product is suitable for grinding metal materials with fiber-reinforced depressed center wheel under general environmental conditions.

This product is widely used in the processing of metals and building materials.

The performance and specifications of this product are shown in the table below:

Model		GM4570	GM4590
Rated Power Input	W	2200	2200
Rated Speed	/min	8300	6600
Wheel Size	mm	Ø180x8xØ22	Ø230x8xØ22
Wheel Type		Type 27	Type 27
Net Weight	kg	5.0	5.0

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

INSTRUCTIONS FOR OPERATION

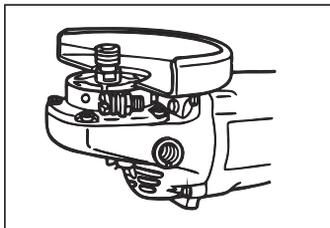
● Installing or Removing Wheel Guard

The wheel guard must be installed during operation!

Use the wheel guard, a protective device, to prevent injury caused by the rupture of the wheel during operation. Make sure that the wheel guard is installed securely before use. After loosening the fixing screws slightly, the wheel guard can be rotated and fixed at the required angle to obtain the maximum working efficiency. After adjusting the wheel guard, it is necessary to confirm whether the fixing screws are fully tightened.

CAUTION:

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

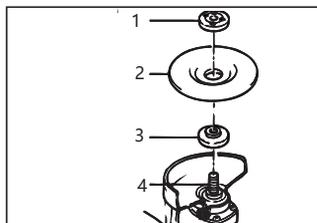


● Installing or Removing Depressed Center Wheel

Screw the inner flange onto the spindle, then put the wheel into the spindle and install it on the inner flange, and screw the outer flange to the spindle. Press the spindle lock device to prevent the spindle from rotating. Then use the lock nut wrench to tighten the outer flange.

CAUTION:

Always be sure that the tool is switched OFF and unplugged before installing or removing the accessory.



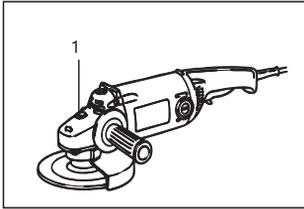
- 1.Outer Flange
- 2.Depressed Center Wheel
- 3.Inner Flange
- 4.Drive Spindle

● Spindle Lock

Press the spindle lock to prevent spindle rotation when installing or removing the accessory.

CAUTION:

Never actuate the spindle when the spindle is moving. The tool may be damaged.



1. Spindle Lock

● **Switch Operation**

Common Operation:

ON: Press the switch button.

OFF: Release the switch button.

For Continuous Operation:

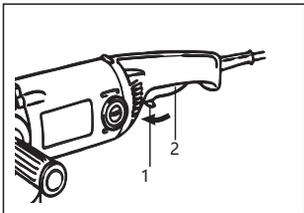
ON: Press the switch button first, and then pull the

switch lock to lock the switch handle.

OFF: Press the switch button first, and then release it.

CAUTION:

Before plugging in the tool, always check to see that the switch actuates properly .



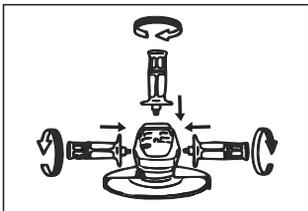
1. Switch Lock
2. Switch Button

● **Soft Start (DSM230A/ASM230A/KSM230A)**

A soft start device can be equipped with the tool, which allows for smooth start-ups and minimizes kick backs.

● **Auxiliary Handle**

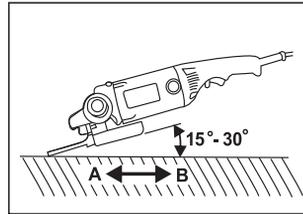
When operating with tools, please use the auxiliary handle. Just screw the auxiliary handle into the screw hole on the gearbox.



● **Operation**

1. Generally, the edge of the grinding wheel should maintain an angle of 15°-30 °with the surface of the workpiece.
2. Do not operate in the direction of A when using the new grinding wheel, as this will cut off the workpiece. Once the edge of the wheel has been

rounded off by use, the wheel may be worked in both A and B directions.



Attention:

Do not exert too much force on the tool.

Due to the weight of the tool itself will form an appropriate pressure, the imposition of pressure will lead to damage to the grinding wheel, resulting in personal hazards.

Stop using the grinding wheel when it is worn to 150mm (GM4570) or 180mm (GM4590). It is very dangerous to continue to use it.

Replace a new grinding wheel immediately and dispose of the old one with intent to destroy it.

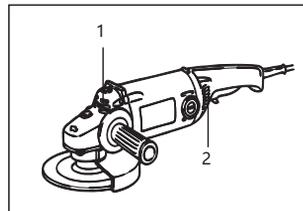
MAINTENANCE AND CARE

CAUTION:

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

•**Clean the air vents**

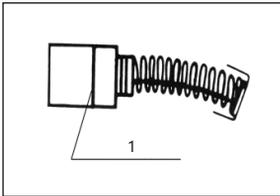
The air inlet and air outlet of the tool should be cleaned regularly or at any time when it is blocked.



1. Air Outlet
2. Air Inlet

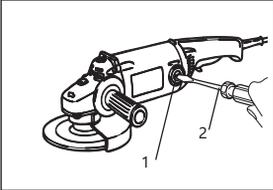
● **Replace the Carbon Brushes**

Remove and 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 cover plate, take out the worn carbon bush and replace a new one, and then tighten the plate securely with a screw.



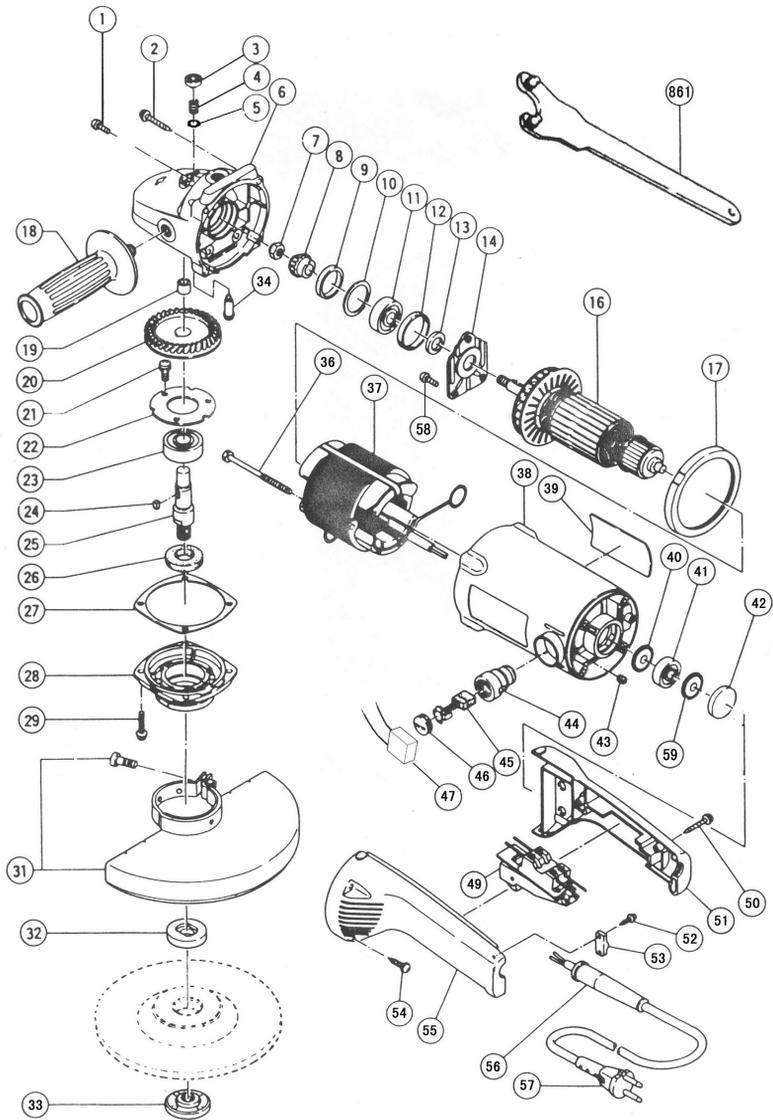
1. Brush Holder Cap
2. Screwdriver

※If the replacement of the supply cord is necessary, this has to be done by the manufacturer or his agent in order to avoid a safety hazard.

EXPLANATION OF GENERAL VIEW

GM4570

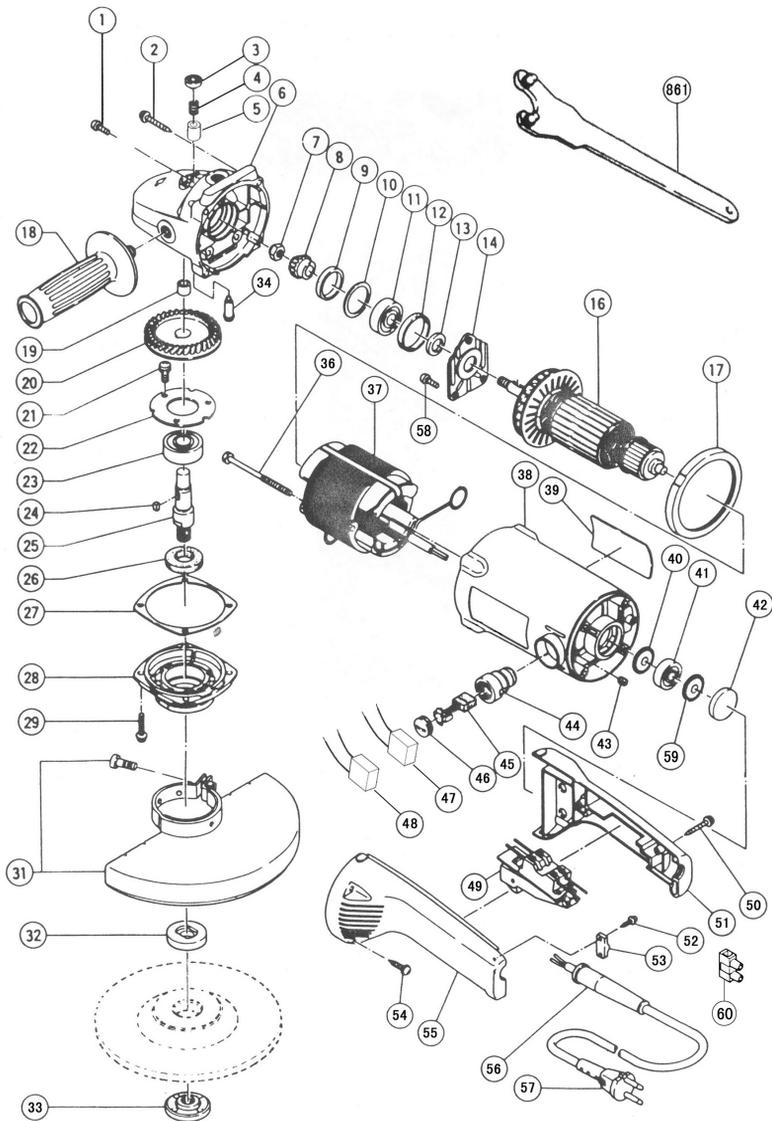
1	Hex Socket Head Screw	31	Wheel Guard
2	Pan Head Tapping Screw (with Flat Washer)	32	Inner Flange
3	Spindle Lock Nut	33	Outer Flange
4	Autolocking Spring	34	Spindle Lock Pin
5	Sleeve	36	Cross Recessed Hex Head Tapping Screw
6	Gear Housing	37	Stator Assembly
7	Hex Lock Nut	38	Motor Housing
8	Driving Spiral Bevel Gear	39	Nameplate
9	Oil Seal	40	Insulation Washer
10	Washer	41	Ball Bearing
11	Ball Bearing	42	Bearing Retainer
12	Damping Washer	43	Hex Socket Head Screw
13	Felt Washer	44	Carbon Brush Holder
14	Bearing Cover	45	Carbon Brush
15	Flat Key	46	Brush Holder Cap
16	Armature Assembly	47	Capacitor
17	Baffle Plate	49	Trigger Switch
18	Auxiliary Handle	50	Pan Head Tapping Screw
19	Needle Bearing	51	Right-Half Handle
20	Driven Spiral Bevel Gear	52	Pan Head Tapping Screw (with Flat Washer)
21	Pan Head Screw (with Spring Washer)	53	Strain Relief
22	Bearing Retainer	54	Pan Head Tapping Screw (with Flat Washer)
23	Ball Bearing	55	Left-Half Handle
24	Flat Key	56	Cord Guard
25	Drive Spindle	57	Cord
26	Dustproof Washer	58	Hex Socket Head Screw
27	Paper Washer	59	Damping Washer
28	Bearing Box	861	Wrench
29	Hex Socket Head Screw		



EXPLANATION OF GENERAL VIEW

GM4590

1	Hex Socket Head Screw	32	Inner Flange
2	Pan Head Tapping Screw	33	Outer Flange (Lock Nut)
3	Spindle Lock Nut	34	Spindle Lock Pin
4	Autolocking Spring	36	Cross Recessed Hex Head Tapping Screw
5	Sleeve	37	Stator Assembly
6	Gear Housing	38	Motor Housing
7	Hex Lock Nut	39	Nameplate
8	Driving Spiral Bevel Gear	40	Insulation Washer
9	Oil Seal	41	Ball Bearing
10	Washer	42	Bearing Retainer
11	Ball Bearing	43	Hex Socket Head Screw
12	Damping Washer	44	Carbon Brush Holder
13	Felt Washer	45	Carbon Brush
14	Bearing Cover	46	Brush Holder Cap
15	Flat Key	47	Capacitor
16	Armature Assembly	48	Soft Start Device
17	Baffle Plate	49	Trigger Switch
18	Auxiliary Handle	50	Pan Head Tapping Screw
19	Needle Bearing	51	Right-Half Handle
20	Driven Spiral Bevel Gear	52	Pan Head Tapping Screw (with Flat Washer)
21	Pan Head Screw (with Spring Washer)	53	Strain Relief
22	Bearing Retainer	54	Pan Head Tapping Screw (with Flat Washer)
23	Ball Bearing	55	Left-Half Handle
24	Flat Key	56	Cord Guard
25	Drive Spindle	57	Cord
26	Dustproof Washer	58	Hex Socket Head Screw
27	Paper Washer	59	Damping Washer
28	Bearing Box	60	Terminal Block
29	Hex Socket Head Screw	861	Wrench
31	Wheel Guard		



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