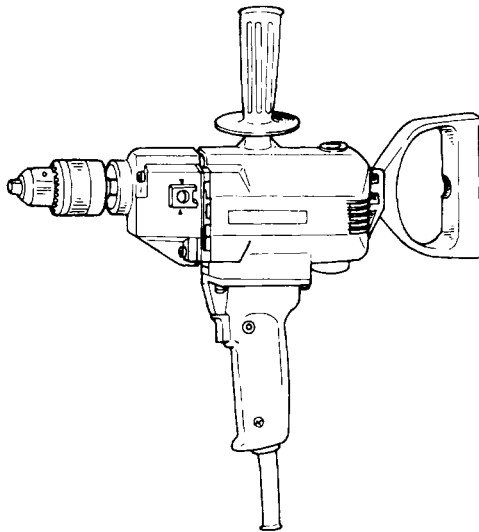


HITACHI

DRILL

MODEL D 13

INSTRUCTION MANUAL



Note:

Before using this Electric Power Tool, carefully read through this INSTRUCTION MANUAL to ensure efficient, safe operation. It is recommended that this MANUAL be kept readily available as an important reference when using this electric power tool.



DOUBLE INSULATION

We sincerely thank you for selecting a HITACHI ELECTRIC POWER TOOL. To operate this electric power tool safely and efficiently, please read this INSTRUCTION MANUAL carefully to get a good understanding of the precautions in operation, capacity of the electric power tool, use and the like.

IMPORTANT INFORMATION: SAFETY RULES FOR POWER TOOLS

WARNING: When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury, including the following.

READ ALL INSTRUCTIONS

1. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite injuries.
2. **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, benzene, thinner, gasoline, gases, adhesive materials which are combustible or explosive.
3. **GUARD AGAINST ELECTRIC SHOCK.** Prevent body contact with grounded surfaces. For example: pipes, radiators, ranges, refrigerator enclosures.
4. **KEEP CHILDREN AWAY.** Do not let visitors contact tool or extension cord. All visitors should be kept away from work area.
5. **STORE IDLE TOOLS.** When not in use, tools should be stored in dry, and high or locked-up place – out of reach of children.
6. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was intended.
7. **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.
8. **DRESS PROPERLY.** Do not wear loose clothing or jewelry. They can be caught in moving parts.
Rubber gloves and non-skid footwear are recommended when working outdoors.
Wear protective hair covering to contain long hair.
9. **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.

10. **DON'T ABUSE CORD.** Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
11. **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.
12. **DON'T OVERREACH.** Keep proper footing and balance at all times.
13. **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 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.
14. **DISCONNECT TOOLS.** When not in use, before servicing, and when changing accessories, such as blades, bits, cutters.
15. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
16. **AVOID UNINTENTIONAL STARTING.** Don't carry plugged-in tool with finger on switch. Be sure switch is off when plugging in.
17. **OUTDOOR USE EXTENSION CORDS.** When tool is used outdoors, use only extension cords intended for use outdoors and so marked.
18. **STAY ALERT.** Watch what you are doing. Use common sense. Do not operate tool when you are tired.
19. **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 an authorized service center unless otherwise indicated elsewhere in this instruction manual.
Have defective switches replaced by authorized service center.
Do not use tool if switch does not turn it on and off.
20. **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.
21. **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.

22. **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.
23. **KEEP THE RIGHT PARTS IN THE RIGHT POSITIONS.** Do not remove covers and screws which have been factory-mounted. They perform important respective roles. Keep them in the right positions.
24. **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.
25. **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.
26. **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.
27. **OPERATE POWER TOOLS AT THE RATED VOLTAGE.** Operate power tools at voltages specified on their nameplates.
28. **NEVER TOUCH THE MOVING PARTS.** Never touch the moving parts such as blades, bits, cutters and others.
29. **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.
30. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.
31. **CAREFULLY HANDLE POWER TOOLS.** Should a power tool be dropped or struck against hard materials inadvertently, it may be deformed, cracked, or damaged.
32. **DO NOT WIPE PLASTIC PARTS WITH SOLVENT.** Solvents such as gasoline, thinner, benzene, 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.
33. **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.

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 an **AUTHORIZED HITACHI POWER TOOL REPAIR SHOP**.

REPLACEMENT PARTS

When servicing use only identical replacement parts.

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 in any way.

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.

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 – 30.5)	101 – 150 (30.8 – 45.7)
Ampere More Than	Rating Not More Than	AWG			
	0 – 6		18	16	16
6 – 10		18	16	14	12
10 – 12		16	16	14	12
12 – 16		14	12	Not Recommended	

DOUBLE INSULATION SYSTEM ENHANCES SAFE OPERATION

To enhance safe operation of this electric power tool, HITACHI has adopted a double insulation system. The term “double insulation” used here denotes an insulation system with two insulations physically separated and arranged between the electrically conductive material connected to the power supply and the 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.



DOUBLE INSULATION

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 dealer or an authorized HITACHI service agent 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.

PRECAUTIONS ON USING DRILL

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

SAVE THESE INSTRUCTIONS

NAME OF PARTS

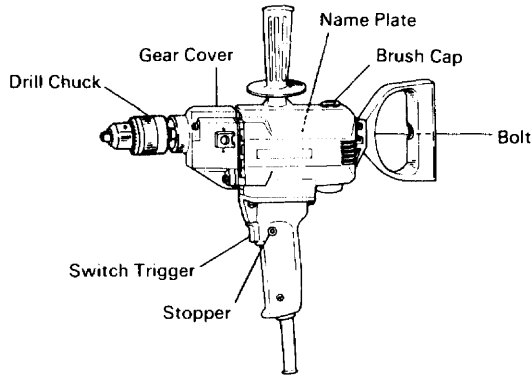


Fig. 1

SPECIFICATIONS

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

APPLICATION

Drilling in various metal, lumber and plastics.

PREPARATION PRIOR TO OPERATION

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

1. Extension cord

Use an extension cord when the work site is removed from the power supply. In this case, an extension cord of sufficient thickness shall be used. Actually, use the shortest possible extension cord.

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.

BEFORE USE

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

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.

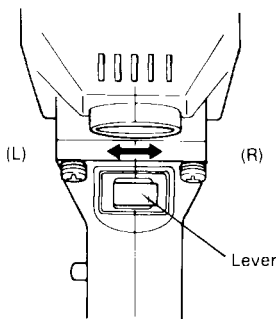


Fig. 2

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

(1) 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.

(2) 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 hole in the spade handle, locate the spade handle in the desired position and tighten the bolt firmly.

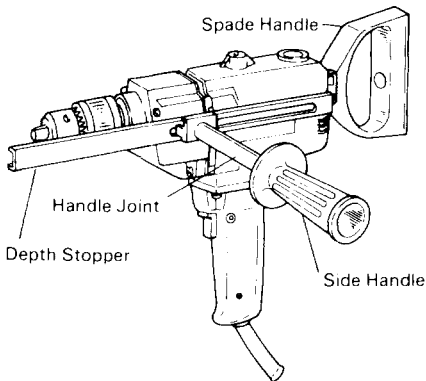


Fig. 3

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.

8. Installing the depth stopper (optional accessory)

The depth stopper which is useful for adjusting the drilling depth is available. Install the depth stopper to the gear cover using the side handle or set screw.

9. 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.

HOW TO USE THE DRILL

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 drill bits and decreases the efficiency of operation, but also shortens the life of the drill.

2. In case of penetrating holes

It is subject to break the drill bits when penetrating. It is important to decrease pressing force when penetrating.

3. Operation of switch

(1) Trigger switch.

By pulling the trigger of switch, the switch is turned ON. By pulling the trigger again and the trigger is released, the switch is turned OFF.

(2) 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

CAUTION:

Be sure to switch power OFF and disconnect the plug during maintenance and inspection.

1. 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.

2. Inspecting tightness of various screws

Periodically inspect each screw tightness of individual components. If any screws are loosened, securely retighten them. Loosened screws, if unheeded, may cause a hazardous situation.

3. Keeping after use

When not in use, the Electric Drill should be kept in a dry place out of the reach of children.

4. 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 HITACHI ELECTRIC DRILL Type D13 corresponding to the illustrated number.

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

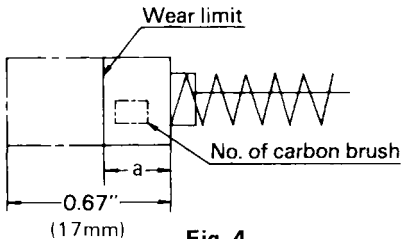


Fig. 4

	a	No. of carbon brush
Usual carbon brush	0.24"(6mm)	43
Auto-stop carbon brush	0.28"(7mm)	12Z

NOTE:

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

