

Genesis

4-1/2" 6.0 Amp Angle Grinder Operator's Manual

4-1/2" 6,0 Rémouleur d'Angle d'Ampli
Manuel d'utilisation

4-1/2" 6,0 Muela de Angulo
de amperio
Manual del Operario



GAG645

4-1/2" 6-Amp Angle Grinder Operator's Manual

Specifications:

- Model: GAG645
- Input: 120V AC, 6.0 Amp.
- No-Load Speed: 10,500 RPM
- Wheel Size: 4-1/2" (115mm)
- Net Weight: 5.5 lbs.
- Includes: Angle Grinder, One Wheel, Auxilliary Handle and Wrench

WARNING:

To reduce the risk of injury, user must read and understand this operator's manual before operating this tool. Save this Manual for future reference.

Toll-Free Help Line: 1-888-552-8665.

WARNING:



The Operation of any power tool can result in foreign objects being thrown into your eyes, which can result in severe eye damage. Before beginning tool operation, always wear safety goggles or safety glasses with side shields and a full face shield when needed. We recommend Wide Vision Safety Mask for use over eyeglasses or standard safety glasses with side shields. Always wear eye protection which is marked to comply with ANSI

787.1



**Look for this symbol to point out important safety precautions. It means attention!!!
Your safety is involved.**

GENERAL SAFETY RULES

⚠ WARNING:

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints,
- crystalline silica from bricks and cement and other masonry products, and
- arsenic and chromium from chemically treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

⚠ WARNING:

READ AND UNDERSTAND ALL WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS BEFORE USING THIS EQUIPMENT.

Failure to follow all instructions listed below may result in electric shock, fire and/or serious personal injury.

SAVE THESE INSTRUCTIONS

- 1. READ THE INSTRUCTION MANUAL BEFORE OPERATING THE MACHINE.** To minimize the possible occurrence of accidents and personal injury, learn the tool's application, limitations, and specific potential hazards peculiar to this tool.
- 2. WEAR EYE AND HEARING PROTECTION. ALWAYS USE SAFETY GLASSES WITH SIDE SHIELDS.** Unless otherwise specified, everyday glasses provide only limited impact resistance, they are NOT safety glasses. Use only certified safety equipment; eye protection equipment should comply with ANSI Z87.1 standards. Protective hearing equipment should comply with ANSI S3.19 standards.
- 3. DO NOT USE THIS OR ANY OTHER MACHINE WHEN YOU ARE TIRED, UNDER THE INFLUENCE OF DRUGS, ALCOHOL, OR MEDICATION. WATCH WHAT YOU ARE DOING, STAY ALERT AND USE COMMON SENSE.**
- 4. WEAR PROPER CLOTHING.** Do not wear loose clothing, gloves, neckties, rings, bracelets, wrist watches or other jewelry which may get caught in moving parts. Wearing nonskid footwear is recommended as well as wearing protective hair covering to contain long hair.

5. **USE AND KEEP GUARDS IN PLACE** and in good working order. Never operate the machine with any guard or cover removed. Check that all guards are in place, secured, and working correctly before each use to reduce the risk of injury.
6. **DO NOT USE THE TOOL IN DANGEROUS ENVIRONMENTS.** Keep the work area well lighted to prevent tripping or inadvertently placing arms, hands, or fingers in dangerous positions. Do not use power tools in damp or wet locations or in the rain which can cause shock or electrocution.
7. **KEEP THE WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
8. **CHECK THE TOOL FOR DAMAGED PARTS** before using the machine. Check for proper alignment of moving parts, binding of moving parts, component breakage, and any other conditions that may affect the tool's operation. A guard or any other part that is damaged must be properly repaired or replaced by an authorized service center to avoid risk of personal injury.
9. **REMOVE ADJUSTING KEYS AND WRENCHES BEFORE STARTING THE TOOL.** Keys, wrenches, scrap, and other debris can be thrown at high speed, possibly causing serious personal injury.
10. **KEEP CHILDREN AND VISITORS AWAY.** Your shop is a potentially dangerous environment and visitors should not be allowed to contact any tools, extension cords, or roam about unsupervised. All visitors should wear safety glasses and be kept a safe distance from the work area.
11. **MAKE THE WORKSHOP CHILDPROOF** by using padlocks, master switches, and by removing starter keys from tools.
12. **MAINTAIN ALL TOOLS AND MACHINES WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
13. **DISCONNECT TOOLS WHEN NOT IN USE,** before servicing, or when changing attachments, blades, bits, cutters, etc.
14. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Check to be sure that the tool's switch is in the "OFF" position before plugging in the power cord. Should a power failure occur, move the switch to the "OFF" position. Accidental start-ups can cause serious personal injury.
15. **USE THE CORRECT TOOL FOR THE JOB.** Don't force the tool or attachment to do a job for which it was not designed. Don't use the tool for a purpose not intended as damage to the machine and/or personal injury may result.

- 16. USE RECOMMENDED ACCESSORIES.** Using accessories and attachments not recommended by the manufacturer or intended for use on this type tool, may cause damage to the machine or result in personal injury to the user. Consult the instruction manual for recommended accessories.
- 17. MAKE SURE YOUR EXTENSION CORD IS THE PROPER SIZE AND IS IN GOOD CONDITION.** When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and tool overheating. Consult the Extension Cord Chart for the correct size based on the cord length and nameplate ampere rating. If ever in doubt, use the next heavier wire gauge cord. The smaller the gauge number, the heavier the cord.
- 18. SECURE THE WORK-PIECE.** Use clamps or a vise to hold the work-piece when practical. Using clamps or similar mechanical device is safer than using your hand(s) and allows you to use both hands to operate the tool. Losing control of the work-piece can cause personal injury.
- 19. DON'T OVERREACH.** Maintain proper footing and balance at all times; loss of balance can cause you to fall into the working machine, possibly causing an injury.
- 20. NEVER STAND ON THE TOOL.** An injury may occur if the machine is tipped or if you should unintentionally contact the cutting tool.
- 21. DO NOT FORCE THE TOOL.** The tool will perform the job better and safer at the feed rate for which it was designed. Forcing the tool could possibly damage the machine and may result in personal injury.
- 22. FEED THE WORK-PIECE IN THE CORRECT DIRECTION AND SPEED.** Feed the work-piece into a blade, cutter, or abrasive surface against the direction of the cutting tool's direction of rotation only. Incorrectly feeding the work-piece in the same direction as the cutting tool rotates causes the work-piece to be thrown out at high speed.
- 23. NEVER LEAVE THE TOOL RUNNING UNATTENDED. TURN THE POWER OFF.** Don't leave the machine until it comes to a complete stop.
- 24. TURN THE MACHINE "OFF", AND DISCONNECT THE MACHINE FROM THE POWER SOURCE** before adjusting or changing set-ups, or when making repairs. An accidental start-up may occur causing personal injury.
- 25. NEVER USE THE TOOL IN AN EXPLOSIVE ATMOSPHERE.** Normal sparking of the motor could ignite fumes.
- 26. KEEP THE TOOL DRY, CLEAN, AND FREE FROM OIL AND GREASE.** Always use a clean cloth when cleaning. Never use brake fluids, gasoline, petroleum-based products, or any solvents to clean the tool.

- 27. DO NOT USE THE TOOL IF SWITCH DOES NOT TURN IT ON AND OFF.** Have defective switches replaced by an authorized service center.
- 28. USE ONLY CORRECT BLADES.** Do not use blades with incorrectly sized arbor holes. Never use blade washers or blade bolts that are defective or incorrect.
- 29. BEFORE MAKING A CUT, BE SURE ALL ADJUSTMENTS ARE SECURE. DOUBLE CHECK ALL SETUPS.** Make sure the blade is tight and not making contact with the saw or work-piece before connecting to the power supply.
- 30. AVOID CUTTING NAILS.** Inspect for and remove all nails from lumber before cutting.
- 31. NEVER TOUCH THE BLADE OR OTHER MOVING PARTS DURING USE.**
- 32. NEVER START A TOOL WHEN ANY ROTATING COMPONENT IS IN CONTACT WITH THE WORK-PIECE.**
- 33. MAKE SURE THE WORK AREA HAS AMPLE LIGHTING** to see the work and that no obstructions will interfere with safe operation **BEFORE** performing any work.
- 34. INSPECT TOOL CORDS PERIODICALLY.** If a damaged cord is found, have it repaired by a qualified service technician at an authorized service facility. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is required, do not connect the equipment-grounding conductor to a live terminal. Repair/replace damaged or worn cords immediately. Be constantly aware of the cord location and keep it well away from the rotating blade.
- 35. POLARIZED PLUGS.** To reduce the risk of electric shock, this tool has a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not change the plug in any way.

⚠ WARNING:

USE OF THIS TOOL CAN GENERATE AND DISBURSE DUST OR OTHER AIRBORNE PARTICLES, INCLUDING WOOD DUST, CRYSTALLINE SILICA DUST AND ASBESTOS. Direct particles away from face and body. Always operate tool in a well ventilated area and provide for proper dust removal. Use dust collection system wherever possible. Exposure to the dust may cause serious and permanent respiratory or other injury, including silicosis (a serious lung disease), cancer, and death. Avoid breathing the dust, and avoid prolonged contact with the dust. Allowing dust to get into

your mouth or eyes, or lay on your skin may promote absorption of harmful material. Always use properly fitting NIOSH/OSHA approved respiratory protection appropriate for dust exposure, and wash exposed areas with soap and water.

EXTENSION CORDS

Grounded tools require a three wire extension cord. Double insulated tools can use either a two or three wire extension cord. As the distance from the power supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. Refer to the table shown below to determine the required minimum wire size.

The smaller the gauge number of the wire, the greater the capacity of the cord. For example: a 14 gauge cord can carry a higher current than a 16 gauge cord. When using more than one extension cord to make up the total length, be sure each cord contains at least the minimum wire size required. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum wire size.

Guidelines for Using Extension Cords

- If you are using an extension cord outdoors, be sure it is marked with the suffix "W-A" ("W" in Canada) to indicate that it is acceptable for outdoor use.
- Be sure your extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified person before using it.
- Protect your extension cords from sharp objects, excessive heat, and damp or wet areas.

Recommended Minimum Wire Gauge for Extension Cords (120 Volt)						
Nameplate Amperes (At Full Load)	Extension Cord Length					
	25 Feet	50 Feet	75 Feet	100 Feet	150 Feet	200 Feet
0-2.0	18	18	18	18	16	16
2.1-3.4	18	18	18	16	14	14
3.5-5.0	18	18	16	14	12	12
5.1-7.0	18	16	14	12	12	10
7.1-12.0	18	14	12	10	8	8
12.1-16.0	14	12	10	10	8	6
16.1-20.0	12	10	8	8	6	6

SPECIFIC SAFETY RULES FOR ANGLE GRINDERS

DO NOT let comfort or familiarity with your angle grinder (gained from repeated use) replace strict adherence to angle grinder safety rules. If you use this tool unsafely or incorrectly, you can suffer serious personal injury.

⚠ WARNING: Hold tool by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord. Contact with a “live” wire will also make exposed metal parts of the tool “live” and shock the operator.

1. Always use proper guard with grinding wheel. A guard protects operator from broken wheel fragments.
2. Accessories must be rated for at least the speed recommended on the tool warning label. Wheels and other accessories running over rated speed can fly apart and cause injury.
3. Hold the tool by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord. Contact with a “live” wire will make exposed metal parts of the tool “live” and shock the operator.
4. Grinding wheel and guard must be securely attached as described in this manual before connecting the grinder to a power source. Make sure that the guard is in good before operating the grinder.
5. Check the grinding wheel carefully visible defects before operation. Replace cracked, chipped, or warped wheel immediately. Run the tool (with guard) at no load speed for about a minute, holding tool away from others. If wheel is flawed, it will likely separate during this test.
6. Always use safety glasses or goggles. Ordinary eye or sun glasses are NOT safety glasses.
7. When using depressed center grinding wheels, be sure to use only fiberglass reinforced wheels.
8. Use only flanges and clamp nut specified for this tool; do not over tighten the clamp nut on the grinding wheel. Excessive tightening can cause the wheel to crack during operation.
9. Be careful not to damage the spindle, the flange, or clamp nut (especially the installing surface) or the lock nut. Damage to these parts could result in wheel breakage.
10. NEVER use tool with wood cutting blades or other saw blades. Such blades when used on a grinder frequently kick and cause loss of control leading personal injury.
11. Hold the tool firmly with both hands.
12. Keep hands away from rotating parts.
13. Make sure cord is clear of wheel. Do not wrap cord around your arm or wrist. If control of tool is lost, cord may become wrapped around you and cause personal injury.
14. Make sure the wheel is not contacting the workpiece before the switch is turned on.
15. Before using the tool on an actual workpiece, let it run for a while. Watch for vibration or wobbling that could indicate poor installation or a poorly balanced wheel.
16. Use the specified surface of the wheel to perform the grinding. Never use the side or upper surfaces for cutting.
17. Watch out for flying sparks. Hold the tool so that sparks fly away from you and other persons or flammable materials.
18. Do not leave the tool running. Operate the tool only when hand-held.
19. Do not touch the workpiece immediately after operation; it may be extremely hot and could burn your skin.
20. ALWAYS wear proper apparel including long sleeve shirts, leather gloves and shop aprons to protect skin from contact with hot grindings.
21. Use of this tool to grind or sand some products, paints and wood could expose user to containing hazardous substances. Use appropriate respiratory protection.

OPERATION

SAVE THESE INSTRUCTIONS

⚠ WARNING: MISUSE or failure to follow the safety rules stated in this instruction manual may cause serious personal injury.

⚠ WARNING: Before plugging in the tool, always check to see that the tool is switched off.

⚠ WARNING: The switch can be locked in "ON" position for ease of operator comfort during extended use. Apply caution when locking tool in "ON" position and maintain a firm grasp on the tool.

SWITCH ACTION:

1. To start the tool, slide the slide switch forward to the (ON) position.
2. For continuous operation, press the front of slide switch downward to lock it on.
3. To stop the tool, press downward on the rear of slide switch, the switch will return to the "OFF" position.

INSTALLING THE AUXILLARY HANDLE:

⚠ WARNING: Always be sure that the tool is switched off and unplugged before performing any work on the tool.

Your grinder is equipped with a two position auxillary handle; it can be mounted on either the left, or right side of the die cast gear housing. Generally, a right handed operator will grip the body of the grinder with their right hand and grip auxillary handle, mounted to the left side of the gear housing, with their left hand. The opposite gripping and auxillary handle placement is generally used by a left handed operator. Occasionally, auxillary handle placement needs to be changed to accommodate the requirements or restrictions of the operation being performed.

To mount the auxillary handle to the grinder, simply securely screw the handle into the threaded hole on the left, or right side of the die cast gear housing.

INSTALLING OR REMOVING WHEEL GUARD:

⚠ WARNING: Always be sure that the tool is switched off and unplugged before performing any work on the tool.

1. To mount the wheel guard, loosen the clamp lever on wheel guard's band.
2. Align the small protrusion on the inside of the wheel guard band with the notch on the grinders bearing cap shoulder, then slip the guard's band onto the shoulder of the bearing cap.
3. Slightly rotate the guard so that it is positioned as shown in the figure on the last page of this manual.
4. Tighten the clamp lever securely.
5. To remove the guard, follow the installation procedure in reverse.

⚠ WARNING: When using a depressed center grinding wheel, flex wheel, wire wheel, cut-off wheel, or abrasive mop disc, the wheel guard must be fitted on the tool so that the closed side of the guard always points towards the operator.

INSTALLING OR REMOVING DEPRESSED CENTER GRINDING WHEELS:

⚠ WARNING: Always be sure that the tool is switched off and unplugged before adjusting, adding accessories, or checking a function on the tool.

1. Mount the inner flange with the machined "flats" side down onto the spindle. Slowly rotate the inner flange until it engages the corresponding matching machined "flats" on the spindle shaft.

2. Slide the wheel, crown side down and depressed side up, over the spindle shaft and over the raised shoulder on the inner flange.
3. Screw the outer flange onto the spindle with the shouldered side down.
4. Firmly depress the spindle lock so the spindle cannot revolve; then use the lock nut wrench, turning it clockwise, to securely tighten the outer flange.
5. To remove the wheel, follow the installation procedure in reverse.

⚠ WARNING: Always install grinding wheel with the depressed center against the disc flange. Failure to do so will cause the grinding wheel to crack when tightening the clamp nut. This could result in serious personal injury because of loose particles breaking off and being thrown from the grinder. Never use a grinding wheel with a mounting hole larger than 5/8". **Do not overtighten.**

⚠ WARNING: Always use the supplied guard when a depressed center grinding wheel is on the tool. The wheel can shatter during use and the guard helps reduce the chances of personal injury.

INSTALLING OR REMOVING AN ABRASIVE DISC:

⚠ WARNING: Always be sure that the tool is switched off and unplugged before adjusting, adding accessories, or checking a function on the tool.

1. Mount the rubber backing pad onto the spindle.
2. Place abrasive disc onto the spindle, then fit the disc onto rubber pad and begin to screw the outer flange onto the spindle.
3. Firmly depress the spindle lock so that the spindle cannot rotate, then use the lock nut wrench and securely tighten clockwise.
4. To remove the disc, follow the installation procedure in reverse.

GRINDING AND SANDING OPERATION:

⚠ WARNING: Never force the tool; the weight of the tool applies adequate pressure. Forcing and excessive pressure could cause dangerous wheel breakage.

ALWAYS replace the wheel if the tool is dropped while grinding.

NEVER bang or hit the grinding wheel or disc onto the work.

Avoid bouncing and snagging the wheel, especially when working on corners, sharp edges, etc. This can cause loss of control and kickback.

NEVER use the tool with wood carving blades or other saw blades. It is only designed for grinding, sanding, or wire brushing.

⚠ WARNING: After operation, always switch off the tool and wait until the wheel comes to a complete stop before putting the tool down.

ALWAYS select and use grinding wheels that are recommended for the material to be ground. Ensure that the minimum operating speed of any accessory wheel selected

for use.

ALWAYS hold the tool firmly with one hand on the motor housing and the other on the side handle. Turn the tool on and then apply the wheel or disc to the workpiece. The key to efficient operation begins by controlling the pressure and surface contact between grinding wheel and the workpiece.

Flat surfaces are usually best ground by keeping the edge of the wheel at an angle of 5 to 15 degrees. Maintaining the proper angle of 5 to 15 degrees by tilting the grinder and continuously moving the grinder back and forth or up and down over the work area. Keep the grinder moving to avoid removing an excessive amount of material from one area.

Use just enough pressure to keep the tool from chattering or bouncing; normally the weight of the tool alone is adequate for most grinding jobs. Where there is a chance that the grinding wheel may get snagged by the workpiece, such as loose bolts or jagged edges, causing loss of tool control, use lighter pressure.

OPERATION WITH WIRE BRUSHES:

⚠ WARNING: In normal wire brushing operations, the material being removed and brush bristles will fly off, going great distances with extreme force. The potential for serious injury exists. To protect against this hazard, the operator and others in the work area must wear protective clothing and safety goggles. Wearing a full face mask over safety glasses with side shields is highly suggested.

⚠ WARNING: Always be sure that the tool is switched off and unplugged before adjusting, adding accessories, or checking a function on the tool.

Do not use a brush that is damaged or is out of balance. Use of a damaged brush increases the potential for injury from contact with broken brush wires.

Wire brushes designed for grinder use are available in a variety of shapes, sizes, and wire types. Unlike grinding wheels which are held in place inner and flange washers, wire brushes screw onto the spindle; for this grinder, wire brushes utilizing a 5/8" - 11 unc thread are required. The flat brush styles must also be of a diameter and thickness which allows their use with the guard in place.

To install the wire brush, unplug the tool and place it upside down allowing easy access to the spindle. Remove any accessories on the spindle, then thread the wire brush onto the spindle and tighten securely with an adjustable wrench while depressing the spindle lock.

Perform wire brush operations in a fashion similar grinding as described in the previous section. Tip the grinder from 5 to 15 degrees and allow the weight of the tool to remove material as desired. Excessive pressure causes premature wire breakage and bending over of the wires.

1. On/Off Switch
2. Wheel Guard
3. Spindle Lock
4. Inner Flange
5. Side Handle
6. Grinding Disk



Two-Year Warranty

This product is warranted free from defects in material and workmanship for 2 years after date of purchase. This limited warranty does not cover normal wear and tear nor damage from neglect or accident. The original purchaser is covered by this warranty and it is not transferable. Please return the tool to store location of purchase along with your receipt, and you will receive a new drill or a refund. ***THIS PRODUCT IS NOT WARRANTED IF USED FOR INDUSTRIAL OR COMMERCIAL PURPOSES.***

Toll-Free Help Line:

For questions about this or any other GENESIS Product please call Toll-Free: 888-552-8665.

Genesis

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