

PHALANX PDM-160D

PHALANX PDM-160D Rotary Tool Kit User Manual

Model: PDM-160D

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1. INTRODUCTION

Thank you for purchasing the PHALANX PDM-160D Rotary Tool Kit. This versatile tool is designed for a wide range of applications including carving, sanding, polishing, cutting, and drilling. To ensure safe and efficient operation, please read this manual thoroughly before using the tool. Keep this manual for future reference.

2. GENERAL SAFETY INSTRUCTIONS

WARNING: 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.

- Always wear appropriate personal protective equipment, including safety glasses, gloves, and a dust mask.
- Keep your work area clean and well-lit. Cluttered or dark areas invite accidents.
- Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.
- Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.
- Ensure the power plug matches the outlet. Never modify the plug in any way.
- Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges, and refrigerators.
- Do not abuse the cord. Never use the cord for carrying, pulling, or unplugging the power tool.
- Disconnect the plug from the power source before making any adjustments, changing accessories, or storing power tools.

- 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.
- 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.
- Use the power tool, accessories, and tool bits in accordance with these instructions, taking into account the working conditions and the work to be performed.

3. PACKAGE CONTENTS

Your PHALANX PDM-160D Rotary Tool Kit includes the following items:

- PHALANX PDM-160D Rotary Tool
- Hard Carrying Case
- Flexible Shaft Attachment
- Depth Gauge Attachment
- Accessory Organizer Case
- Over 130 Assorted Accessories (e.g., sanding discs, polishing discs, cutting wheels, miniature saws, grinders, drill bits, buffing compound)
- 4 Sizes of Collets
- Spare Carbon Brushes (2 pcs)
- User Manual



Image: The PHALANX PDM-160D Rotary Tool Kit, showcasing the main tool, flexible shaft, and a wide array of accessories neatly organized within its hard carrying case.

4. SETUP

4.1 Installing/Changing Accessories

1. **Ensure the tool is unplugged** from the power source before changing any accessories.
2. Locate the collet nut at the end of the rotary tool shaft.
3. Press and hold the shaft lock button (usually located near the collet nut) to prevent the shaft from rotating.
4. Use the provided wrench to loosen the collet nut by turning it counter-clockwise.
5. Insert the desired accessory shank into the collet. Ensure the shank is fully seated.
6. While still holding the shaft lock button, tighten the collet nut clockwise with the wrench until the accessory is securely held. Do not overtighten.
7. Release the shaft lock button.

200W Rotary Tool



Image: Close-up of the PHALANX PDM-160D Rotary Tool, demonstrating an accessory (cutting disc) securely installed in the collet, ready for use.

4.2 Attaching the Flexible Shaft

1. **Unplug the rotary tool.**
2. Remove the collet nut and collet from the rotary tool's main shaft.
3. Unscrew the nose piece from the rotary tool.
4. Screw the flexible shaft coupling onto the rotary tool's threaded shaft until secure.
5. Insert the flexible shaft's inner drive cable into the rotary tool's shaft, ensuring it engages properly.
6. Tighten the flexible shaft's outer casing onto the coupling.
7. Install the desired accessory into the collet of the flexible shaft handpiece following the steps in 4.1.



Image: The PHALANX PDM-160D Rotary Tool connected to its flexible shaft attachment, illustrating how the flexible shaft extends the tool's reach and maneuverability for detailed work.

4.3 Attaching the Depth Gauge

1. **Unplug the rotary tool.**
2. Ensure an accessory is properly installed in the collet.
3. Slide the depth gauge attachment over the nose of the rotary tool.
4. Adjust the depth gauge to the desired depth by sliding it up or down and then tightening its locking screw.

5. OPERATING INSTRUCTIONS

5.1 Powering On/Off and Speed Control

- Plug the rotary tool into a suitable AC power outlet.
- To turn the tool ON, slide the ON/OFF switch to the "ON" position.
- Adjust the rotational speed using the variable speed control dial. Start at a lower speed and gradually increase as needed for the task.
- To turn the tool OFF, slide the ON/OFF switch to the "OFF" position.



Warm Tips :

To prevent parts from coming loose, use the wrench comes with the tool to tighten the collet nut.

Image: A detailed view of the PHALANX PDM-160D Rotary Tool, highlighting the speed control dial and power switch for precise operation adjustments.

5.2 General Operating Tips

- Always secure your workpiece firmly before beginning any operation.
- Apply light, consistent pressure. Let the tool do the work. Excessive pressure can cause the tool to bog down, overheat, or damage the accessory/workpiece.
- Move the tool smoothly and continuously across the workpiece to avoid gouging or uneven results.
- Match the accessory and speed to the material and task. Refer to accessory packaging for recommended speeds.
- For delicate work or tight spaces, utilize the flexible shaft attachment.

5.3 Applications

The PHALANX PDM-160D Rotary Tool is suitable for various tasks:

- **Carving/Engraving:** Use carving bits for intricate designs on wood, plastic, or soft metals.
- **Sanding:** Attach sanding bands or discs for shaping, smoothing, or removing rust.
- **Polishing:** Use felt wheels or polishing buffs with buffing compound to achieve a high-gloss finish on metals, plastics, or ceramics.

- **Cutting:** Employ cutting wheels for slicing through thin materials like plastic, wood, or soft metal.
- **Drilling:** Use appropriate drill bits for small holes in various materials.

6. MAINTENANCE

6.1 Cleaning

- **Always unplug the tool before cleaning.**
- Wipe the tool's exterior with a clean, damp cloth. Do not use harsh chemicals or abrasive cleaners.
- Use a soft brush or compressed air to clear dust and debris from the ventilation openings.
- Clean accessories after each use to maintain their effectiveness and lifespan.

6.2 Carbon Brush Replacement

The carbon brushes are wear items and should be inspected periodically. Replace them when they are worn down to approximately 1/4 inch (6mm) or if the tool experiences reduced power or intermittent operation.

1. **Unplug the tool.**
2. Locate the brush caps on the sides of the motor housing.
3. Unscrew the brush caps using a flathead screwdriver or the provided tool.
4. Carefully remove the old carbon brushes.
5. Insert the new carbon brushes, ensuring they slide in smoothly.
6. Replace and tighten the brush caps.
7. Run the tool at a low speed for a few minutes to allow the new brushes to seat properly.

6.3 Storage

- Store the rotary tool and its accessories in the provided hard carrying case in a dry, secure location, out of reach of children.
- Ensure the tool is clean and dry before storage.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Tool does not start.	No power supply; ON/OFF switch in OFF position; Worn carbon brushes.	Check power connection; Ensure switch is ON; Replace carbon brushes.
Reduced power or intermittent operation.	Worn carbon brushes; Overload; Loose connection.	Replace carbon brushes; Reduce pressure on workpiece; Check power cord and connections.
Excessive vibration or noise.	Accessory not properly installed; Bent accessory shank; Damaged collet.	Re-install accessory securely; Replace bent accessory; Replace collet if damaged.
Tool overheats.	Blocked ventilation slots; Excessive continuous use; Overload.	Clean ventilation slots; Allow tool to cool down; Reduce pressure and take breaks.

8. SPECIFICATIONS

Brand: PHALANX

Model Number: PDM-160D

Power Source: AC

Special Feature: Multi Use

Included Components: Rotary tool kit (main tool, flexible shaft, depth gauge, over 130 accessories, carrying case)

Note: Specific voltage, wattage, and RPM ranges may vary. Refer to product packaging for precise details.

9. WARRANTY AND SUPPORT

PHALANX products are manufactured to high-quality standards. For information regarding warranty coverage, technical support, or replacement parts, please refer to the warranty card included with your product or contact PHALANX customer service through the retailer where the product was purchased. Please retain your proof of purchase for warranty claims.