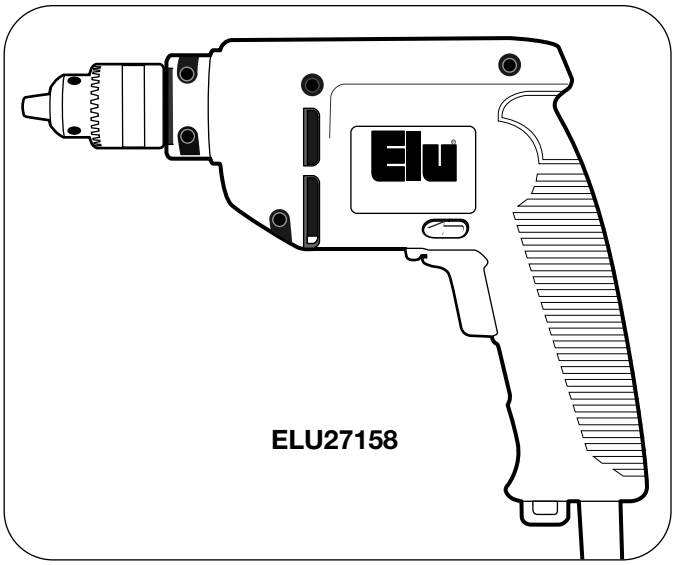
# 1/2" Drill




**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. _____

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# IMPORTANT SAFETY INSTRUCTIONS

**⚠WARNING** Read and understand all warnings and operating instructions before using any tool or equipment. When using tools or equipment, basic safety precautions should always be followed to reduce the risk of personal injury. Improper operation, maintenance or modification of tools or equipment could result in serious injury and property damage. There are certain applications for which tools and equipment are designed. Elu strongly recommends that this product NOT be modified and/or used for any application other than for which it was designed.

Information regarding the safe and proper operation of this tool is available from the following sources:

Power Tool Institute
1300 Sumner Avenue, Cleveland, OH 44115-2851

National Safety Council
1121 Spring Lake Drive, Itasca, IL 60143-3201

American National Standards Institute, 25 West 43rd Street, 4 floor, New York, NY 10036 **www.ansi.org** ANSI 01.1Safety Requirements for Woodworking Machines, and the U.S. Department of Labor regulations **www.osha.gov**

**SAVE THESE INSTRUCTIONS!**

## SAFETY GUIDELINES - DEFINITIONS

It is important for you to read and understand this manual. The information it contains relates to protecting YOUR SAFETY and PREVENTING PROBLEMS. The symbols below are used to help you recognize this information.

**⚠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.

### CALIFORNIA PROPOSITION 65

**⚠WARNING** Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known (to the State of California) 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
- 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, always wear NIOSH/OSHA approved, properly fitting face mask or respirator when using such tools.

# 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**

- **Keep your work area clean and well lit.** Cluttered benches and 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 bystanders, children, and visitors away while operating a power tool.** Distractions can cause you to lose control.

**ELECTRICAL SAFETY**

- **Grounded tools must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances.** Never remove the grounding prong or modify the plug in any way. Do not use any adaptor plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. If the tools should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user. Some units are grounded. Applicable only to Class I (grounded) tools.
- **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. Applicable only to Class II (double insulated) tools. Some units are rated at 230 volts and they are fitted with the 220 volt style plug which is not polarized.
- **Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is grounded.
- **Don't 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 to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.
- **When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W."** These cords are rated for outdoor use and reduce the risk of electric shock. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. The following table shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.

## GENERAL SAFETY RULES continued

**PERSONAL SAFETY**

- **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,
- **Dress properly. Do not wear loose clothing or jewelry.** Contain long hair. Keep your hair, clothing, and gloves away from moving parts. Loose clothing, jewelry, or long hair can be caught in moving parts. Air vents often cover moving parts and should also be avoided.
- **Avoid accidental starting.** Be sure switch is off before plugging in. Carrying tools with your finger on the switch or plugging in tools that have the switch on invites accidents.
- **Remove adjusting keys or switches before turning the tool on.** A wrench or key that is left attached to a rotating part of the tool may result in personal injury.
- **Do not overreach.** Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations.
- **Use safety equipment.** Always wear eye protection. Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

**TOOL USE AND CARE**

- **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.
- **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.
- **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.
- **Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool.** Such preventative safety measures reduce the risk of starting the tool accidentally.
- **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
- **Maintain tools with care.** Keep cutting tools sharp and clean. Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control.
- **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation.** If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.
- **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool, may become hazardous when used on another tool.

## GENERAL SAFETY RULES continued

**SERVICE**

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

## ADDITIONAL SPECIFIC SAFETY RULES

1. **Hold tool by insulated gripping surfaces** when performing an operation where the cutting tools may contact hidden wiring or its own cord. Contact with a “live” wire will make exposed metal parts of the tool “live” and shock the operator.
2. **Keep handles dry, clean, free from oil and grease.** It is recommended to use rubber gloves. This will enable better control
3. **DO NOT TOUCH ANY METAL PARTS OF THE TOOL when drilling or driving into walls, floors or wherever live electrical wires may be encountered.** Hold the tool only by insulated grasping surfaces to prevent electric shock if you drill or drive into a live wire.
4. **Wear eye and hearing protection. Always use safety glasses.** Everyday eyeglasses are NOT safety glasses. USE CERTIFIED SAFETY EQUIPMENT. Eye protection equipment should comply with ANSI Z87.1 standards. Hearing equipment should comply with ANSI S3.19 standards.
5. **⚠WARNING Use of this tool can generate and disburse dust or other airborne particles, including wood dust, crystalline silica dust and asbestos dust.** Direct particles away from face and body. Always operate tool in well ventilated area and provide for proper dust removal. Use dust collection system wherever possible. Exposure to the dust may cause serious and permanent respiratory or other injury, including silicosis (a serious lung disease), cancer, and death. Avoid breathing the dust, and avoid prolonged contact with dust. Allowing dust to get into your mouth or eyes, or lay on your skin may promote absorption of harmful material. Always use properly fitting NIOSH/OSHA approved respiratory protection appropriate for the dust exposure, and wash exposed areas with soap and water.

| SYMBOL | DEFINITION |
|---|---|
| V | volts |
| A | amperes |
| Hz | hertz |
| W | watts |
| min | minutes |
| ∿ | alternating current |
| ⎓ | direct current |
| $n_o$ | no load speed |
| ⧈ | Class II Construction |
| ⏚ | earthing terminal |
| ⚠ | safety alert symbol |
| .../min | revolutions per minute |

## MOTOR

Many tools will operate on either D.C., or single phase 25 to 60 cycle A.C. current and voltage within plus or minus 5 percent of that shown on the specification plate on the tool. Several models, however, are designed for A.C. current only. Refer to the specification plate on your tool for proper voltage and current rating.

**CAUTION** Do not operate your tool on a current on which the voltage is not within correct limits. Do not operate tools rated A.C. only on D.C. current. To do so may seriously damage the tool.

**SAVE THESE INSTRUCTIONS!**

## EXTENSION CORD SELECTION

If an extension cord is used, make sure the conductor size is large enough to prevent excessive voltage drop which will cause loss of power and possible motor damage. A table of recommended extension cord sizes will be found in this section. This table is based on limiting line voltage drop to 5 volts (10 volts for 230 volts) at 150% of rated amperes.

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.

RECOMMENDED EXTENSION CORD SIZES FOR USE WITH PORTABLE ELECTRIC TOOLS

| | | Length of Cord in Feet | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 115V | 25 Ft. | 50 Ft. | 100 Ft. | 150 Ft. | 200 Ft. | 250 Ft. | 300 Ft. | 400 Ft. | 500 Ft. |
| | 230V | 50 Ft. | 100 Ft. | 200 Ft. | 300 Ft. | 400 Ft. | 500 Ft. | 600 Ft. | 800 Ft. | 1000 Ft. |
| Nameplate Ampere Rating | 0-2 | 18 | 18 | 18 | 16 | 16 | 14 | 14 | 12 | 12 |
| | 2-3 | 18 | 18 | 16 | 14 | 14 | 12 | 12 | 10 | 10 |
| | 3-4 | 18 | 18 | 16 | 14 | 12 | 12 | 10 | 10 | 8 |
| | 4-5 | 18 | 18 | 14 | 12 | 12 | 10 | 10 | 8 | 8 |
| | 5-6 | 18 | 16 | 14 | 12 | 10 | 10 | 8 | 8 | 6 |
| | 6-8 | 18 | 16 | 12 | 10 | 10 | 8 | 6 | 6 | 6 |
| | 8-10 | 18 | 14 | 12 | 10 | 8 | 8 | 6 | 6 | 4 |
| | 10-12 | 16 | 14 | 10 | 8 | 8 | 6 | 6 | 4 | 4 |
| | 12-14 | 16 | 12 | 10 | 8 | 6 | 6 | 6 | 4 | 2 |
| | 14-16 | 16 | 12 | 10 | 8 | 6 | 6 | 4 | 4 | 2 |
| | 16-18 | 14 | 12 | 8 | 8 | 6 | 4 | 4 | 2 | 2 |
| | 18-20 | 14 | 12 | 8 | 6 | 6 | 4 | 4 | 2 | 2 |

**SAVE THESE INSTRUCTIONS!**

# FUNCTIONAL DESCRIPTION

### MOTOR BRUSHES

ELU uses an advanced brush system which automatically stops the drill when the brushes wear out. This prevents serious damage to the motor.

### SWITCH

To start drill, depress trigger switch; to stop the drill, release trigger. To lock trigger in the on position for continuous operation, depress trigger and push up locking button “A” shown in figure 1, then gently release the trigger. To release the locking mechanism, depress the trigger fully, then release it. Before using the tool each time, be sure that the locking button release mechanism is working freely.

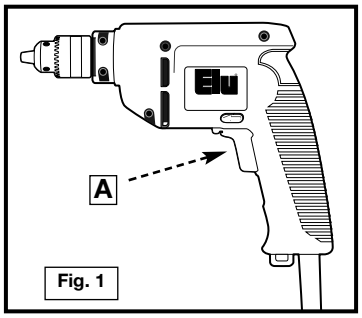


Fig. 1

Do not lock the switch on when drilling by hand so that you can instantly release the trigger switch if the bit binds in the hole.

The locking button is for use only when the drill is mounted in a drill press stand or otherwise held stationary.

Be sure to release the locking button before disconnecting the plug from the power supply. Failure to do so will cause the tool to start immediately the next time it is plugged in. Damage or injury could result.

**THE VARIABLE SPEED TRIGGER SWITCH**

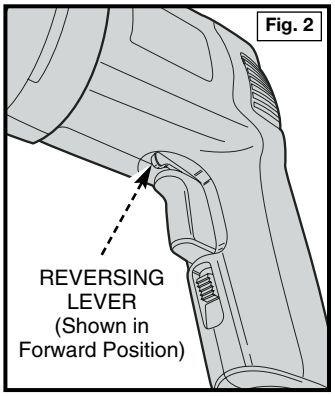
This switch permits speed control: the farther the trigger is depressed, the higher the speed of the drill.

**NOTE:** Use lower speeds for starting holes without a center punch, drilling in metal or plastics, driving screws or drilling ceramics. Higher speeds are better for drilling wood and composition boards, and for using abrasive and polishing accessories.

**THE REVERSING LEVER**

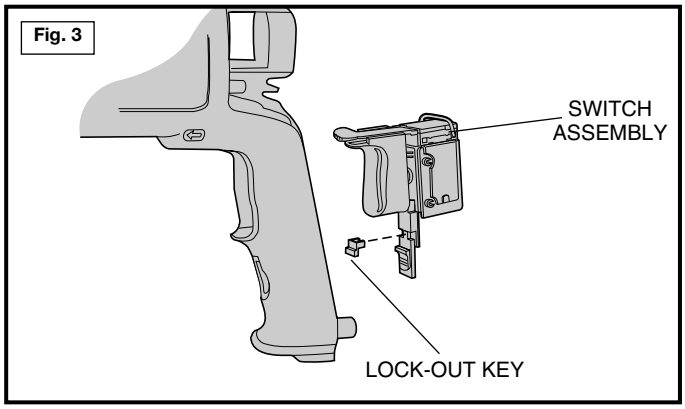
The reversing lever changes the direction of rotation of the drill and is used when backing out screws and jammed drill bits. To operate the tool in reverse, release the trigger switch and push the lever to the left (when viewed from the chuck end) as shown in Figure 2. To operate the drill in forward for drilling holes or driving screws (as well as when using other accessories) release the trigger switch and push the lever to the right (when viewed from the chuck end).

Return the reversing lever to the forward position after all operations in reverse are completed.




**SWITCH LOCK-ON**

Your drill is equipped with a switch lock-on feature. If you wish to disable this feature, take your tool to any authorized service center. The service center can provide a lock-out key to prevent the unit from being locked in the on position (Figure 3).



# ASSEMBLY

**NOTE:** This tool is shipped completely assembled. No assembly time or tools are required.

**SIDE HANDLE**

A side handle may be supplied with your drill. The side handle clamps to the front of the gear case and can be rotated 360 degrees to permit right or left hand use.

**⚠CAUTION** If a side handle is included with your drill, always use it and hold the drill with both hands.

# OPERATION

**DRILLING**

1. Always unplug the drill when attaching or changing bits or accessories.
2. Use sharp drill bits only. For WOOD, use twist drill bits, spade bits, power auger bits, or hole saws. For METAL, use high speed steel twist drill bits or hole saws. For MASONRY, such as brick, cement, cinder block, etc., use carbide-tipped bits.
3. Be sure the material to be drilled is anchored or clamped firmly. If drilling thin material, use a wood "back-up" block to prevent damage to the material.
4. Always apply pressure in a straight line with the bit. Use enough pressure to keep the drill biting, but do not push hard enough to stall the motor or deflect the bit.
5. Hold the tool firmly to control the twisting action of the drill.
6. **IF THE DRILL STALLS**, it is usually because it is being overloaded or improperly used. **RELEASE THE TRIGGER IMMEDIATELY**, remove the drill bit from work, and determine cause of stalling. **DO NOT CLICK TRIGGER OFF AND ON IN AN ATTEMPT TO START A STALLED DRILL — THIS CAN DAMAGE THE DRILL.**
7. To minimize stalling or breaking through the material, reduce pressure on drill and ease the bit through the last fractional part of the hole.
8. Keep the motor running when pulling the bit out of a drilled hole. This will help prevent jamming.
9. With Variable Speed Drills there is no need to center punch the point to be drilled. Use a slow speed to start the hole and accelerate by squeezing the trigger harder when the hole is deep enough to drill without the bit skipping out.

**KEYED CHUCKS**

Open chuck jaws by turning collar with fingers and insert shank of bit about 3/4" into chuck. Tighten chuck collar by hand. Place chuck key in each of the three holes, and tighten in CLOCKWISE direction. It's important to tighten chuck with all three holes to prevent slippage. To release bit, turn chuck key COUNTERCLOCKWISE in just one hole, then loosen the chuck by hand. Any authorized DEWALT service center can install a keyless chuck in place of a keyed chuck.

**KEYLESS CHUCKS**
Open chuck jaws by turning plastic collar with fingers and insert shank of bit about 3/4" into chuck. Tighten plastic collar CLOCKWISE while depressing spindle lock button on the right side of the tool housing (Fig. 4). To release bit, turn plastic collar COUNTERCLOCKWISE while depressing the spindle lock button (Fig. 4). **NOTE:** DO NOT DEPRESS LOCK BUTTON WHILE OPERATING DRILL or while the chuck is moving.

**DRILLING IN METAL**
Use a cutting lubricant when drilling metals. The exceptions are cast iron and brass which should be drilled dry. The cutting lubricants that work best are sulfurized cutting oil or lard oil; bacon-grease will also serve the purpose.

**DRILLING IN WOOD**
Holes in wood can be made with the same twist drills used for metal. These bits may overheat unless pulled out frequently to clear chips from the flutes. For larger holes, use power drill wood bits. Work that is apt to splinter should be backed up with a block of wood.

**DRILLING IN MASONRY**
Use carbide tipped masonry bits at low speeds. Keep an even force on the drill but not so much that you crack the brittle materials. A smooth, even flow of dust indicates the proper drilling rate.

# MAINTENANCE

## KEEP TOOL CLEAN

Periodically blow out all air passages with dry compressed air. All plastic parts should be cleaned with a soft damp cloth. NEVER use solvents to clean plastic parts. They could possibly dissolve or otherwise damage the material.

## FAILURE TO START

Should your tool fail to start, check to make sure the prongs on the cord plug are making good contact in the outlet. Also, check for blown fuses or open circuit breakers in the line.

## BRUSH INSPECTION (If applicable)

For your continued safety and electrical protection, brush inspection and replacement on this tool should ONLY be performed by an AUTHORIZED ELU SERVICE STATION.

At approximately 100 hours of use, take or send your tool to your nearest authorized service station to be thoroughly cleaned and inspected. Have worn parts replaced and lubricated with fresh lubricant. Have new brushes installed and test the tool for performance.

Any loss of power before the above maintenance check may indicate the need for immediate servicing of your tool. DO NOT CONTINUE TO OPERATE TOOL UNDER THIS CONDITION. If proper operating voltage is present, return your tool to the service station for immediate service.

# SERVICE

## REPLACEMENT PARTS

When servicing use only identical replacement parts.

## SERVICE AND REPAIRS

All quality tools will eventually require servicing, or replacement of parts due to wear from normal use. All repairs made by the service centers are fully guaranteed against defective material and workmanship. We cannot guarantee repairs made or attempted by others.

Should you have any questions about your tool, call 1-800-54-HOW-TO (544-6986) or 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.).

# ACCESSORIES

Recommended accessories for use with your tool are available at extra cost from your distributor or local service center.

ACCESSORY MUST BE RATED FOR USE AT SPEED EQUAL TO OR HIGHER THAN NAMEPLATE R.P.M. OF TOOL WITH WHICH IT IS BEING USED.

**⚠CAUTION** The use of any non-recommended accessory may be hazardous.

# WARRANTY

Elu industrial tools are warranted for one year from date of purchase. We will repair, without charge, any defects due to faulty materials or workmanship. For warranty repair information, call your local Black & Decker service center. This warranty does not apply to accessories or damage caused where repairs have been made or attempted by others. This warranty gives you specific legal rights and you may have other rights which vary in certain states or provinces.

In addition to the warranty, ELU tools are covered by our:

**30 DAY NO RISK SATISFACTION GUARANTEE**

If you are not completely satisfied with the performance of your ELU power tool, simply return it to the participating seller within 30 days for a full refund. Please return the complete unit, transportation prepaid. Proof of purchase may be required.

BLACK & DECKER (U.S.) INC., 701 East Joppa Road, Baltimore, MD 21286
(JUN05) Form No. 633074-00 ELU27158 