



Operating Instructions Manual

4-1/2" Electric Angle Grinder

87-1597



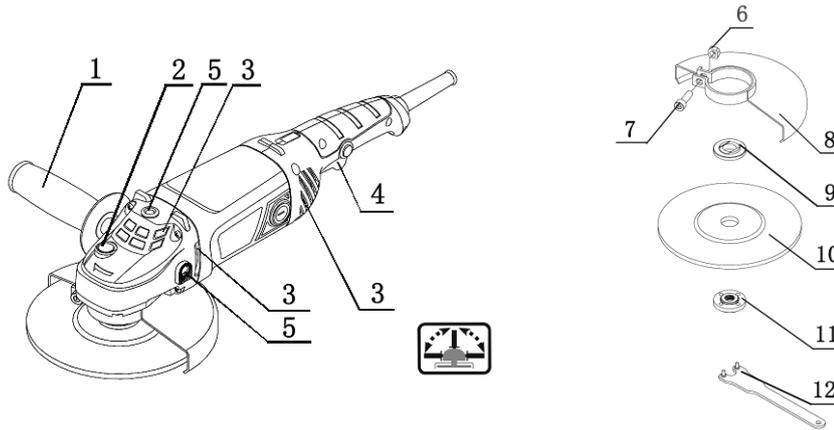
⚠ WARNING: Cancer and Reproductive Harm – www.p65warnings.ca.gov.

Read through operating instructions manual carefully before using the product. Protect yourself and others by observing all safety information, warnings, and cautions. Failure to comply with instructions could result in personal injury and/or damage to the product or property. Please retain these instructions for future reference.

SPECIFICATIONS:

Model	Voltage (V)	Frequency (Hz)	Rated Current (Amps)	No-load speed (Min-1)	Disc Diameter	Spindle Threads	Weight (lb.)
87-1593	120	60	8	11,000 RPM	4-1/2"	5/8"-11	5.18

OPERATING INSTRUCTIONS:



Operating Controls:

1. Auxiliary Handle
2. Spindle Lock Button
3. Ventilation Slots
4. On/off Switch
5. Threads (For Auxiliary Handle)
6. Square Nut
7. Pan Head Screw
8. Grinding Guard
9. Inner Flange
10. Grinding Disc
11. Outer Flange
12. Spanner Wrench

Assembly:

Warning: Switch off the grinder and disconnect it from the power.

Note: The cutting guard must be used when using the cutting disc.

- 1) The auxiliary handle (1) can be fitted to the left or the right of the tool. Select the position which is the most safe and comfortable for the use of the tool.
- 2) Fitting the grinding guard:(See Figure 1 and 2)
 - A: Position the lug on the inside of the central guard ring in the vertical slot in the spindle cover then twist the grinding guard to the appropriate position.
 - B: Tighten the pan head screw in a clockwise direction using a screwdriver.

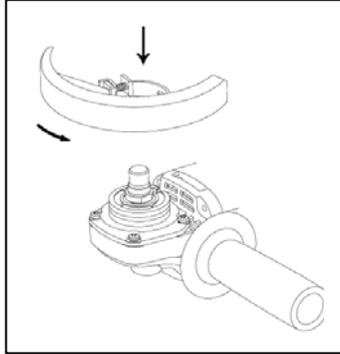


Figure 1

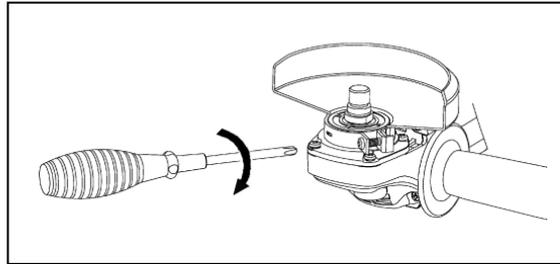


Figure 2

- 3) Fitting the grinding disc: (Figure 3 and Figure 4)
 - A. Place the inner flange (9) over the spindle making sure the fit is tight.
 - B. Place the grinding disc (10) on the top of the inner flange ensuring the bore fits into the step of the flange.
 - C. Mount the concave recess side of the outer flange (11) over the spindle.
 - D. Press the spindle locking button (2) firmly and verify that there is no movement in the spindle. While the spindle lock is depressed, tighten the outer flange in a clockwise direction using the spanner (12) (See figure 4).

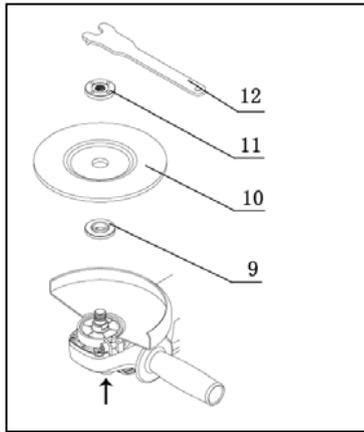


Figure 3

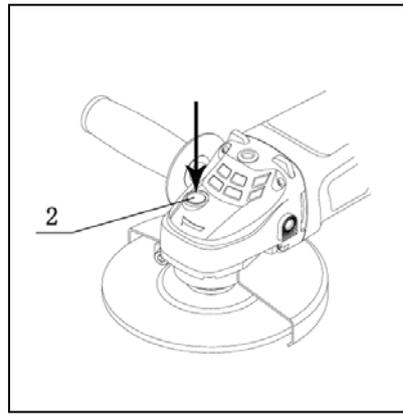


Figure 4

Allow the angle grinder to run with no load for at least a minute with the grinding disc correctly assembled. Any vibration to the disc should be immediately fixed.

Using the Tool:

Switch Action

- 1) When starting, hold the tool firmly with both hands. One hand on the rear handle and the other on the side handle.
- 2) Start the tool by pressing the on/off safety button, then pressing the trigger of on/off switch down slightly (See figure 5).
- 3) Stop the tool by releasing the trigger.

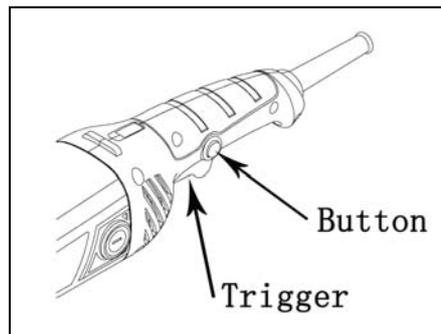


Figure 5

Note: This angle grinder, with the proper disc attached, can be used for grinding and cutting steel, stone, or ceramic workpieces such as pipe, iron, steel bar, bricks, and tiles. Do not attempt to grind wood or a soft metal such as lead. The material will quickly "fill" the disc and render it useless.

Before starting grinder, first ensure that the disc, disc guard and tool are in good condition. Position the guard so that it will deflect hot sparks away from the operator.

- 1) Do not cover exhaust vents when the tool is in use. This may cause damage to the motor and reduce the efficiency of the tool.
- 2) Move the grinder across the workpiece in a steady motion.
- 3) Diamond cutting or grinding wheels are recommended for stone, concrete or masonry.



The best results are achieved with an angle of 30° to 40° for grinding. Move the tool back and forth with light pressure. In this manner, the workpiece does not become too hot, discoloration will not occur, and no ridges are produced.

Under no circumstances should a cutting disc be used for grinding.

Maintenance and Inspection:

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

- 1) The armature and stator (motor) are the heart of the power tool. Exercise due care to ensure they do not become damaged or affected by oil or water.
- 2) The carbon brushes should be checked periodically, and worn-out brushes should be replaced. After replacing, inspect whether the new carbon brushes can move freely in the brush holder. Keep running the motor for 15 minutes to match the contact of the carbon brushes and commutator.
- 3) Regularly inspect all mountings and screws and ensure they are properly tightened. Should any of the screws be loose, tighten them immediately. Failure to do so may result in serious damage.
- 4) The supply cord of the tool and any extension cord used should be checked frequently for damage. Replace the extension cord if necessary.
- 5) The grease in the gearbox will require replacement after extensive use of the tool.
- 6) Clean and dust the tool after each use.

Accessories:

CAUTION: These accessories or attachments are recommended for use with your tool specified in this manual. The use of any other accessories or attachments might present a risk of injury. Only use the accessory or attachment for its stated purpose.

Auxiliary Handle -1pc
Spanner Wrench -1pc
Replacement Motor Brush – 1 set



Read the owners manual before use



Wear Safety Gloves



Wear Eye Protection



Wear Ear Protection



Wear Dust Mask

NOTE: DURING OPERATION SAFETY GLASSES/GOGGLES AND A FACE SHIELD SHOULD ALWAYS BE WORN TO GUARD AGAINST DEBRIS AND METAL CHIPS.

SAFETY PRECAUTIONS:

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

Work Area:

1. Keep your work area clean and well lit. Cluttered benches and dark areas can cause accidents.
2. Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dusts. Power tools create sparks which may ignite the dust or fumes.
3. Keep bystanders, children, and visitors away while operating a power tool. Distractions can cause you to lose control.

Electrical Safety:

1. Double Insulated tools are equipped with 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 a polarized outlet. Do not change the plug in any way. Double Insulation eliminates the need for the three-wire grounded power cord and grounded power supply system.
2. Avoid body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators. There is an increased risk of electric shock if your body is grounded.
3. Don't expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
4. Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.
5. When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W". These cords are rated for outdoor use and reduce the risk of electric shock.

Personal Safety:

1. Stay alert when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication, as this may result in serious personal injury.
2. Dress properly. Do not wear loose clothing or jewelry and pull back long hair. Keep your hair, clothing, and gloves away from moving parts to avoid being caught in the tool.
3. Avoid accidental starting. Be sure switch is off before plugging in the tool. Carrying tools with your finger on the switch or plugging in tools with the switch on can cause injury.
4. Remove adjusting keys or wrenches before turning the tool on. A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
5. Do not overreach. Always keep proper footing and balance. Proper footing and balance enable better control of the tool in unexpected situations.
6. Use safety equipment. Always wear eye protection. Dust mask, non-skid safety shoes, hard hat, or hearing protection may be used for appropriate conditions.

Tool Use and Care:

1. Use clamps to secure and support the workplace to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control.
2. Do not force tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.
3. Do not use tool if switch does not turn it on or off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.
4. Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally.
5. Store tools out of reach of children and other untrained persons. Tools are dangerous in the hands of untrained users.
6. Maintain tools with care. Keep cutting tools sharp and clean. Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control.
7. Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using. Many

accidents are caused by poorly maintained tools.

8. Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool, may become hazardous when used on another tool.

Service:

1. Tool service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified personnel could result in a risk of injury.
2. When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual. Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk of electric shock or injury.

Additional Safety Regulations:

- Always use the proper guard with grinding or cut-off wheels. A guard protects operator from broken wheel fragments, sparks, and debris from cutting.
- Hold tool by insulated gripping surfaces when performing an operation where the cutting tools 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.
- Accessories must be rated for at least the speed recommended on the tool warning label. Wheels and other accessories running over their rated speed can fly apart and cause injury.
- When the machine is in operation, keep hands away from the cutting or grinding area.
- The disc will not stop immediately when the machine is turned off. Exercise caution.
- Do not place the tool down after use until the grinding or cutting wheels have come to complete stop.
- Do not start the tool when the grinding or cutting wheels are touching the work area.
- Always ensure the safety guard is attached correctly and do not operate the angle grinder without the guard attached.
- Only use grinding and cutting wheels that are approved for a maximum speed of 11,000 RPM or greater.
- Only use grinding or cutting wheels with the correct bore size for the spindle of the grinder.
- Keep the power cord away from the cutting area during use. Always position the cord so that it will not be caught in the workpiece when the grinder is in use.
- Always wear hearing protection, safety glasses and face mask while in operation.
- Before connecting the tool to the power supply follow the safety instructions to install the grinding or cutting wheels. Installing the nut too tightly can cause the wheel to crack.
- Always use both hands when operating the tool.
- Use the standard parts. Do not use a coolant or water and do not use as a fixed grinder.

LIMITED WARRANTY:

Kimball Midwest warrants to the original buyer ("Buyer") all parts and accessories purchased by it from Kimball Midwest against defects in material or workmanship.

Kimball Midwest will repair or replace, at no charge to the buyer, this tool which, after examination by Kimball Midwest, is determined to be defective within a period of 1 year from receipt.

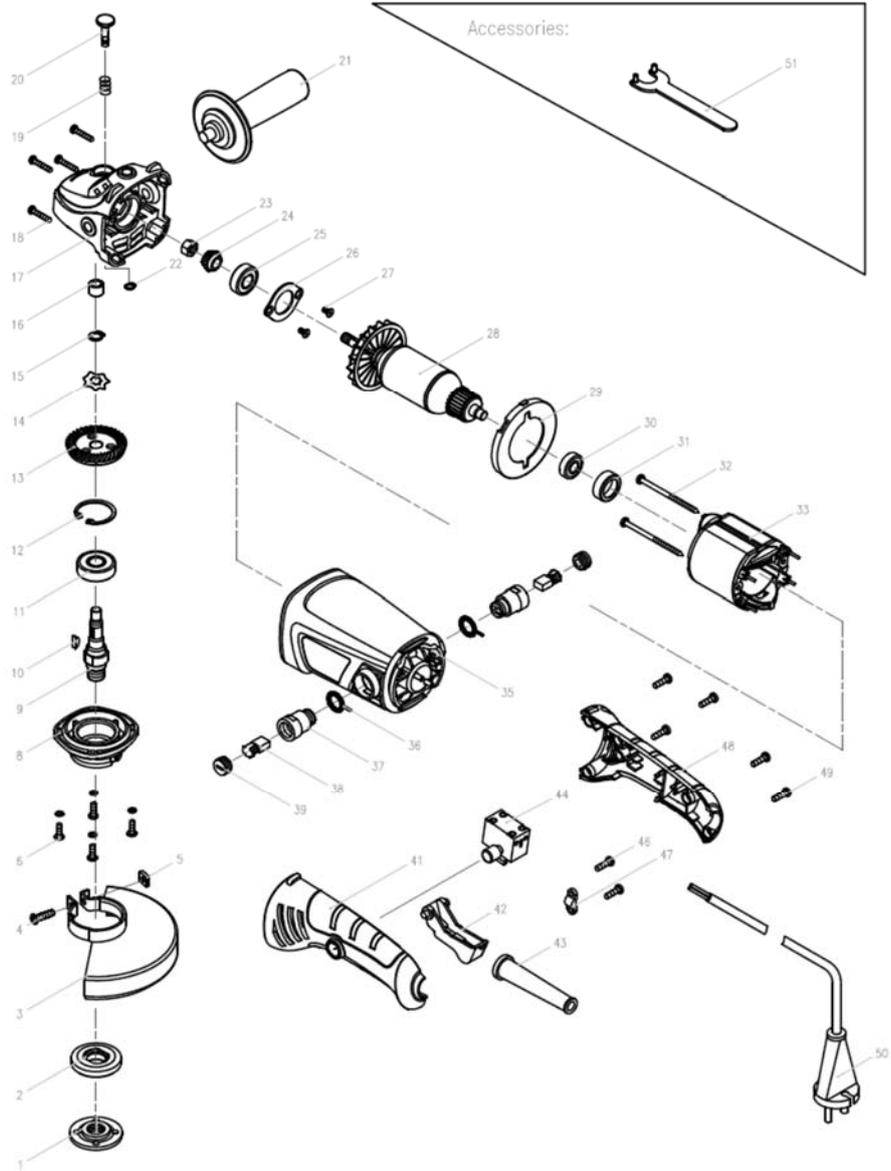
Coverage under this warranty will be provided only if the defective tool has been submitted to Kimball Midwest for inspection.

This warranty does not cover any damage to this tool due to alteration, modification, improper installation, accident, post-installation misuse, abuse, negligence, inadequate maintenance, or malfunction of associated parts or equipment not supplied by Kimball Midwest.

This warranty is in lieu of any other warranty, expressed or implied, including any warranty of merchantability or fitness for a particular purpose. Replacement or repair as provided under this warranty is the exclusive remedy of the buyer. Kimball Midwest shall not be liable for any incidental or consequential damages resulting from breach of this warranty. Kimball Midwest neither assumes, nor authorizes any person to assume for it, any other liability in connection with the sale of its products.

If this Kimball Midwest Product proves defective in material or workmanship within one year after purchase, contact the Kimball Midwest Quality Assurance Department at:

Assembly Diagram



No.	Item Description	Qty.	No.	Item description	Qty.
1	Outer flange	1	26	Bearing cover	1
2	Inner flange	1	27	Countersunk head screw M5X10	2
3	Grinding guard ϕ 115	1	28	Armature	1
4	Pan head screw M5X20	1	29	Baffle	1
5	Square nut M5	1	30	Bal bearing 608.2Z	1
6	Pan head screw M4X14, with spring washer	4	31	Bearing bush	1
8	Gear box cover	1	32	Tapping screw ST4X68C	2
9	Spindle	1	33	Stator	1
10	Key 3X3.7x10	1	35	Housing	1
11	Ball bearing 6201.2RS	1	36	Ring terminal	2
12	Circlip for hole ϕ 32	1	37	Brush holder	2
13	Gear	1	38	Carbon brush	2
14	Wave spring washer ϕ 10X ϕ 13.6	1	39	Brush holder cap	2
15	Circlip for shaft ϕ 10	1	41	Handle	1
16	Friction bearing	1	42	Trigger	1
17	Gear box	1	43	Cord sleeve	1
18	Tapping screw ST4X22F	4	44	Switch	1
19	Spindle lock spring	1	46	Tapping screw ST4X14F	2
20	Spindle lock button	1	47	Cord clamp	1
21	Auxiliary handle	1	48	Handle cover	1
22	Circlip for shaft ϕ 6	1	49	Tapping screw ST4X14F	5
23	Hex. Thick nut M8X1	1	50	Cord	1
24	Pinion	1	51	Spanner	1
25	Ball bearing 6000.RS	1			

