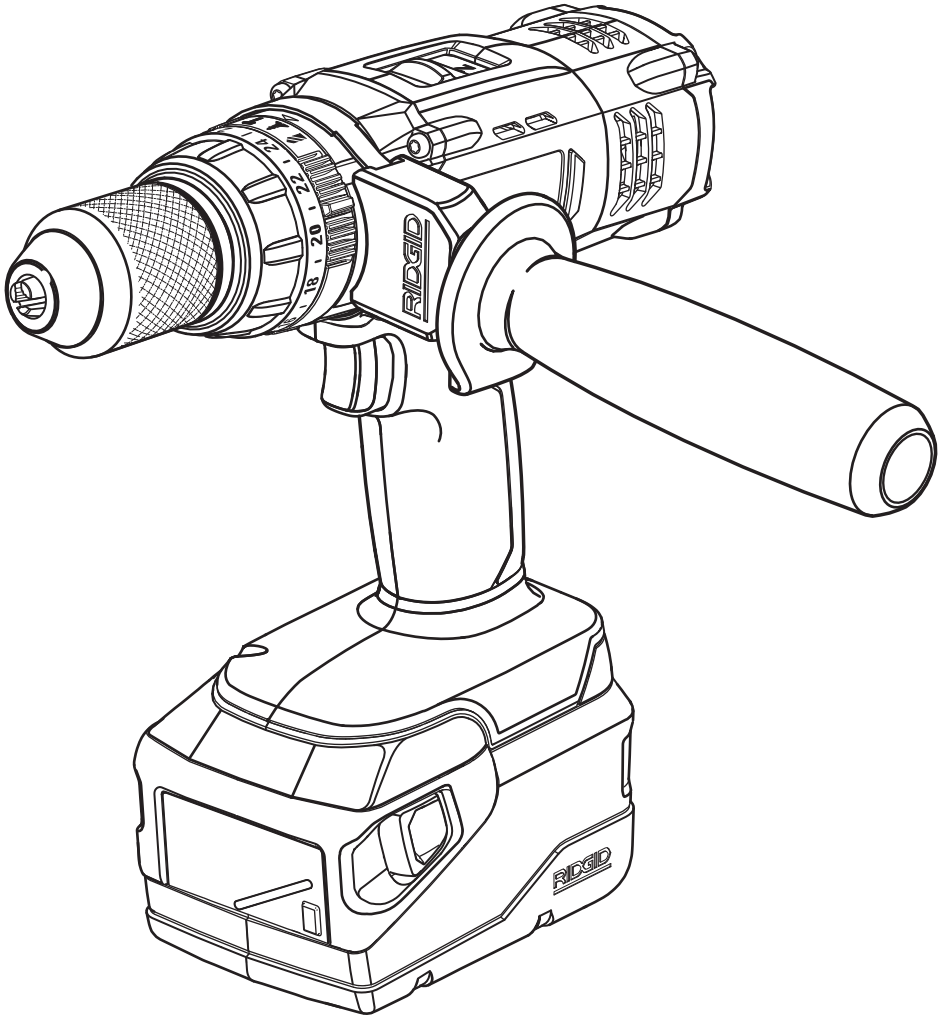
# OPERATOR'S MANUAL

## 1/2 in., 24 VOLT LITHIUM-ION HAMMER DRILL

## TWO-SPEED/REVERSIBLE

**R851150**




**NEW BATTERY PACKS MUST BE CHARGED BEFORE FIRST USE**

Your hammer drill has been engineered and manufactured to our high standards for dependability, ease of operation, and operator safety. When properly cared for, it will give you years of rugged, trouble-free performance.

**⚠ WARNING:**
To reduce the risk of injury, the user must read and understand the operator's manual before using this product.

Thank you for buying a RIDGID product.

**SAVE THIS MANUAL FOR FUTURE REFERENCE**

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# INTRODUCTION

This tool has many features for making its use more pleasant and enjoyable. Safety, performance, and dependability have been given top priority in the design of this product making it easy to maintain and operate.

**WARNING:**

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints,
- crystalline silica from bricks and cement and other masonry products, and
- arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

# GENERAL SAFETY RULES

**⚠ WARNING!**

**Read all instructions.** Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury. The term "power tool" in all of the warnings listed below refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

## SAVE THESE INSTRUCTIONS

## 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.

## 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.
- **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.**
- **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- **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.**
- **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.**
- **Use battery only with charger listed.**

| MODEL | BATTERY PACK | CHARGER |
|---|---|---|
| R851150 | 130377001 (R85008) | 140315001 (R85009) |

## PERSONAL SAFETY

- **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.
- **Use safety equipment. Always wear eye protection.** Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- **Avoid accidental starting. Ensure the switch is in the off-position before plugging in.** Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.
- **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.
- **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
- **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewelry or long hair can be caught in moving parts.
- **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of these devices can reduce dust-related hazards.
- **Do not wear loose clothing or jewelry. Contain long hair.** Loose clothes, jewelry, or long hair can be drawn into air vents.
- **Do not use on a ladder or unstable support.** Stable footing on a solid surface enables better control of the power tool in unexpected situations.

## POWER TOOL USE AND CARE

- **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.
- **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.
- **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.
- **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.
- **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.
- **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

# GENERAL SAFETY RULES

- **Use the power tool, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, 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.

## BATTERY TOOL USE AND CARE

- **Ensure the switch is in the off position before inserting battery pack.** Inserting the battery pack into power tools that have the switch on invites accidents.
- **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.
- **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.
- **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.
- **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.

## SERVICE

- **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.

**⚠ WARNING!**

To reduce the risk of injury, user must read instruction manual.

- **When servicing a power tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual.** Use of unauthorized parts or failure to follow Maintenance instructions may create a risk of shock or injury.

# SPECIFIC SAFETY RULES

- **Wear ear protectors with impact drills.** Exposure to noise can cause hearing loss.
- **Use auxiliary handles supplied with the tool.** Loss of control can cause personal injury.
- **Hold power tools by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord.** Contact with a "live" wire will also make exposed metal parts of the tool "live" and shock the operator.
- **Know your power tool. Read operator's manual carefully. Learn its applications and limitations, as well as the specific potential hazards related to this tool.** Following this rule will reduce the risk of electric shock, fire, or serious injury.
- **Always wear safety glasses with side shields.** Everyday glasses have only impact resistant lenses. They are NOT safety glasses. Following this rule will reduce the risk of eye injury.
- **Protect your lungs. Wear a face or dust mask if the operation is dusty.** Following this rule will reduce the risk of serious personal injury.
- **Protect your hearing. Wear hearing protection during extended periods of operation.** Following this rule will reduce the risk of serious personal injury.
- **Battery tools do not have to be plugged into an electrical outlet; therefore, they are always in operating condition. Be aware of possible hazards when not using your battery tool or when changing accessories.** Following this rule will reduce the risk of electric shock, fire, or serious personal injury.
- **Do not place battery tools or their batteries near fire or heat.** This will reduce the risk of explosion and possibly injury.
- **Do not crush, drop or damage battery pack. Do not use a battery pack or charger that has been dropped or received a sharp blow.** A damaged battery is subject to explosion. Properly dispose of a dropped or damaged battery immediately.
- **Batteries vent hydrogen gas and can explode in the presence of a source of ignition, such as a pilot light.** To reduce the risk of serious personal injury, never use any cordless product in the presence of open flame. An exploded battery can propel debris and chemicals. If exposed, flush with water immediately.
- **Do not charge battery tool in a damp or wet location.** Following this rule will reduce the risk of electric shock.
- **For best results, your battery tool should be charged in a location where the temperature is more than 50°F but less than 100°F. Do not store outside or in vehicles.**
- **Under extreme usage or temperature conditions, battery leakage may occur. If liquid comes in contact with your skin, wash immediately with soap and water, then neutralize with lemon juice or vinegar. If liquid gets into your eyes, flush them with clean water for at least 10 minutes, then seek immediate medical attention.** Following this rule will reduce the risk of serious personal injury.
- **If the power supply cord is damaged,** it must be replaced only by the manufacturer or by an authorized service center to avoid risk.

# SAFETY RULES FOR CHARGER

**WARNING!**
**READ AND UNDERSTAND ALL INSTRUCTIONS.** Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury.

- **Before using battery charger,** read all instructions and cautionary markings in this manual, on battery charger, battery, and product using battery to prevent misuse of the products and possible injury or damage.

**CAUTION:**
To reduce the risk of electric shock or damage to the charger and battery, charge only lithium-ion rechargeable batteries as specifically designated on your charger. Other types of batteries may burst, causing personal injury or damage.

- **Do not use charger outdoors or expose to wet or damp conditions.** Water entering charger will increase the risk of electric shock.
- **Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.** Following this rule will reduce the risk of electric shock, fire, or serious personal injury.
- **Do not abuse cord or charger.** Never use the cord to carry the charger. Do not pull the charger cord rather than the plug when disconnecting from receptacle. Damage to the cord or charger could occur and create an electric shock hazard. Replace damaged cords immediately.
- **Make sure cord is located so that it will not be stepped on, tripped over, come in contact with sharp edges or moving parts or otherwise subjected to damage or stress.** This will reduce the risk of accidental falls, which could cause injury, and damage to the cord, which could result in electric shock.
- **Keep cord and charger from heat to prevent damage to housing or internal parts.**
- **Do not let gasoline, oils, petroleum-based products, etc. come in contact with plastic parts.** They contain chemicals that can damage, weaken, or destroy plastic.
- **An extension cord should not be used unless absolutely necessary.** Use of improper extension cord could result in a risk of fire and electric shock. If extension cord must be used, make sure:
  a. That pins on plug of extension cord are the same number, size and shape as those of plug on charger.
  b. That extension cord is properly wired and in good electrical condition; and
  c. That wire size is large enough for AC ampere rating of charger as specified below:

| Cord Length (Feet) | 25' | 50' | 100' |
|---|---|---|---|
| Cord Size (AWG) | 16 | 16 | 16 |

  **NOTE:** AWG = American Wire Gauge
- **Do not operate charger with a damaged cord or plug,** which could cause shorting and electric shock. If damaged, have the charger replaced by an authorized serviceman.
- **Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way.** Take it to an authorized serviceman for electrical check to determine if the charger is in good working order.
- **Do not disassemble charger.** Take it to an authorized serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
- **Unplug charger from outlet before attempting any maintenance or cleaning to reduce the risk of electric shock.**
- **Disconnect charger from the power supply when not in use.** This will reduce the risk of electric shock or damage to the charger if metal items should fall into the opening. It also will help prevent damage to the charger during a power surge.
- **Risk of electric shock.** Do not touch uninsulated portion of output connector or uninsulated battery terminal.
- **Save these instructions.** Refer to them frequently and use them to instruct others who may use this tool. If you loan someone this tool, loan them these instructions also to prevent misuse of the product and possible injury.

# IMPORTANT SAFETY INSTRUCTIONS

## 1. SAVE THESE INSTRUCTIONS

This manual contains important safety and operating instructions for battery charger 140315001.

2. **Before using battery charger,** read all instructions and cautionary markings on battery charger, battery, and product using battery.
3. **CAUTION:** To reduce the risk of injury, charge only lithium-ion rechargeable batteries. Other types of batteries may burst, causing personal injury or damage.

# SYMBOLS

Some of the following symbols may be used on this tool. Please study them and learn their meaning. Proper interpretation of these symbols will allow you to operate the tool better and safer.

| SYMBOL | NAME | DESIGNATION/EXPLANATION |
|---|---|---|
| V | Volts | Voltage |
| A | Amperes | Current |
| Hz | Hertz | Frequency (cycles per second) |
| W | Watt | Power |
| min | Minutes | Time |
| ~ | Alternating Current | Type of current |
| ⎓ | Direct Current | Type or a characteristic of current |
| $n_o$ | No Load Speed | Rotational speed, at no load |
| ⧈ | Class II Tool | Double-insulated construction |
| .../min | Per Minute | Revolutions, strokes, surface speed, orbits etc., per minute |
|  | Wet Conditions Alert | Do not expose to rain or use in damp locations. |
|  | Read The Operator's Manual | To reduce the risk of injury, user must read and understand operator's manual before using this product. |
|  | Eye Protection | Always wear safety goggles or safety glasses with side shields and, as necessary, a full face shield when operating this product. |
|  | Safety Alert | Precautions that involve your safety. |
|  | No Hands Symbol | Failure to keep your hands away from the blade will result in serious personal injury. |
|  | No Hands Symbol | Failure to keep your hands away from the blade will result in serious personal injury. |
|  | No Hands Symbol | Failure to keep your hands away from the blade will result in serious personal injury. |
|  | No Hands Symbol | Failure to keep your hands away from the blade will result in serious personal injury. |
|  | Hot Surface | To reduce the risk of injury or damage, avoid contact with any hot surface. |

# SYMBOLS

The following signal words and meanings are intended to explain the levels of risk associated with this product.

| SYMBOL | SIGNAL | MEANING |
|---|---|---|
| ⚠ | **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. |
| | **CAUTION** | (Without Safety Alert Symbol) Indicates a situation that may result in property damage. |

## SERVICE

Servicing requires extreme care and knowledge and should be performed only by a qualified service technician. For service we suggest you return the product to your nearest **AUTHORIZED SERVICE CENTER** for repair. When servicing, use only identical replacement parts.

**⚠ WARNING:**

To avoid serious personal injury, do not attempt to use this product until you read thoroughly and understand completely the operator's manual. If you do not understand the warnings and instructions in the operator's manual, do not use this product. Call RIDGID customer service for assistance.

**⚠ WARNING:**

The operation of any power tool can result in foreign objects being thrown into your eyes, which can result in severe eye damage. Before beginning power tool operation, always wear safety goggles or safety glasses with side shields and, when needed, a full face shield. We recommend Wide Vision Safety Mask for use over eyeglasses or standard safety glasses with side shields. Always use eye protection which is marked to comply with ANSI Z87.1.

# SAVE THESE INSTRUCTIONS

# FEATURES

## PRODUCT SPECIFICATIONS

| | |
|---|---|
| Chuck | 1/2 in. Keyless |
| Motor | 24 Volt DC |
| Switch | VSR (Variable Speed Reversible) |
| No Load Speed | 0-400/0-1,500 r/min. (RPM) |
| Blows per minute | 0-6,400/0-24,000 BPM |
| Clutch | 24 Position |
| Torque | 615 in.lb. |
| Charger Input | 120 V, 60 Hz, AC only |

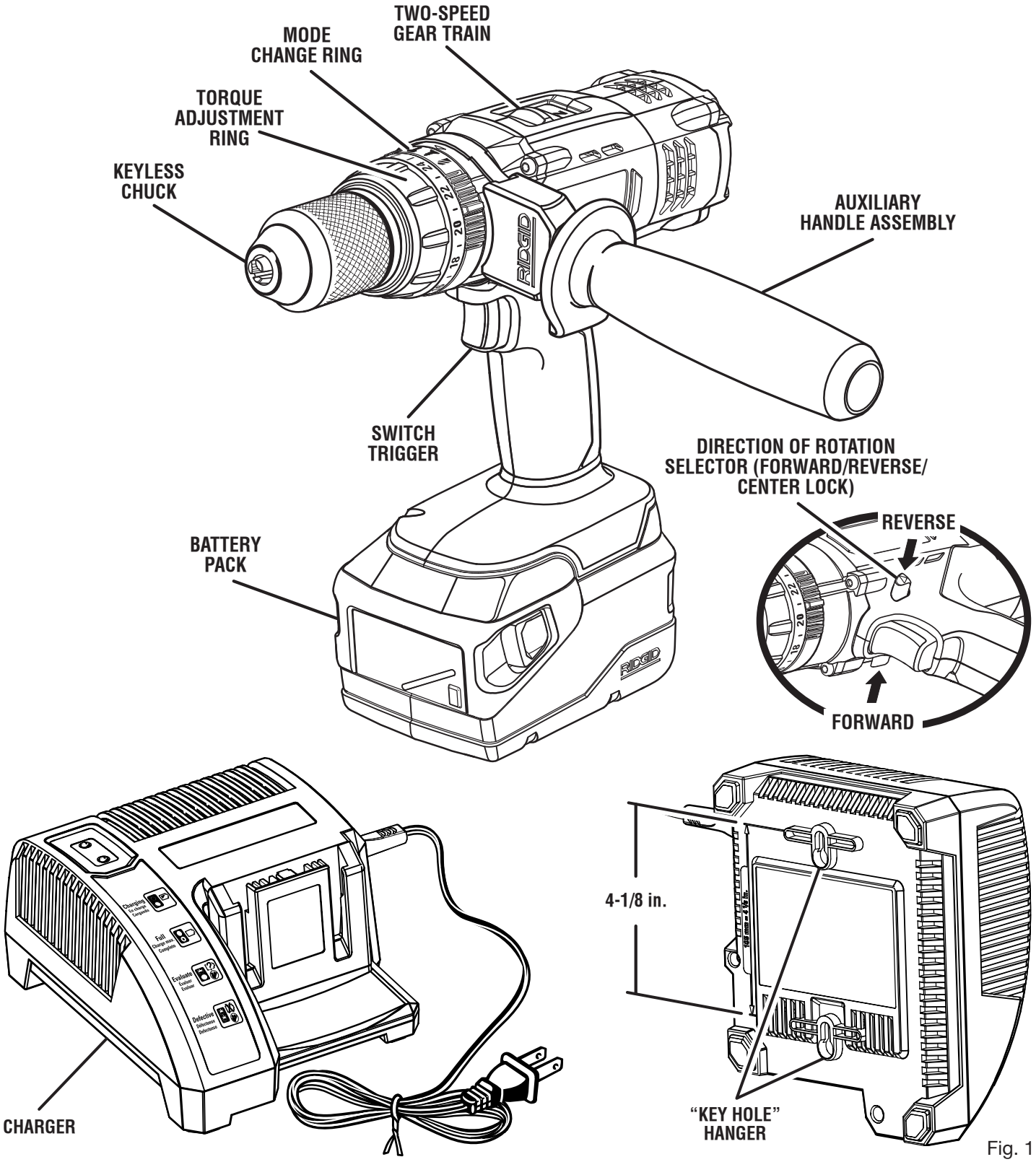



Fig. 1

# FEATURES

## KNOW YOUR HAMMER DRILL

*See Figure 1.*

The safe use of this product requires an understanding of the information on the tool and in this operator's manual as well as a knowledge of the project you are attempting. Before use of this product, familiarize yourself with all operating features and safety rules.

## AUXILIARY HANDLE ASSEMBLY

Your drill is equipped with an auxiliary handle assembly for ease of operation and to prevent loss of control.

## BLOWS PER MINUTE

This tool features an impact speed of 0-6,400 BPM in **LO (1)** speed and 0-24,000 BPM in **HI (2)** speed. BPM (Blows Per Minute) is the number of impacts per minute.

## CHARGER

The charger has a key-hole hanging feature for convenient, space-saving storage. Screws should be installed so that the center distance is 4-1/8 in.

## DIRECTION OF ROTATION SELECTOR

**(FORWARD/REVERSE/CENTER LOCK)**

Your drill has a direction of rotation (forward/reverse/center lock) selector located above the switch trigger for changing the direction of bit rotation. Setting the switch trigger in the **OFF** (center lock) position helps reduce the possibility of accidental starting when not in use.

## MODE CHANGE RING

Using the mode change ring, the operator can select either hammer mode, drive mode, or drilling mode.

## KEYLESS CHUCK

The keyless chuck allows you to hand-tighten or release the drill bit in the chuck jaws.

## TORQUE ADJUSTMENT RING

Your drill has a 24-position clutch. The torque adjustment ring can be turned to select the right amount of torque for your application.

## TWO-SPEED GEAR TRAIN

The two-speed gear train is designed for drilling or driving at **LO (1)** or **HI (2)** speeds. A slide switch is located on top of your drill for selecting either **LO (1)** or **HI (2)** speed.

## VARIABLE SPEED

The variable speed switch trigger delivers higher speed with increased trigger pressure and lower speed with decreased trigger pressure.

# ASSEMBLY

## UNPACKING

This product requires assembly.

- Carefully remove the tool and any accessories from the box. Make sure that all items listed in the packing list are included.
- Inspect the tool carefully to make sure no breakage or damage occurred during shipping.
- Do not discard the packing material until you have carefully inspected and satisfactorily operated the tool.
- If any parts are damaged or missing, please call 1-866-539-1710 for assistance.

## PACKING LIST

Hammer Drill

Auxiliary Handle

Double-ended Bit

Tool Bag

Charger

Battery Pack

Operator's Manual

**WARNING:**

If any parts are damaged or missing do not operate this tool until the parts are replaced. Failure to heed this warning could result in serious personal injury.

**WARNING:**

Do not attempt to modify this tool or create accessories not recommended for use with this tool. Any such alteration or modification is misuse and could result in a hazardous condition leading to possible serious personal injury.

**WARNING:**

To prevent accidental starting that could cause serious personal injury, always remove the battery pack from the tool when assembling parts.

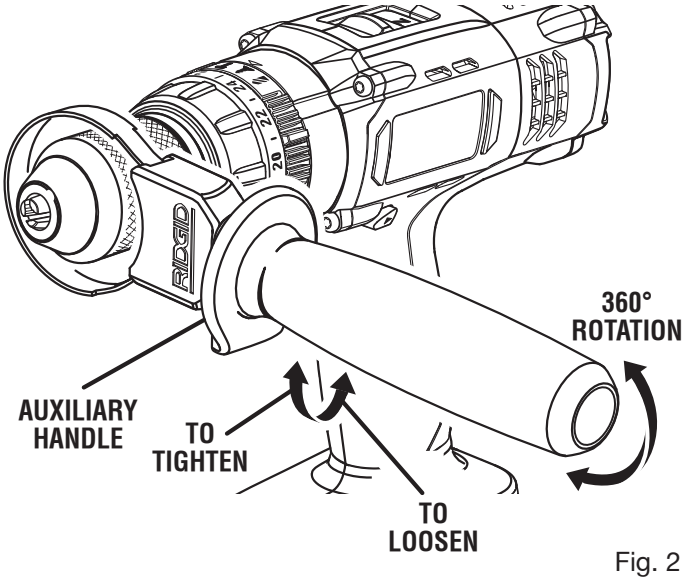



Fig. 2

## INSTALLING THE AUXILIARY HANDLE ASSEMBLY

*See Figure 2.*

An auxiliary handle assembly is packed with the drill for ease of operation and to help prevent loss of control. The handle can be rotated 360°, and it can also be mounted on the opposite side for left hand use.

**To install the auxiliary handle assembly:**

- Loosen the handle assembly by turning the handle counterclockwise.
- Rotate the handle assembly to the desired operating position.
- Securely tighten by turning the handle assembly clockwise.

Be sure the handle assembly is securely tightened against the clamp. This secures the handle assembly.

**NOTE:** For convenience and ease of starting threads, the hex nut has been trapped inside the molded slot in the handle assembly.

# OPERATION

**WARNING:**
Do not allow familiarity with tools to make you careless. Remember that a careless fraction of a second is sufficient to inflict severe injury.

**WARNING:**
Always wear safety goggles or safety glasses with side shields when operating tools. Failure to do so could result in objects being thrown into your eyes resulting in possible serious injury.

**WARNING:**
Do not use any attachments or accessories not recommended by the manufacturer of this tool. The use of attachments or accessories not recommended can result in serious personal injury.

## APPLICATIONS

You may use this tool for the purposes listed below:

- Hammer drilling in concrete, brick, or other masonry
- Drilling in wood
- Drilling in ceramics, plastics, fiberglass, and laminates
- Drilling in metals
- Driving screws
- Mixing paint

**CAUTION:**
If at any point during the charging process none of the LEDs are lit, remove the battery pack from the charger to avoid damaging the product. DO NOT insert another battery. Return the charger and battery to your nearest service center for service or replacement.

**CAUTION:**
Charge in a well ventilated area. Do not block charger vents. Keep them clear to allow proper ventilation.

## CHARGING THE BATTERY PACK

**NOTE: New 24 Volt lithium-ion battery packs will not work without first being charged. Before first time use, charge the battery pack to activate it.**

It is not necessary to drain the battery pack completely before recharging. Lithium-ion battery packs have no “memory” and can be recharged at any time. It is therefore possible to charge the battery pack before extended usage even if the battery pack is not completely drained of charge. Use the charge level indicator to determine the amount of charge in the battery pack.

Lithium-ion batteries deliver fade free power for their entire run time. 24 Volt lithium-ion tools will not gradually lose power due to decreasing battery charge. Instead, power from the battery pack will drop from full to zero once the full charge has been drained from the battery. Once this happens, the tool’s power drops from full to zero, and recharging of the battery is required

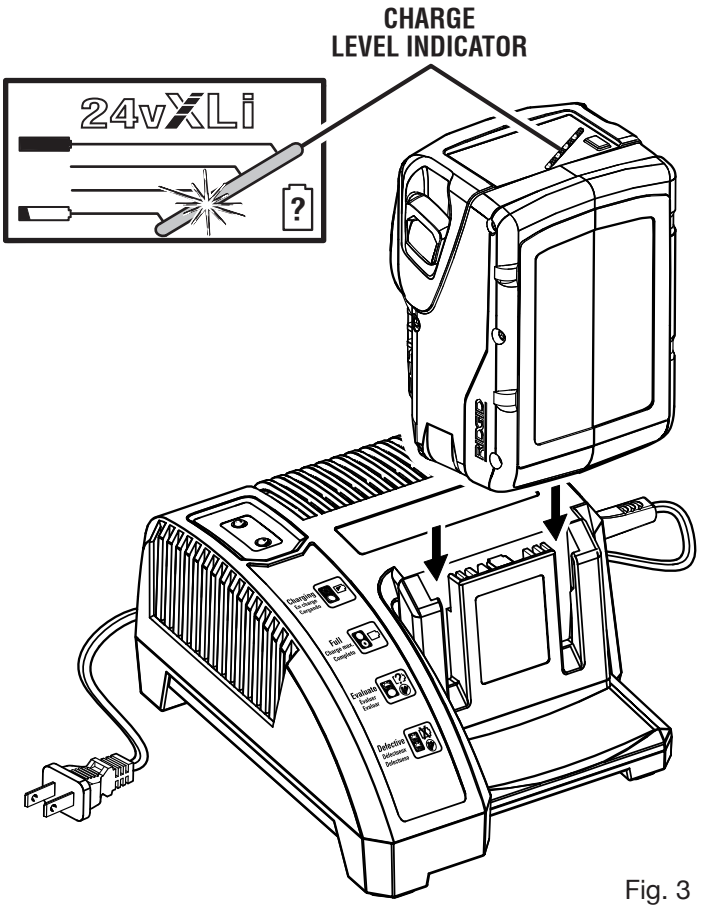



Fig. 3

# OPERATION

## TO CHARGE

A fully discharged battery pack with a temperature between 32° F (0° C) and 150° F (65° C) will charge in about an hour.

- Charge the 24 Volt lithium-ion battery pack only with the charger provided.
- Connect the charger to a power supply.
  **NOTE:** If needed**,** the charger can operate with most generators and inverters rated at 300 Watts or higher.
- Attach the battery pack to the charger by aligning the raised ribs on the battery pack with the grooves in the charger, then slide the battery pack onto the charger. *See Figure 3.*
- Do not place the charger in an area of extreme heat or cold. It will work best at normal room temperature.
- After charging is complete, the continuous green light will come on and the charge level indicator lights on the battery will go off.
- The charger will keep the battery pack fully charged if left on the charger.

## CHARGE LEVEL INDICATOR

*See Figure 4.*

The charge level indicator shows that the battery is charged at 1/4, 1/2, 3/4, or full capacity. To display the amount of charge left in the battery, press and hold the charge level indicator button.

**NOTE:** When the battery pack contains less than 10% charge, the 1/4 charge level indicator will flash.

## CHARGING A HOT BATTERY PACK

If the battery pack is above normal temperature range, the red LED will begin flashing and the green LED will be off. When the battery pack cools down to approximately 150° F (65°C), the charger will automatically begin fast charge mode.

**NOTE:** Refer to **CHARGING THE BATTERY PACK** for normal recharging of batteries. If the charger does not charge the battery pack under normal circumstances, return both the battery pack and charger to your nearest repair center for electrical check. For the location of your nearest repair center, please call 1-866-539-1710.

## CHARGING A COOL BATTERY PACK

If the battery pack is below normal temperature range, the red LED will begin flashing and the green LED will be off. When the battery warms to a temperature of more than 14° F (-10 °C), the charger will automatically begin charge mode.

## COLD WEATHER OPERATION

The lithium-ion battery pack can be used in temperatures down to -4° F. When the battery pack is very cold, it may “buzz” for the first minute of use to warm itself up. Put the battery pack on a tool and use the tool in a light duty application. After about a minute, the pack will have warmed itself up and begin operating normally.

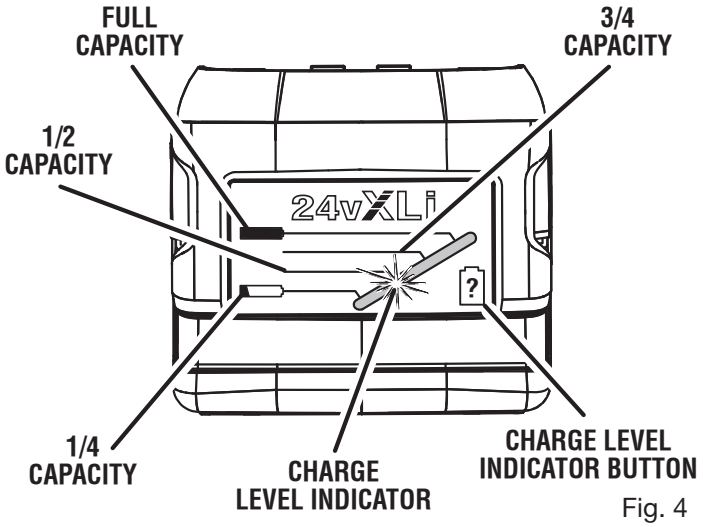



Fig. 4

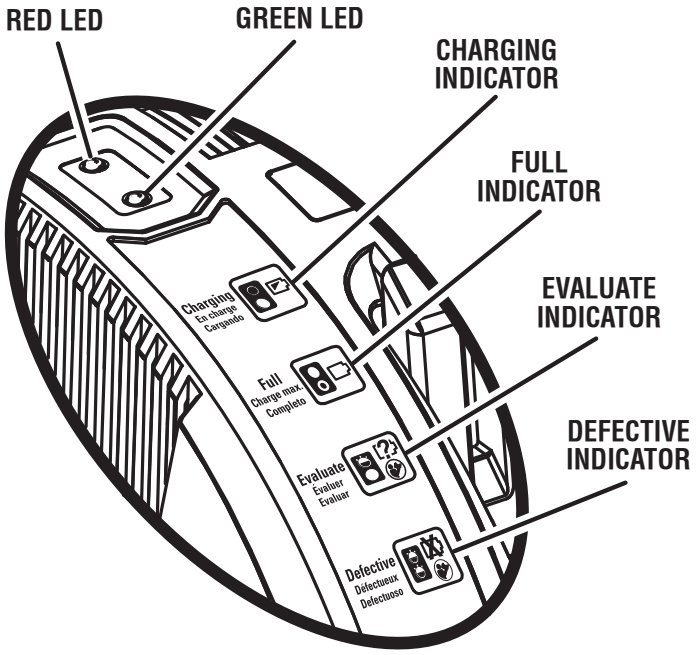



Fig. 5

# OPERATION

## LED FUNCTION OF CHARGER

*See Figure 5.*

| LED INDICATOR | | BATTERY PACK | RED LED | GREEN LED | ACTION |
|---|---|---|---|---|---|
|  | Charging | Fast charging | ON | OFF | Charges in 1 hour |
| | Charging | Deeply Discharged | ON | OFF | Charger pre-charges battery until normal voltage is reached, then begins fast charge mode. May take longer than 1 hour to fully charge. |
|  | Full | Maintenance charging | OFF | ON | Fast charging is complete<br>Charger maintains charge mode |
|  | Evaluate | Hot battery pack | Flashing | OFF | When battery pack reaches cooled temperature, charger begins fast charge mode |
| | Evaluate | Cold battery pack | Flashing | OFF | When battery pack reaches warmed temperature, charger begins fast charge mode |
|  | Defective | Defective | Flashing | Flashing | Battery pack or charger is defective |
| | • If defective, try to repeat the conditions a second time by removing and reinstalling the battery pack. If the LED status repeats a second time, try charging a different battery.<br>• If a different battery charges normally, dispose of the defective pack (see *Maintenance* section).<br>• If a different battery also indicates “Defective,” the charger may be defective. | | | | |

# OPERATION

## TO INSTALL BATTERY PACK

*See Figure 6.*

- Lock the switch trigger on the drill by placing the direction of rotation (forward/reverse/center lock) selector in center position.
- Place the battery pack in the drill. Align the raised rib on the battery pack with the groove inside the drill.
- Make sure the latches on each side of the battery pack snap in place and battery pack is secured in the drill before beginning operation.

### CAUTION:

When placing battery pack in the tool, be sure raised rib on battery pack aligns with the bottom of the drill and latches into place properly. Improper installation of the battery pack can cause damage to internal components.

## REMOVING BATTERY PACK

*See Figure 6.*

- Lock the switch trigger on the drill by placing the direction of rotation selector in center position.
- Locate the latches on the side of the battery pack and depress to release the battery pack from the drill.
- The battery pack will automatically disconnect in the direction to be removed when buttons are depressed.
- Remove the battery pack from the drill.

### ⚠ WARNING:

Battery tools are always in operating condition. Therefore, switch should always be locked when not in use or carrying at your side.

## SWITCH TRIGGER

*See Figure 7.*

To turn the drill **ON**, depress the switch trigger. To turn it **OFF**, release the switch trigger.

## VARIABLE SPEED

*See Figure 7.*

The variable speed switch trigger delivers higher speed with increased trigger pressure and lower speed with decreased trigger pressure.

**NOTE:** You might hear a whistling or ringing noise from the switch during use. Do not be concerned; this is a normal part of the switch function.

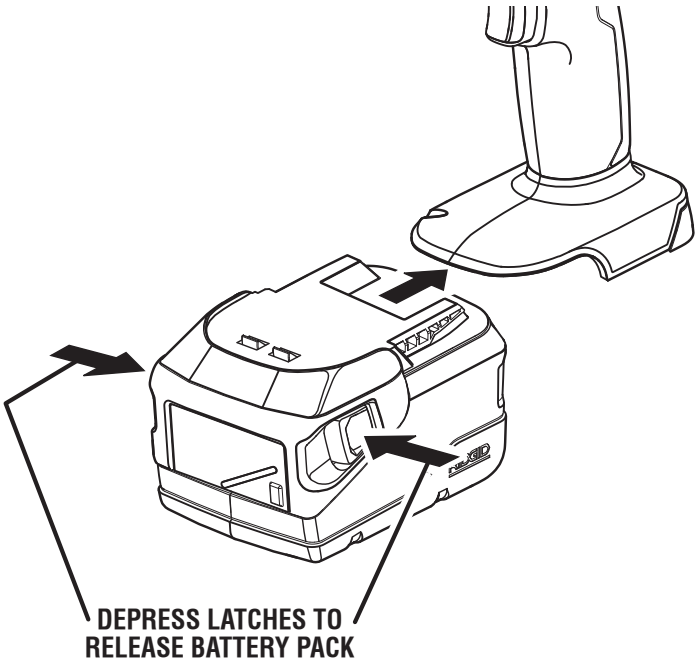



Fig. 6

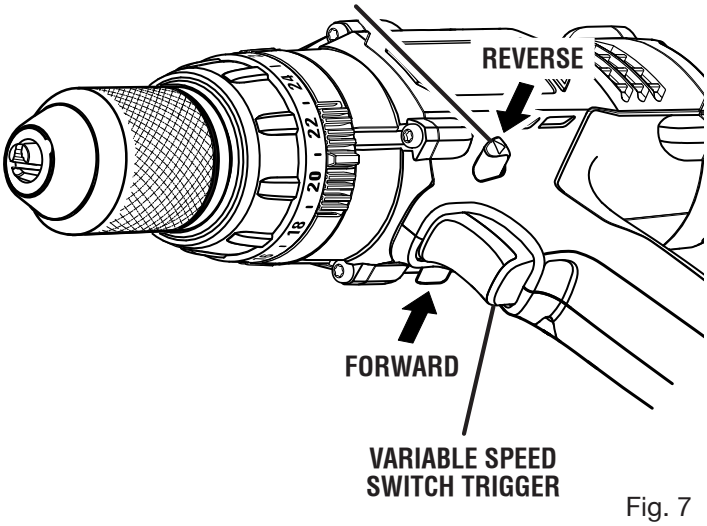



Fig. 7

# OPERATION

## DIRECTION OF ROTATION SELECTOR
**(FORWARD/REVERSE/CENTER LOCK)**

*See Figure 7.*

The direction of bit rotation is reversible and is controlled by a selector located above the switch trigger. With the drill held in normal operating position, the direction of rotation selector should be positioned to the left of the switch trigger for drilling. The drilling direction is reversed when the selector is to the right of the switch trigger.

Setting the switch trigger in the **OFF** (center lock) position helps reduce the possibility of accidental starting when not in use.

### CAUTION:
To prevent gear damage, always allow the chuck to come to a complete stop before changing the direction of rotation.

To stop the drill, release the switch trigger and allow the chuck to come to a complete stop.

**NOTE:** The drill will not run unless the direction of rotation selector is pushed fully to the left or right.

Avoid running the drill at low speeds for extended periods of time. Running at low speeds under constant usage may cause the drill to become overheated. If this occurs, cool the drill by running it without a load and at full speed.

## KEYLESS CHUCK

*See Figure 8.*

The drill has a keyless chuck to tighten or release drill bits in the chuck jaws. The arrows on the chuck indicate which direction to rotate the chuck body in order to **CLOSE** (tighten) or **OPEN** (release) the chuck jaws on the drill bit.

### ⚠ WARNING:
Do not hold the chuck body with one hand and use the power of the drill to tighten the chuck jaws on the drill bit. The chuck body could slip in your hand, or your hand could slip and come in contact with the rotating drill bit. This could cause an accident resulting in serious personal injury.

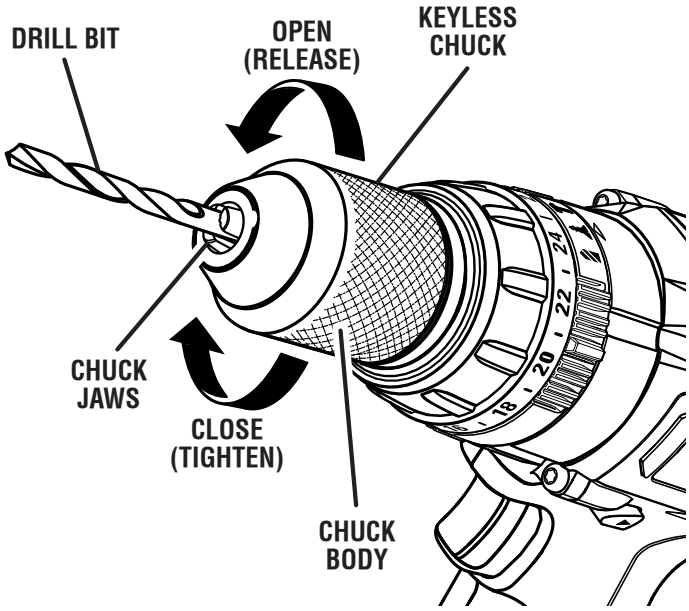


Fig. 8

# OPERATION

## TWO-SPEED GEAR TRAIN

*See Figure 9.*

The drill has a two-speed gear train designed for drilling or driving at **LO (1)** or **HI (2)** speeds. A slide switch is located on top of the drill to select either **LO (1)** or **HI (2)** speed. When using drill in the **LO (1)** speed range, speed will decrease and unit will have more power and torque. When using drill in the **HI (2)** speed range, speed will increase and unit will have less power and torque. Use **LO (1)** speed for high power and torque applications and **HI (2)** speed for fast drilling or driving applications.

**NOTE:** If you have difficulty changing from one gear range to the other, turn the chuck by hand until the gears engage.

### CAUTION:

Never change gears while the tool is running. Failure to obey this caution could result in serious damage to the drill.

## MODE CHANGE RING

*See Figure 10.*

The mode change ring allows you to quickly switch from drill mode to drive mode.

In general, drill mode should be used for drilling and other heavy duty applications. Drive mode should be used for driving screws. Hammer mode should be used for hammer drilling.

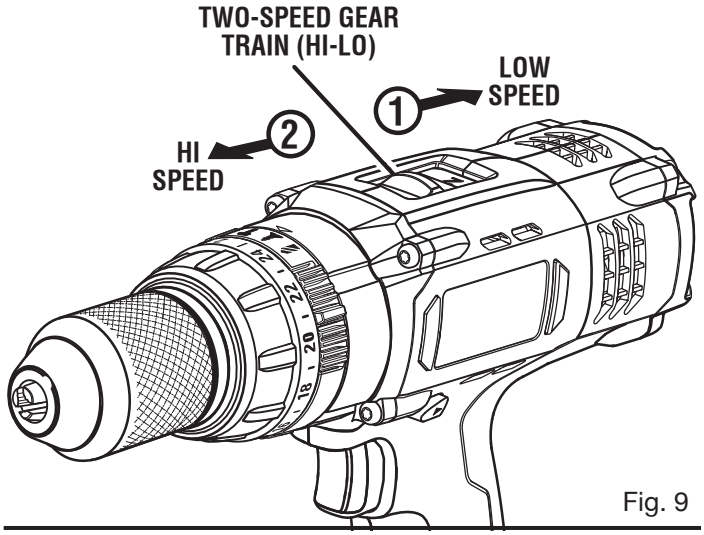



Fig. 9

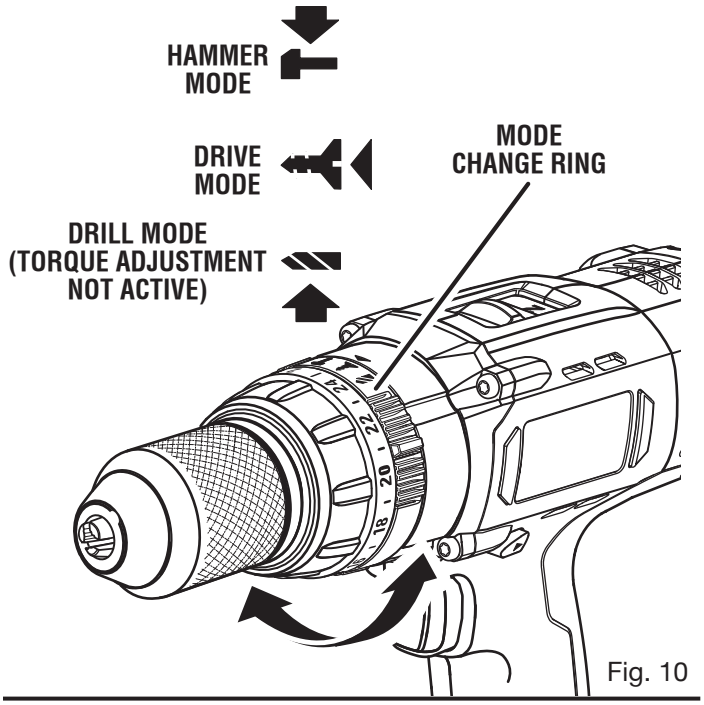



Fig. 10

# OPERATION

## SELECTING DRIVE, DRILL, OR HAMMER SETTING

*See Figure 11.*

Select the option that best matches the type of bit, fastener, and material you will be using.

- Choose your application
- Choose the correct speed: **LO (1)** or **HI (2)**
- Choose the correct mode: Drill, Drive or Hammer.

## TORQUE ADJUSTMENT

*See Figure 12.*

When using the drill-driver for various driving applications, it becomes necessary to increase or decrease the torque in order to help prevent the possibility of damaging screw heads, threads, workpiece, etc. In general, torque intensity should correspond to the screw diameter. If the torque is too high or the screws too small, the screws may be damaged or broken.

The torque is adjusted by rotating the torque adjustment ring.

The torque is greater when the torque adjustment ring is set on a higher setting. The torque is less when the torque adjustment ring is set on a lower setting.

The proper setting depends on the type of material and the size of screw you are using.

**NOTE:** The torque adjustment ring only functions in drive mode.

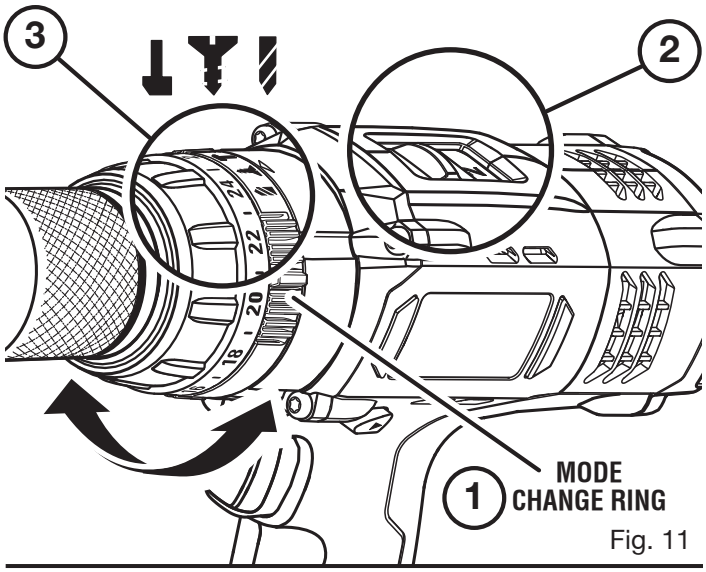


Fig. 11

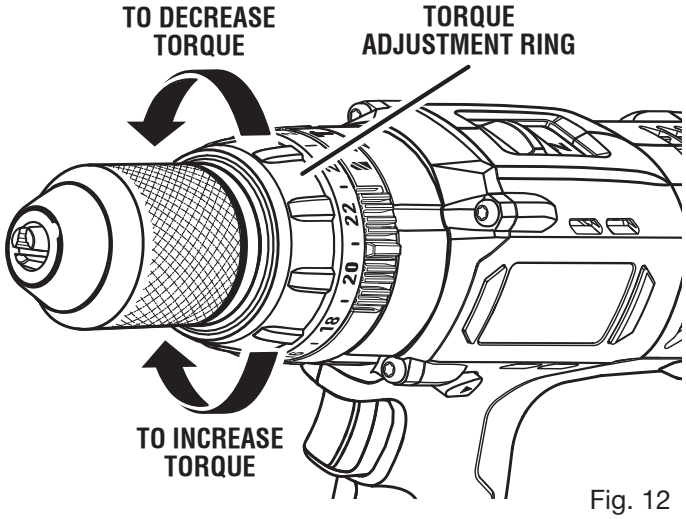


Fig. 12

# OPERATION

## INSTALLING BITS

*See Figure 13.*

- Lock the switch trigger by placing the direction of rotation selector in the center position.
- Open or close the chuck jaws to a point where the opening is slightly larger than the bit size you intend to use. Also, raise the front of the drill slightly to keep the bit from falling out of the chuck jaws.
- Insert the drill bit.

**WARNING:**

Make sure to insert the drill bit straight into the chuck jaws. Do not insert the drill bit into the chuck jaws at an angle then tighten, as shown in figure 14. This could cause the drill bit to be thrown from the drill, resulting in possible serious personal injury or damage to the chuck.

- Tighten the chuck jaws securely on the bit.

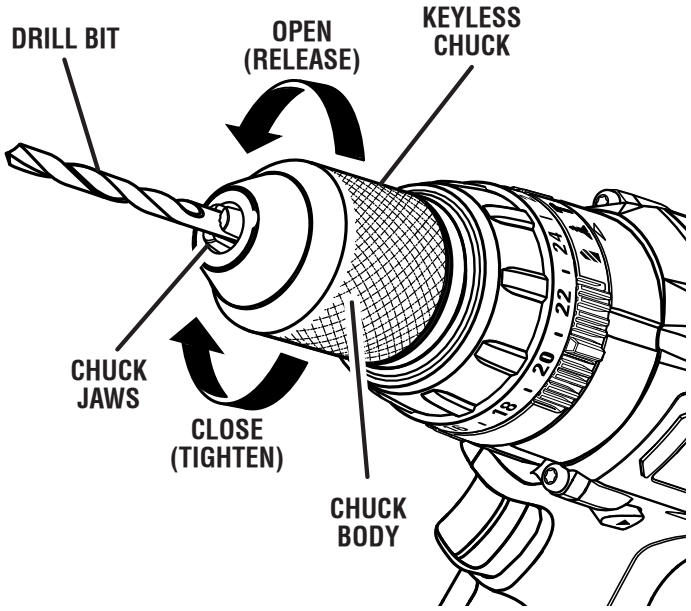
  **NOTE:** Rotate the chuck body in the direction of the arrow marked **CLOSE** to close the chuck jaws. Do not use a wrench to tighten or loosen the chuck jaws.

## REMOVING BITS

*See Figure 13.*

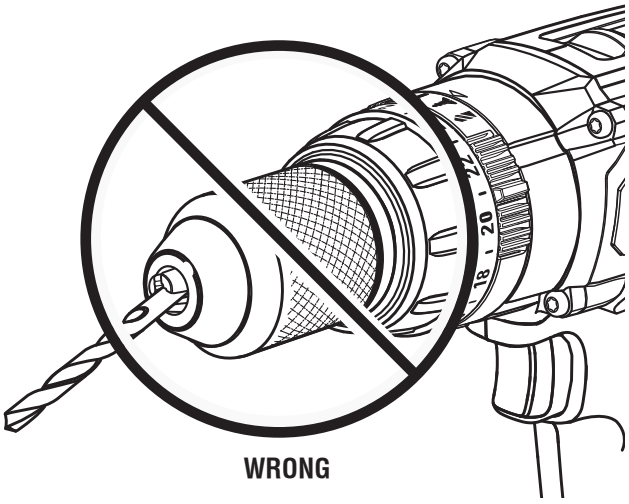
- Lock the switch trigger by placing the direction of rotation selector in the center position.
- Open the chuck jaws.

  **NOTE:** Rotate the chuck body in the direction of the arrow marked **OPEN** to open the chuck jaws. Do not use a wrench to tighten or loosen the chuck jaws.
- Remove the drill bit.




RIGHT

Fig. 13




WRONG

Fig. 14

# OPERATION

## USING THE AUXILIARY HANDLE ASSEMBLY

*See Figure 15.*

An auxiliary handle assembly is packed with the drill for ease of operation and to help prevent loss of control. The handle can be rotated 360°, and it can also be mounted on the opposite side for left hand use.

**To adjust the auxiliary handle assembly:**

- Loosen the handle assembly by turning the handle counterclockwise.
- Rotate the handle assembly to the desired operating position.
- Securely tighten by turning the handle assembly clockwise.

Be sure the handle assembly is securely tightened against the clamp. This secures the handle assembly.

**NOTE:** For convenience and ease of starting threads, the hex nut has been trapped inside the molded slot in the handle assembly.

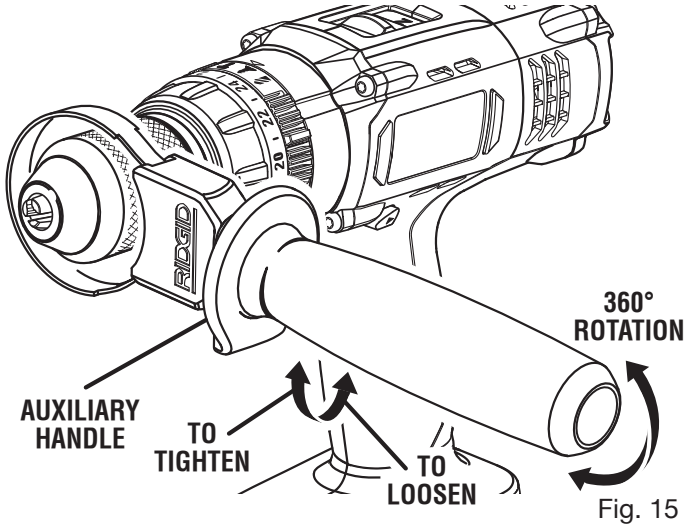


Fig. 15

## DRILLING

*See Figure 16.*

- Check the direction of rotation selector for the correct setting (forward or reverse).
- Secure the material to be drilled in a vise or with clamps to keep it from turning as the drill bit rotates.
- Hold the drill firmly and place the bit at the point to be drilled.
- Depress the switch trigger to start the drill.
- Move the drill bit into the workpiece, applying only enough pressure to keep the bit cutting. Do not force the drill or apply side pressure to elongate a hole. Let the tool do the work.

**⚠ WARNING:**

Be prepared for binding at bit breakthrough. When these situations occur, drill has a tendency to grab and kick opposite to the direction of rotation and could cause loss of control when breaking through material. If not prepared, this loss of control can result in possible serious injury.

- When drilling hard, smooth surfaces, use a center punch to mark the desired hole location. This will prevent the drill bit from slipping off-center as the hole is started.
- When drilling metals, use a light oil on the drill bit to keep it from overheating. The oil will prolong the life of the bit and increase the drilling action.
- If the bit jams in the workpiece or if the drill stalls, stop the tool immediately. Remove the bit from the workpiece and determine the reason for jamming.

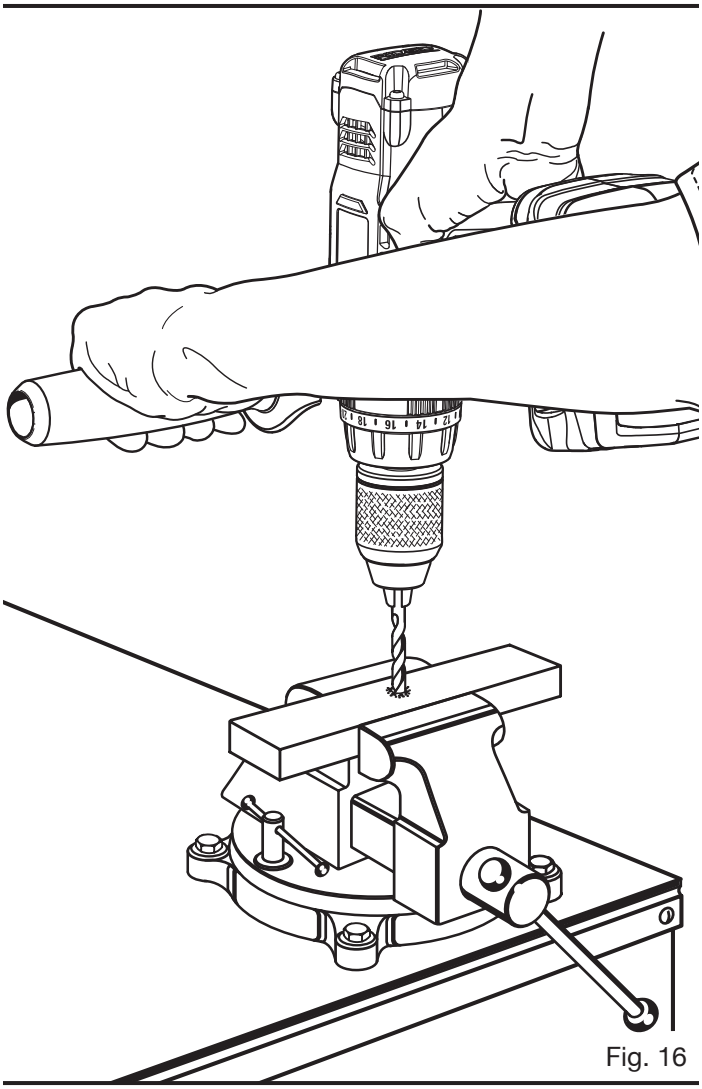


Fig. 16

**NOTE:** This drill has an electric brake. When the switch trigger is released, the chuck stops turning. When the brake is functioning properly, sparks will be visible through the vent slots on the housing. This is normal and is the action of the brake.

# OPERATION

## WOOD DRILLING

For maximum performance, use high speed steel bits for wood drilling.

- Select drill mode.
- Begin drilling at a very low speed to prevent the bit from slipping off the starting point. Increase the speed as the drill bit bites into the material.
- When drilling through holes, place a block of wood behind the workpiece to prevent ragged or splintered edges on the back side of the hole.

## METAL DRILLING

For maximum performance, use high speed steel bits for metal or steel drilling.

- Select drill mode.
- Begin drilling at a very low speed to prevent the bit from slipping off the starting point.
- Maintain a speed and pressure which allows cutting without overheating the bit. Applying too much pressure will:
  - Overheat the drill;
  - Wear the bearings;
  - Bend or burn bits; and
  - Produce off-center or irregular-shaped holes.
- When drilling large holes in metal, start with a small bit, then finish with a larger bit. Also, lubricate the bit with oil to improve drilling action and increase bit life.

## MASONRY DRILLING

For maximum performance, use carbide-tipped masonry impact bits when drilling holes in brick, tile, concrete, etc.

- Turn mode change ring to the hammer drill icon to select hammer mode.
- Apply light pressure and medium speed for best results in brick.
- Apply additional pressure for hard materials such as concrete.
- When drilling holes in tile, practice on a scrap piece to determine the best speed and pressure. Begin drilling at a very low speed to prevent the bit from slipping off the starting point.

# MAINTENANCE

**WARNING:**
When servicing use only identical RIDGID replacement parts. Use of any other parts may create a hazard or cause product damage.

**WARNING:**
Always wear safety goggles or safety glasses with side shields during power tool operation or when blowing dust. If operation is dusty, also wear a dust mask.

**WARNING:**
To avoid serious personal injury, always remove the battery pack from the tool when cleaning or performing any maintenance.

## GENERAL MAINTENANCE

Avoid using solvents when cleaning plastic parts. Most plastics are susceptible to damage from various types of commercial solvents and may be damaged by their use. Use clean cloths to remove dirt, dust, oil, grease, etc.

**WARNING:**
Do not at any time let brake fluids, gasoline, petroleum-based products, penetrating oils, etc., come in contact with plastic parts. Chemicals can damage, weaken or destroy plastic which may result in serious personal injury.

Only the parts shown on the parts list are intended to be repaired or replaced by the customer. All other parts should be replaced at a RIDGID authorized service center.

## BATTERIES

The battery pack for this tool is equipped with lithium-ion rechargeable batteries. Length of service from each charging will depend on the type of work you are doing.

The batteries in this tool have been designed to provide maximum trouble-free life. However, like all batteries, they will eventually wear out. Do not disassemble battery pack and attempt to replace the batteries. Handling of these batteries, especially when wearing rings and jewelry, could result in a serious burn.

To obtain the longest possible battery life, we suggest the following:

- Remove the battery pack from the charger once it is fully charged and ready for use.

For battery pack storage longer than 30 days:

- Store the battery pack where the temperature is below 80°F and away from moisture.
- Store battery packs in a 30%-50% charged condition.
- Every six months of storage, charge the pack as normal.

## BATTERY PACK REMOVAL AND PREPARATION FOR RECYCLING


To preserve natural resources, please recycle or dispose of batteries properly.

This product contains lithium-ion batteries. Local, state or federal laws may prohibit disposal of lithium-ion batteries in ordinary trash.

Consult your local waste authority for information regarding available recycling and/or disposal options.

**WARNING:**
Upon removal, cover the battery pack's terminals with heavy-duty adhesive tape. Do not attempt to destroy or disassemble battery pack or remove any of its components. Lithium-ion batteries must be recycled or disposed of properly. Also, never touch both terminals with metal objects and/or body parts as short circuit may result. Keep away from children. Failure to comply with these warnings could result in fire and/or serious injury.

# MAINTENANCE

### CHUCK REMOVAL

*See Figures 17 - 19.*

The chuck may be removed and replaced by a new one.

- Lock the switch trigger by placing the direction of rotation selector in center position.
- Insert a 5/16 in. or larger hex key into the chuck of the drill and tighten the chuck jaws securely.
- Tap the hex key sharply with a mallet in a clockwise direction. This will loosen the screw in the chuck for easy removal.
- Open the chuck jaws and remove the hex key. Using a screwdriver, remove the chuck screw by turning it in a clockwise direction.

  **NOTE:** The chuck screw has left hand threads.
- Insert the hex key into the chuck and tighten the chuck jaws securely. Tap sharply with a mallet in a counterclockwise direction. This will loosen the chuck on the spindle. It can now be unscrewed by hand.

### TO RETIGHTEN A LOOSE CHUCK

The chuck may become loose on the spindle and develop a wobble. Also, the chuck screw may become loose, causing the chuck jaws to bind and prevent them from closing. To tighten:

- Lock the switch trigger by placing the direction of rotation selector in the center position.
- Open the chuck jaws.
- Insert the hex key into the chuck and tighten the chuck jaws securely. Tap the hex key sharply with a mallet in a clockwise direction. This will tighten the chuck on the spindle.
- Open the chuck jaws and remove the hex key.
- Tighten the chuck screw.

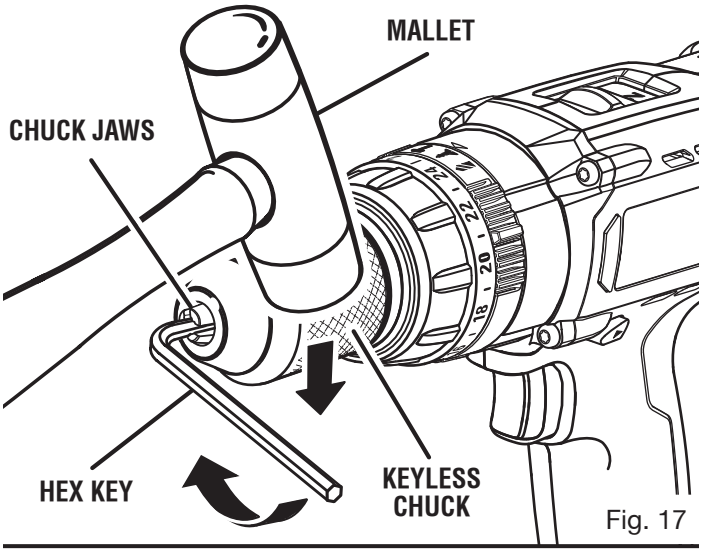



Fig. 17

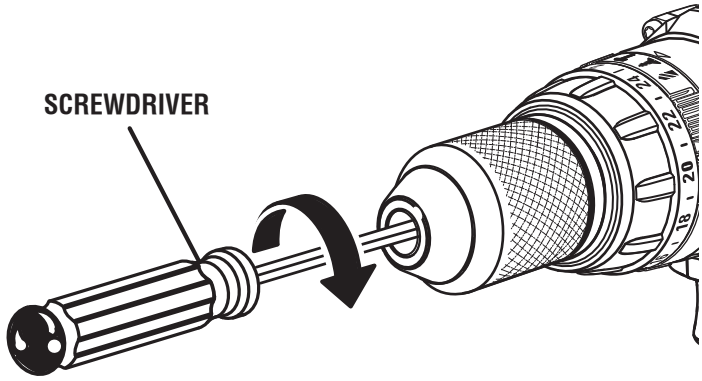



Fig. 18

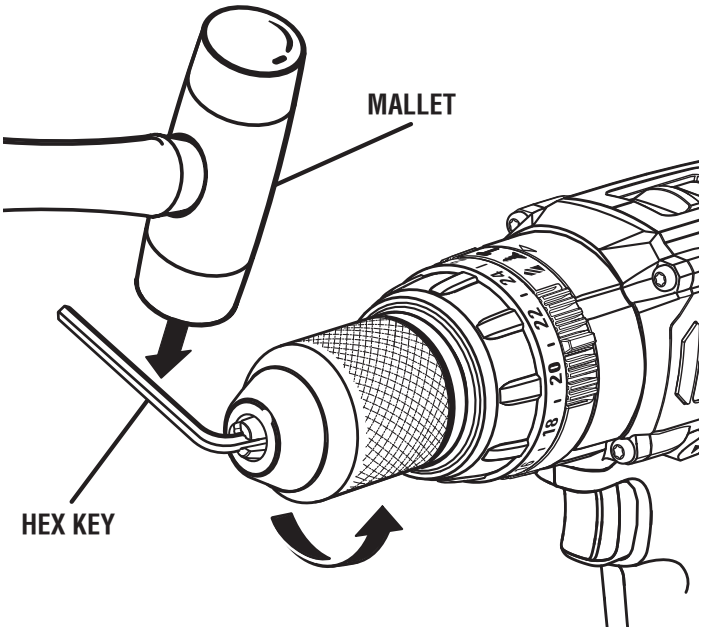



Fig. 19

# WARRANTY

## RIDGID® HAND HELD AND STATIONARY POWER TOOL 3 YEAR LIMITED SERVICE WARRANTY

Proof of purchase must be presented when requesting warranty service.

Limited to RIDGID® hand held and stationary power tools purchased 2/1/04 and after. This product is manufactured by One World Technologies, Inc. The trademark is licensed from RIDGID, Inc. All warranty communications should be directed to One World Technologies, Inc., attn: RIDGID Hand Held and Stationary Power Tool Technical Service at (toll free) 1-866-539-1710.

### 90-DAY SATISFACTION GUARANTEE POLICY

During the first 90 days after the date of purchase, if you are dissatisfied with the performance of this RIDGID® Hand Held and Stationary Power Tool for any reason you may return the tool to the dealer from which it was purchased for a full refund or exchange. To receive a replacement tool you must present proof of purchase and return all original equipment packaged with the original product. The replacement tool will be covered by the limited warranty for the balance of the 3 YEAR service warranty period.

### WHAT IS COVERED UNDER THE 3 YEAR LIMITED SERVICE WARRANTY

This warranty on RIDGID® Hand Held and Stationary Power Tools covers all defects in workmanship or materials and normal wear items such as brushes, chucks, motors, switches, cords, gears and even cordless batteries in this RIDGID® tool for three years following the purchase date of the tool. Warranties for other RIDGID® products may vary.

### HOW TO OBTAIN SERVICE

To obtain service for this RIDGID® tool you must return it; freight prepaid, or take it in to an authorized service center for RIDGID® branded hand held and stationary power tools. You may obtain the location of the authorized service center nearest you by calling (toll free) 1-866-539-1710 or by logging on to the RIDGID® website at www.ridgid.com. When requesting warranty service, you must present the original dated sales receipt. The authorized service center will repair any faulty workmanship, and either repair or replace any part covered under the warranty, at our option, at no charge to you.

### WHAT IS NOT COVERED

This warranty applies only to the original purchaser at retail and may not be transferred. This warranty only covers defects arising under normal usage and does not cover any malfunction, failure or defect resulting from misuse, abuse, neglect, alteration, modification or repair by other than an authorized service center for RIDGID® branded hand held and stationary power tools. Consumable accessories provided with the tool such as, but not limited to, blades, bits and sand paper are not covered.

**RIDGID, INC. AND ONE WORLD TECHNOLOGIES, INC. MAKE NO WARRANTIES, REPRESENTATIONS OR PROMISES AS TO THE QUALITY OR PERFORMANCE OF ITS POWER TOOLS OTHER THAN THOSE SPECIFICALLY STATED IN THIS WARRANTY.**

### ADDITIONAL LIMITATIONS

To the extent permitted by applicable law, all implied warranties, including warranties of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE, are disclaimed. Any implied warranties, including warranties of merchantability or fitness for a particular purpose, that cannot be disclaimed under state law are limited to three years from the date of purchase. One World Technologies, Inc. and RIDGID, Inc. are not responsible for direct, indirect, incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**One World Technologies, Inc.**
P.O. Box 35, Hwy. 8
Pickens, SC 29671

# OPERATOR'S MANUAL

## 1/2 in., 24 VOLT LITHIUM-ION HAMMER DRILL

## TWO-SPEED/REVERSIBLE

## R851150

**Customer Service Information:**

For parts or service, contact your nearest RIDGID authorized service center. Be sure to provide all relevant information when you call or visit. For the location of the authorized service center nearest you, please call 1-866-539-1710 or visit us online at www.ridgid.com.

The model number of this tool is found on a plate attached to the motor housing. Please record the serial number in the space provided below. When ordering repair parts, always give the following information:

**Model No.** R851150

**Serial No.** _____

983000-505
6-28-06 (REV:02)