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RYOBI P450

RYOBI 18V ONE+ Cordless 4-1/2 in. Angle Grinder Kit User Manual

Model: P450

Product Overview

The RYOBI 18V ONE+ Cordless 4-1/2 inch Angle Grinder Kit (Model P450) provides cordless convenience for various grinding and cutting applications. This tool operates at 6500 RPM, offering precision and power. Key features include onboard wrench storage, a comfortable GRIPZONE overmold, and a 3-position side handle for enhanced user comfort and control. The kit includes a 1.5 Ah lithium-ion battery and a compact charger, designed for fade-free power and extended runtime.



Figure 1: The RYOBI 18V ONE+ Cordless 4-1/2 inch Angle Grinder Kit, including the grinder, 1.5 Ah battery, and compact charger.

Safety Information

Always read and understand 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. Keep all warnings and instructions for future reference.

- Wear eye protection and hearing protection.
- Use appropriate personal protective equipment (PPE) such as gloves and a dust mask.
- Ensure the workpiece is securely clamped.
- Never operate the grinder without the guard in place.
- Keep hands clear of the rotating wheel.
- Disconnect the battery pack before making any adjustments, changing accessories, or storing the tool.

Setup

1. Battery Installation and Charging

1. Insert the 18V ONE+ battery pack into the charger. Ensure it clicks into place.
2. Plug the charger into a standard electrical outlet. The indicator light on the charger will show the charging status.
3. Once fully charged, remove the battery from the charger.
4. Align the charged battery pack with the battery port on the grinder handle and slide it in until it locks securely.



Figure 2: The RYOBI 18V ONE+ Cordless 4-1/2 inch Angle Grinder, ready for battery installation.

2. Attaching the Side Handle

The angle grinder features a 3-position side handle for optimal control and comfort.

1. Identify the three threaded holes on the grinder's gear housing.
2. Screw the side handle into the desired position (left, right, or top) until it is firmly secured.



Figure 3: The angle grinder illustrating the three possible positions for attaching the side handle.

3. Installing/Changing Grinding Wheels

1. **Ensure the battery pack is removed before changing wheels.**
2. Press and hold the spindle lock button.
3. Use the spanner wrench (stored in the side handle) to loosen and remove the outer flange nut by turning it counter-clockwise.
4. Remove the old grinding wheel (if applicable).
5. Place the new 4-1/2 inch grinding wheel onto the inner flange, ensuring it sits flush.
6. Re-attach the outer flange nut and tighten it clockwise with the spanner wrench while holding the spindle lock button. Do not overtighten.
7. Verify the wheel is securely mounted and rotates freely without wobbling.

Operating Instructions

1. Starting and Stopping the Grinder

- To start: Ensure the battery is installed. Press the trigger switch.
- To stop: Release the trigger switch.

2. General Operation Guidelines

- Always hold the grinder firmly with both hands, using the main handle and the side handle.
- Allow the wheel to reach full speed (6500 RPM) before contacting the workpiece.
- Apply light, consistent pressure. Do not force the tool, as this can cause kickback or damage the wheel.
- Maintain a stable stance and keep the work area clear of obstructions.
- For cutting, use a cutting wheel and make shallow passes. For grinding, use a grinding wheel and move the tool smoothly across the surface.



Figure 4: An angle grinder in operation, demonstrating its use for cutting metal. Always wear appropriate safety gear.

Maintenance

1. Cleaning

- Regularly clean the tool's ventilation openings to prevent overheating. Use a dry cloth or compressed air.
- Do not use solvents or harsh chemicals, as they can damage plastic parts.

2. Inspection

- Before each use, inspect the tool for any damaged parts, loose screws, or worn components.
- Check the grinding wheel for cracks, chips, or excessive wear. Replace damaged wheels immediately.
- Ensure the guard is securely attached and undamaged.

3. Storage

Store the tool in a dry, secure location out of reach of children. Remove the battery pack before storing for extended periods.

Troubleshooting

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
Tool does not start.	Battery not charged or improperly installed.	Charge battery fully. Ensure battery is securely inserted.
Reduced power or performance.	Battery charge is low. Overloading the tool.	Recharge battery. Reduce pressure on the tool.
Excessive vibration.	Damaged or improperly installed grinding wheel.	Inspect and replace damaged wheel. Reinstall wheel correctly.
Tool overheats.	Blocked ventilation openings. Continuous heavy use.	Clean ventilation openings. Allow tool to cool down.

Specifications

Feature	Detail
Brand	RYOBI
Model Number	P450 (PAG01KMX)
Power Source	Battery Powered (18V ONE+ Lithium-Ion)
Voltage	18 Volts
Wheel Diameter	4-1/2 inches
Maximum Rotational Speed	6500 RPM
Item Weight	7.21 pounds (3.28 Kilograms)
Battery Type	Lithium Ion
Special Features	Compact, GRIPZONE overmold, 3-position side handle, onboard spanner wrench storage

Warranty and Support

For detailed warranty information and customer support, please refer to the official RYOBI website or contact RYOBI customer service directly. Keep your purchase receipt for warranty claims.
Manufacturer: RYOBI
UPC: 033287189212

This manual provides general instructions for the RYOBI 18V ONE+ Cordless 4-1/2 in. Angle Grinder Kit. For specific details or advanced operations, consult the full manufacturer's manual.

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