

---

# DEWALT®

---

## ***XR LI-ION***



Figure 1

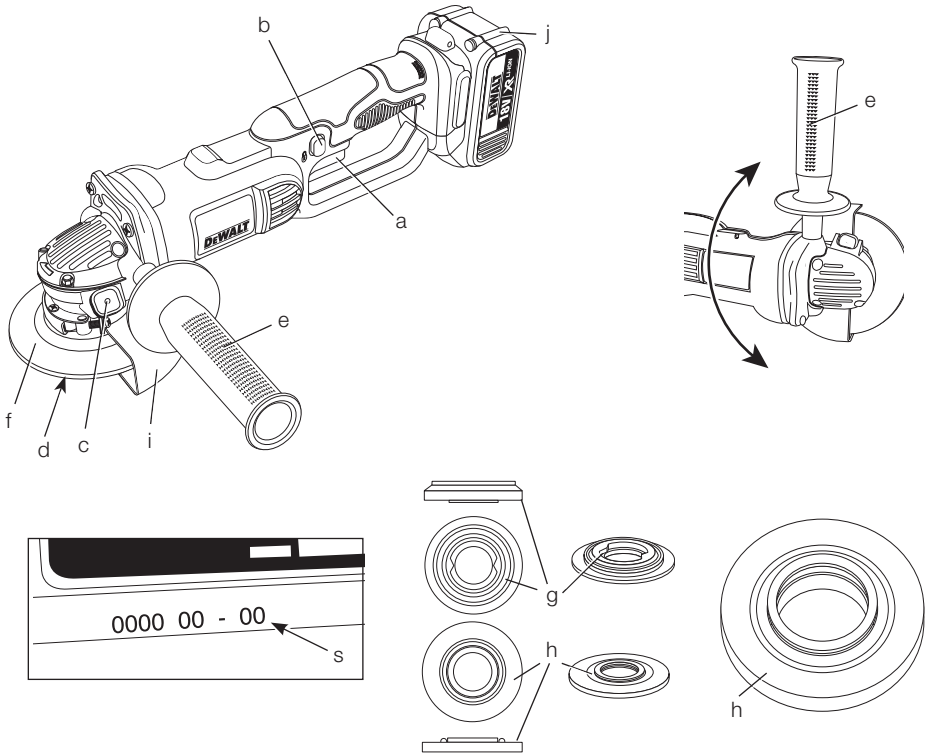


Figure 2

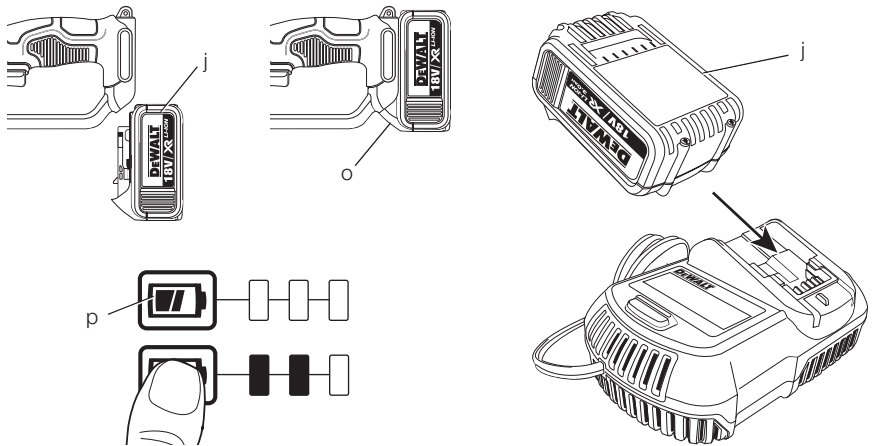


Figure 3

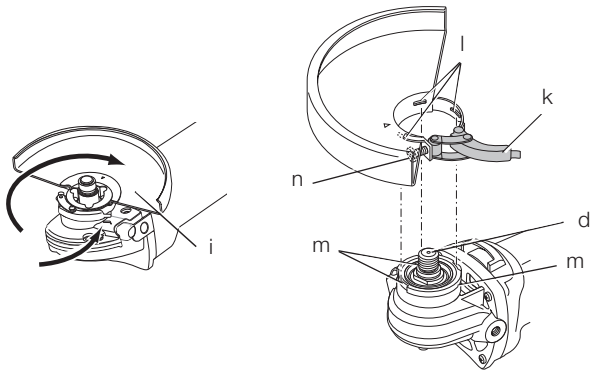


Figure 4

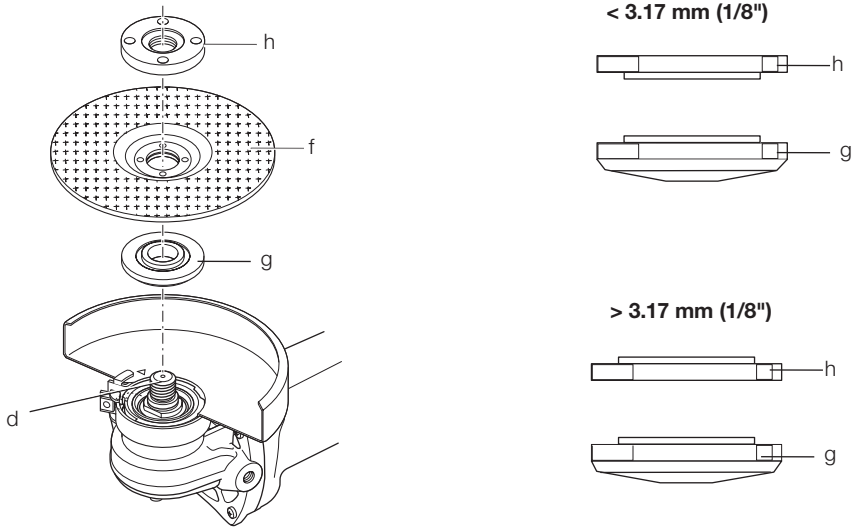


Figure 5

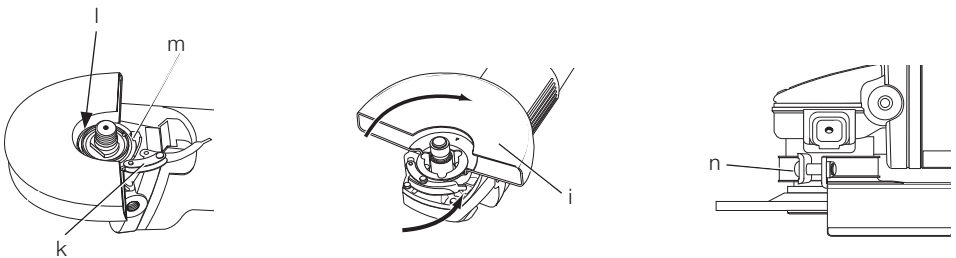


Figure 6

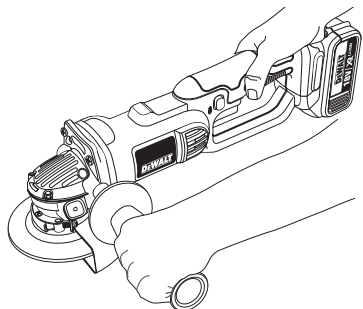
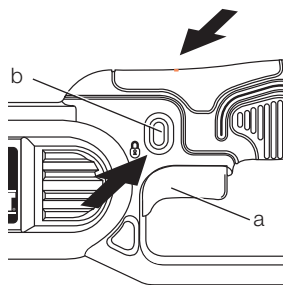


Figure 7



# CORDLESS GRINDER

## DCG412

### Congratulations!

You have chosen a DEWALT tool. Years of experience, thorough product development and innovation make DEWALT one of the most reliable partners for professional power tool users.

### Technical Data

		DCG412
Voltage	$V_{DC}$	18
Type		1
Power input	W	405
No-load/rated speed	$\text{min}^{-1}$	7000
Wheel diameter	mm	125
Spindle diameter		M14
Weight (without battery pack)	kg	2.2*

Battery pack	DCB180	DCB181	DCB182
Battery type	Li-Ion	Li-Ion	Li-Ion
Voltage	$V_{DC}$	18	18
Capacity	$A_h$	3.0	1.5
Weight	kg	0.64	0.35

Charger	DCB105	
Mains voltage	$V_{AC}$	220
Battery type		Li-Ion
Approx. charging time	30 min (1.5 Ah battery packs)	55 min (3.0 Ah battery packs)
		70 min (4.0 Ah battery packs)
Weight	kg	0.49

### Definitions: Safety Guidelines

The definitions below describe the level of severity for each signal word. Please read the manual and pay attention to these symbols.



**DANGER:** Indicates an *imminently hazardous situation which, if not avoided, will result in death or serious injury.*



**WARNING:** Indicates a *potentially hazardous situation which, if not avoided, could result in death or serious injury.*



**CAUTION:** Indicates a *potentially hazardous situation which, if not avoided, may result in minor or moderate injury.*

**NOTICE:** Indicates a *practice not related to personal injury which, if not avoided, may result in property damage.*



Denotes risk of electric shock.



Denotes risk of fire.



**WARNING:** To reduce the risk of injury, read the instruction manual.

### General Power Tool Safety Warnings



**WARNING! Read all safety warnings and all instructions.** Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

#### SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

#### 1) WORK AREA SAFETY

- Keep 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.** Power tools create sparks which may ignite the dust or fumes.
- Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

#### 2) ELECTRICAL SAFETY

- Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.

- b) **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** *There is an increased risk of electric shock if your body is earthed or grounded.*
- c) **Do not expose power tools to rain or wet conditions.** *Water entering a power tool will increase the risk of electric shock.*
- d) **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** *Damaged or entangled cords increase the risk of electric shock.*
- e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** *Use of a cord suitable for outdoor use reduces the risk of electric shock.*
- f) **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.** *Use of an RCD reduces the risk of electric shock.*

**3) PERSONAL SAFETY**

- a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** *A moment of inattention while operating power tools may result in serious personal injury.*
- b) **Use personal protective equipment. Always wear eye protection.** *Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*
- c) **Prevent unintentional starting. Ensure the switch is in the off position before connecting to power source and/or battery pack, picking up or carrying the tool.** *Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.*
- d) **Remove any adjusting key or wrench before turning the power tool on.** *A wrench or a key left attached to a rotating part of the power tool may result in personal injury.*
- e) **Do not overreach. Keep proper footing and balance at all times.** *This enables better control of the power tool in unexpected situations.*

- f) **Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts.** *Loose clothes, jewellery or long hair can be caught in moving parts.*
- g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** *Use of dust collection can reduce dust-related hazards.*

**4) POWER TOOL USE AND CARE**

- a) **Do not force the power tool. Use the correct power tool for your application.** *The correct power tool will do the job better and safer at the rate for which it was designed.*
- b) **Do not use the power tool if the switch does not turn it on and off.** *Any power tool that cannot be controlled with the switch is dangerous and must be repaired.*
- c) **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** *Such preventive safety measures reduce the risk of starting the power tool accidentally.*
- d) **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.** *Power tools are dangerous in the hands of untrained users.*
- e) **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** *Many accidents are caused by poorly maintained power tools.*
- f) **Keep cutting tools sharp and clean.** *Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.*
- g) **Use the power tool, accessories and tool bits etc., in accordance with these instructions taking into account the working conditions and the work to be performed.** *Use of the power tool for operations different from those intended could result in a hazardous situation.*

**5) BATTERY TOOL USE AND CARE**

- a) **Recharge only with the charger specified by the manufacturer.** *A charger that is suitable for one type of battery pack may*

create a risk of fire when used with another battery pack.

- b) **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.
- c) **When battery pack is not in use, keep it away from other metal objects like paper clips, coins, keys, nails, screws or other small metal objects that can make a connection from one terminal to another.** Shorting the battery terminals together may cause burns or a fire.
- d) **Under abusive conditions, liquid may be ejected from the battery, avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause irritation or burns.

## 6) SERVICE

- a) **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

## ADDITIONAL SPECIFIC SAFETY RULES

### Safety Instructions for All Operations

- a) **This power tool is intended to function as a grinder, wire brush or cut-off tool. 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.
- b) **Operations such as sanding and polishing are not recommended to be performed with this power tool.** Operations for which the power tool was not designed may create a hazard and cause personal injury.
- c) **Do not use accessories which are not specifically designed and recommended by the tool manufacturer.** Just because the accessory can be attached to your power tool, it does not assure safe operation.
- d) **The rated speed of the accessory must be at least equal to the maximum speed marked on the power tool.** Accessories running faster than their rated speed can break and fly apart.
- e) **The outside diameter and the thickness of your accessory must be within the capacity rating of your power tool.** Incorrectly sized accessories cannot be adequately guarded or controlled.
- f) **The arbour size of wheels, flanges, backing pads or any other accessory must properly fit the spindle of the power tool.** Accessories with arbour holes that do not match the mounting hardware of the power tool will run out of balance, vibrate excessively and may cause loss of control.
- g) **Do not use a damaged accessory. Before each use inspect the accessory such as abrasive wheel for chips and cracks, backing pad for cracks, tear or excess wear, wire brush for loose or cracked wires. If power tool or accessory is dropped, inspect for damage or install an undamaged accessory. After inspecting and installing an accessory, position yourself and bystanders away from the plane of the rotating accessory and run the power tool at maximum no-load speed for one minute.** Damaged accessories will normally break apart during this test time.
- h) **Wear personal protective equipment. Depending on application, use face shield, safety goggles or safety glasses. As appropriate, wear dust mask, hearing protectors, gloves and workshop apron capable of stopping small abrasive or workpiece fragments.** The eye protection must be capable of stopping flying debris generated by various operations. The dust mask or respirator must be capable of filtrating particles generated by your operation. Prolonged exposure to high intensity noise may cause hearing loss.
- i) **Keep bystanders a safe distance away from work area. Anyone entering the work area must wear personal protective equipment.** Fragments of workpiece or of a broken accessory may fly away and cause injury beyond immediate area of operation.
- j) **Hold power tool by insulated gripping surfaces only, when performing an operation where the cutting accessory may contact hidden wiring or its own cord.** Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and shock the operator.
- k) **Position the cord clear of the spinning accessory.** If you lose control, the cord may be cut or snagged and your hand or arm may be pulled into the spinning accessory.
- l) **Never lay the power tool down until the accessory has come to a complete stop.** The spinning accessory may grab the surface and pull the power tool out of your control.



- m) **Do not run the power tool while carrying it at your side.** Accidental contact with the spinning accessory could snag your clothing, pulling the accessory into your body.
- n) **Regularly clean the power tool's air vents.** The motor's fan will draw the dust inside the housing and excessive accumulation of powdered metal may cause electrical hazards.
- o) **Do not operate the power tool near flammable materials.** Sparks could ignite these materials.
- p) **Do not use accessories that require liquid coolants.** Using water or other liquid coolants may result in electrocution or shock.
- q) **Do not use Type 11 (flaring cup) wheels on this tool.** Using inappropriate accessories can result in injury.
- r) **Always use side handle. Tighten the handle securely.** The side handle should always be used to maintain control of the tool at all times.

- torque reaction or kickback forces, if proper precautions are taken.
- b) **Never place your hand near the rotating accessory.** Accessory may kickback over your hand.
- c) **Do not position your body in the area where power tool will move if kickback occurs.** Kickback will propel the tool in direction opposite to the wheel's movement at the point of snagging.
- d) **Use special care when working corners, sharp edges etc. Avoid bouncing and snagging the accessory.** Corners, sharp edges or bouncing have a tendency to snag the rotating accessory and cause loss of control or kickback.
- e) **Do not attach a saw chain woodcarving blade or toothed saw blade.** Such blades create frequent kickback and loss of control.

## FURTHER SAFETY INSTRUCTIONS FOR ALL OPERATIONS

### Causes and Operator Prevention of Kickback

Kickback is a sudden reaction to a pinched or snagged rotating wheel, backing pad, brush or any other accessory. Pinching or snagging causes rapid stalling of the rotating accessory which in turn causes the uncontrolled power tool to be forced in the direction opposite of the accessory's rotation at the point of the binding.

For example, if an abrasive wheel is snagged or pinched by the workpiece, the edge of the wheel that is entering into the pinch point can dig into the surface of the material causing the wheel to climb out or kick out. The wheel may either jump toward or away from the operator, depending on direction of the wheel's movement at the point of pinching. Abrasive wheels may also break under these conditions.

Kickback is the result of power tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given **BELOW**:

- a) **Maintain a firm grip on the power tool and position your body and arm to allow you to resist kickback forces. Always use auxiliary handle, if provided, for maximum control over kickback or torque reaction during start-up.** The operator can control

### Safety Warnings Specific for Grinding and Abrasive Cutting-Off Operations

- a) **Use only wheel types that are recommended for your power tool and the specific guard designed for the selected wheel.** Wheels for which the power tool was not designed cannot be adequately guarded and are unsafe.
- b) **The guard must be securely attached to the power tool and positioned for maximum safety, so the least amount of wheel is exposed towards the operator.** The guard helps to protect operator from broken wheel fragments and accidental contact with wheel and sparks that could ignite clothing.
- c) **Wheels must be used only for recommended applications. For example: do not grind with the side of cut-off wheel.** Abrasive cut-off wheels are intended for peripheral grinding, side forces applied to these wheels may cause them to shatter.
- d) **Always use undamaged wheel flanges that are of correct size and shape for your selected wheel.** Proper wheel flanges support the wheel thus reducing the possibility of wheel breakage. Flanges for cut-off wheels may be different from grinding wheel flanges.
- e) **Do not use worn down wheels from larger power tools.** Wheel intended for larger power tool is not suitable for the higher speed of a smaller tool and may burst.

## Safety Warnings Specific for Wire Brushing Operations

- a) **Be aware that wire bristles are thrown by the brush even during ordinary operation. Do not overstress the wires by applying excessive load to the brush.** The wire bristles can easily penetrate light clothing and/or skin.
- b) **If the use of a guard is recommended for wire brushing, do not allow any interference of the wire wheel or brush with the guard.** Wire wheel or brush may expand in diameter due to work and centrifugal forces.

## Additional Safety Information

- Threaded mounting of accessories must match the grinder spindle thread. For accessories mounted by flanges, the arbor hole of the accessory must fit the locating diameter of the flange. Accessories that do not match the mounting hardware of the power tool will run out of balance, vibrate excessively and may cause loss of control.
- The grinding surface of the centre depressed wheels must be mounted below the plane of the guard lip. An improperly mounted wheel that projects through the plane of the guard lip cannot be adequately protected.

## Residual Risks

In spite of the application of the relevant safety regulations and the implementation of safety devices, certain residual risks cannot be avoided. These are:

- Impairment of hearing.
- Risk of personal injury due to flying particles.
- Risk of burns due to accessories becoming hot during operation.
- Risk of personal injury due to prolonged use.
- Risk of dust from hazardous substances.

## Markings on Tool

The following pictograms are shown on the tool:



Read instruction manual before use.



Wear ear protection.



Wear eye protection.

## DATE CODE POSITION (FIG. 1)

The date code (s), which also includes the year of manufacture, is printed into the housing.

Example:

2012 XX XX

Year of Manufacture

## Important Safety Instructions for All Battery Chargers

**SAVE THESE INSTRUCTIONS:** This manual contains important safety and operating instructions for the DCB105 battery charger.

- Before using the charger, read all instructions and cautionary markings on charger, battery pack and product using the battery pack.



**WARNING:** Shock hazard. Do not allow any liquid to get inside charger. Electric shock may result.



**CAUTION:** Burn hazard. To reduce the risk of injury, charge only DEWALT rechargeable battery packs. Other types of batteries may overheat and burst resulting in personal injury and property damage.



**CAUTION:** Children should be supervised to ensure that they do not play with the appliance.

**NOTICE:** Under certain conditions, with the charger plugged in to the power supply, the exposed charging contacts inside the charger can be shorted by foreign material. Foreign materials of a conductive nature such as, but not limited to, steel wool, aluminum foil or any buildup of metallic particles should be kept away from charger cavities. Always unplug the charger from the power supply when there is no battery pack in the cavity. Unplug charger before attempting to clean.

- **DO NOT attempt to charge the battery pack with any chargers other than the ones in this manual.** The charger and battery pack are specifically designed to work together.
- **These chargers are not intended for any uses other than charging DEWALT rechargeable batteries.** Any other uses may result in risk of fire, electric shock or electrocution.
- **Do not expose charger to rain or snow.**

- **Pull by plug rather than cord when disconnecting charger.** This will reduce risk of damage to electric plug and cord.
- **Make sure that cord is located so that it will not be stepped on, tripped over or otherwise subjected to damage or stress.**
- **Do not use an extension cord unless it is absolutely necessary.** Use of improper extension cord could result in risk of fire, electric shock or electrocution.
- **When operating a charger outdoors, always provide a dry location and use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.
- **Do not block the ventilation slots on the charger. The ventilation slots are located on the top and sides of the charger.** Place the charger in a position away from any heat source.
- **Do not operate charger with damaged cord or plug — have them replaced immediately.**
- **Do not operate charger if it has received a sharp blow, been dropped or otherwise damaged in any way.** Take it to an authorised service centre.
- **Do not disassemble the charger; take it to an authorised service centre when service or repair is required.** Incorrect reassembly may result in a risk of electric shock, electrocution or fire.
- **In case of damaged power supply cord the supply cord must be replaced immediately by the manufacturer, its service agent or similar qualified person to prevent any hazard.**
- **Disconnect the charger from the outlet before attempting any cleaning. This will reduce the risk of electric shock.** Removing the battery pack will not reduce this risk.
- **NEVER attempt to connect 2 chargers together.**
- **The charger is designed to operate on standard 230 V household electrical power. Do not attempt to use it on any other voltage.** This does not apply to the vehicular charger.

**SAVE THESE INSTRUCTIONS**

**Chargers**

The DCB105 charger accepts 10.8 V, 14.4 V and 18 V Li-Ion (DCB121, DCB123, DCB140, DCB141, DCB142, DCB180, DCB181 and DCB182) battery packs.

This charger requires no adjustment and is designed to be as easy as possible to operate.






**Charging Procedure (fig. 2)**

1. Plug the charger into an appropriate 220 V outlet before inserting the battery pack.
2. Insert the battery pack (j) into the charger, making sure the pack is fully seated in the charger. The red (charging) light will blink continuously indicating that the charging process has started.
3. The completion of charge will be indicated by the red light remaining ON continuously. The pack is fully charged and may be used at this time or left in the charger.

**NOTE:** To ensure maximum performance and life of Li-Ion batteries, charge the battery pack fully before first use.

**Charging Process**

Refer to the table below for the state of charge of the battery pack.

State of charge	
 charging	— — — —
 fully charged	_____
 hot/cold pack delay	— • — • — • — •
 problem pack or charger	• • • • • • • • • •
 problem powerline	• • • • • • • • • •

This charger will not charge a faulty battery pack. The charger will indicate faulty battery by refusing to light or by displaying problem pack or charger blink pattern.

**NOTE:** This could also mean a problem with a charger.

If the charger indicates a problem, take the charger and battery pack to be tested at an authorised service centre.

**Hot/Cold Pack Delay**

When the charger detects a battery that is too hot or too cold, it automatically starts a hot/cold pack delay, suspending charging until the battery has reached an appropriate temperature. The charger then automatically switches to the pack charging mode. This feature ensures maximum battery life.

XR Li-Ion tools are designed with an Electronic Protection System that will protect the battery against overloading, overheating or deep discharge.

The tool will automatically turn off if the Electronic Protection System engages. If this occurs, place the Li-Ion battery on the charger until it is fully charged.

A cold battery pack will charge at about half the rate of a warm battery pack. The battery pack will charge at that slower rate throughout the entire charging cycle and will not return to maximum charge rate even if the battery warms.

## Important Safety Instructions for All Battery Packs

When ordering replacement battery packs, be sure to include the catalog number and voltage.

The battery pack is not fully charged out of the carton. Before using the battery pack and charger, read the safety instructions below and then follow the charging procedures outlined.

### READ ALL INSTRUCTIONS

- **Do not charge or use the battery pack in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Inserting or removing the battery pack from the charger may ignite the dust or fumes.
- **Never force the battery pack into charger. Do not modify the battery pack in any way to fit into a non-compatible charger as battery pack may rupture causing serious personal injury.**
- Charge the battery packs only in designated DEWALT chargers.
- **DO NOT splash or immerse in water or other liquids.**
- **Do not store or use the tool and battery pack in locations where the temperature may reach or exceed 40 °C (105 °F) (such as outside sheds or metal buildings in summer).**
- For best results, make sure the battery pack is fully charged before use.



**WARNING:** Never attempt to open the battery pack for any reason. If the battery pack case is cracked or damaged, do not insert it into the charger. Do not crush, drop or damage battery pack. Do not use a battery pack or charger that has received a sharp blow, been dropped, run over or damaged in any way (e.g., pierced with a nail, hit with a hammer, stepped on). Electric shock or electrocution may result. Damaged battery packs should be returned to the service centre for recycling.



**CAUTION:** When not in use, place tool on its side on a stable surface where it will not cause a tripping or falling hazard. Some tools with large battery packs will stand upright on the battery pack but may be easily knocked over.

### SPECIFIC SAFETY INSTRUCTIONS FOR LITHIUM ION (Li-Ion)

- **Do not incinerate the battery pack even if it is severely damaged or is completely worn out.** The battery pack can explode in a fire. Toxic fumes and materials are created when lithium ion battery packs are burned.
- **If battery contents come into contact with the skin, immediately wash the area with mild soap and water.** If the battery liquid gets into the eye, rinse water over the open eye for 15 minutes or until irritation ceases. If medical attention is needed, the battery electrolyte is composed of a mixture of liquid organic carbonates and lithium salts.
- **Contents of opened battery cells may cause respiratory irritation.** Provide fresh air. If symptoms persists, seek medical attention.



**WARNING:** Burn hazard. Battery liquid may be flammable if exposed to spark or flame.

## Battery Pack

### BATTERY TYPE

The DCG412 operates on 18 volt battery pack.

The DCB180, DCB181 or DCB182 battery packs may be used. Refer to **Technical Data** for more information.

## Storage Recommendations

1. The best storage place is one that is cool and dry away from direct sunlight and excess heat or cold. For optimum battery performance and life, store battery packs at room temperature when not in use.
2. For long storage, it is recommended to store a fully charged battery pack in a cool, dry place out of the charger for optimal results.

**NOTE:** Battery packs should not be stored completely depleted of charge. The battery pack will need to be recharged before use.

## Labels on Charger and Battery Pack

In addition to the pictographs used in this manual, the labels on the charger and the battery pack show the following pictographs:



Read instruction manual before use.



Charging.



Fully charged.



Hot/cold pack delay.



Problem pack or charger.



Problem powerline.



Do not probe with conductive objects.



Do not charge damaged battery packs.



Use only with DEWALT battery packs. Others may burst, causing personal injury and damage.



Do not expose to water.



Have defective cords replaced immediately.



Charge only between 4 °C and 40 °C.



Discard the battery pack with due care for the environment.



Do not incinerate the battery pack.



Charges Li-Ion battery packs.



See **Technical data** for charging time.



Only for indoor use.

## Package Contents

The package contains:

- 1 Angle grinder
- 1 125 mm Guard (Type 27)
- 1 Side handle
- 1 Flange set
- 1 Two-pin spanner
- 1 Charger
- 2 Li-Ion battery packs (M2, L2 models)
- 1 Instruction manual
- 1 Exploded drawing

**NOTE:** Battery packs, chargers and kitboxes are not included with N-models.

- Check for damage to the tool, parts or accessories which may have occurred during transport.
- Take the time to thoroughly read and understand this manual prior to operation.

## Description (fig. 1–3)



**WARNING:** Never modify the power tool or any part of it. Damage or personal injury could result.

- a. Trigger switch
- b. Lock-off button
- c. Spindle lock button
- d. Spindle
- e. Side handle
- f. Abrasive wheel
- g. Backing flange
- h. Threaded clamp nut
  - i. Guard
  - j. Battery pack
  - k. Guard catch
  - l. Lugs
- m. Gear case slots
- n. Adjusting screw
- o. Battery release button
- p. fuel gauge button

## INTENDED USE

The DCG412 heavy-duty angle grinder has been designed for professional grinding and cutting applications.

**DO NOT** use grinding wheels other than centre depressed wheels and flap discs.

**DO NOT** use under wet conditions or in the presence of flammable liquids or gases.

This heavy-duty angle grinder is a professional power tool.

**DO NOT** let children come into contact with the tool. Supervision is required when inexperienced operators use this tool.

- This product is not intended for use by persons (including children) suffering from diminished physical, sensory or mental abilities; lack of experience, knowledge or skills unless they are supervised by a person responsible for their safety. Children should never be left alone with this product.

## Electrical Safety

The electric motor has been designed for one voltage only. Always check that the battery pack voltage corresponds to the voltage on the rating plate. Also make sure that the voltage of your charger corresponds to that of your mains.



Your DEWALT charger is double insulated in accordance with EN 60335; therefore no earth wire is required.

If the supply cord is damaged, it must be replaced by a specially prepared cord available through the DEWALT service organisation.

## Using an Extension Cable

An extension cord should not be used unless absolutely necessary. Use an approved extension cable suitable for the power input of your charger (see **Technical Data**). The minimum conductor size is 1 mm<sup>2</sup>; the maximum length is 30 m.

When using a cable reel, always unwind the cable completely.

## ASSEMBLY AND ADJUSTMENTS



**WARNING:** To reduce the risk of serious personal injury, turn tool off and disconnect tool from power source before making any adjustments or removing/installing attachments or accessories. Before reconnecting the tool, depress and release the trigger switch to ensure that the tool is off.



**WARNING:** Use only DEWALT battery packs and chargers.

## Inserting and Removing the Battery Pack from the Tool (fig. 2)

**NOTE:** For best results, make sure your battery pack is fully charged.

### TO INSTALL THE BATTERY PACK INTO THE TOOL HANDLE

1. Align the battery pack (j) with the rails inside the tool's handle (fig. 2).
2. Slide it into the handle until the battery pack is firmly seated in the tool and ensure that it does not disengage.

### TO REMOVE THE BATTERY PACK FROM THE TOOL

1. Press the battery release button (o) and firmly pull the battery pack out of the tool handle.
2. Insert battery pack into the charger as described in the charger section of this manual.

### FUEL GAUGE BATTERY PACKS (FIG. 2)

Some DEWALT battery packs include a fuel gauge which consists of three green LED lights that indicate the level of charge remaining in the battery pack.

To actuate the fuel gauge, press and hold the fuel gauge button (p). A combination of the three green LED lights will illuminate designating the level of charge left. When the level of charge in the battery is below the usable limit, the fuel gauge will not illuminate and the battery will need to be recharged.

**NOTE:** The fuel gauge is only an indication of the charge left on the battery pack. It does not indicate tool functionality and is subject to variation based on product components, temperature and end-user application.

## Attaching Side Handle (fig. 1)



**WARNING:** Before using the tool, check that the handle is tightened securely.



**WARNING:** The side handle should always be used to maintain control of the tool at all times.

Screw the side handle (e) tightly into one of the holes on either side of the gear case.

To improve user comfort, the gear case will rotate 90° for cutting operations.

## Rotating the Gear Case (fig. 1)

1. Remove the four corner screws attaching the gear case to motor housing.



- Without separating the gear case from motor housing, rotate the gear case head to desired position.

**NOTE:** If the gear case and motor housing become separated by more than 1/8" (3.17 mm), the tool must be serviced and re-assembled by an authorised DEWALT service center. Failure to have the tool serviced may cause brush, motor and bearing failure.

- Reinstall screws to attach the gear case to the motor housing. Tighten screws to 20 in.-lbs. torque. Overtightening could cause screws to strip.

## Mounting and Removing the Guard (fig. 3)



**WARNING:** To reduce the risk of serious personal injury, turn tool off and disconnect tool from power source before making any adjustments or removing/installing attachments or accessories. Before reconnecting the tool, depress and release the trigger switch to ensure that the tool is off.



**CAUTION:** Guards must be used with this grinder.

When using the DCG412 grinder for cutting metal or masonry a Type 1 guard MUST be used. Type 1 guards are available at extra cost from DEWALT distributors.

**NOTE:** Please refer to the **Grinding and Cutting Accessory Chart** at the end of this section to see other accessories that can be used with these grinders.

- Place the tool on a table, spindle (d) up.
- Open the guard latch (k), and align the lugs (l) on the guard with the slots on the gear case (m).
- Push the guard down until the guard lugs engage and rotate freely in the groove on the gear case hub.
- With the guard latch open, rotate the guard (i) into the desired working position.
- Close the guard latch to secure the guard on the gear case.



**CAUTION:** If the guard cannot be tightened by the adjusting screw (n), do not use the tool. To reduce the risk of personal injury, take the tool and guard to a service center to repair or replace the guard.

**NOTICE:** Do not tighten the adjusting screw (n) with the clamp lever in the open position. Undetectable damage to the guard or the mounting hub may result.

**NOTE:** Edge grinding and cutting can be performed with Type 27 wheels designed and specified for this purpose; 6.35 mm (1/4") thick wheels are designed for surface grinding while 3.17 mm (1/8") wheels are designed for edge grinding.

## Mounting Depressed Center Grinding Wheels

**NOTE:** The Type 27 guard supplied with grinder **MUST** be used.

### MOUNTING AND REMOVING HUBBED WHEELS (FIG. 1, 4)

Hubbed wheels install directly on the M14 threaded spindle.

- Thread the wheel on the spindle (d) by hand.
- Depress the spindle lock button (c) and use a wrench to tighten the hub of the wheel.
- Reverse the above procedure to remove the wheel.

**NOTICE:** Failure to properly seat the wheel before turning the tool on may result in damage to the tool or the wheel.

### MOUNTING NON-HUBBED WHEELS (FIG. 1, 4)

**NOTE:** The Type 27 guard supplied with grinder **MUST** be used.

**NOTE:** Please refer to the **Grinding and Cutting Accessory Chart** at the end of this section to see other accessories that can be used with these grinders.

- Place the tool on a table, guard up.
- Install the unthreaded backing flange (g) on spindle (d) with the raised centre against the wheel.
- Place wheel (f) against the backing flange, centering the wheel on the raised centre of the backing flange.
- While depressing the spindle lock button (c), thread the clamp nut (h) on spindle. If the wheel you are installing is more than 1/8" (3.17mm) thick, place the threaded clamp nut on the spindle so that the raised centre fits into the center of the wheel. If the wheel you are installing is 1/8" (3.17 mm) thick or less, place the threaded clamp nut on the spindle so that the raised centre is not against the wheel.

5. While depressing the spindle lock button (c), tighten the clamp nut with a wrench.
6. To remove the wheel, depress the spindle lock button and loosen the threaded clamp nut with a wrench.

**NOTE:** If the wheel spins after the clamp nut is tightened, check the orientation of the threaded clamp nut. If a thin wheel is installed with the raised centre on the clamp nut against the wheel, it will spin because the height of the raised centre prevents the clamp nut from holding the wheel.

## Mounting Wire Brushes and Wire Wheels (fig. 1)

Wire cup brushes or wire wheels install directly on the threaded spindle without the use of flanges. Use only wire brushes or wheels provided with a M14 threaded hub. These accessories are available at extra cost from your local dealer or authorised service center.

**NOTE:** The Type 27 guard is required when using wire brushes and wheels.



**CAUTION:** To reduce the risk of personal injury, wear work gloves when handling wire brushes and wheels. They can become sharp.



**CAUTION:** To reduce the risk of damage to the tool, wheel or brush must not touch guard when mounted or while in use. Undetectable damage could occur to the accessory, causing wires to fragment from accessory wheel or cup.

### MOUNTING WIRE CUP BRUSHES AND WIRE WHEELS

1. Place the tool on a table, guard up.
2. Thread the wheel on the spindle by hand.
3. Depress spindle lock button (c) and use a wrench on the hub of the wire wheel or brush to tighten the wheel.
4. To remove the wheel, reverse the above procedure.

**NOTICE:** To reduce the risk of damage to the tool, properly seat the wheel hub before turning the tool on.

## Prior to Operation

- Install the guard and appropriate disc or wheel. Do not use excessively worn discs or wheels.
- Be sure the inner and outer flanges are mounted correctly.

- Make sure the disc or wheel rotates in the direction of the arrows on the accessory and the tool.

## OPERATION

### Instructions for Use



**WARNING:** Always observe the safety instructions and applicable regulations.



**WARNING:** To reduce the risk of serious personal injury, turn tool off and disconnect tool from power source before making any adjustments or removing/installing attachments or accessories. Before reconnecting the tool, depress and release the trigger switch to ensure that the tool is off.



**WARNING:**

- Ensure all materials to be ground or cut are secured in place.
- Use clamps or a vice to hold and support the workpiece to a stable platform. It is important to clamp and support the workpiece securely to prevent the movement of the workpiece and loss of control. Movement of the workpiece or loss of control may create a hazard and cause personal injury.
- Apply only a gentle pressure to the tool. Do not exert side pressure on the disc.
- Always wear regular working gloves while operating this tool.
- The gear case becomes very hot during use.
- Always install the guard and appropriate disc or wheel. Do not use excessively worn disc or wheel.
- Be sure the inner and outer flange are mounted correctly.
- Make sure the disc or wheel rotates in the direction of the arrows on the accessory and the tool.
- Avoid overloading. Should the tool become hot, let it run a few minutes under no-load condition.

### Proper Hand Position (fig. 1, 6)



**WARNING:** To reduce the risk of serious personal injury, **ALWAYS** use proper hand position as shown.





**WARNING:** To reduce the risk of serious personal injury, **ALWAYS** hold securely in anticipation of a sudden reaction.

Proper hand position requires one hand on the side handle (e), with the other hand on the body of the tool, as shown in figure 6.

## Switch



**WARNING:** Before using the tool, check that the handle is tightened securely.

### LOCK-OFF BUTTON AND TRIGGER SWITCH (FIG. 7)

Your cut-off tool is equipped with a lock-off button (b).

To lock the trigger switch (a), press the lock-off button as shown in figure 7. When the lock-off button is depressed to the lock icon, the unit is locked.

Always lock the trigger switch when carrying or storing the tool to eliminate unintentional starting.

To unlock the trigger switch, press the lock-off button (b). When the lock-off button is depressed to the unlock icon, the unit is unlocked. The lock-off button is colored **red** to indicate when the switch is in its **unlocked** position.

Pull the trigger switch (a) to turn the motor ON. Releasing the trigger switch turns the motor OFF.

**NOTE:** This tool has no provision to lock the switch in the ON position, and should never be locked ON by any other means.



**WARNING:** Hold the side handle and body of the tool firmly to maintain control of the tool at start up and during use and until the wheel or accessory stops rotating. Make sure the wheel has come to a complete stop before laying the tool down.



**WARNING:** Allow the tool to reach full speed before touching tool to the work surface. Lift the tool from the work surface before turning the tool off.

## Spindle Lock (fig. 1)

The spindle lock (c) is provided to prevent the spindle from rotating when installing or removing wheels. Operate the spindle lock only when the tool is turned off, unplugged from the power supply, and has come to a complete stop.

**NOTICE:** To reduce the risk of damage to the tool, do not engage the spindle lock while the tool is operating. Damage

to the tool will result and attached accessory may spin off possibly resulting in injury.

To engage the lock, depress the spindle lock button (c) and rotate the spindle until you are unable to rotate the spindle further.

## EDGE GRINDING WITH GRINDING WHEELS



**WARNING:** Wheels used for cutting and edge grinding may break or kickback if they bend or twist while the tool is being used to do cut-off work or deep grinding. To reduce the risk of serious injury, limit the use of these wheels with a standard Type 27 guard to shallow cutting and notching (less than 13 mm [1/2"] in depth). The open side of the guard must be positioned away from the operator. For deeper cutting with a Type 1 cut-off wheel, use a closed Type 1 guard. Please refer to the **Grinding and Cutting Accessory Chart** at the end of this section to see other accessories that can be used with these grinders.

1. Allow the tool to reach full speed before touching the tool to the work surface.
2. Apply minimum pressure to the work surface, allowing the tool to operate at high speed. Grinding rate is greatest when the tool operates at high speed.
3. Position yourself so that the open-underside of the wheel is facing away from you.
4. Once a cut is begun and a notch is established in the workpiece, do not change the angle of the cut. Changing the angle will cause the wheel to bend and may cause wheel breakage. Edge grinding wheels are not designed to withstand side pressures caused by bending.
5. Remove the tool from the work surface before turning the tool off. Allow the tool to stop rotating before laying it down.



**WARNING:** Do not use edge grinding/cutting wheels for surface grinding applications because these wheels are not designed for side pressures encountered with surface grinding. Wheel breakage and serious personal injury may result.

## Mounting and Using Wire Brushes and Wire Wheels

Wire wheels and brushes can be used for removing rust, scale and paint, and for smoothing irregular surfaces.

**NOTE:** Please refer to *Precautions To Take When Wire Brushing Paint*.

1. Allow the tool to reach full speed before touching the tool to the work surface.
2. Apply minimum pressure to work surface, allowing the tool to operate at high speed. Material removal rate is greatest when the tool operates at high speed.
3. Maintain a 5° to 10° angle between the tool and work surface for wire cup brushes.
4. Maintain contact between the edge of the wheel and the work surface with wire wheels.
5. Continuously move the tool in a forward and back motion to avoid creating gouges in the work surface. Allowing the tool to rest on the work surface without moving, or moving the tool in a circular motion causes burning and swirling marks on the work surface.
6. Remove the tool from the work surface before turning the tool off. Allow the tool to stop rotating before setting it down.



**CAUTION:** Use extra care when working over an edge, as a sudden sharp movement of grinder may be experienced.

## Using Cutting (Type 1) Wheels



**WARNING:** Do not use edge grinding/cutting wheels for surface grinding applications because these wheels are not designed for side pressures encountered with surface grinding. Wheel breakage and injury may result.

1. Allow tool to reach full speed before touching tool to work surface.
2. Apply minimum pressure to work surface, allowing tool to operate at high speed. Cutting rate is greatest when the tool operates at high speed.
3. Once a cut is begun and a notch is established in the workpiece, do not change the angle of the cut. Changing the angle will cause the wheel to bend and may cause wheel breakage.

4. Remove the tool from work surface before turning tool off. Allow the tool to stop rotating before setting it down.

## Precautions To Take When Wire Brushing Paint

1. Wire brushing of lead based paint is NOT RECOMMENDED due to the difficulty of controlling the contaminated dust. The greatest danger of lead poisoning is to children and pregnant women.
2. Since it is difficult to identify whether or not a paint contains lead without a chemical analysis, we recommend the following precautions when wire brushing any paint:

### PERSONAL SAFETY

1. No children or pregnant women should enter the work area where the paint removal is being done until all clean up is completed.
2. A dust mask or respirator should be worn by all persons entering the work area. The filter should be replaced daily or whenever the wearer has difficulty breathing.

**NOTE:** Only those dust masks suitable for working with lead paint dust and fumes should be used. Ordinary painting masks do not offer this protection. See your local hardware dealer for the proper respiratory protection.

3. NO EATING, DRINKING or SMOKING should be done in the work area to prevent ingesting contaminated paint particles. Workers should wash and clean up BEFORE eating, drinking or smoking. Articles of food, drink, or smoking should not be left in the work area where dust would settle on them.

### ENVIRONMENTAL SAFETY

1. Paint should be removed in such a manner as to minimize the amount of dust generated.
2. Areas where paint removal is occurring should be sealed with plastic sheeting of 4 mils thickness.
3. Wire brushing should be done in a manner to reduce tracking of paint dust outside the work area.

### CLEANING AND DISPOSAL

1. All surfaces in the work area should be vacuumed and thoroughly cleaned daily for the duration of the wire brushing project. Vacuum filter bags should be changed frequently.
2. Plastic drop cloths should be gathered up and disposed of along with any dust chips or other removal debris. They should be placed in sealed

refuse receptacles and disposed of through regular trash pick-up procedures.

During clean up, children and pregnant women should be kept away from the immediate work area.

3. All toys, washable furniture and utensils used by children should be washed thoroughly before being used again.

## Metal Applications

When using the tool in metal applications, make sure that a residual current device (RCD) has been inserted to avoid residual risks caused by metal swarf.

If the power supply is shut off by the RCD, take the tool to an authorised DEWALT repair agent.



**WARNING:** In extreme working conditions, conductive dust can accumulate inside the machine housing when working with metal. This can result in the protective insulation in the machine becoming degraded with a potential risk of an electrical shock.

To avoid build-up of metal swarf inside the machine, we recommend to clear the ventilation slots on a daily basis. Refer to **Maintenance**.

## MAINTENANCE

Your DEWALT power tool has been designed to operate over a long period of time with a minimum of maintenance. Continuous satisfactory operation depends upon proper tool care and regular cleaning.



**WARNING:** To reduce the risk of serious personal injury, turn tool off and disconnect tool from power source before making any adjustments or removing/installing attachments or accessories. Before reconnecting the tool, depress and release the trigger switch to ensure that the tool is off.

The charger and battery pack are not serviceable. There are no serviceable parts inside.

## Pop-off Brushes

The motor will be automatically shut off indicating that the carbon brushes are nearly worn out and that the tool needs servicing. The carbon brushes are not user-serviceable. Take the tool to an authorised DEWALT repair agent.



## Lubrication

Your power tool requires no additional lubrication.



## Cleaning



**WARNING:** Blow dirt and dust out of the main housing with dry air as often as dirt is seen collecting in and around the air vents. Wear approved eye protection and approved dust mask when performing this procedure.



**WARNING:** Never use solvents or other harsh chemicals for cleaning the non-metallic parts of the tool. These chemicals may weaken the materials used in these parts. Use a cloth dampened only with water and mild soap. Never let any liquid get inside the tool; never immerse any part of the tool into a liquid.

## CHARGER CLEANING INSTRUCTIONS



**WARNING:** Shock hazard. Disconnect the charger from the AC outlet before cleaning. Dirt and grease may be removed from the exterior of the charger using a cloth or soft non-metallic brush. Do not use water or any cleaning solutions.

## Optional Accessories



**WARNING:** Since accessories, other than those offered by DEWALT, have not been tested with this product, use of such accessories with this tool could be hazardous. To reduce the risk of injury, only DEWALT recommended accessories should be used with this product.

Consult your dealer for further information on the appropriate accessories.

## Protecting the Environment



Separate collection. This product must not be disposed of with normal household waste.

Should you find one day that your DEWALT product needs replacement, or if it is of no further use to you,

do not dispose of it with household waste. Make this product available for separate collection.



Separate collection of used products and packaging allows materials to be recycled and used again. Re-use of recycled materials helps prevent environmental pollution and reduces the demand for raw materials.

Local regulations may provide for separate collection of electrical products from the household, at municipal waste sites or by the retailer when you purchase a new product.

DEWALT provides a facility for the collection and recycling of DEWALT products once they have reached the end of their working life. To take advantage of this service please return your product to any authorised repair agent who will collect them on our behalf.

You can check the location of your nearest authorised repair agent by contacting your local DEWALT office at the address indicated in this manual. Alternatively, a list of authorised DEWALT repair agents and full details of our after-sales service and contacts are available on the Internet at: **[www.2helpU.com](http://www.2helpU.com)**.



## Rechargeable Battery Pack

This long life battery pack must be recharged when it fails to produce sufficient power on jobs which were easily done before. At the end of its technical life, discard it with due care for our environment:

- Run the battery pack down completely, then remove it from the tool.
- Li-Ion cells are recyclable. Take them to your dealer or a local recycling station. The collected battery packs will be recycled or disposed of properly.

# 锂电池充电式角磨机

## DCG412

祝贺您！

感谢您选择得伟工具。凭借多年的经验以及全面的产品开发与创新，得伟已经成为专业电动工具使用者最值得信赖的伙伴之一。

如果你对这款或者任何的得伟工具有任何的疑问或者意见，请致电：800-820-4221或者 400-620-4221

### 技术数据

		DCG412
电压	V <sub>DC</sub>	18
空载转速	rpm	7000
最大盘片直径	mm	125
主轴直径	mm	M14
重量	kg	2.2

### 定义：安全准则

下列定义解释了各警示词的严重程度。请仔细阅读本产品手册并注意这些符号。



**危险：**指示紧急的危险情形，如不加以避免，将导致死亡或严重伤害。



**警告：**指示潜在的危险情形，如不加以避免，可能导致死亡或严重伤害。



**警示：**指示潜在的危险情形，如不加以避免，可能导致轻度或中度伤害。

**注意：**指示不涉及人身伤害的情况，如不加以避免，可能导致财产损失。



表示有触电风险。



表示存在火灾风险。



**警告：**为降低伤害风险，请阅读使用手册。

### 电动工具安全通则

请妥善保管所有警示与须知，以备将来参考使用

**警告！**请仔细阅读所有安全警告和指示说明。不遵循下列的警告和指示则可能会导致触电、火灾和/或严重伤害。

在所有以下列举的警告中术语“电动工具”指用电驱动（有线）电动工具或电池驱动（无线）电动工具。

### 1、工作场所安全

- 保持工作场地清洁和明亮。混乱和黑暗的场地会
- 不要在易爆环境，如有易燃液体、气体或粉尘的环境下操作电动工具。电动工具产生的火花会点燃粉尘或气体。
- 让儿童和旁观者离开后操纵电动工具。分心会使你放松控制。

### 2、电气安全

- 电动工具插头必须与插座相配。不能以任何方式改装插头。需接地的电动工具不能使用任何转换插头。未经改装的插头和相配的插座将减少触电危险。
- 避免人体接触接地表面，如管道、散热片和冰箱。如果你身体接地会增加触电危险。
- 不得将电动工具暴露在雨中或潮湿环境中。水进入电动工具将增加触电危险。d) 不得滥用电线。绝不能用电线搬运、拉动电动工具或拔出其插头。让电动工具远离热、油、锐边或运动部件。受损或缠绕的电线会增加触电危险。
- 当在户外使用电动工具时，使用适合户外使用的外接电线。适合户外使用的电线将减少触电危险。
- 如果在潮湿的环境中使用电动工具，请使用漏电保护装置（RCD）。使用此装置可降低触电危险。

### 3) 人身安全

- 保持警觉，当操作电动工具时关注所从事的操作并保持清醒。切勿在有疲倦、药物、酒精或治疗反应下操作电动工具。在操作电动工具期间精力分散会导致严重人身伤害。
- 使用安全装置。始终配戴护目镜。安全装置，诸如适当条件下的防尘面具、防滑安全鞋、安全帽、听力防护等装置能减少人身伤害。
- 避免突然起动。确保开关在插入插头时处于关断位置。手指放在已接通电源的开关上或开关处于接通时插入头可能会导致危险。
- 在电动工具接通之前，拿掉所有调节钥匙或扳手。遗留在电动工具旋转零件上的扳手或钥匙会导致人身伤害。
- 手不要伸得太长。时刻注意脚下和身体平衡。这样在意外情况下能很好地控制电动工具。
- 着装适当。不要穿宽松衣服或佩带饰品。让你的头发、衣服和袖子远离运动部件。宽松衣服、佩饰或长发可能会卷入运动部件。

g) 如果提供了与排屑装置、集尘设备连接用的装置,则确保他们连接完好且使用得当。使用这些装置可减少碎屑引起的危险。

#### 4) 电动工具使用和注意事项

a) 不要滥用电动工具,根据用途使用适当的电动工具。选用适当的设计额值的电动工具会使你工作有效、更安全。

b) 如果开关不能接通或关断工具电源,则不能使用该电动工具。不能用开关来控制的电动工具是危险的且必须进行修理。

c) 在进行任何调节、更换附件或贮存电动工具之前,必须从电源上拔掉插头和/或将电池盒脱离电源。这种防护性措施将减少电动工具突然起动的危险。

d) 将闲置电动工具贮存在儿童所及范围之外,并且不要让不熟悉电动工具或对这些说明不了解的人操作电动工具。电动工具在未经训练的用户手中是危险的。

e) 保养电动工具。检查运动部件的安装偏差或卡住、零件破损情况和影响电动工具运行的其它条件。如有损坏,电动工具必须在使用前修理好。许多事故由维护不良的电动工具引发。

f) 保持切削刀具锋利和清洁。保养良好的有锋利切削刃的刀具不易卡住而且容易控制。

g) 按照使用说明书以及打算使用的电动工具的特殊类型要求的方式,考虑作业条件和进行的作业来使用电动工具、附件和工具的刀头等。电动工具用作那些与要求不符的操作可能会导致危险情况。

#### 5、电池式工具使用和注意事项

a) 只用制造商规定的充电器充电。将适用于某种电池盒的充电器用到其他电池盒时会发生着火危险。

b) 只使用配有特制电池盒的电动工具。使用其他电池盒会发生损坏和着火危险。

c) 当电池盒不用时,将它远离其他金属物体,例如回形针、硬币、钥匙、钉子、螺钉或其他小金属物体,以防一端与另一端连接。电池端子短路会引起燃烧或者火灾。

d) 在滥用条件下,液体会从电池中溅出;避免接触。如果无意间碰到了,用水冲洗。如果液体碰到了眼睛,还要寻求医疗帮助。从电池中溅出的液体会发生腐蚀或燃烧。

#### 6、维修

将你的电动工具送交专业维修人员,必须使用同样的备件进行更换。这样确保所维修的电动工具的安全性。

#### 附加安全细则

##### 所有操作的使用说明

a) 该电动工具是用于实现砂轮机、砂光机、钢丝刷或抛光机功能的。阅读随该电动工具提供的所有安全警告、说明、图解和规定。不了解以下所列所有说明将导致电击、着火和/或严重伤害。

b) 不推荐用该电动工具进行诸如切断等操作。电动工具不按指定的功能去操作,可能会发生危险和引起人事危害。

c) 不使用非工具制造商推荐和专门设计的附件。

否则该附件可能被装到你的电动工具上,而它不能安全操作。

d) 附件的额定转速必须至少等于电动工具上标出的最大速度。附件以比其额定转速大的速度运转会发生爆裂和飞溅。

e) 附件的外径和厚度必须在电动工具额定能力范围内。不正确的附件尺寸不能得到充分保护或控制。

f) 砂轮、法兰盘、靠背垫或任何其他附件的轴孔尺寸必须适合于安装到电动工具的主轴上。

带轴孔、与电动工具安装件不配的附件将会失稳、过度振动并会引起失控。

g) 不要使用损坏的附件。在每次使用前要检查附件,例如砂轮是否有碎片和裂痕,靠背垫是否有裂缝、撕裂或过度磨损,钢丝刷是否松动或金属丝是否断裂。如果电动工具或附件跌落了,检查是否有损坏或安装没有损坏的附件。检查和安装附件后,让自己和旁观者的位置远离旋转附件的平面,并以电动工具最大空载转速运行一分钟。破损的附件通常在该试验时会碎裂。

h) 戴上防护用品。根据适用情况,使用面罩、安全护目镜或安全眼镜。适用时,戴上防尘面具、听力保护器、手套和能挡小磨料或工件碎片的工作围裙。眼防护罩必须挡住各种操作产生的飞屑。防尘面具或口罩必须能够过滤操作产生的颗粒。长期暴露在高强度噪声中会引起失聪。

i) 让旁观者与工作区域保持一定安全距离。任何进入工作区域的人必须戴上防护用品。工件或破损附件的碎片可能会飞出并引起紧靠着操作区域的旁观者的伤害。切割附件触及带电导线会使电动工具外漏的金属零件带电,并使操作者触电。

j) 当在切割附件有可能切割到暗线或自身电线的场所进行操作时,只能通过绝缘握持面来握住电动工具。切割附件碰到一根带电导线会使电动工具外漏金属零件带电并使操作者发生电击危险。

k) 使软线远离旋转的附件。如果控制不当,软线可能被切断或缠绕,并使得你的手或手臂可能被卷入旋转附件中。

l) 直到附件完全停止运动才放下电动工具。旋转的附件可能会抓住表面并拉动电动工具而让你失去对工具的控制。

m) 当携带电动工具时不要开动它。意外地触及旋转附件可能会缠绕你的衣服而使附件伤害身体。



- n) 经常清理电动工具的通风口。电动机风扇会将灰尘吸入机壳，过多的金属粉尘沉积会导致电气危险。
- o) 不要在易燃材料附近操作电动工具。火星可能会点燃这些材料。
- p) 不要使用需用冷却液的附件。用水或其他冷却液可能会导致电腐蚀或电击。

### 对所有操作的进一步安全说明

#### 反弹和相关警告：

反弹是因卡住或缠绕住的旋转砂轮、靠背垫、钢丝刷或其他附件而产生的突然反作用力。卡住或缠绕会引起转动附件的迅速堵转，随之使失控的电动工具在卡住点产生与附件旋转方向相反的运动。

例如，如果砂轮被工件缠绕或卡住，伸入卡住点的砂轮边缘可能会进入材料表面而引起砂轮爬出或反弹。砂轮可能会飞向或飞离操作者，这取决于砂轮在卡住点的运动方向。在此条件下砂轮也可能碎裂。

反弹是电动工具误用和/或不正确的操作工序或条件的结果。可以同工采取以下给出的适当预防措施得以避免：

- 保持紧握电动工具，使您的身体和手臂处于正确状态以抵抗反弹力。如有辅助手柄，则要一直使用，以便最大限度地控制住起动时的反弹力或反力矩。如采取合适的预防措施，操作者就可以控制反力矩或反弹力。
- 绝不能将手靠近转动附件。附件可能会反弹碰到手。
- 不要站在发生反弹时电动工具可能移动到的德方。反弹将在缠绕点驱使工具逆砂轮运动方向运动。
- 当在尖角、锐边等处作业时要特别小心。避免附件的弹跳和缠绕。尖角、锐边和弹跳具有缠绕旋转附件的并引起反弹的失控。
- 不要附上锯链、木锯片或带齿锯片。这些锯片会产生频繁的反弹和失控。

### 打磨和切割操作的附加安全说明

#### 对磨削和打磨切割操作的专用安全警告：

- 只使用所推荐的砂轮型号和为选用砂轮专门设计的护罩。不是为电动工具设计的砂轮不能充分得到保护，是不安全。
- 护罩必须牢固地装在电动工具上，且放置得最具安全性，只有最小的砂轮部分暴露在操作人面前。护罩帮助保护操作者免于受到爆裂砂轮碎片和偶然触及砂轮的危險。
- 砂轮只用作推荐的用途。例如：不要用切割砂轮的侧面进行磨削。施加到砂轮侧面的力可能会使其碎裂。
- 始终为所选砂轮选用未损坏的、有恰当规格和形状的砂轮法兰盘。合适的砂轮法兰盘支撑砂轮可以减少砂轮破裂的可能性。切割砂轮的法兰盘可以不同于砂轮的法兰盘。

- 不要使用从大规格电动工具上用剩的磨损砂轮。用于大规格电动工具上的砂轮不适于较小规格工具的高速工况并可能会爆裂。

### 砂光操作的附加安全说明

#### 砂光操作的专用安全警告：

- 当砂光时，不要使用超大砂盘纸。选用砂盘纸时应按照制造商的推荐。超出砂光垫盘的大砂盘纸有撕裂的危险并且会引起缠绕、砂盘的撕裂或反弹。

### 抛光操作的附加安全说明

#### 抛光操作的专用安全警告：

- 不允许抛光帽或带绳索有任何松动部分而随意旋转，收拢或调整松动的附带绳索。松动而旋转的附带绳索会将手指缠住或在工件上卡住。

### 钢丝刷操作的附加安全说明

#### 钢丝刷操作的专用安全警告：

- 要意识到即使正常操作时钢丝线也会随刷子甩出。不要对钢丝刷施加过大的负荷而使得钢丝线承受过应力。钢丝线可能会轻易刺入薄的衣服和/或皮肤内。
- 如果建议钢丝刷使用护罩，则不允许该护罩对钢丝轮或钢丝刷有任何干扰。钢丝轮或钢丝刷在工作负荷和离心力作用下直径会变大。

### 角磨机的附加安全细则

- 附件的螺纹安装必须与角磨机主轴螺纹相配。对于通过法兰安装的附件，附件的轴孔必须适合法兰的定位直径。与电动工具安装件不相配的附件将失衡、过度震动并会引起失控。
- 中心凹陷的砂轮的磨削表面必须安装在护罩边缘平面的下方。安装不当且穿过护罩边缘平面的砂轮得不到充分保护。
- 禁止在本工具上使用 11 型号（杯形）砂轮。

使用不合适的附件可能会导致伤害。

- 建议使用侧手柄。牢固地拧紧手柄。应始终使用侧手柄，以时刻保持对工具的控制。

### 额外安全注意事项

通风口常常覆盖运动的部分应被保护。宽松的衣物，饰物或者头发会被运动的部分所勾住。



**警告：**我们推荐使用标有最大不超过30mA剩余电流装置。



**警告：**一些有磨锯钻以及其他包含化学成分的工业行为所产生的粉尘会导致癌症，生育问题疾病和其他再生系统疾病。

含铅油漆释放的铅

砖头，水泥以及其他一些泥石物体中的晶体硅

化学处理过的含有砷，铬的木材

工作者是否经常工作决定了工作者是否会被这些物质感染。要减少对于这些物质的曝光摄氏度，请在在一个通风很好的地方工作，穿着有认可的安全装备例如特殊设计过有出尘功能的防尘面罩。

请勿过长时间接触磨，锯，钻和其他工业活动。穿着有防护的衣服并且用肥皂水冲洗工作环境。让粉尘进入人的口鼻或者粘着在皮肤上可能会促进吸收有害的化学物质。

### 所有电池包的重要安全事项

当订购更换的电池包时，请确保信息包含目录号和电压。查询此手册最后电池电器匹配表。

电池包在开包前电量不是满额的。在使用电池包和充电前，请阅读一下的安全注意事项并按此执行。

不要在让充电和电池包放在有可能会引起爆炸的环境中例如有可燃性液体，气体和粉尘。装载拆卸电池包都有可能引燃粉尘和烟雾。

切勿强行给电池包充电。请勿以任何形式改装电池包来适配一个本来不匹配的充电器。这种不匹配性会导致严重的个人伤害。请查询附录表格来找到相适配的电池和充电器。

请使用有得伟标志的充电器来充电。

切勿将电池包浸入水中或其他液体中。

切勿将电池包在一个工作环境会超过40摄氏度的放置。例如户外帐篷或者夏季的特质工业棚。请将电池包放置在一个干燥凉爽的环境中。

提示：不要将电池包放在一个扣动开关锁住的工具中。切勿将扣动开关调至开启位置。



**警告：火灾危险。**切勿试图以任何理由拆开电池包。如果电池包有裂开或者损坏，请勿将其再插入充电器。切勿粉碎，摔或这损坏电池包。不要使用有裂痕的，被摔过的，过摄氏度使用的或者被损坏过的电池包或者充电器。例如：被钉子穿透的，被铁锤锤过的，被脚踏过的等）损坏的电池包应该被退回服务中心回收掉。



**警告：火灾危险。**不要储存或者携带电池包。这样的话外界金属物会接触到电池包。例如，不要把电池包放置在有掉落钉子，螺丝和钥匙的围裙，口袋，工具箱，产品包箱，抽屉等中。携带运输电池可能引起火灾。美国危险物质运输交通规则事实上禁止在飞机上运输电池无论是放在手提箱中还是放在旅行箱里除非以短路的方式保护着。所以当需要运输耽搁电池包时，保证电池终端是绝缘的。

## 适用于所有电池充电器的重要安全守则

请妥善保管好这些说明：本手册含有适用于DCB105电池充电器的重要安全和操作守则。使用充电器之前，请阅读充电器、电池组以及使用电池组的产品的所有守则和注意标示



**警告：触电危险。**切勿使任何液体进入充电器。这可能导致触电。



**警告：灼伤危险。**要降低受伤的风险，只使用得伟充电式电池充电。其他类型的电池可能会爆裂，导致人身伤害和损害。



**警告：必须监督儿童，确保他们没有玩耍本工具。**

**注意：特定条件下，充电器连接电源后，充电器内暴露的充电触点会被异物短路。导电性异物，包括但不限于钢绒、铝箔或聚集的金属颗粒，应远离充电器腔室。当腔室内没有电池组时，切记拔下充电器插头。清洁充电器前，亦应拔下其插头。**

切勿尝试使用本手册说明以外的任何充电器为电池组充电。充电器和电池组经特别设计以便配合工作。

除了为得伟充电式电池充电以外，这些充电器并非设计用于其他用途。任何其他用途可能导火灾、触电或电击的风险。

不得将充电器暴露在雨中或雪中。

断开充电器连接时拔下插头，切勿拉拽电线。这将减低对电插头和电源线的损害风险。

确保电源线布置在不易踩踏、踢绊、拉扯或会受到损害或压力的位置。

不得使用延长电源线，除非有绝对的必要。使用不正确的延长电源线可能导致火灾、触电或电击的风险。

在室外使用充电器时，应选择干燥的地点并使用适合室外使用的延长线。室外专用的延长线能够降低触电风险。

不得遮盖充电器上的通风槽。通风槽位于充电器的顶部及侧面。充电器应远离任何热源。

操作充电器时，不得使用损坏的电源线或插头——必须立即将其更换。

若充电器遭受重击、掉落或因任何方式引起的损坏，切勿操作该充电器。将它送往授权的检修中心。

不得拆卸充电器；在需要检修或维修时将它送往授权的检修中心，错误的重装可能导致触电、电击或火灾的风险。

为避免发生危险，电源线一旦损坏，必须立即联系厂商、服务代理或类似有资质的人员更换。

尝试进行任何清洁工作之前，请将充电器插头从插座上断开。这将降低触电的危险。取出电池组并不会降低此危险。

禁止尝试将两个充电器连接在一起。



充电器设计用于采用220V家用电源操作。不得尝试使用任何其他电压操作。上述不适用于车用充电器。

## 电气安全

一台电动工具的电机只适配一个电压范围。务必检查电源对应铭牌上的电压。220VAC代表你的工具在交流电上工作。在此额定电压外工作会导致动力损失并且会导致过热。所有得伟的工具都在工厂测试过。如果此工具不正常运作，请检查电源。你的得伟工具是双重绝缘的，因此没有地线。

年轻的儿童和体弱多病者。在没有监督的情况下，儿童和体弱多病者不建议使用。

— 只有在有人负责安全的情况下，体力虚弱者，视力，精神状态虚弱者，缺少经验和知识的人（包括孩童）不建议使用此工具。

— 儿童必须被监护以确保他们没有把电动工具当玩具

**电源线的更换** 如果电源线或者插头损坏了，必须找生产商或者经得伟授权的服务中心以避免危险。

## 延长线

**注意：**只适用当国电气机构认可的延长线。在使用延长线前，检查是否有松弛或者外露的电线，损坏的绝缘体和有缺陷的固件。如必要，更换之。

## 充电器

DCB105充电器接受10.8V、14.4 V和18V锂离子（DCB121, DCB140, DCB141, DCB180和 DCB181）电池组。

这些充电器无需任何调整，专为简易操作而设计。

## 充电步骤（图2）

1. 在插入电池组之前，请把充电器插入合适的220伏特插座中。

2. 将电池组（i）插入充电器中，确保电池完全放入充电器内。红（充电）灯会连续闪烁，表示充电过程已经开始。

3. 红灯保持持续发光时，表示充电已经完成。此时，充满电的电池可供使用，也可留在充电器中。

**注意：**为确保锂电池性能和寿命最大化，首次使用前请将电池充满电。

## 充电过程

有关电池组的充电状态可参考下表

充电状态	
	电池充电中
	电池已充满
	高/低温电池组延迟充电
	电池或充电器故障
	电源电路故障

本充电器不能给已经损坏的电池充电。充电器不亮、闪烁类型为电池或充电器故障时，均可表示电池损坏。

注意：这也可能表示充电器故障。

充电器显示故障时，请把充电器和电池组送往授权服务中心检测。

## 热/冷电池组延迟

当充电器检测到电池过热或过冷时，它会自动启动热/冷电池延迟模式，暂停充电，直到电池达到适当的温度。然后，充电器会自动切换到电池组充电模式。此功能可确保电池拥有最长的使用寿命。

XR 锂电池工具的设计带有防止电池超载、过热或深度放电的电子保护系统。

如果电子保护系统处于运作状态，该工具将自动停止运转。如果发生这种情况，请将锂电池放在充电器上直到完全充电。

冷电池组充电速率是温热的电池组充电速率的一半左右。电池组在整个充电周期的充电速度都会较慢，即使电池升温也不会返回到最高速度。

## 适用于所有电池组的重要安全守则

在订购替换电池组时，请提供产品目录号和电压。

从包装箱取出的电池组并非完全充电。使用电池组和充电器之前，请阅读下列安全守则。然后遵循所述的充电程序。

## 请阅读所有守则

禁止在易燃液体、气体或粉尘等存在的易爆环境中充电或使用电池组。在充电器中插入或取出电池会点燃粉尘或气体。

勿将电池强行放入充电器。不得以任何方式改动电池来放入不兼容的充电器，否则电池会破裂并导致严重的人身伤害。

电池组只可在得伟充电器中充电。



**警告：**禁止以任何理由打开电池组。

切勿喷溅或沉浸在水中或其他液体中。

勿在温度达到或超过40°C (105°F) (例如夏天的室外凉棚或金属建筑物) 存放或使用电池组。

获得最佳效果，请在使用前确保电池组充满电。

如果电池组壳体破裂或损坏，切勿将其放入充电器中。



**警告：**放置不用时，将工具侧放在平稳的表面上，以避免绊倒或摔落的风险。一些工具的电池组外形尺寸较大，可以直立在电池组上，但可能很容易被打翻。

器中。不得挤压、损坏电池组或使其跌落。如果电池组或充电器曾被重击、跌落、碾压或发生其它方式的损坏（例如针刺、锤击、踩踏等），则不得使用。否则可能导致触电或电死事故。损坏的电池组应交给维修中心回收。

## 锂离子电池组的附加安全守则 (Li-Ion)

不论电池组是严重受损或完全损坏，切勿焚化电池组。电池组会在火中爆炸。锂离子电池组在燃烧时会释放大量有毒烟雾和物质。

如果皮肤接触到电池内含物质，应立即用中性肥皂和清水冲洗。如果电池液沾到眼睛，应睁开眼睛用清水冲洗至少15分钟或直到眼睛不会感到刺激为止。若需要医疗帮助，电池电解液是由液状有机碳酸盐和锂盐混合组成的。

电池打开后，其内含物质可能会刺激呼吸系统。呼吸新鲜空气，如果症状持续，请寻求医疗帮助。



**警告：**灼伤危险。如果暴露在火花或火焰中，电池液可能会燃烧。

### 电池组

电池类型

使用18伏特电池组。

可使用DCB180或DCB181型电池组。

### 存储建议

1. 最佳的存储地点应凉爽干燥，远离直射阳光和热源或冷源的位置。为了优化电池的效能和使用寿命，请在不使用时应将电池组存放在室温环境。

2. 长期存放时，为达到最佳效果，建议将充满电的电池组从充电器中取出，并存放在凉爽、干燥的地点。

**注意：**电池组不可在电量耗尽的情况下存放。电池组在使用前应再次充电。

充电器和电池组上的标签

除了本手册中使用的图形符号外，充电器和电池组上的标签会显示下列图形符号：



使用前阅读使用手册



电池充电中



电池已充满



高/低温电池组延迟充电



电池或充电器故障



电源电路故障



切勿插入任何导电物件



不要对损坏的电池组充电



DCB105 只能使用得伟电池组，使用其他电池组可能会爆裂，导致人身伤害和损害



不要暴露在水中



应立即替换故障的电源线



只在介于40°C和40°C的环境中充电



弃置电池组时，请妥善处理以保护我们的环境。



切勿焚化电池组



锂离子电池组充电



充电时间请参阅技术数据



仅限室内使用

**说明 (图1)**

- a. 启动开关
- b. 锁定按钮
- c. 主轴锁定按钮
- d. 主轴
- e. 侧手柄
- f. 磨切轮
- g. 法兰圈
- h. 锁紧螺帽
- i. 护罩
- j. 电池包

**安装与调整****安装侧手柄 (Fig.1)**

机器两侧有螺纹的洞中可以安装侧手柄 (E)。在使用电动工具前, 请检查手柄安装紧固。

为了提高用户的舒适度, 齿轮箱将旋转90° 进行切割操作。

**旋转齿轮箱**

1. 卸下附加齿轮箱电机警告: 为了减少严重受伤的可能性, 在进行任何调整和安装前, 把电动工具关闭并移除电池包是必须的。突然的机器启动会造成人身伤害。

2. 卸下外壳的四个角落的螺丝

提示: 如果齿轮箱和电机箱分离超过3.17mm (1/8"), 电动工具必须拿去得伟服务中心进行修理和安装。如果不及时修理可能会导致电机损坏。

3. 重新把螺丝安装固定住齿轮箱和电机箱。用20磅的力气旋紧。旋的太紧会使螺母打滑。

**附件**

选择正确的护罩, 背垫和法兰来配套研磨辅料很重要。请参照12页和13页的信息来选择正确的附件。



**警告:** 附件必须被标明工具警告标记上推荐的最低速度。磨切片或其他附件如果转速过快可能会让磨切片飞出并导致伤害。有螺纹的附件必须有5、8" - 11轴心孔距。每一个不带螺纹的附件必须有22.2mm (7/8") 的轴心孔距。如果这个附件没有达到这样的标准, 这个附件可能是为电圆锯所设计的。只使用12页和13页上所列的附件。附件的转速必须高于电动工具铭牌上所要求的工具转速。

**安装护罩 (Fig.3)****安装和拆卸护罩**

**警告:** 为了减少严重受伤的可能性, 在进行任何调整和安装前, 把电动工具关闭并移除电池包是必须的。突然的机器启动会造成人身伤害。

**提醒:** 护罩必须配合研磨片, 切割片, 百叶轮, 钢丝轮和钢丝刷一起使用。只有在使用传统磨砂片时可以不使用护罩。中突型的护罩 (用以配合中突型研磨片 (中突型和29型), 百叶轮, 钢丝轮可以在当地的经销商或者授权的服务中心付费购买。除此之外的其他型号要配合其他不含在机器里的护罩。1型护罩配合1型磨切片使用。其他的安全须知如下:

1. 打开保护锁键 (K), 让护罩上的手柄和齿轮箱的插槽一致。
2. 把护罩推落直到护罩可以在插槽上自由转动。
3. 让护罩保护锁键处于打开状态, 把护罩转到期望的工作位置。护罩本身应该定位在主轴和操作者之间以确保提供最大的保护。
4. 关闭安全保护锁键以确保护罩固定在机器上。在此状态下, 你是无法转动护罩的。在护罩松动的情况下, 切勿开始任何工作或者加紧杆在开启位置。
5. 如果要拆下护罩, 请打开护罩保护锁键, 旋转护罩以确保箭头方向的一致再拉起护罩。

**提示:** 护罩在出厂时已经被预先调整好。如果使用一段时间后, 护罩变的松动, 在关闭位置使用加紧杆来旋紧螺丝 (如图5)

**注意:** 不要在开启位置紧固螺丝。不这样的话会造成不被发现的损坏和开裂的缝隙。

**注意:** 如果加紧杆不能够紧固螺丝了, 就不要使用这个工具了。为了减少人身伤害的机率, 拿着机器和护罩去 服务中心修理或者更换护罩。

**提示:** 磨边时需要使用专用和专门设计的中突型的轮片。6.35mm (1/4") 厚的轮片来磨表面, 用3.17mm (1/8") 的来磨边。如果需要切割的话, 可以使用1型的轮片配合1型的护罩。

**操作**

**警告:** 为了降低严重个人伤害的机率, 在进行任何的调整, 附件安装和拆卸时, 请先关闭工具, 拆下电池包。

**安装和拆下电池包 (如图2)**

**提示:** 为了最好的机器工作状态, 请完全充足电。

需要装电池包时, 把电池包 (J) 插入充电器插座, 让电池包完全对准插槽并滑入充电器插槽里。确保电池包和插槽完全契合固定住。

需要拆电池包时, 按下释放按钮 (O) 并且用力把电池包从充电器中退出。

## 电池包电量（如图2）

一些得伟的电池包包含电量显示装置。绿色的LED灯能够显示出电池包里还剩余多少电量。

要开动电池能量显示装置，长按能量显示按钮P。一组三个的绿色LED灯会亮起显示出剩余电量。如果剩余电量已经少于最低工作要求的电量，电量就不会被显示出来。请立刻去充电。

**提示：**能量显示器只显示电池包中剩余电量。它不会显示工具的功能性。根据不同的产品，温度和应用对象，会有不同显示。

如果需要更多的关于电池电量显示的咨询，请致电 800-820-4221或者 400-620-4221

## 开关

锁机键和开关键

你的这个角磨装备有解锁键（B）。

如果要锁定开关，按下如图8所示的解锁键。当锁定开关按钮被按下锁图标，该单位已被锁定。携带或存放工具时始终锁定触发开关，以防止意外启动。

如果要解锁开机开关，按下解锁按钮。当锁定开关按钮被按下解锁图标，锁定装置。解锁按钮是红色的来表面机器处于解锁状态。

拉动开机开关（A）来启动马达。释放开关来停下马达。

**提示：**此工具没有在开启状态锁定开关的功能设置。所以不可能用任何方式锁定开启状态。



**警告：**当发动机器，使用机器工作中和最后附件停止运作，都要紧握侧手柄和机身保持对机器的控制。务必在磨切片完全停止后再关闭机器。



**警告：**在工具和附件达到最高速度前，尽量不要使其触碰工作对象表面。先让机器离开工作对象表面然后再停机。

## 轴心锁按钮（如图1）

轴心锁（C）是用在安装或者卸下磨切片时来防止中轴旋转的。只有当机器彻底停止，电池包卸下，磨切片彻底停止工作时才操作轴心按钮。

**提示：**为了减少机器损坏的机率，不要在机器运行时操作轴心锁。这样会导致机器损坏并且造成附件碎裂引起人身伤害。

如果要锁住轴心，按下轴心锁按钮（C）并且转动轴心直到你不能转动轴心。

## 装备和使用中突型磨片和百叶轮

**提示：**必须使用中突型护罩。护罩可以从当地的经销商和授权的服务中心购买到。

## 装备和卸下面中突砂轮



**警告：**为了减少严重的人身伤害机率，在开始任何的附件调整包括装备和卸下，都请先关闭电动工具并且拆下电池包。工具的突然启动会导致人身伤害。中突型磨片需直接装在5、8“–11寸的螺纹主轴上。

1. 用手把磨切片旋在主轴上
2. 按下主轴锁定钮并且用扳手把磨切片旋紧。
3. 如果要拆下磨切片，把这个程序反过来做

**提示：**在没有把磨片完全安装到位的情况下开动机器可能导致机器的损坏。

## 用研磨片进行表面研磨

1. 让电动工具在接触到工作对象前达到最高速度。
2. 对工作对象表面施加最小的压力使得机器仍然以最高速度运行。研磨效率在工具高速运转时是最佳的。
3. 让工具和工作对象表面维持一个20度到20度之前的角度进行工作。
4. 使得工具向前向后工作的连续性，这样可以避免在对象表面留下坑洞。
5. 先离开工作对象表面再停下机器。让机器完全停下后再放平机器。

## 使用磨砂百叶轮对表面进行抛光

1. 让机器在进入工作对象前达到最高速度。
2. 用最小的力气把机器按在工作表面，允许机器在最大速度下工作。研磨效率在全速工作状态中是最佳的。
3. 在工具和工作表面，保持一个5度到10度的角度。
4. 使工具在工作表面不停地进行来回运动以避免磨出坑迹。
5. 先把机器从工作对象中移开后再次关停机器。在机器完全停止后才再放平。

## 安装砂纸背面垫



**警告：**为了减少严重的人身伤害的机率，请关闭机器，拿下电池包后再进行对附件工具的安装，拆卸和调整。

**提示：**当使用砂纸背面垫时，护罩可能需要拆下。



**警告：**合适的护罩在进行研磨，切割和抛光工作时，必须重新安装起来。

1. 将背面垫合适的套在轴心上。
2. 把砂纸轮安装在背面垫上。
3. 在按下轴心锁按钮后，将螺帽固定在轴心上。
4. 用手旋紧螺母。然后按下轴心锁按钮。旋转砂磨片直到砂磨片和背面垫完全贴合。

5. 如果要移开轮片，边握住，边旋转砂纸和背面垫边按下轴心锁。

### 使用有背面垫的砂纸进行抛光

选择合适的颗粒粗细的砂纸进行研磨。砂纸有不同的表面沙粒程度。粗糙的沙粒表面能够快速地进行研磨，但研磨后表面很粗糙。精细的表面沙粒程度适合慢速的工作，但能形成很好的光滑表面。刚开始时用粗糙的表面。随着工作的深入，按顺序换用中等颗粒粗糙程度的和精细的砂纸用于最后的优化工作。

粗糙	16-30 颗粒度
中等	36-80 颗粒度
精细	100-120 颗粒度
非常精细	150-180 颗粒度

1. 让机器达到最高转速后再接触工作对象表面
2. 使用中等的力度在工作对象表面，这样可使机器在一个高速下运行。当机器在高速下运行时，打磨的效果是最佳的。
3. 使机器和工作平面保持一个5度到15度的角度区间。打磨片与工作平面接触距离大约一寸即25.4毫米。
4. 让工具沿一条直线来回往复运动。如果在机器在一个点停下持续工作或者按照一个圆圈工作都有可能时工作对象表面产生坑洞。
5. 请先将工具移离工作对象后再关停机器。在机器完全停下转动前别平放在桌上。

### 打磨喷涂表面时的注意事项

1. 不建议打磨含铅的喷涂表面因为这样很难控制含化学成分 of 的灰尘。铅中毒对小孩和孕妇是最危险严重的。
2. 因为在没有化学成分分析的情况下，很难知晓涂料中是否有含铅物质，我们推荐采取以下方法：

### 个人安全

1. 当打磨涂料表面时，小孩和孕妇不允许进入工作区域。
2. 工作区域内的所有人都必须带好防尘面具和空气过滤器。过滤器中的滤芯必须每天更换。

**提示：**只有那些适合于在含铅环境中工作的防尘面具才可以被使用。通常的防尘面具是不具有保护措施。请咨询当地的经销商，购买适合的空气过滤面罩。

3. 在工作区域中，任何的进食，进水和吸烟是不被允许的。这样是为了有效保护含化学物质的颗粒进入消化系统。工作者在进食，进水和吸烟前应进行手的清

洗。任何食物，水源或者烟蒂都不应遗留在工作区域内以免被灰尘覆盖。

### 工作环境安全

1. 喷涂应以适当的方式来去除以最大可能程度的减少灰尘的产生。
2. 有喷涂灰尘产生的工作区域应用4毫米厚的塑料纸包裹起来。
3. 打磨应以一定的方式进行以免把灰尘带离工作区域。

### 清洗和丢弃

1. 工作区域内的所有表面都应用吸尘器进行吸尘。在每天工作中，适时的进行彻底的擦洗工作。吸尘器的集成袋应定时更换。
2. 一次性防尘服应集中收集并处理。
3. 所有的玩具，可擦洗家具和小孩用器皿都应该彻底的擦洗再进行使用。

### 安装和使用钢丝刷和钢丝轮

安装钢丝刷和钢丝轮的时候不需要法兰圈，直接在轴心上旋紧就好。只配用5、8“ - 11 寸的螺母并配以中突型的防护罩。

**注意：**为了您的自身安全，如有需要接触钢丝轮和钢丝刷时，请带好工作手套。

**注意：**为了避免机器的损坏，在安装钢丝轮和钢丝刷时，请勿触碰防护罩。



**警告：**为了您的自身安全，请先关闭机器，移除电池包后，再进行附件和配件的调整和安装拆卸。突然的启动会导致人身伤害。

1. 用手将轮盘旋在轴心上。
2. 按下轴心锁按钮，并且使用扳手旋紧轮盘。
3. 如果要拆卸轮盘，反过来操作。

**提示：**为了减少对工具的伤害，在启动工具前，将轮盘位置固定好。

### 使用钢丝轮和钢丝刷

钢丝轮和钢丝刷都可以用来除锈，除垢并且打磨不规则的表面。

**注意：**当使用钢丝刷和钢丝轮时，应采取和使用涂料打磨一样的措施和步骤。

1. 让机器达到最高转速后再接触工作对象表面
2. 使用中等的力度在工作对象表面，这样可使机器在一个高速下运行。当机器在高速下运行时，打磨的效果是最佳的。



3. 使机器和工作平面保持一个5度到15度的角度区间。打磨片与工作平面接触距离大约一寸即25.4毫米。

4. 让工具沿一条直线来回往复运动。如果在机器在一个点停下持续工作或者按照一个圆圈工作都有可能时工作对象表面产生坑洞。

5. 请先将工具移离工作对象后再关停机器。在机器完全停下转动前别平放在桌上。

推荐的附件在当地服务中心可以以额外的价格购买到。如果你有任何附件的需求，请至XXXXX。

制造商: 百得德国公司

地址: Black & Decker Str. 40 65510 Idstein, 德国

产地: 墨西哥



**警告:** 当在一个有工作角度的情况下工作时, 请特别小心使用, 以免产生刮痕。



**警告:** 为了您的自身安全, 请先关闭机器, 移除电池包后, 再进行附件和配件的调整和安装拆卸。突然的启动会导致人身伤害。

## 保养



**警告:** 为了您的自身安全, 请先关闭机器, 移除电池包后, 再进行附件和配件的调整和安装拆卸。突然的启动会导致人身伤害。

## 润滑

您的电动工具不需要任何的额外润滑。

## 清洁



**警告:** 用干净, 干燥的风对通风通道进行每周一次的定期清理以吹走通风口中的灰尘。为了降低眼部伤害的机率, 请佩戴符合AS/NZ51337的护目镜。



**警告:** 切勿使用溶剂或者其他强腐蚀性的化学物质来清洁非金属部分。这些化学物质可能会腐蚀塑料。请只使用清水或中性肥皂来清洁。切勿让任何液体进入机器本身也不要让机器的任何部位浸入任何的液体中。

## 充电器清洁指引



**警告:** 触电危险。在清洁前, 断开充电器和AC插座。使用布或者软非金属刷子可以将灰尘和润滑油会从电池包外部移除。切勿使用清水或者其他清洁方式。

## 维修

充电器和电池包是不可以维修的。充电器和电池包里也没有任何可以维修的部分。

## 附件



**警告:** 除了得伟品牌的附件, 其他的附件没有被测试过。使用这些没有被测试过的附件可能造成危险。为了减少危险产生的可能性, 请只使用得伟推荐的附件。