DEWALT DCG413B

DEWALT 20V MAX* DCG413B Cordless Brushless 4-1/2 Inch Angle Grinder User Manual

Model: DCG413B

1. Introduction

Thank you for choosing the DEWALT 20V MAX* DCG413B Cordless Brushless 4-1/2 Inch Angle Grinder. This manual provides essential information for the safe operation, maintenance, and troubleshooting of your tool. Please read it thoroughly before use and retain it for future reference.
The DEWALT DCG413B is a powerful and versatile cordless angle grinder designed for various cutting and grinding applications. Its brushless motor ensures extended motor life and eliminates the need for brush changes. Key safety features include a Kickback Brake and E-Switch Protection for enhanced user safety.

2. General Safety Warnings

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.

2.1 Personal Safety

- Always wear eye protection (safety glasses or goggles) and hearing protection.
- Wear appropriate personal protective equipment (PPE) such as gloves, heavy-duty work clothes, and a dust mask.
- Do not operate the tool while fatigued or under the influence of drugs, alcohol, or medication.
- Maintain proper footing and balance at all times.
- Keep bystanders and children away from the work area.

2.2 Electrical Safety

- This tool is battery-powered. Use only DEWALT 20V MAX* batteries and chargers.
- Do not expose power tools to rain or wet conditions.
- Avoid body contact with earthed or grounded surfaces.

2.3 Tool Use and Care

- Do not force the power tool. Use the correct power tool for your application.

- Disconnect the battery pack before making any adjustments, changing accessories, or storing the tool.
- 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.

2.4 Specific Grinder Safety Warnings

- Always use a guard that is correctly attached and positioned for maximum safety.
- Ensure the accessory is correctly mounted and tightened before use.
- Do not use damaged accessories. Inspect accessories before each use.
- Be aware of the Kickback Brake feature, which stops the wheel rapidly in case of a pinch, stall, or bind-up.
- Hold the tool firmly with both hands. A loss of control can result in personal injury.
- Never lay the power tool down until the accessory has come to a complete stop.
- Do not touch the accessory immediately after operation, as it may be extremely hot.

3. Components and Features

Familiarize yourself with the parts of your DEWALT Angle Grinder:



Figure 1: DEWALT DCG413B Angle Grinder with side handle attached. This image shows the main body of the grinder, the paddle switch, the side handle, and the wheel guard.



Figure 2: Key features of the DEWALT DCG413B Angle Grinder, including the 850 MWO motor, 2-stage trigger, Kickback Brake, and approximate weight of 3-3/4 lbs.

- **Brushless Motor:** Provides extended motor life and eliminates the need for brush changes.
- **Paddle Switch:** Ergonomic switch for comfortable operation.
- **Two-Stage Trigger:** Requires two actions to activate the tool, enhancing safety.
- **Kickback Brake:** Engages when a pinch, stall, or bind-up event is sensed, stopping the wheel rapidly and shutting off the grinder.
- **E-Switch Protection:** Prevents automatic restart after a power outage; the trigger switch must be cycled (turned off and then on) to restart.
- **Adjustable Guard:** For directing sparks and debris away from the user.
- **Side Handle:** Provides additional control and stability during operation.

4. Setup and Assembly

4.1 Battery Installation (Battery and charger sold separately)

1. Ensure the grinder is switched off.
2. Align the battery pack with the tool's battery port.
3. Slide the battery pack into the tool until it clicks securely into place.
4. To remove, press the battery release button and slide the battery out.

4.2 Attaching the Side Handle

The side handle can be attached to either side of the gear case for left or right-handed operation.

1. Thread the side handle into one of the threaded holes on the gear case.
2. Tighten securely by hand.

4.3 Installing/Adjusting the Guard

Always use the guard provided with the tool. The guard protects against flying debris and accidental contact with the rotating accessory.

1. Loosen the guard clamping screw.
2. Position the guard to deflect sparks and debris away from you.
3. Tighten the clamping screw firmly to secure the guard.

4.4 Installing Grinding/Cutting Wheels (Accessories sold separately)

Ensure the wheel is rated for the grinder's maximum RPM and is suitable for the material being worked on.

1. Disconnect the battery pack.
2. Press and hold the spindle lock button.
3. Using the provided wrench, loosen and remove the outer flange nut.
4. Place the desired grinding or cutting wheel onto the spindle, ensuring it sits flush against the inner flange.
5. Replace the outer flange nut and tighten it securely with the wrench while holding the spindle lock button.
6. Release the spindle lock button.

5. Operating Instructions

5.1 Powering On/Off

The DCG413B features a two-stage paddle switch for activation.

1. To turn on: Slide the safety lock-off button forward, then depress the paddle switch.
2. To turn off: Release the paddle switch. The tool will stop.

E-Switch Protection: If the tool loses power (e.g., battery removed and reinserted, or battery fully discharged), the tool will not restart automatically when power is restored. You must release the paddle switch and then re-engage it to restart the tool.



Figure 3: Side view of the DEWALT DCG413B Angle Grinder, highlighting the paddle switch mechanism for operation.

5.2 Kickback Brake Feature

The Kickback Brake is a safety feature designed to protect the user. In the event of a pinch, stall, or bind-up of the accessory, the electronic brake engages with maximum force to quickly stop the wheel (typically in 2 seconds or less) and shut off the grinder. This reduces the movement of the tool and helps prevent kickback.



Figure 4: An illustration of the Kickback Brake engaging during a bind-up situation, demonstrating the safety mechanism of the DEWALT angle grinder.

5.3 General Grinding and Cutting Tips

- Always secure your workpiece.
- Allow the tool to reach full speed before contacting the workpiece.
- Apply moderate pressure; do not force the tool. Excessive pressure can lead to overheating, reduced performance, and potential kickback.
- Maintain a firm grip on the tool with both hands.
- For cutting, use a cutting wheel and make shallow passes.
- For grinding, maintain a slight angle between the wheel and the workpiece.
- Regularly inspect the accessory for wear or damage.

6. Maintenance

6.1 Cleaning

- Disconnect the battery pack before cleaning.
- Use a soft brush or dry cloth to clean the ventilation slots and housing.
- Do not use water or chemical cleaning agents.
- Periodically blow out dust and debris from the motor housing using compressed air.

6.2 Inspection

- Regularly inspect the power cord (if using a corded charger) for damage.
- Check the wheel guard for any damage or deformation.
- Inspect the grinding/cutting wheels for cracks, chips, or excessive wear before each use.
- Ensure all screws and fasteners are tight.

6.3 Brushless Motor

Your DEWALT DCG413B is equipped with a brushless motor, which means there are no carbon brushes to replace. This design contributes to longer motor life and reduced maintenance.



Figure 5: A worker using the DEWALT angle grinder, emphasizing the brushless motor technology that eliminates the need for brush changes.

7. Troubleshooting

Problem	Possible Cause	Solution
Tool does not start.	Battery pack not inserted correctly or discharged. E-Switch Protection activated.	Ensure battery is fully charged and properly inserted. If E-Switch Protection is active, release the paddle switch and re-engage it.
Tool stops during operation.	Kickback Brake engaged due to bind-up/stall. Overload protection activated. Battery discharged.	Release the paddle switch, clear the bind-up, and restart. Reduce pressure on the tool. Replace with a charged battery.

Problem	Possible Cause	Solution
Excessive vibration.	Damaged or improperly installed accessory. Loose guard or side handle.	Inspect and replace damaged accessories. Ensure accessory is correctly installed and tightened. Check guard and side handle for tightness.
Reduced performance.	Battery charge low. Accessory worn or incorrect for application.	Charge or replace battery. Replace worn accessory. Ensure correct accessory type is used.

8. Specifications

Feature	Detail
Model Number	DCG413B
Power Source	Battery Powered (20V MAX*)
Wheel Diameter	4-1/2 inches
Motor Type	Brushless
Maximum Rotational Speed	3450 RPM
Voltage	20 Volts
Wattage	20 watts
Item Weight	3-3/4 lbs
Product Dimensions (L x W x H)	12.2" x 4.7" x 6"
Material	Metal, Plastic
Included Components	Angle Grinder (Tool Only)



Figure 6: Dimensions of the DEWALT DCG413B Angle Grinder: 12.2 inches long, 4.7 inches wide, and 6 inches high.

9. Warranty and Support

9.1 Limited Warranty

This DEWALT tool comes with a **3-year limited warranty**. For specific terms and conditions, please refer to the warranty card included with your product or visit the official DEWALT website. This warranty typically covers defects in material or workmanship.

9.2 Customer Support

For technical assistance, service, or to locate an authorized service center, please contact DEWALT customer support. Contact information can typically be found on the DEWALT official website or on the product packaging.
You can also visit the DEWALT Store on Amazon for more product information and accessories.

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