

Instruction manual



Model 966 - 1/2" 12.0V Drill/Driver
Model 8623 12V Battery Pack



Model 8604
12.0/14.4V Charger

PATENT PENDING

To learn more about Porter-Cable
visit our website at:

<http://www.porter-cable.com>

Two-Speed Cordless Drill/Drivers And Hammer Drill Driver



Model 977 - 1/2" 14.4V
Hammer Drill/Driver
Model 8723 14.4V Battery Pack



Model 978 - 1/2" 14.4V Drill/Driver
Model 8723 14.4V Battery Pack

IMPORTANT

Please make certain that the person who is to use this equipment carefully reads and understands these instructions before starting operations.

The Model and Serial No. plate is located on the main housing of the tool. Record these numbers in the spaces below and retain for future reference.

Model No. _____

Type _____

Serial No. _____

SAFETY GUIDELINES / DEFINITIONS

This manual contains information that is important for you to know and understand. This information relates to protecting YOUR SAFETY and PREVENTING EQUIPMENT PROBLEMS. To help you recognize this information, we use the following symbols. Please read the manual and pay attention to these sections.

▲ 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 used without the safety alert symbol indicates potentially hazardous situation which, if not avoided, may result in property damage.

▲ 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.

▲ WARNING Do not operate equipment until you have read Operator's Manual for **Safety, Assembly, Operation, and Maintenance Instructions**

GENERAL SAFETY RULES

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

SAVE THESE INSTRUCTIONS.

WORK AREA

1. **Keep your work area clean and well lit.** Cluttered benches and 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 which may ignite the dust or fumes.
3. **Keep bystanders, children, and visitors away while operating a power tool.** Distractions can cause you to lose control.

ELECTRICAL SAFETY

1. **Do not abuse the cord. Never use the cord to carry the tool. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately.** Damaged cords increase the risk of electric shock.
2. **A battery operated tool with integral batteries or a separate battery pack must be recharged only with the specified charger for the battery.** A charger that may be suitable for one type of battery may create a risk of fire when used with another battery.
3. **Use battery operated tool only with specifically designated battery pack.** Use of any other batteries may create a risk of fire.

PERSONAL SAFETY

1. **Stay alert, watch what you are doing, and use common sense when operating a power tool. Do not use 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. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
3. **Avoid accidental starting. Be sure switch is in the locked or off position before inserting battery pack.** Carrying tools with your finger on the switch or inserting the battery pack into a tool with the switch on invites accidents.
4. **Remove adjusting keys or wrenches before turning the tool on.** A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
5. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the tool in unexpected situations.
6. **Use safety equipment. Always wear eye protection.** Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.
7. **Use certified safety equipment.** Eye protection equipment should comply with ANSI Z87.1 standards, hearing equipment should comply with ANSI S3.19 standards, and dust mask protection should comply with MSHA/NIOSH certified respirator standards.

TOOL USE AND CARE

1. **Use clamps or other practical way to secure and support the workpiece to a stable platform.** Holding the work by hand or against your body is unstable and may lead to loss of control.
2. **Do not force tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
3. **Do not use tool if switch does not turn it on or off.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
4. **Disconnect battery pack from tool and place the switch in the locked or OFF position before making any adjustments, changing accessories, or storing the tool.** Such preventive safety measures reduce the risk of starting the tool accidentally.
5. **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
6. **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 sparks, burns, or a fire.

7. Maintain tools with care. Keep cutting tools sharp and clean. Properly maintained tools with sharp cutting edge are less likely to bind and are easier to control.

8. Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.

9. Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool may create a risk of injury when used on another tool.

SERVICE

1. Tool service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified personnel could result in a risk of injury.

2. When servicing a 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 AND SYMBOLS

1. HOLD TOOL 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.

2. DO NOT use bits larger than those recommended. Larger bits increase the chance of jamming, and will overload the drill, damaging the motor and gears.

3. DO NOT USE CHUCK if jaws or other parts are cracked or worn.

4. VERIFY THE DRILL'S ROTATION BEFORE STARTING THE DRILL.

5. NEVER ATTEMPT TO CHANGE DIRECTION of rotation while switch is "ON". To do so may damage interlock feature built into switch. Be sure switch is "OFF" and motor has completely stopped before changing direction of rotation.

6. NEVER HOLD WORKPIECE IN YOUR HAND, LAP, OR AGAINST OTHER PARTS OF YOUR BODY during operation.

7. DO NOT USE DRILL AS A ROUTER, or try to elongate or enlarge holes by twisting the drill. Drill bits can break and can cause injury.




8. SOME WOOD CONTAINS PRESERVATIVES which can be toxic. Take extra care to prevent inhalation and skin contact when working with these materials. Request, and follow, all safety information available from your material supplier.

9. THERE ARE CERTAIN APPLICATIONS for which this tool was designed. Porter-Cable strongly recommends that this tool NOT be modified and/or used for any application other than for which it was designed. If you have any questions relative to its application DO NOT use the tool until you have written Porter-Cable and we have advised you.

Technical Service Manager
Porter-Cable Corporation
4825 Highway 45 North
Jackson, TN 38305

ADDITIONAL SAFETY RULES FOR HAMMER DRILL/DRIVERS

1. **Apply forward force only** on pistol grip handle and **ONLY** with your hands when drilling.
2. **Do not** use bits larger than those recommended. They may cause personal injury due to jamming and loss of control. Large bits may also overload the drill and damage the motor and gears.
3. **Verify** that the mode selecting ring, the speed selector, and the reversing switch are in correct positions for the operation being performed.
4. **Use only** percussion-type carbide-tipped bits when hammer-drilling.
5. **Always wear** ear protectors and safety glasses when hammer-drilling.
6. **Do not** attempt to cut through reinforcing rods with percussion-type bits.
7. **Should** the drill bit become jammed in the work, release switch trigger immediately to prevent personal injury. Remove the battery from the tool and remove the drill bit from the work. Do not attempt to free the stalled bit by starting and stopping the motor. This could result in bodily injury.

SYMBOL	DEFINITION
V	volts
A	amperes
Hz	hertz
W	watts
PSI	pounds per square inch
Min.	minimum
Max.	maximum
in.	inch
MM	millimeters
h	hours
min	minutes
s	seconds
	alternating current
	direct current
n_0	no load
	alternating or direct current
.....	Class II Construction
.../min	revolutions or reciprocation per minute

SAFETY INSTRUCTIONS FOR CHARGER AND BATTERIES

1. **SAVE THESE INSTRUCTIONS.** This manual contains important safety and operating instructions for Porter-Cable Battery Charger.

2. **Before using a battery charger,** read all instructions and cautionary markings on (1) battery charger, (2) battery pack, and (3) product using battery.

To reduce risk of injury, a Porter-Cable charger should only be used to charge a Porter-Cable battery pack. Other types of batteries may burst causing personal injury and damage. Do not charge a Porter-Cable battery pack with any other charger.

3. **Do not expose charger** to rain, snow or frost.
4. **Do not abuse cord.** Never carry charger by cord or yank it to disconnect from receptacle. Pull by plug rather than cord when disconnecting charger. Have damaged or worn power cord and strain reliever replaced immediately. **DO NOT ATTEMPT TO REPAIR POWER CORD.**
5. **Make sure cord** is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
6. **Do not use an extension cord** unless absolutely necessary. Use of improper extension cord could result in a risk of fire and electric shock. If an extension cord must be used, make sure:
 - A. That the pins on plug of extension cord are the same number, size and shape as those of plug on charger.
 - B. That the extension cord is properly wired and in good electrical condition.
 - C. Wire Size of cord is at least as specified in following chart:

LENGTH OF CORD IN FEET	25	50	100	150
AWG SIZE OF CORD	18	18	18	16

- D. If an extension cord is to be used outdoors it must be marked with the suffix W-A or W following the cord type designation. For example – SJTW-A to indicate it is acceptable for outdoor use.
7. **Do not operate** charger with damaged cord or plug – have them replaced immediately, to avoid a hazard. **DO NOT ATTEMPT TO REPAIR POWER CORD.**
8. **Do not operate** charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified serviceman.
9. **Do not disassemble charger or battery pack.** Take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
10. **Unplug charger** from outlet before attempting any maintenance or cleaning – to reduce risk of electric shock.
11. **Charge the battery pack** in a well ventilated place, do not cover the charger and battery pack with a cloth, etc., while charging.
12. **Do not store** the charger or battery pack in locations where the temperature may reach or exceed 122°F (50°C) (such as a metal tool shed, or a car in the summer), which can lead to deterioration of the storage battery.
13. **Do not charge battery pack** when the temperature is BELOW 40°F (4.44°C) or ABOVE 104°F (40°C). This is very important for proper operation.
14. **Do not incinerate battery pack.** It can explode in a fire.
15. **Do not charge battery** in damp or wet locations.
16. **Do not attempt** to charge any other cordless tool or battery pack with the Porter-Cable charger.
17. **Do not short across** the terminals of the battery pack: EXTREMELY HIGH TEMPERATURES COULD CAUSE PERSONAL INJURY OR FIRE.
18. **Double insulated tools are equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way.** Double Insulation eliminates the need for the three wire grounded power cord and grounded power supply system.

19. Dispose of expended batteries properly. The Porter-Cable Model 8823 Battery Pack contains rechargeable, nickel-cadmium batteries. These batteries must be recycled or disposed of properly. Drop off expended battery packs at your local replacement battery retailer, your local recycling center, or at a Porter-Cable Service Center (see list on back page of this manual).



Applicable fees for the collection and recycling of these batteries (in the United States), have been paid to the RBRC™. For further information, call: 1-800-8-BATTERY.

RBRC™ is a Trademark of the Rechargeable Battery Recycling Corporation.

FUNCTIONAL DESCRIPTION

FOREWORD

Your Porter-Cable Cordless Hammer Drill/Driver is designed to drill holes and drive fasteners in various materials as indicated in the following chart:

MAXIMUM CAPACITIES				
SPEED RANGE	DRILLING			DRIVING
	MILD STEEL	ALUMINUM	WOOD SELF-FEED BIT	WOOD SCREWS
LOW	3/8"	3/8"	1"	3/8"
HIGH	3/8"	3/8"	1/2"	#10

SWITCH OPERATION

Squeeze trigger switch (A) Fig. 1 to start motor. Release trigger to stop motor. As the trigger is squeezed, the motor speed increases.

NOTE: A low volume, high pitched tone is normal while the switch is in the variable speed mode.

FORWARD/REVERSE

- Make sure that the trigger switch (A) Fig. 1 is in the "OFF" position before attempting to change the direction of rotation.
- Push button (B) Fig. 1 toward the left side of the drill for FORWARD (clockwise) rotation.
- Push button (B) Fig. 1 toward the right side of the drill for REVERSE (counter-clockwise) rotation.
- Place button (B) Fig. 1 in the center position to lock trigger switch in the "OFF" position.

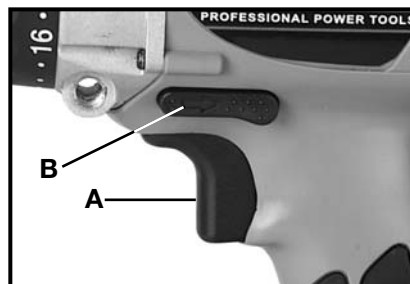


Fig. 1

ELECTRIC BRAKE

When the trigger switch is released, an electric brake automatically engages to stop spindle rotation.

INSTALLING AND REMOVING DRILL AND SCREWDRIVER BITS

⚠ CAUTION Always set the reversing button to the center (locked "OFF") position when installing and removing bits.

1. The three-jaw chuck is designed for self-centering of the bit. Open jaws large enough by turning the sleeve (A) Fig. 2 counterclockwise, when viewing the chuck from the bit end, so that the bit shank can be inserted easily.

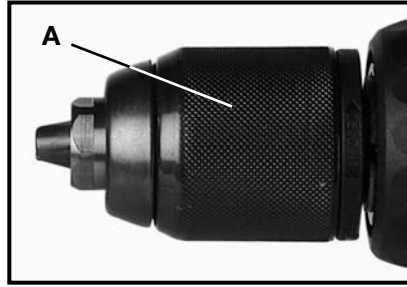


Fig. 2

2. Clean and insert the smooth end of the bit as far as it will go into the chuck, or up to the flutes for small bits.

3. While holding the bit with one hand, turn the sleeve (A) Fig. 2 clockwise until the bit is gripped in the chuck.

4. Tighten the chuck by turning the sleeve (A) clockwise. Tighten securely.

⚠ WARNING Do not operate the drill motor while installing or removing bits. This action may cause the bit to be thrown from the chuck, causing personal injury.

5. To remove the bit, reverse procedure.

ADJUSTING TORQUE COLLAR

The clutch unit provides twenty clutch settings, a "Drill" (solid lock-up) setting (and a hammer position for the hammer drill). Lowest torque is available at setting #1, with maximum torque available at the "Drill" setting. The amount of output torque may be adjusted by rotating the front collar (A) Fig. 3A, so that the desired torque setting is aligned with the index mark (B) Fig. 3A. In general, lower torque settings are used for driving small screws and other delicate work, while higher torque settings are used for driving larger screws.

The "Drill" position is used for drilling and for driving very large screws.

The Model 977 is equipped with a hammer setting (A) Fig. 3B. The hammer position is used when "impacting" is needed to assist in the drilling operation (concrete, bricks, etc.). The hammering function will not engage unless the torque collar is set to the hammer position AND the drill bit is pushed against the work.

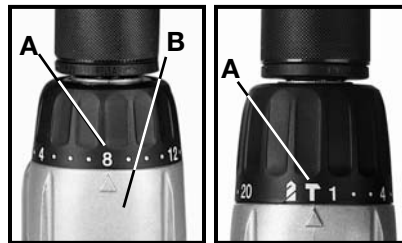


Fig. 3A

Fig. 3B

TWO-SPEED GEAR SHIFT

The Model 966, 977, and 978 cordless tools all have a two-speed gear shift which provides spindle speed ranges of approximately 0 to 450 RPM (LOW) and 0 to 1400 RPM (HIGH) for Models 977 and 978, and 0-400 RPM (LOW) and 0-1300 RPM (HIGH) for Model 966. To change speed ranges, release trigger switch to stop motor. Slide speed selector (A) Fig. 4 backward for HIGH speed or forward for LOW speed.

The low speed position is normally used when drilling larger holes and when driving or removing screws. The high speed position is normally used for drilling small holes.

DRIVER BIT STORAGE

Convenient storage areas with retaining clip (B) Fig. 4 for screwdriver bits are provided on each side of the tool.

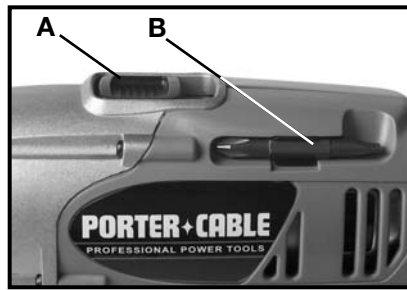


Fig. 4

SIDE HANDLE

Model 977 is shipped with a side handle (A) Fig. 5 to provide additional control and support during high torque drilling and driving operations. To use, screw the side handle (A) into the threaded hole (B) on either side of the tool.

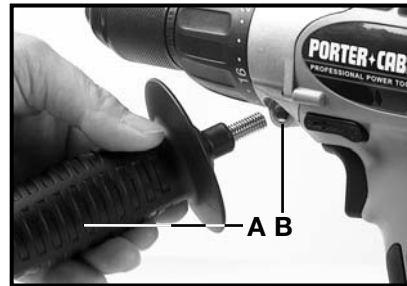


Fig. 5

ADJUSTABLE GRIPS

Three different grip adjustments (small, medium, and large) are provided with the drill/driver to accommodate various hand sizes, and to provide maximum user comfort and control.

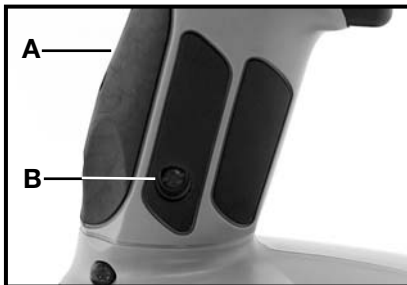


Fig. 6

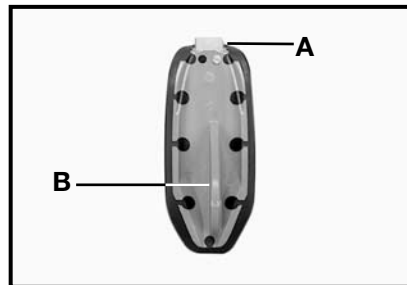


Fig. 7

The drill is shipped with a medium grip insert (A) Fig. 6 installed. To change the grip, remove the phillips head screw (B) Fig. 6 from right side of the handle by turning it counter-clockwise. Lift the grip insert from the back of the handle. Install a new grip insert by first placing the tab (A) Fig. 7 at the top of the grip into the corresponding slot in the drill/driver handle. The retention fin (B) Fig. 7 will fit in the slot provided. Hold the grip against the handle, and insert and tighten the phillips head screw (B) Fig. 6 until snug. Do not over tighten.

OPERATION

CHARGING THE BATTERY PACK GENERAL

Before using your cordless tool for the first time, the battery pack should be fully charged. If the battery pack is installed in the tool, remove it by following instructions under INSTALLING OR REMOVING BATTERY PACK.

As a battery pack approaches the discharged state, you will notice a sharp drop in tool performance. When the tool is unable to perform the task at hand, it is time to recharge the battery pack. Recharging the battery pack before this condition is reached will reduce the total work life of the pack. Discharging the pack beyond this point can damage the pack.

NOTE: Battery temperature will increase during and shortly after use. Batteries may not accept a full charge if they are charged immediately after use. Allow the battery pack to cool to room temperature before charging for best results.

The battery charger may rest on the four pads provided on the bottom of the case or be mounted on a wall by utilizing the two key hole slots provided.

CAUTION Vent slots in top and bottom of charger must not be obstructed. Do not charge battery when temperature is BELOW 40°F (4.44°C) or ABOVE 104°F (40°C).

NORMAL CHARGING

Make sure that the power circuit voltage is the same as that shown on the charger specification plate. Connect charger to power source. The green light (A) Fig. 8 should begin to flash. This indicates the charger is ready to begin charging.

Position battery pack on charger, align rails on battery pack with four tabs (C) Fig. 8 on charger. Slide battery forward on charger until it stops.

The green light (A) Fig. 8 should begin to glow continuously, indicating that the battery pack is receiving a "Fast Charge" (if the green light does not glow continuously, or if the red light (B) Fig. 8 also begins to flash, see "DIAGNOSTICS").

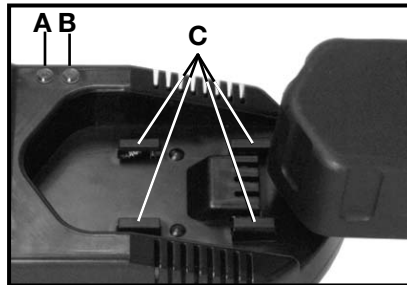


Fig. 8

After approximately one hour, the "Fast Charge" indicator light should go out, indicating that the battery pack is fully charged and that the charger is now in a "Maintenance Charge" mode. The battery pack can be left on "Maintenance Charge" until you are ready to use it.

Depending on room temperature, line voltage, and existing charge level, initial battery charging may take longer than one hour.

WARNING Disconnect charger from power source when not in use.

DIAGNOSTICS

The Model 8604 charger is equipped with a diagnostic system that automatically checks the battery pack when it is inserted into the charger. If no problems are found, the charger will automatically switch to "Fast Charge" mode as described in "NORMAL CHARGING".

Problems will be indicated by charger indicator lights (see Fig. 8):

- If the green light (A) continues to flash after battery pack is inserted in charger, the battery pack temperature is either too high or too low for charging. If left alone, the charger will continue to monitor the battery pack temperature and will begin charging when the temperature reaches an acceptable level.
- If the green light (A) glows continuously and red light (B) flashes, the battery pack is receiving a "Fast Charge", but the battery pack voltage is low. It is not unusual for a new, or a fully discharged battery pack to give this indication for the first several minutes of charge. If the red light continues to flash throughout the charge cycle, it indicates that the pack is weak and will provide reduced performance (the pack is still useable, but will not provide maximum power or work per charge). This battery pack will probably require replacement in the near future.
- If the green light (A) continues to flash and red light (B) flashes, the battery pack has failed (pack is not chargeable and requires replacement).

INSTALLING OR REMOVING BATTERY PACK

To remove a battery pack, depress the battery release button (B) Fig. 9, and pull battery pack out of tool.

To install a battery pack, align rails (A) Fig. 9 on battery pack with slots on tool and push battery pack onto tool until it locks in place.

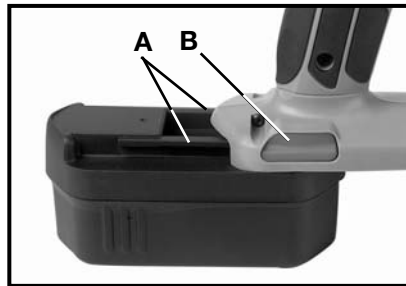


Fig. 9

HOW TO HOLD THE DRILL/DRIVER

The front end of the Drill/Driver may be made live if the tool drills into live wiring in the wall. TO PREVENT ELECTRICAL SHOCK, THE HAMMER DRILL/DRIVER MUST BE HELD AS SHOWN IN FIG. 10A.

IT'S
A DRILL



Fig. 10A

HOW TO HOLD THE HAMMER DRILL/DRIVER

⚠ WARNING The front end of the Hammer Drill/Driver may be made live if the tool drills into live wiring in the wall. TO PREVENT ELECTRICAL SHOCK, THE HAMMER DRILL/DRIVER MUST BE HELD AS SHOWN IN FIG. 10B.

IT'S A
HAMMER DRILL



Fig.. 10B

GENERAL DRILLING

1. Set torque adjusting collar for drilling operation and set speed selector to appropriate speed.
2. Be sure drill bit is securely gripped in chuck.
3. Set REVERSING BUTTON for clockwise rotation.

⚠ CAUTION Make sure work is held securely in vise or clamped in place prior to starting drilling operation. Loose work may spin and cause bodily injury.

4. Locate exact center for hole to be drilled, and use a center punch to make a small dent in work.
5. Place tip of drill bit in dent made by center punch, hold drill square with work, and start the motor.

⚠ CAUTION Applying too much pressure may cause the bit to overheat or break resulting in bodily injury or damaged drill bits.

Apply steady, even pressure to keep drill bit cutting. Too little pressure will keep the bit from cutting and dull the cutting edges due to excessive friction created by sliding over the surface.

⚠ CAUTION Always be alert and brace yourself against the twisting action of the drill.

6. If drill stalls or becomes jammed in the hole, release trigger immediately, remove drill bit from work, and determine cause of stalling or jamming. DO NOT SQUEEZE TRIGGER ON AND OFF IN AN ATTEMPT TO FREE A STALLED OR JAMMED DRILL – THIS WILL DAMAGE THE MOTOR.

The direction of rotation may be reversed to help free a jammed bit. Be sure direction of rotation is RESET before attempting to continue drilling.

7. Reduce the pressure on the drill just before the bit cuts through the work to avoid splintering wood or stalling in metal.
8. When bit has completely penetrated work and is spinning freely, withdraw it from the work while the motor is still running, then turn off drill.

DRILLING WOOD

In addition to the instructions listed under "GENERAL DRILLING", the following also apply:

1. When using twist drills in wood, withdraw them from the hole frequently to clear chips built up in flutes to avoid overheating and burning work.
2. If a backing block is used to keep back of work from splintering, clamp it securely in place. If a backing block is not used with spade bits or hole saws, ease up pressure as soon as bit point breaks through work, and complete the hole from the opposite side.

DRILLING METAL

In addition to the instructions listed under "GENERAL DRILLING", the following also apply:

1. Use only good quality sharp high speed steel twist bits.
2. Start drilling with slow speed and gradually increase speed as drill cuts. The harder the material, the slower the speed required.
3. When drilling a large hole, drill a smaller hole first and then enlarge it to the required size.
4. The use of a lubricant, such as oil, on the drill point helps keep the bit cool, increases drilling action, and prolongs drill bit life.

DRIVING WOOD SCREWS

IT'S A
SCREWDRIVER



Fig. 11

1. Drill pilot and shank clearance holes. See chart Fig. 12.

SUGGESTED HOLE SIZES FOR WOOD SCREWS			
Screw Size	Shank Drill Clearance Diameter	Pilot Drill Diameter	
		Soft Wood	Hard Wood
#6	$\frac{9}{64}$ (.140)	$\frac{1}{16}$ (.062)	$\frac{7}{64}$ (.109)
#8	$\frac{11}{64}$ (.172)	$\frac{5}{64}$ (.078)	$\frac{1}{8}$ (.125)
#10	$\frac{3}{16}$ (.187)	$\frac{3}{32}$ (.094)	$\frac{9}{64}$ (.140)
#12	$\frac{7}{32}$ (.218)	$\frac{7}{64}$ (.109)	$\frac{5}{32}$ (.156)

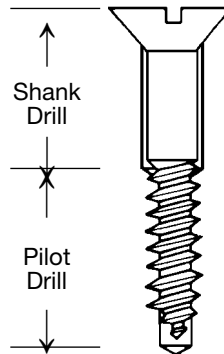


Fig. 12

2. Install proper bit that fits screw to screwdriver.
3. Set torque adjusting collar for desired torque and set speed selector to LOW.
4. Set screwdriver for correct rotation.
5. Start screw straight in hole with fingers.
6. Place bit on screw, remove fingers, start screwdriver, and exert pressure to drive screw.
7. As soon as screw has seated, lift screwdriver from screw.
8. A lubricant, such as soap or wax, may be used on screw threads for ease of driving, particularly in hard wood.
9. Combination pilot drill, shank drill, and countersink bits are available from local supply houses for drilling holes in one easy operation.

DRIVING SELF-TAPPING SCREWS

1. Drill pilot hole of correct size as recommended by screw manufacturer.
2. Install proper bit that fits screw.
3. Set torque adjusting collar for desired torque and set speed selector to LOW.
4. Set screwdriver for correct rotation.
5. Position bit in head of screw.
6. Place end of screw into pre-drilled hole, remove fingers, start screwdriver and drive screw.
7. As soon as screw has seated, lift screwdriver from screw.

DRIVING MACHINE SCREWS

1. Drill and tap correct hole size for fastener.
2. Start screw in hole with fingers and drive as outlined under DRIVING WOOD SCREWS.

TO REMOVE SCREWS

1. Set torque adjusting collar for maximum torque and set speed selector to LOW.
2. Install proper bit that fits screw.
3. Set screwdriver for reverse rotation.
4. Place bit in screw and start drill.

HAMMER-DRILLING

Drilling Concrete – Use carbide-tipped masonry bits only. Be sure drill bit is securely gripped in chuck and the mode selecting ring is in the “hammer” position (Fig. 3B). Start drill by squeezing the trigger. Place tip of bit in contact with work and apply steady firm pressure.

Avoid allowing Hammer-Drill to bounce or “dance” under its own weight. This could result in damage to both the drill bit and the Hammer-Drill.

▲ CAUTION Take extreme care if the bit becomes jammed in the Hole. Stop the drill immediately. See "ADDITIONAL SAFETY RULES FOR HAMMER DRILL/DRIVERS", Number 7.

MAINTENANCE

KEEP TOOL CLEAN

All plastic parts should be cleaned with a soft damp cloth. NEVER use solvents to clean plastic parts. They could very possibly dissolve or otherwise damage the material.

FAILURE TO START

Should your tool fail to start, make sure battery pack is charged and properly installed in drill.

BATTERY

The battery pack will discharge by itself without damage if stored for long periods of time, and may require recharging before use.

LUBRICATION

For your continued safety and electrical protection, lubrication and service on this tool should ONLY be performed by an AUTHORIZED PORTER-CABLE SERVICE STATION or a PORTER-CABLE/DELTA FACTORY SERVICE CENTER.

At approximately 100 hours of use, take or send your tool to your nearest Authorized Porter-Cable Service Station to be thoroughly cleaned and inspected; worn parts replaced, when necessary; relubricated with fresh lubricant, and performance tested.

SERVICE AND REPAIRS

All quality tools will eventually require servicing or replacement of parts due to wear from normal use. These operations, including brush inspection and replacement, should ONLY be performed by either an AUTHORIZED PORTER-CABLE SERVICE STATION or a PORTER-CABLE/DELTA FACTORY SERVICE CENTER. All repairs made by these agencies are fully guaranteed against defective material and workmanship. We cannot guarantee repairs made or attempted by anyone other than these agencies.

Should you have any questions about your tool, feel free to write us at any time. In any communications, please give all information shown on the nameplate of your tool (model number, type, serial number, etc.).

CHUCK REPLACEMENT

⚠ CAUTION Remove battery pack to prevent accidental starting.

1. Open chuck jaws (A) Figs. 12 and 13 as wide as possible to gain access to the chuck retaining screw (B) Fig. 12.
2. Remove chuck retaining screw by turning it clockwise (left-hand thread) with a hex wrench.
3. Use a 19mm wrench on nose of chuck (B) Fig. 13. Turn counter-clockwise to remove.
4. To install new chuck, reverse the procedure.

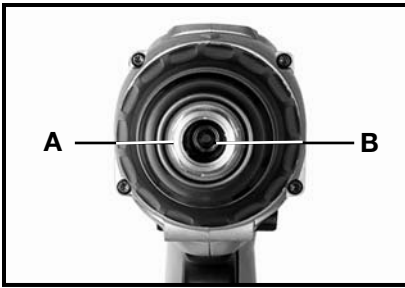


Fig. 12

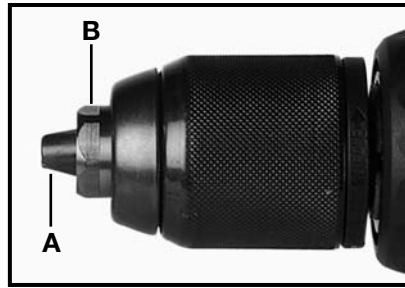


Fig. 13



Fig. 14



Fig. 15

ALTERNATE CHUCK REPLACEMENT

CAUTION Remove battery pack to prevent accidental start-up.

1. Open chuck jaws as wide as possible to gain access to the chuck retaining screw.
2. Remove chuck retaining screw by turning it clockwise (left-hand thread) with an hex wrench.
3. Place the two-speed gear shift selector to the rear (LOW) position.
4. Place the short end of a large hex wrench ($\frac{1}{4}$ " or larger) into the chuck (Fig. 14). Align wrench flats with chuck jaws and tighten chuck securely. While supporting chuck on a solid surface, position hex wrench to left (see Fig. 14) and strike wrench a sharp blow with a hammer to loosen chuck. Turn chuck counterclockwise to remove.
5. Coat mounting face of the replacement chuck with anti-seize compound.
6. Thread chuck onto spindle by turning chuck clockwise. Hand tighten. Install hex wrench in chuck. While supporting chuck on a solid surface, position hex wrench to the right (see Fig. 15), and strike wrench a sharp blow with a hammer to seat chuck onto spindle.
7. Remove hex wrench from chuck.
8. Install chuck retaining screw.

ACCESSORIES

A complete line of accessories is available from your Porter-Cable • Delta Supplier, Porter-Cable • Delta Factory Service Centers, and Porter-Cable Authorized Service Stations. Please visit our Web Site www.porter-cable.com for a catalog or for the name of your nearest supplier.

Since accessories other than those offered by Porter-Cable • Delta, have not been tested with this product use of such accessories could be hazardous. For safest operation, only

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Porter-Cable warrants its Professional Power Tools for a period of one year from the date of original purchase. We will repair or replace at our option, any part or parts of the product and accessories covered under this warranty which, after examination, proves to be defective in workmanship or material during the warranty period. For repair or replacement return the complete tool or accessory, transportation prepaid, to your nearest Porter-Cable Service Center or Authorized Service Station. Proof of purchase may be required. This warranty does not apply to repair or replacement required due to misuse, abuse, normal wear and tear or repairs attempted or made by other than our Service Centers or Authorized Service Stations.

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