INSTRUCTION MANUAL

RANKOR

ANGLE GRINDER

RAG950401

RAG950501

MADE IN CHINA

READ AND FOLLOW ALL SAFETY PRECAUTIONS IN THE INSTRUCTION MANUAL.

Content

1. Spindle lock button
2. On/Off switch
3. Auxiliary handle (insulated gripping surface)*
5. Locking screw for the protection guard
6. Protection guard for grinding
7. Mounting flange
8. Grinding wheel*
9. Clamping nut

*** Accessories shown or described are not part of the standard delivery scope of the product. A complete overview of accessories can be found in our accessories program.**

Safety Notes

General Power Tool Safety Warnings

⚠WARNING

Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire, or severe injury. Save all warnings and instructions for future reference. The power tool in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

Work area safety

- **Keep the work area clean and well-lit. Cluttered or dark areas invite accidents.**
- **Do not operate power tools in explosive atmospheres, such as in flammable liquids, gases or dust. Power tools create sparks that may ignite the dust or fumes.**
- **Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.**

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 the 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 the cord away from heat, oil, sharp edges and 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. Using 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. The use of an RCD reduces the risk of electric shock.**

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 masks, non-skid safety shoes, hard hats, and hearing protection for appropriate conditions will reduce personal injuries.**
- **Prevent unintentional starting. Ensure the switch is off position before connecting it to the power source or battery pack or picking up or carrying the tool. Carrying power tools with your finger on the switch or energising power tools with 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 connecting dust extraction and collection facilities, ensure these are connected and properly used. The use of dust collection can reduce dust-related hazards.**

Power tool use and care

- **Don' t 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 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 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. Poorly maintained power tools cause many accidents**
- **Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp edges are less likely to bind and are easier to control.**
- **Use the power tool, accessories, tool sets, etc., in accordance with these instructions, taking into account the working conditions and the work to be performed. Using the power tool for operations different from those intended could result in a hazardous situation.**

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.**

Safety Warnings for Angle Grinder

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

- **This power tool is intended to function as a grinder, sander, wire brush, or cut-off tool. Read all safety warnings, instructions, illustrations, and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire, or severe injury.**
- **Operations such as polishing are not recommended with this power tool. Operations for which the power tool was not designed may create a hazard and cause personal injury.**
- **Do not use accessories not specifically designed and recommended by the tool manufacturer. An inappropriate accessory attached to your power tool does not ensure safe operation.**
- **The accessory's rated speed must equal 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. Only appropriately sized accessories can be adequately guarded or controlled.**
- **The threaded mounting of accessories must match the grinder spindle thread. For accessories mounted by flanges, the accessory's arbor hole must fit the flange's locating diameter. Accessories that do not match the mounting hardware of the power tool may run out of balance, vibrate excessively, or lose control.**
- **Do not use a damaged accessory. Before each use, inspect the accessory, such as abrasive wheels for chips and cracks, backing pads for cracks, tear, or excess wear, wire brushes for loose or cracked wires. If the 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 usually break apart during this test time.**
- **Wear personal protective equipment. Depending on the application, use a face shield, safety goggles, or safety glasses. As appropriate, wear a dust mask, hearing protectors, gloves, and shop 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 the work area. Anyone entering the work area must wear personal protective equipment. Fragments of workpieces or broken accessories may fly away and cause injury beyond the immediate vicinity of the operation.**

▶Hold the power tool by insulated gripping surfaces and auxiliary handle only when performing an operation where the cutting accessory may contact hidden wiring or its cord. Cutting the accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator ▶an electric shock.

Position the cord clear of the spinning accessory. If the power tool loses control, the cord may be cut or ▶snagged, and the operator's hand or arm may be pulled into the spinning wheel.

Never lay the power tool down until the accessory has completely stopped. The spinning wheel may grab ▶the surface and pull the power tool out of the control.

Do not run the power tool while carrying it at the operator's side. Accidental contact with the spinning ▶accessory could snag the clothing or cause severe injury.

Regularly clean the power tool's air vents. The motor's fan will draw 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.

Kickback and related warnings

▶Kickback is a sudden reaction to a pinched or snagged rotating wheel, backing pad, brush, or 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 binding point.

For example, if the workpiece snagged or pinched an abrasive wheel, the edge of the wheel entering the pinch point can dig into the material's surface, causing the wheel to climb out or kick out. The wheel may either jump toward or away from the operator, depending on the direction of the wheel's movement at the point of pinching. Abrasive wheels may also break under these conditions.

Kickback results from power tool misuse 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 resist kickback forces. Always use an 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, for it may kick back over your hand.

▶Do not position your body in the area where the power tool will move if kickback occurs. Kickback will propel the tool in a direction opposite to the wheel's movement at the point of snagging.

▶Use special care when working with comers, sharp edges, etc. Avoid bouncing and snagging the accessory. Corners, sharp edges or bouncing tend to snag the rotating accessory and cause loss of control or kickback.

▶Do not attach a saw chain woodcarving blade or toothed saw blade. Such blades create frequent kickbacks and loss of control.

Safety warnings specific for Grinding and Abrasive Cutting-Off operations

▶Use only wheel types 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 the 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 that the least amount of wheel is exposed towards the operator. The guard helps to protect the operator from broken wheel fragments, accidental contact with the wheel and sparks that could ignite clothing.

▶Wheels must be used only for recommended applications. For example, do not grind with the side of the cut-off wheel. Abrasive cut-off wheels are intended for peripheral grinding; side forces applied to these wheels may cause them to shatter.

▶**Always use undamaged wheel flanges of the correct size and shape for your selected wheel. Proper wheel flanges support the wheel, thus reducing the possibility of wheel breakage. Flanges for cut-off wheels may be different from grinding wheel flanges.**

▶**Do not use worn-down reinforced wheels from larger power tools. Wheels intended for larger power tools are not suitable for the higher speed of a smaller tool and may burst.**

Additional safety warnings specific for abrasive cutting-off operations

▶**Do not "jam" the cut-off wheel or apply excessive pressure. Do not attempt to make an excessive depth of cut. Overstressing the wheel increases the loading and susceptibility to twisting or binding 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 the 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 weight. Supports must be placed under the workpiece near the cut line and the edge of the workpiece on both sides of the wheel.**

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

Safety warnings specific for sanding operations

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

Safety warnings specific for wire brushing operations

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

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

Additional safety warnings

Wear safety goggles.

▶**Use suitable detectors to determine if utility lines are hidden in the work area or call the local utility company for assistance. Contact with electric lines can lead to fire and electric shock. Damaging a gas line can lead to an explosion. Penetrating a water line causes property damage or may cause an electric shock.**

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

▶ **Do not touch grinding and cutting discs before they have cooled down. The discs can become very hot while working.**

- **Secure the workpiece. A workpiece clamped with clamping devices or in a vice is held more securely than by hand.**
- **If the plug is not suitable for your socket outlets, it should be cut off and an appropriate plug 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. It should never be inserted into a mains socket elsewhere.**
- **Products sold in AUS and NZ only: Use a residual current device (RCD) with a rated residual current of 30 mA or less.**

Product Description and Specifications

Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire or severe injury.

Intended Use

- **The machine is intended for cutting, roughing and brushing metal and stone materials without water. A special cutting guard (accessory) must be used to cut with bonded abrasives.**
- **When cutting in stone, provide for sufficient dust extraction. With approved sanding tools, the machine can be used for sanding with sanding discs.**

Product Features

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

1. Spindle lock button
2. On/Off switch
3. Auxiliary handle (insulated gripping surface)*
5. Locking screw for the protection guard
6. Protection guard for grinding
7. Mounting flange
8. Grinding wheel*
9. Clamping nut

*** Accessories shown or described are not part of the standard delivery scope of the product. A complete overview of accessories can be found in our accessories program.**

Technical Data

Model No.	RAG950401	RAG950501
No Load Speed	11000r/min	11000r/min
Max. Disc Diameter	115mm	125mm
Rated Power	950W	950W
Frequency	50/60Hz	50/60Hz
Voltage	220-244V~	220-244V~

*** Measured without protection guard and auxiliary handle. The values given are valid for a nominal voltage [U] of 230 V. For different voltages and models for specific countries, these values can vary.**

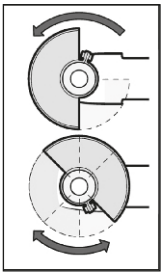
Assembly

Mounting the Protective Devices

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

Note: After breakage of the grinding disc during operation or damage to the holding fixtures on the protection guard/power tool, the machine must promptly be sent to an after-sales service agent for maintenance.

Protection Guard for Grinding



Place the protection guard on the spindle collar. Adjust the position of the protection guard to the requirements of the operation. Lock the protection guard by tightening the locking screw using a Phillips screwdriver.

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

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

Operation

Starting Operation

▶Observe the correct mains voltage! The voltage of the power source must agree with the voltage specified on the machine's nameplate. Power tools marked with 240V can also be operated with 220V.

▶ Hold power tool by insulated gripping surfaces and auxiliary handle only. The accessory may contact hidden wiring or its cord. Accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and shock the operator.

When operating the machine with power from mobile generators that do not have sufficient reserve capacity or are not equipped with suitable voltage control with starting current amplification, loss of performance or untypical behavior can occur upon switching on.
Please observe the power generator's suitability, particularly concerning the mains voltage and frequency.

Switching On and Off

To save energy, only switch the power tool on when using it.

To turn on the power tool, push the switch "2" left to "0".

To switch off the power tool, push the switch "2" right to "1".

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

Working Advice

▶Exercise caution when cutting slots in structural walls; see Section "Information on Structures".
▶Clamp the workpiece if it does not remain stationary due to its own weight.
▶Do not strain the machine so heavily that it comes to a standstill.
▶ After heavily straining the power tool, continue to run it at no load for several minutes to cool down the accessory.
▶Do not touch grinding and cutting discs before they have cooled down. The discs can become very hot while working.
▶Do not use the power tool with a cut-off stand.
▶Hold power tool by insulated gripping surfaces and auxiliary handle only. The accessory may contact hidden wiring or its own cord. Accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and shock the operator.

Rough Grinding

▶Never use a cutting disc for roughing.

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

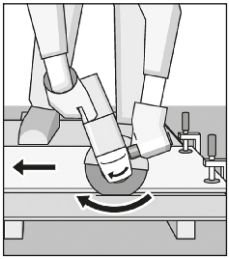
Flap Disc

With the flap disc (accessory), curved surfaces and profiles can be worked.
Flap discs have a considerably higher service life, lower noise levels, and lower sanding temperatures than conventional sanding sheets.

Cutting Metal

▶For cutting with bonded abrasives, always use the protection guard.

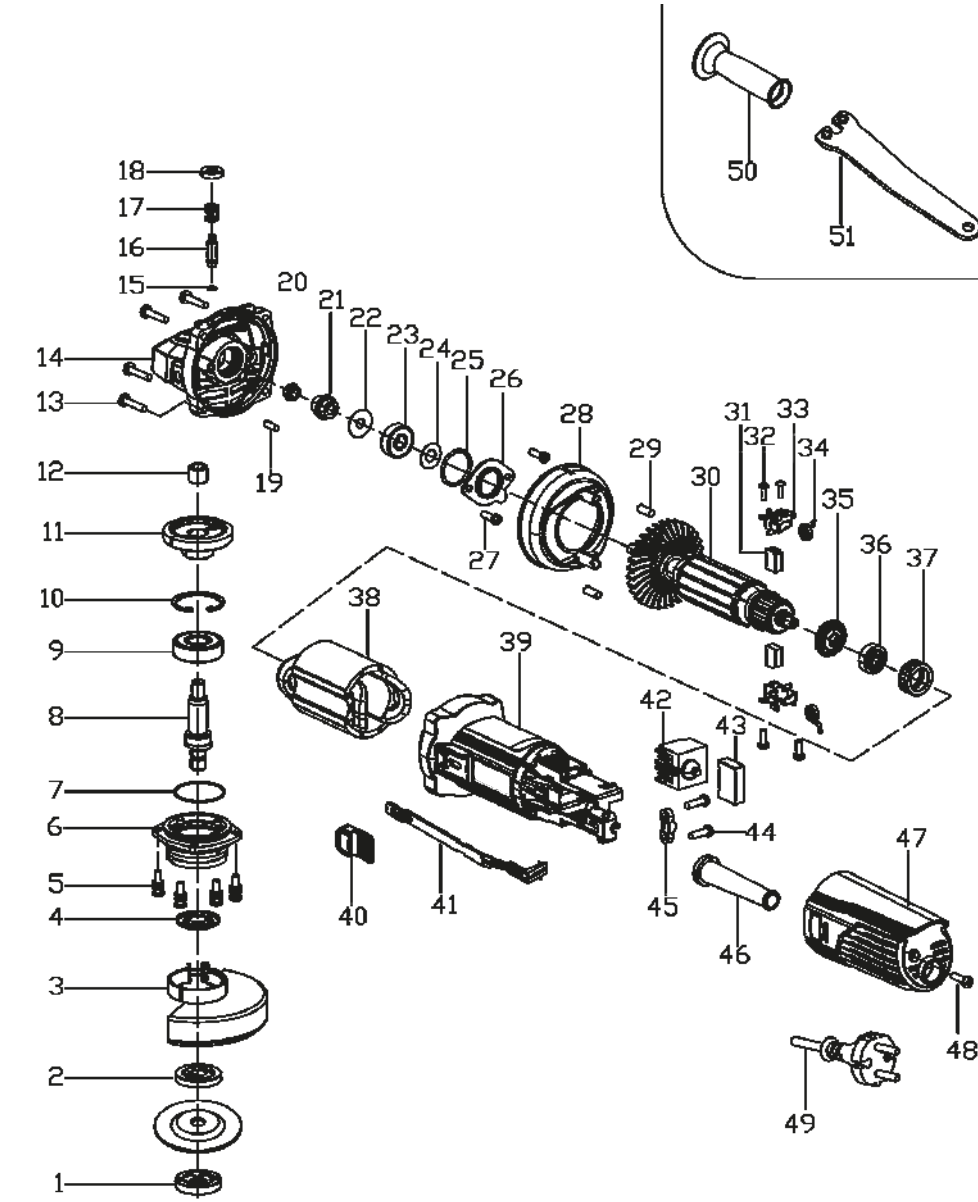
When cutting, work with moderate feed adapted to the material being cut. Do not exert pressure on the cutting disc, tilt, or oscillate the machine.
Do not reduce the speed of running down cutting discs by applying sideward pressure.



When cutting profiles and square bars, it is best to start with the smallest cross-section.
If the replacement of the supply cord is necessary, this has to be done by the service agent to avoid a safety hazard.

ANGLE GRINDER SPARE PARTS LIST

Exploded view No.	Part name	qty	Exploded view No.	Part name	qty
1	Outer Flange	1	27	Screw M4x12	2
2	Inner Flange	1	28	Fad Guid	1
3	Wheel cover	1	29	Rubber column	2
4	Dust cover	4	30	Armature	1
5	Screw M4*14	1	31	Carbon brush	2
6	Bearing holder	1	32	Scrw ST3*8	4
7	O ring ϕ43X1.8	1	33	Carbon brush holder	2
8	Output shaft	1	34	Coil spring	2
9	6201 bearing	1	35	Ring	1
10	Spring ring 32	1	36	6.7-2RS bearing	1
11	Big gear	1	37	Bearing sleeve	1
12	HK0810 Needle bearing	4	38	Stator	1
13	Screw ST4X20(F type)	1	39	Motor housing	1
14	Gear cover	1	40	Switch pusher	1
15	O ring ϕ4x1	1	41	Switch tie rod	1
16	Self-locking pin	1	42	Switch	1
17	Self-locking spring	1	43	Capacitance	1
18	Self-locking cap	1	44	Screw ST4*14	2
19	Wool top	1	45	Wire ramp	1
20	M6 Nut	1	46	Sheath	1
21	Pinion	1	47	Rear cow	1
22	Washer ϕ18.9X0.3Xϕ6.2	1	48	Screw ST4*14	1
23	608-2RS bearing	1	49	Cable	1
24	Washerϕ16.9X0.3Xϕ8.3	1	50	Side handle	1
25	O ring ϕ21.5X1.8	1	51	Wrench	1
26	Bearing clamp	1			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