

ET-3504-J
1/2-INCH DRILL



JOHN DEERE

**OPERATOR'S
MANUAL**



CAUTION
RISK OF INJURY!
READ MANUAL BEFORE OPERATING!
THIS MANUAL IS AN IMPORTANT PART OF THE DRILL
AND SHOULD REMAIN WITH THIS UNIT WHEN YOU SELL OR RENT IT.

Introduction

Congratulations on the purchase of your new drill! You can be assured your drill was constructed and designed with quality and performance in mind. Each component has been rigorously tested to ensure the highest level of acceptance.

This operator's manual was compiled for your benefit. By reading and following the simple safety, installation, operation, maintenance and troubleshooting steps described in this manual, you will receive years of trouble-free operation from your new tool. The contents of this manual are based on the latest product information available at the time of publication. The manufacturer reserves the right to make changes in price, color, materials, equipment, specifications or models at any time without notice.

Once the unit has been removed from the box, immediately write in the serial number of your unit in the space provided below.

SERIAL NUMBER _____

Inspect for signs of obvious or concealed freight damage. If damage does exist, file a claim with the transportation company immediately. Be sure that all damaged parts are replaced and that the mechanical problems are corrected prior to operation of the unit. If you require service, contact your Customer Service.

Mi-T-M® Corporation, 8650 Enterprise Drive, Peosta, IA 52068
1-877-JD-KLEEN / (1-877-535-5336) Fax 563-556-1235
Monday - Friday 8:00 a.m. - 5:00 p.m. CST

Please have the following information available for all service calls:

1. Model Number
2. Serial Number
3. Date and Place of Purchase

WARNING

WEAR RESPIRATORY PROTECTION

Some dust created by power sanding, sawing, grinding, drilling and other construction activities contain 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-base paints,
- Crystalline Silica from bricks, 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.

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Safety

RECOGNIZE SAFETY INFORMATION

This is the safety alert symbol. When you see this symbol on your tool or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



UNDERSTAND SIGNAL WORDS

A "DANGER, WARNING or CAUTION" safety warning will be surrounded by a "SAFETY ALERT BOX." This box is used to designate and emphasize Safety Warnings that must be followed when operating this tool.

Accompanying the Safety Warnings are "signal words" which designate the degree or level of hazard seriousness. The "signal words" used in this manual are as follows:

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.

▲ DANGER

▲ WARNING

▲ CAUTION

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





WARNING

KEEP WORK AREA CLEAN AND WELL LIT.

Cluttered areas and benches invite injuries.

CONSIDER WORK AREA ENVIRONMENT.

Don't expose power tools to rain. Don't use power tools in damp or wet locations. Keep work area well lit. Don't use tool in presence of flammable liquids or gases. Power tools produce sparks during operation. They also spark when switching ON/OFF. Never use power tools in dangerous sites containing lacquer, paint, benzine, thinner, gasoline, gases, adhesive agents, and other materials which are combustible or explosive.



GUARD AGAINST ELECTRIC SHOCK

Prevent body contact with grounded surfaces. For example, pipes, radiators, ranges, refrigerator enclosures.

KEEP CHILDREN AWAY

Do not let visitors contact tool or extension cord. All visitors should be kept away from work area.

STORE IDLE TOOLS

When not in use, tools should be stored in dry, and high or locked location - out of reach of children.

DRESS PROPERLY

Do not wear loose clothing or jewelry. They can be caught in moving parts. Rubber gloves and nonskid footwear are recommended when working outdoors.

USE SAFETY GLASSES

Also use face or dust mask if cutting operation is dusty. All persons in the area where power tools are being operated should also wear safety eye protectors and face or dust masks.

SECURE WORK

Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.



WARNING

DON'T OVERREACH

Keep proper footing and balance at all times.

MAINTAIN TOOLS WITH CARE

Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and replace if damaged, have repaired by authorized service facility. Inspect extension cords periodically and replace if damaged. Keep handles dry, clean, and free from oil and grease.

DISCONNECT TOOLS

When not in use, before servicing, and when changing accessories, such as blades, bits, cutters.

AVOID UNINTENTIONAL STARTING

Don't carry plugged-in tool with finger on switch. Be sure switch is off when plugged in.

SECURELY MOUNT ACCESSORIES AND BLADES TO THE TOOL MAIN BODY

Extra care must be taken when using tools on elevated location (such as a roof ladder, scaffold, or the like) to prevent injury to someone on a lower level in the event the tool and/or accessory should drop.

NEVER TOUCH THE MOVING PARTS

Never touch the moving parts such as blades, bits, cutters and others.

CAUTION

DON'T FORCE TOOL

It will do the job better and safer at the rate from which it was intended.

USE RIGHT TOOL

Don't force small tool or attachment to do the job of a heavy-duty tool. Don't use tool for purpose not intended - for example - don't use circular saw for cutting tree limbs or logs.

DON'T ABUSE CORD

Never carry tool by cord or yank it to disconnect from receptacles. Keep cord from heat, oil and sharp edges.

REMOVE ADJUSTING KEYS AND WRENCHES

Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.



CAUTION

OUTDOOR USE EXTENSION CORDS

When tool is used outdoors, use only extension cords intended for use outdoors and so marked.

STAY ALERT

Watch what you are doing. Use common sense. Do not operate tool when you are tired.

CHECK DAMAGED PARTS

Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by a John Deere Dealer unless otherwise indicated elsewhere in this instruction manual. Have defective switched replaced by a John Deere Dealer. Do not use tool if switch does not turn it on and off.

AVOID USING A POWER TOOL FOR APPLICATIONS OTHER THAN THOSE SPECIFIED

Never use a power tool for applications other than those specified in the instruction manual.

ENSURE SAFE OPERATION THROUGH CORRECT HANDLING

Secure safe operation through correct handling by observing the instructions described herein. Do not employ accessories other than those specified herein; otherwise, a hazardous condition may be created. Never allow a power tool to be used by persons not familiar with correct handling (such as children) or by those who cannot handle the tool correctly.

CONFIRM THAT NO ITEMS SUCH AS AN ELECTRIC CABLE OR CONDUIT ARE BURIED INSIDE

In places where live wiring may be hidden behind a wall, floor, ceiling, etc. do not hold or contact any metal parts of the tool. In such cases, metal parts could become electrically live and present a serious shock hazard.

KEEP THE RIGHT PARTS IN THE RIGHT POSITION

Do not remove covers and screws which have been factory-mounted. They perform important respective roles. Keep them in the right positions.

SHOULD THE PLASTIC HOUSING OR HANDLE OF A POWER TOOL BE CRACKED OR DEFORMED, DO NOT USE IT

Since cracked or deformed parts may lead to an operator receiving an electric shock, do not use such a power tool. Immediately have it repaired.



CAUTION

ALWAYS KEEP THE MOTOR AIR VENT FULLY OPENED

A constantly open motor air vent is necessary to allow air to come in and out for cooling the motor. Do not allow it to become clogged up, even if dust is blown through it.

OPERATE POWER TOOLS AT THE RATED VOLTAGE

Operate power tools at voltages specified on the nameplates.

STOP OPERATION IMMEDIATELY IF ANY ABNORMALITY IS DETECTED

Should a power tool be detected as out of order or should other abnormalities be observed during operation, stop using the tool immediately.

NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.

Don't leave tool until it comes to a complete stop.

CAREFULLY HANDLE POWER TOOLS

Should a power tool be dropped or struck against hard materials inadvertently, it may be deformed, cracked, or damaged.

DO NOT WIPE PLASTIC PARTS WITH SOLVENT

Solvents such as gasoline, thinner, benzine, carbon tetrachloride, and alcohol may damage and crack plastic parts. Do not wipe them with such solvents. Wipe plastic parts with a soft cloth lightly dampened with soapy water.

WHEN REPLACING A COMPONENT PART, ADOPT THE SAME TYPE

When replacing a component part with a new one, adopt the same type of new part. Also, never attempt to repair a power tool yourself.

POLARIZED PLUGS

To reduce the risk of electric shock, this equipment has 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 the proper outlet.

Do not change the plug any way.

PRECAUTIONS ON USING DRILL

1. Attach the side handle and hold the drill firmly while using.
2. Do not wear gloves when operating.
3. Take care of downward direction in the high position.



CAUTION

EXTENSION CORD

Make sure your extension cord is in good condition. 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. 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.

Table 1
MINIMUM GAGE FOR CORD SETS

		Total Length of Cord in Feet (Meter)			
		0-25 (0-7.6)	26-50 (7.9-15.2)	51-100 (15.5-30.05)	101-150 (30.8-45.7)
Ampere Rating		AWG Size of Cord			
More Than	Not More Than				
0	6	18	16	16	14
6	10	18	16	14	12
10	12	16	16	14	12
12	16	14	12	Not recommended	



WARNING: AVOID ELECTRICAL SHOCK HAZARD. NEVER USE THIS TOOL WITH A DAMAGED OR FRAYED ELECTRICAL CORD OR EXTENSION CORD. INSPECT ALL ELECTRICAL CORDS REGULARLY. NEVER USE IN OR NEAR WATER OR IN ANY ENVIRONMENT WHERE ELECTRIC SHOCK IS POSSIBLE.

DOUBLE INSULATION SYSTEM ENHANCES SAFE OPERATION



DOUBLE INSULATION

To enhance safe operation of this electric power tool, JOHN DEERE has adopted a double insulation system. The term "double insulation" used here denotes an insulation systems with two insulations physically separated and arranged between the electrically conductive material connected to the power supply and outer frame subject to contact by the operator.

Thus, the power tool is termed double insulated and both the mark and "  " double insulation", or either one is indicated on the name plate.

While no external grounding is required with this system, normal safety precautions as outlined in this manual must still be followed.

To maintain the effectiveness of the double insulation system, follow the precautions described below:

1. Always contact your John Deere Dealer when assembling, disassembling or replacing parts other than accessories or carbon brushes. Improper assembly and/or replacement with wrong parts may result in eliminating the double insulation-feature.
2. Clean the exterior of the tool with a soft cloth moistened with soapy water, and dry thoroughly. Chloric solvent, gasoline, and thinner will cause plastic components to dissolve.

SAVE THESE INSTRUCTIONS AND MAKE THEM AVAILABLE TO OTHER USERS AND OWNERS OF THIS TOOL!

Functional Description

MODEL:

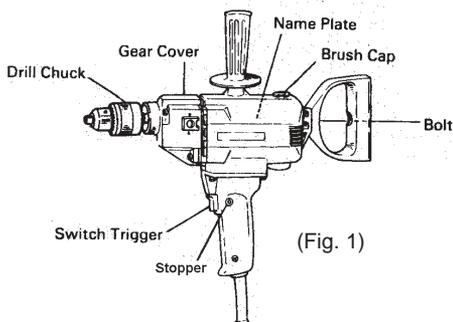
ET-3504-J 1/2-INCH DRILL

NOTE: The information contained in this Instruction Manual is designed to assist you in the safe operation and maintenance of the power tool.

NEVER operate, or attempt any maintenance on the tool unless you have first read and understood all safety instructions contained in this manual.

Some illustrations in this Instruction Manual may show details or attachments that differ from those on your own power tool

NAME OF PARTS:



SPECIFICATIONS:

1/2-INCH DRILL ET-3504-J:

Motor	Single-Phase, Series: Wound Commutator Motor
Power Source	Single-Phase 115V AC/DC 60Hz
Current	6.2A
Capacity	1/2" (13mm) (Steel) 1-5/8" (40mm) (Wood)
No-Load Speed	550 rpm
Weight	6.6 lbs. (3kg)

Preparation

PREPARATION PRIOR TO OPERATION:

Before using the Electric Power Tool, complete the following preparations.

1. Extension cord:
When the work area is far away from the power source, use an extension cord of sufficient thickness and rated capacity. The extension cord should be kept as short as possible.



CAUTION: DAMAGED CORD MUST BE REPLACED OR REPAIRED.

2. Confirming condition of the environment:
Confirm that the work site is placed under appropriate conditions conforming to prescribed precautions.

Operation

APPLICATIONS:

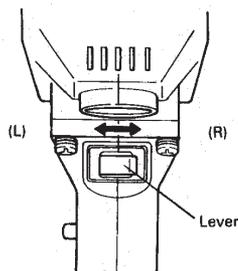
Drilling in various metal, lumber, and plastics.

PRE-OPERATION:



CAUTION: CONFIRM THE FOLLOWING POINTS PRIOR TO CONNECTING THE PLUG TO THE POWER RECEPTACLE.

1. Confirm the applied power source:
Be sure to operate the Electric Power Tool in the voltage specified on the name plate.
2. Confirm that the power switch is turned "OFF":
If the plug is connected to the power receptacle while the power switch is turned ON, the machine starts operating unexpectedly, inviting serious accidents. Prior to using the Electric Power Tool, be sure to confirm that the power switch is turned "OFF".
3. Confirm the direction of bit rotation (Fig. 2):
The drill bit rotates clockwise (when viewed from the rear) when the lever of the reversing switch is set to the "R" position, and rotates in the reverse direction when the lever of the reversing switch is set to the "L" position.
4. Mounting drill bits:
Tighten drill bits with the chuck wrench. There are three holes in which the chuck wrench should be inserted. Tighten them equally in turn at three holes, without tightening them only at one hole. The drill bits can be removed in the opposite method as mentioned above.
5. How to select drill bits:
 - a. When drilling holes in metals or plastics:
Use ordinary metalworking drill bits, applicable drill sizes range from min 3/64" (1.2mm) to drill chuck capacity.
 - b. When drilling holes in lumber:
Use woodworking drill bits. For small holes of 1/4" (6.5mm) diam. or below, use metalworking drill bits.
6. Installing spade handle:
The spade handle can be installed on the back of the drill. Insert the bolt through the hole in the spade handle, locate the spade handle in the desired position and tighten the bolt firmly.

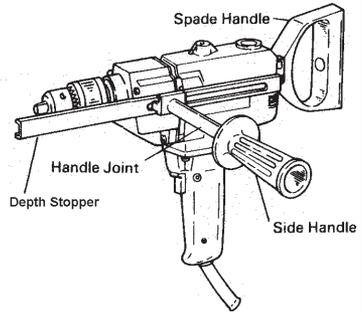


(Fig. 2)

Operation

PRE-OPERATION (CONTINUED):

7. Installing the side handle:
The side handle screws into the housing and two sides of the gear cover. For safe operation, use of the side handle is necessary. Especially in heavy duty drilling, use handle joint and side handle (Fig. 3).
8. Confirm the power receptacle:
If the power receptacle only loosely accepts the plug, the receptacle must be repaired. Contact the nearest electric store for repair service. If such a faulty receptacle is used, it may cause overheating, resulting in a serious hazard.



(Fig. 3)

OPERATION:

1. Pressing force of drill:
You can not get holes quickly even if pressing it by strong force more than necessary. It not only damages the tip of the drill bits and decreases the efficiency of operation, but also shortens the life of the drill.
2. In case of penetrating holes:
Drill bits are subject to break when penetrating. It is important to decrease pressing force when penetrating.
3. Operation of switch:
 - a. Trigger switch:
By pulling the trigger switch, the switch is turned "ON". By pulling the trigger again and the trigger is released, the switch is turned "OFF".
 - b. Reversing switch:
This drill can rotate both clockwise (for drilling) and counterclockwise (for releasing the drill bit) by operating the reversing switch.



CAUTION: NEVER CHANGE THE DIRECTION OF ROTATION WHILE THE MOTOR IS ROTATING. TURN THE POWER SWITCH OFF BEFORE CHANGING THE DIRECTION OF ROTATION.

Maintenance and Inspection

STANDARD ACCESSORIES:



CAUTION: RECOMMENDED ACCESSORIES FOR THE ELECTRIC POWER TOOL ARE MENTIONED IN THIS MANUAL. THE USE OF ANY OTHER ATTACHMENT OR ACCESSORY IS HAZARDOUS.

1. Chuck Wrench 1
2. Side Handle 1

Maintenance and Inspection

MAINTENANCE AND INSPECTION:

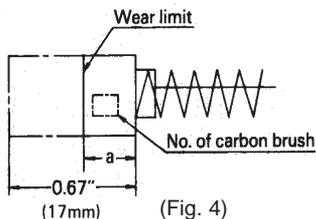


CAUTION: BE SURE TO SWITCH POWER OFF AND DISCONNECT THE PLUG DURING MAINTENANCE AND INSPECTION.

- Inspecting the drill bit:
Since use of an abraded drill bit will cause motor malfunctioning and degraded efficiency, replace the drill bit with a new one or sharpen without delay when abrasion is noted.
- Inspecting tightness of various screws:
Periodically inspect screw tightness of individual components. If any screws are loosened, securely retighten them. Loosened screws, if unheeded, may cause a hazardous situation.
- Keeping after use:
When not in use, the Electric Drill should be kept in a dry place out of the reach of children.
- Inspecting the carbon brushes:
The motor employs carbon brushes which are consumable parts. When the brushes are worn down, motor trouble may result. When the brushes are worn down to the limit line, replace the brushes with new ones. Keep the brushes clean, so that they smoothly slide into the brush holders.

When replacing the brushes with new ones, be sure to use a pair of brushes for JOHN DEERE ELECTRIC DRILL ET-3504-J corresponding to the illustrated number.

Auto-stop carbon brushes automatically cut off the electric circuit, when worn down to the wear limit. This indicates the replacement time of the brush and prevents damage of the commutator.



	a	No. of carbon brush
Usual carbon brush	0.24" (6mm)	43
Auto-stop carbon brush	0.28" (7mm)	73

SERVICE AND REPAIRS

All quality tools will eventually require servicing or replacement of parts due to wear from normal use. These operations should ONLY be performed by a John Deere Dealer.

REPLACEMENT PARTS

When servicing use only identical replacement parts.

NOTE: Due to JOHN DEERE's continuing program of research and development, the specifications herein are subject to change without prior notice.

Notes

Notes

