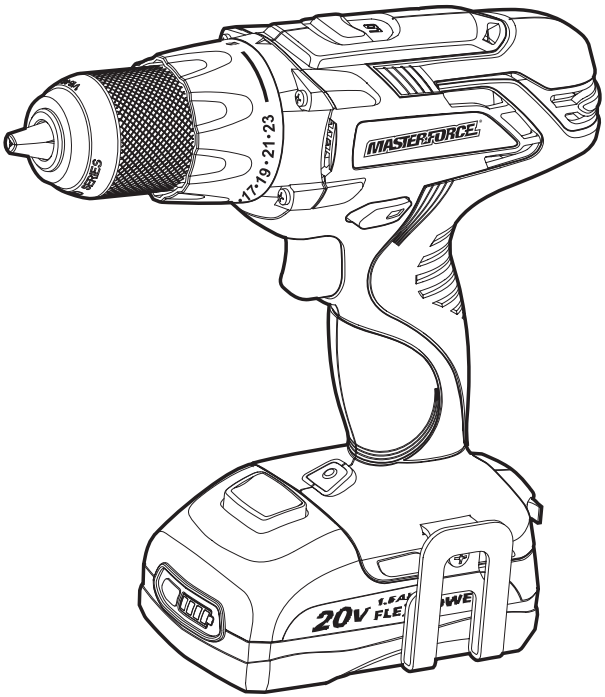
High-Performance 1/2” Drill/Driver



241-0405

For questions/comments, technical assistance or repair parts – Please call toll free: 1-866-917-4374 (M – F 8am – 6pm EST)

OPERATOR’S MANUAL

⚠ CAUTION: To Reduce The Risk Of Injury, User Must Read And Understand Operator’s Manual. Save These Instructions For Future Reference.

TABLE OF CONTENTS

SAFETY SYMBOLS

Some of these 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 more safely.

Symbol	Name	Designation / Explanation
V	Volts	Voltage
A	Amperes	Current
Hz	Hertz	Frequency (cycles per second)
W	Watts	Power
∿	Alternating current	Type of current
⎓	Direct current	Type of characteristic of current
n_o	No-load speed	Rotational speed at no load
lbs	Pounds	Weight
⧈	Class II construction	Double insulated construction
.../min	Per minute	Revolutions, strokes, surface speed orbits, etc., per minute
	Wear safety goggles	**⚠ 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 a full-face shield when needed. We recommend a Wide Vision Safety Mask for use over eye-glasses or standard safety glasses with side shields. Always use eye protection which is marked to comply with ANSI Z87.1.**

⚠ WARNING: To ensure safety and reliability, all repairs should be performed by a qualified service technician.

SAFETY INSTRUCTIONS

The purpose of safety symbols is to attract your attention to possible dangers. The safety symbols and the explanations with them deserve your careful attention and understanding. The symbol warnings do not, by themselves, eliminate any danger. The instructions and warnings they give are no substitutes for proper accident prevention measures.

⚠ WARNING: Be sure to read and understand all safety instructions in this manual, including all safety alert symbols such as "DANGER," "WARNING," and "CAUTION" before using this tool. Failure to following all instructions listed below may result in electric shock, fire, and/or serious personal injury.

SYMBOL MEANING

SAFETY ALERT SYMBOL: Indicates DANGER, WARNING, OR CAUTION. May be used in conjunction with other symbols or pictographs.

⚠ 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, could result in minor or moderate injury.

NOTICE: (Without Safety Alert Symbol) Indicates a situation that may result in property damage.

SAVE THESE INSTRUCTIONS!

SAFETY INSTRUCTIONS

⚠ WARNING: Read all safety warnings and 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.

⚠ WARNING: Risk of fire and electric shock. Dry location use only. Do not expose to rain. Risk of injury.

WORK AREA SAFETY

1. **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks that may ignite the dust or fumes.
3. **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

ELECTRICAL SAFETY

1. **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.
2. **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.
3. **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
4. **Do not abuse the cord.** Never use the cord for carrying, pulling or unplugging the power tool. Keep the cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
5. **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.
6. **If operating a power tool in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) protected supply.** Use of a GFCI reduces the risk of electric shock.

PERSONAL SAFETY

1. **Stay alert, watch what you are doing and use common sense when operating a power tool.** Do not use the tool while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious personal injury.
2. **Use personal protective equipment.** Always wear eye protection. Protective equipment, such as a dust mask, non-skid safety shoes, hard hat, or hearing protection, used for appropriate conditions, will reduce personal injuries.
3. **Prevent unintentional starting.** Ensure that 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 energizing power tools that have the switch on invites accidents.
4. **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.
5. **Do not overreach.** Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.

6. **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.
7. **If devices are provided for the connection of dust extraction and collection facilities, ensure that these are connected and properly used.** Use of these devices can reduce dust-related hazards.

USE AND CARE OF THE POWER TOOLS

1. **Do not force the power tool.** Use the correct power tool for your application. The correct power tool will do the job better and more safely at the rate for which it was designed.
2. **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.
3. **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.
4. **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.
5. **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.
6. **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
7. **Use the power tool, accessories, 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.

BATTERY TOOL USE AND CARE

1. **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.
2. **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.
3. **When the battery pack is not in use, keep it away from other metal objects, such as 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.
4. **Under abusive conditions, liquid may be ejected from the battery; avoid contact.** If contact accidentally occurs, flush with water. If liquid contacts eyes, also seek medical help. Liquid ejected from the battery may cause irritation or burns.

SERVICE

1. **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.

SPECIFIC SAFETY RULES FOR CORDLESS DRILL/DRIVER

1. **Use only with the batteries and chargers listed below.**

Battery pack	Charger
252-8024	252-8036 252-8037
252-8028	
252-8029	
252-8030	
252-8032	
252-8033	

2. **Hold power tools by the insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring.** Contact with a "live" wire will make exposed metal parts of the tool "live" and shock the operator.

3. **When working with the power tool, always hold it firmly with both hands and provide for a secure stance.** The power tool is guided more securely with both hands.

4. **Keep the cord and charger from heat to prevent damage to the housing or internal parts.**

5. **Secure the workpiece.** Clamping devices or a vise will hold the workpiece in place better than the hand.

6. **Do not allow gasoline, oils, petroleum-based products, etc. to come in contact with plastic parts.** These materials contain chemicals that can damage, weaken, or destroy plastic.

7. **Always wait until the machine has come to a complete stop before placing it down.** The tool insert can jam and lead to loss of control over the power tool.

8. **Always set the direction-of-rotation switch to the center (locked) position before performing any kind of work on the machine (e.g., maintenance, tool change, etc.)** and when transporting and storing it. Unintentional activation of the On/Off switch may result in personal injury.

9. **Do not open the battery.** There is risk of a short circuit.

10. **Protect the battery from heat and fire.** There is risk of explosion.

11. **Wear ear protectors when using the cordless drill/driver.** Exposure to noise can cause hearing loss.

12. **Use protective gloves when removing the bit from the tool, or first allow the clamp to cool down.** The bit may be hot after prolonged use.

13. **Use protective gloves when operating the tool.** Protective gloves can help to keep you from being burnt and hurt.

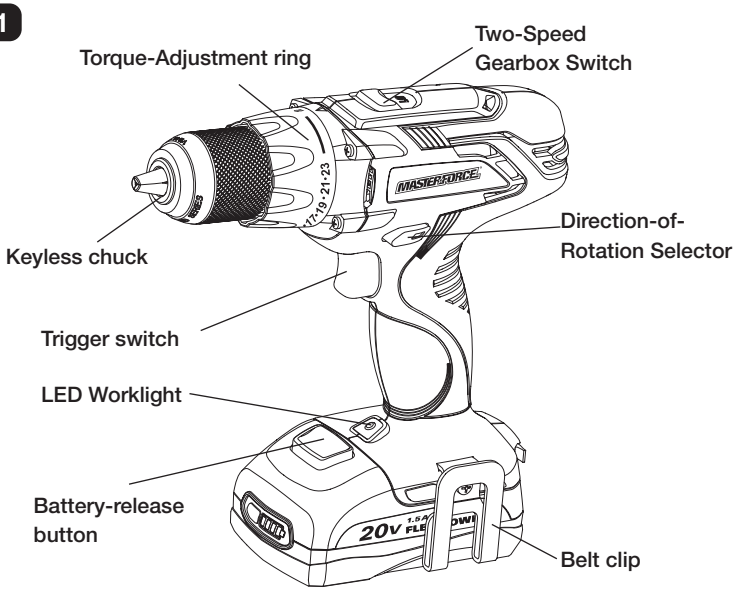
14. **Keep your hands away from the motor-housing vents.** Hot gas comes from the vents during operation.

15. **Release the trigger immediately when a screw is tightened to avoid breaking the screw.**

16. **For best results, your battery tool should be charged in a location where the temperature is more that 41°F (5°C) but less that 122°F (50°C).** Do not store outside or in vehicles.

OVERVIEW

FIG. 1



SPECIFICATIONS

Motor	20V
Chuck	1/2”
No-load Speed	0-450/0-1600 RPM
Max. Torque	455 in.lbs
Clutch	23+1 Position
Weight (without battery)	2 lb. 15 oz. (1.34kg)
Compatible Batteries	252-8033
	252-8032
	252-8030
	252-8029
	252-8028
	252-8024
Battery Charger	252-8037
	252-8036

ASSEMBLY

⚠ WARNING: If any part is broken or missing, DO NOT attempt to attach the battery or operate the tool until the broken or missing part is replaced. Failure to do so could result in possible serious 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 injury.

⚠ WARNING: Your tool should never be connected to the power source when you are assembling parts, making adjustments, cleaning, or when it is not in use. Disconnecting the tool will prevent accidental starting, which could cause serious personal injury.

CONTENTS

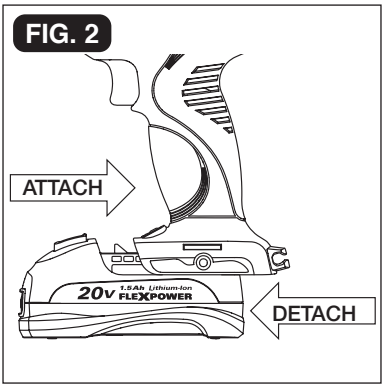
Drill/Driver, belt clip, double ended bit, manual

UNPACKING

1. This product has been shipped completely assembled.
2. Carefully remove the tool and any accessories from the box. Make sure that all items listed in the contents list are included.
3. Inspect the tool carefully to make sure that no breakage or damage occurred during shipping.
4. Do not discard the packing material until you have carefully inspected and satisfactorily operated the tool.

OPERATION

TO ATTACH BATTERY PACK (FIG. 2)



⚠ CAUTION: Avoid the possibility of accidental starting. Always take care not to activate the trigger switch when you are attaching the battery pack or performing other adjustments to the tool.

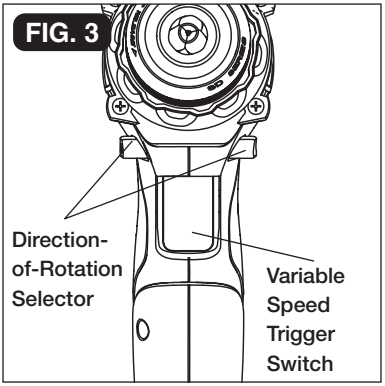
1. Place the direction-of-rotation selector in the center (locked) position.
2. Align the raised portion on the battery pack with the grooves on the bottom of the drill/driver, and then slide the battery pack onto the drill/driver as shown.
3. Make sure that the latch on the battery pack snaps into place and the battery pack is secured to the drill/driver before beginning operation.

NOTICE: When placing the battery pack on the tool, be sure that the raised rib on battery pack aligns with the groove on the drill/driver and the latches snap into place properly. Improper assembly of the battery pack can cause damage to internal components.

TO DETACH BATTERY PACK

1. Place the direction-of-rotation selector in the center (locked) position..
2. Press the battery-release button to release the battery pack.
3. Pull forward on the battery pack to remove it from the drill/driver.

TRIGGER SWITCH (FIG. 3)



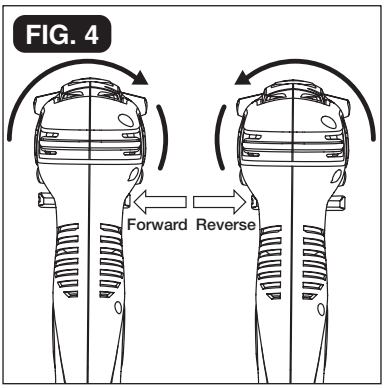
To turn the Drill/Driver ON, depress the trigger switch.

To turn it OFF, release the trigger switch.

VARIABLE SPEED (FIG. 3)

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

DIRECTION-OF-ROTATION SELECTOR (FORWARD/CENTER-LOCK/REVERSE) (FIG. 4)



OPERATION

The direction of rotation of the bit is reversible and is controlled with a selector located above the trigger switch. With the drill/driver held in normal operating position:

Position the direction-of-rotation selector to the left of the tool for forward rotation.

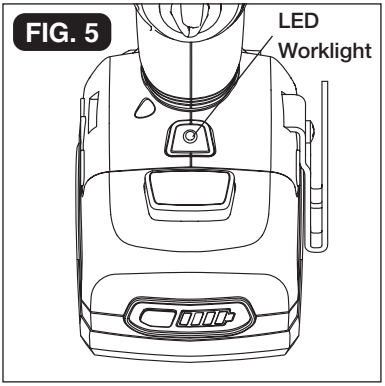
Position the direction-of-rotation selector to the right of the tool for reverse rotation.

Position the direction-of-rotation selector in the center to lock the tool off.

NOTICE: To prevent gear damage, always allow the drill/driver to come to a complete stop before changing the direction of rotation.

NOTICE: The drill/driver will not run unless the direction-of-rotation selector is engaged fully to the left or right.

LED WORKLIGHT (FIG. 5)

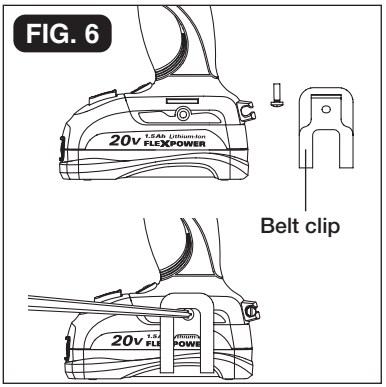


The LED worklight, located on the base of the cordless drill, will illuminate when the trigger switch is depressed. This provides additional light on the surface of the workpiece for operation in lower light situations. The LED worklight will turn off when the trigger switch is released.

ELECTRIC BRAKE

To stop the tool, release the trigger switch and allow the chuck to come to a complete stop. The electric brake quickly stops rotation. This feature engages automatically when you release the trigger switch.

INSTALLING THE BELT CLIP (FIG. 6)



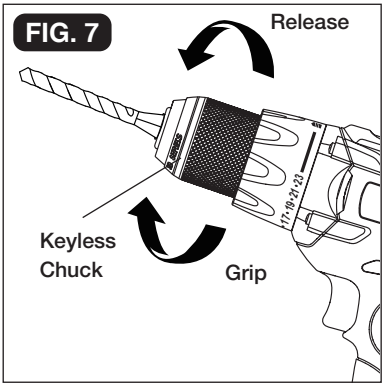
1. Align the rib of the belt clip with the hole on the base of the drill.
2. Insert the screw and tighten the screw securely with a screwdriver.

REMOVING THE BELT CLIP

1. Use a screwdriver to loosen the screw that attaches the belt clip to the drill.
2. Remove the screw and the belt clip.

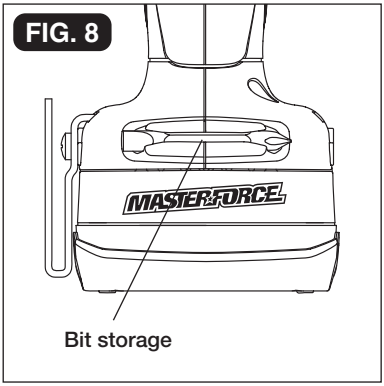
OPERATION

KEYLESS CHUCK (FIG. 7)



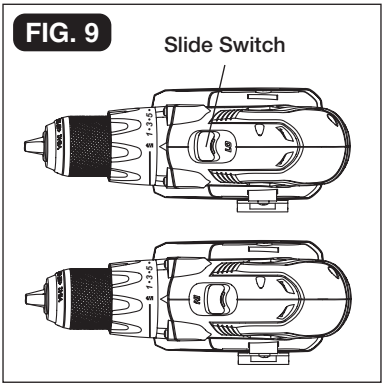
The arrows on the chuck indicate the direction of rotation of the body of the chuck to: GRIP (tighten) or OPEN (release) the jaws of the chuck on the drill bit.

BIT STORAGE (FIG. 8)



When not in use, the bit may be stored on either side of the cordless drill/driver by snapping the bit into place in one of the bit clips.

TWO-SPEED GEAR BOX (FIG. 9)



This drill/driver features a two-speed gearbox that is designed for drilling or driving at LO speed or HI speed. A slide switch is located on the top of the cordless drill/driver to select either LO or HI speed.

When using the cordless drill/driver in the LO speed range, the speed will decrease and the cordless drill/driver will have more power and torque.

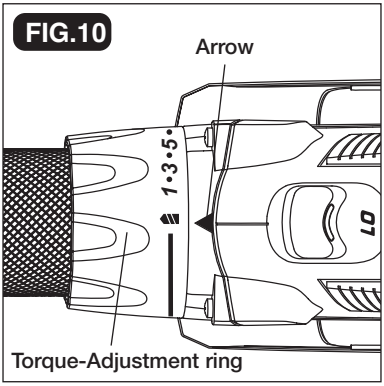
When using the cordless drill/driver in the HI speed range, the speed will increase and the cordless drill/driver will have less power and torque.

Use LO speed for high power and torque applications, and use HI speed for fast drilling applications.

NOTICE: Do not change between LO speed and HI speed while the tool is running. Failure to obey this caution could result in serious damage to the cordless drill.

OPERATION

ADJUSTABLE TORQUE CLUTCH (FIG. 10)



The torque clutch can be adjusted to any of 24 different settings (23 driving and 1 drilling). The higher the torque setting, the more force the cordless drill/driver produces to turn an object in either LO or HI rotation speed.

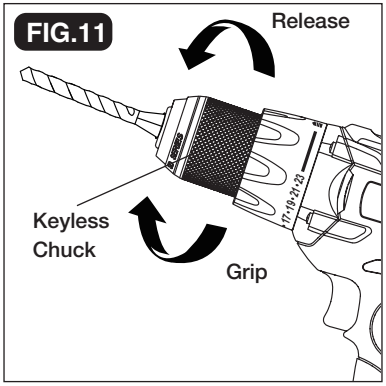
When using the cordless drill/driver for driving applications, it is necessary to increase or decrease the torque to help prevent the damage to screw heads, threads, work-piece, etc. Adjust the torque by rotating the torque-adjustment ring. The proper setting depends on the job and the type of bit, fastener, and material you will be using.

In general, use greater torque for larger screws, but if the torque is too high, the screws may be damaged or broken. For delicate operations, such as removing a partially stripped screw, use a low torque setting. For operations such as drilling into hardwood, use a higher torque setting.

NOTICE: Do not change the torque setting when the tool is running.

NOTICE: When adjusting the torque ring, make sure that the speed switch is either completely in the LO or the HI position.

INSTALLING A BIT (FIG. 11)



1. Lock the trigger switch by placing the direction-of-rotation selector in the OFF (centre) position.
2. Rotate the chuck in the “OPEN” direction to release the jaws of the chuck on the bit.
3. Insert the drill bit.
4. Rotate the chuck in the “GRIP” direction to tighten the jaws of the chuck securely on the bit.

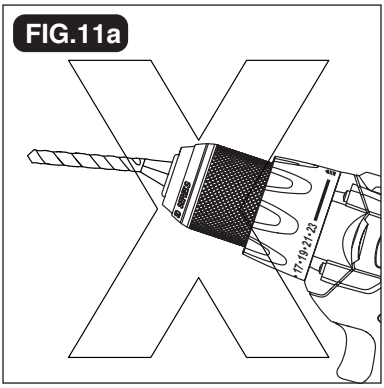
⚠ WARNING: Do not hold the body of the chuck with one hand while using the power of the drill/driver to tighten the jaws of the chuck on the drill bit. The body of the chuck could slip in your hand, or your hand could slip and come into contact with the rotating bit. This could cause an accident and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

⚠ WARNING: Be sure to insert the drill bit straight into the jaws of the chuck. Do not tighten the jaws of the chuck with the drill bit inserted at an angle, as shown in Fig. 13a. Doing so could cause the drill bit to be thrown from the drill, which could result in possibly serious personal injury or damage to the chuck.

OPERATION

REMOVING A BIT (FIG. 11a)

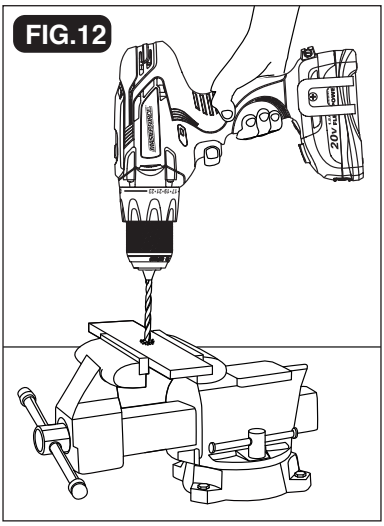
FIG.11a



1. Lock the trigger switch by placing the direction-of rotation selector in the OFF (center) position.
2. Open the jaws of the chuck (rotate in the "OPEN" direction.)
3. Remove the drill bit.

GENERAL DRILLING (FIG. 12)

FIG.12



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

1. Check the direction-of-rotation selector for the correct setting (forward or reverse).
2. Use a vise or clamps to secure the material to be drilled to keep it from turning as the drill bit rotates.
3. Hold the cordless drill/driver firmly, and place the bit at the point to be drilled.
4. Depress the trigger switch to start the cordless drill.
5. Move the drill bit into the workpiece, applying only enough pressure to keep the bit cutting.
6. Do not force the cordless drill/driver or apply sideways pressure to elongate a hole. Allow the tool to do the work.
7. When drilling hard, smooth surfaces, use a center punch to mark the desired location of the hole. This will prevent the drill bit from slipping off-center when the hole is started.
8. When drilling metal, use light oil on the drill bit to prevent it from overheating. The oil will prolong the life of the bit and will increase the drilling efficiency.
9. If the bit jams in the workpiece or if the drill/driver stalls, stop the tool immediately. Reverse the direction of rotation and gently squeeze the trigger to remove the bit from the workpiece. Investigate and correct the cause of jamming before resuming work.

⚠ WARNING: Be prepared for binding when the bit breaks through the workpiece, because the drill/driver has a tendency to grab and kick opposite to the direction of rotation, which could cause a loss of control. If the operator is not prepared, this loss of control could result in serious injury.

OPERATION

DRILLING MODE OPERATION

For drilling in wood, use twist bits, spade bits, power auger bits or hole saws.

1. 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.
2. Select the desired speed to match the planned operation.
3. Begin drilling at a very low speed to prevent the bit from slipping off the starting point, and then increase the speed as the drill bit bites into the material.
4. If the drill/driver stalls, it is usually because it is being overloaded. Release the trigger switch immediately, remove the drill bit from the work, and determine the cause of stalling.
5. Keep the motor running when pulling the bit back out of the drilled hole. This will prevent jamming.

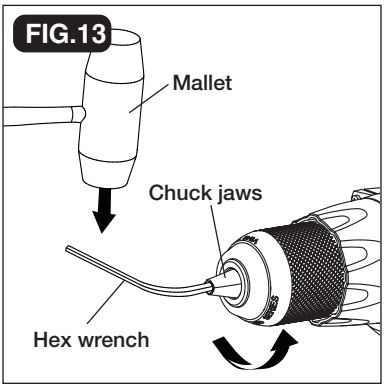
For drilling in metal, use high-speed steel twist drill bits.

1. Use 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.
2. When drilling a large hole, first use a smaller bit to drill a small pilot hole to prevent the larger bit from slipping.
3. Select the desired speed to match the planned operation.
4. Begin drilling at a very low speed to prevent the bit from slipping off the starting point. Maintain a speed and pressure that allows cutting without overheating the bit.
5. If the drill/driver stalls, it is usually because it is being overloaded. Release the trigger switch immediately, remove the drill bit from the work, and determine the cause of stalling.
6. Keep the motor running when pulling the bit back out of the drilled hole. This will prevent jamming.

SCREWDRIVER OPERATION

1. Select the desired speed/torque range to match the planned operation.
2. Attach the desired fastener accessory into the chuck.
3. Make a few practice runs in a scrap piece before working.

CHUCK REMOVAL (FIG. 13)



The chuck can be removed and replaced with a new one.

1. Remove the battery.
2. Lock the trigger switch by placing the direction-of-rotation selector in the center position.
3. Open the chuck jaws. Using a screwdriver, remove the chuck screw by turning it clockwise,
4. Insert a 5/16-in. or larger hex key into the chuck of the drill/driver and tighten the chuck jaws securely.
5. Tap the hex key sharply with a mallet in a counter-clockwise direction. This will loosen the chuck for easy removal.
6. Attach a new chuck to the spindle and tighten the chuck screw.

MAINTENANCE

⚠ WARNING: To avoid serious personal injury, always disconnect the plug from the power source when cleaning or performing any maintenance. Contact a qualified service technician for ALL repairs.

⚠ WARNING: 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: If the supply cord is damaged, it must be replaced by a specially prepared cord available through the service organization.

⚠ WARNING: When servicing, use only identical replacement parts. Use of any other parts may create a hazard or cause product damage. To ensure safety and reliability, all repairs should be performed by a qualified service technician.

Periodic maintenance of your shear allows for long life and trouble-free operation.

A cleaning, lubrication and maintenance schedule should be maintained.

As a common-sense and preventive maintenance practice, follow these recommended steps:

1. Inspect the shear and accessories; check them for wear or damage.
2. Keep the ventilation slots clean to prevent overheating of the motor.
3. The shear maybe cleaned most effectively with compressed dry air. Always wear safety goggles when cleaning tools with compressed air.
4. Use a soft, clean, damp cloth to wipe the tool housing. A mild detergent can be used but nothing like alcohol, petrol or other cleaning agent. Never use caustic agents to clean plastic parts.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
The drill/driver does not work	Battery is depleted	Charge the battery
Bit cannot be installed	Chuck is not opened	Open the chuck
	Bit does not fit the chuck	Use suitable bit
Motor overheating	Be sure cooling vents are free from dust and obstacles	Clean, clear vents. Do not cover with hand during operation

NOTES

High-Performance 1/2” Drill/Driver

WARRANTY

90-DAY MONEY BACK GUARANTEE:

This MASTERFORCE® brand power tool carries our 90-DAY Money Back Guarantee. If you are not completely satisfied with your MASTERFORCE® brand power tool for any reason within ninety (90) days from the date of purchase, return the tool with your original receipt to any MENARDS® retail store, and we will provide you a refund – no questions asked.

3-YEAR LIMITED WARRANTY:

This MASTERFORCE® brand power tool carries our famous No Hassle 3-Year Limited Warranty to the original purchaser. If, during normal use, this MASTERFORCE® power tool breaks or fails due to a defect in material or workmanship within three (3) years from the date of original purchase, simply bring this tool with the original sales receipt back to your nearest MENARDS® retail store. At its discretion, MASTERFORCE® agrees to have the tool or any defective part(s) repaired or replaced with the same or similar MASTERFORCE® product or part free of charge, within the stated warranty period, when returned by the original purchaser with original sales receipt. Not withstanding the foregoing, this limited warranty does not cover any damage that has resulted from abuse or misuse of the Merchandise. This warranty: (1) excludes expendable parts including but not limited to blades, brushes, belts, bits, light bulbs, and/or batteries; (2) shall be void if this tool is used for commercial and/or rental purposes; and (3) does not cover any losses, injuries to persons/property or costs. This warranty does give you specific legal rights and you may have other rights, which vary from state to state. Be careful, tools are dangerous if improperly used or maintained. Seller’s employees are not qualified to advise you on the use of this Merchandise. Any oral representation(s) made will not be binding on seller or its employees. The rights under this limited warranty are to the original purchaser of the Merchandise and may not be transferred to any subsequent owner. This limited warranty is in lieu of all warranties, expressed or implied including warranties or merchantability and fitness for a particular purpose. Seller shall not be liable for any special, incidental, or consequential damages. The sole exclusive remedy against the seller will be for the replacement of any defects as provided herein, as long as the seller is willing or able to replace this product or is willing to refund the purchase price as provided above. For insurance purposes, seller is not allowed to demonstrate any of these power tools for you.

For questions / comments, technical assistance or repair parts – Please Call Toll Free at: **1-866-917-4374**. (M-F 8am – 6pm)

SAVE YOUR RECEIPTS
THIS WARRANTY IS VOID WITHOUT THEM

MENARDS®

07/2012