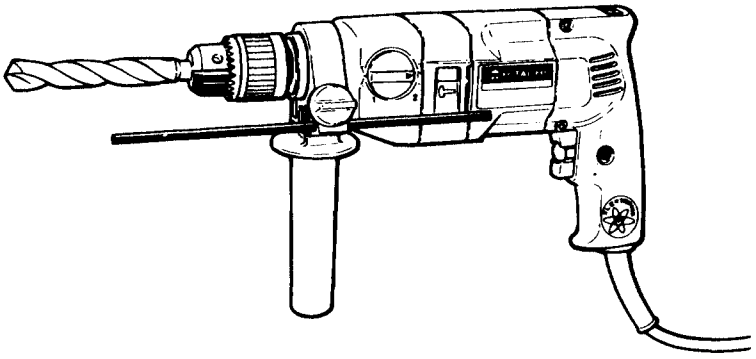
HITACHI

HAMMER DRILL
MODEL DV 20V2·DV 20V3 DV 20T·DV 14V
INSTRUCTION MANUAL



DV20V2

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 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, benzine, thinner, gasoline, gases, adhesive agents, and other 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, 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.
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.

34. SAVE THESE INSTRUCTIONS

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.

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.

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 HAMMER DRILL

1. Before drilling into walls, ceilings or floors, ensure that there are no concealed power cables inside.
2. For DV20V2 and DV14V
   - ○ When boring concrete or similar hard materials in IMPACT mode, set the bit rotation switch lever to the R-side. **(Fig. 1)**
   - ○ When tightening or loosening screws, be sure to set the change plate in ROTATION mode. **(Fig. 2)**
3. Always hold the body handle and side handle of the power tools firmly. Otherwise the counterforce produced may result in inaccurate and even dangerous operation.

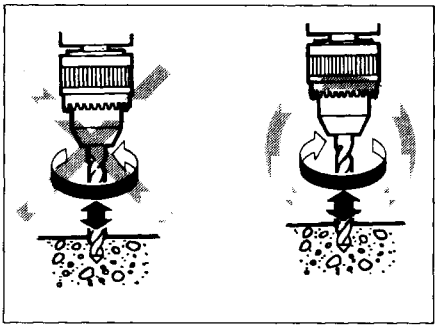


Fig. 1

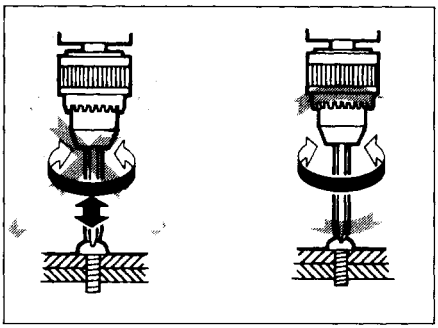


Fig. 2

NAME OF PARTS

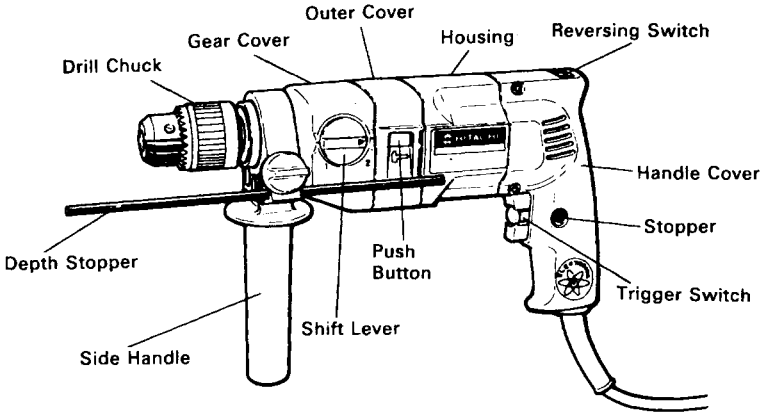


Fig. 3 (DV20V2)

SPECIFICATIONS

Model	DV20V2		DV20V3		DV20T		DV14V
Motor	Single Phase, Series Commutator Motor						
Power Source	Single Phase 115V AC 60 Hz						
Current	5A*		5A*		5A*		5A*
Reversible	Yes		No		No		Yes
Speed Change	1	2	1	2	1	2	No
No-Load Speed	0-1100 rpm	0-2600 rpm	0-1100 rpm	0-2600 rpm	1100 rpm	2600 rpm	0-2600 rpm
Drill Chuck Capacity	1/2"						3/8"

Capacity	Steel	1/2"	5/16"	1/2"	5/16"	1/2"	5/16"	3/8"
	Concrete	3/4"	3/8"	3/4"	3/8"	3/4"	3/8"	9/16"
	Wood	1-3/8"	3/4"	1-3/8"	3/4"	1-3/8"	3/4"	15/16"
No-Load Impact Rate		17600 bpm	41600 bpm	17600 bpm	41600 bpm	17600 bpm	41600 bpm	41600 bpm
Weight (Without Cord)		5.1 lbs		5.1 lbs		5.1 lbs		4.2 lbs

* Be sure to check the nameplate on product as it is subject to change by areas.

ACCESSORIES

CAUTION:
Recommended accessories for this Electric Power Tool are mentioned in this manual. The use of any other attachment or accessory might be hazardous.

STANDARD ACCESSORIES

(1) Chuck Wrench 1
(2) Side Handle Ass'y 1
(3) Depth Stopper 1
Standard accessories are subject to change without notice.

OPTIONAL ACCESSORIES (sold separately)

(1) Case
(2) Drill bit for concrete and stone

O.D.	Length	Code No.	O.D.	Length	Code No.	O.D.	Length	Code No.
1/4"	4"	931851	3/8"	4-3/4"	931854	9/16"	6-5/16"	931776
5/16"	4"	931852	15/32"	6-5/16"	971704	5/8"	6-5/16"	971670
0.37"	4-3/4"	931853	1/2"	6-5/16"	931855	3/4"	6-5/16"	931856

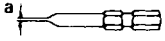
Drill bit of more than 9/16" outer diam. cannot be attached to DV14V.

(3) Plus driver bit (Except DV20T)

Bit No.	Screw Size	Length	Code No.
No. 2	1/8"-3/16"	2-3/4"	955654
No. 3	1/4"-5/16"	2-3/4"	955655

(4) Minus driver bit (Except DV20T)

a	Screw Size	Code No.
1/32"	5/32"	955659
3/64"	3/16"-1/4"	955674



Optional accessories are subject to change without notice.

APPLICATIONS

○ By combined actions of ROTATION and IMPACT:
Boring holes in hard surfaces (concrete, marble, granite, tiles, etc.)
○ By ROTATIONAL action:
Boring holes in metal, wood and plastic. Tightening machine screws, wood screws.

PRIOR TO OPERATION

1. **Power source**
Ensure that the power source to be utilized conforms to the power requirements specified on the product nameplate.
2. **Power switch**
Ensure that the power switch is in the OFF position. If the plug is connected to a power receptacle while the power switch is in the ON position, the power tool will start operating immediately, inviting serious accident.
3. **Extension cord**
When the work area is removed from the power source, use an extension cord of sufficient thickness and rated capacity. The extension cord should be kept as short as practicable.
4. **Fitting the drill bit or the driver bit**
Fit the drill bit or driver bit into the chuck and use the chuck wrench to secure it, tightening the chuck using each of the three holes in turn.
5. **Selecting the appropriate drill bit**
○ When boring concrete or stone
Use the drill bits specified in the Optional Accessories.
○ When boring metal or plastic
Use an ordinary metalworking drill bit.
○ When boring wood
Use an ordinary woodworking drill bit.
However, when drilling 1/4" or smaller holes, use a metalworking drill bit.
6. **Selecting the driver bit**
Screw heads or bits will be damaged unless a bit appropriate for the screw diameter is employed to drive in the screws.
7. **Confirm the direction of bit rotation (Fig. 4)**
The bit rotates clockwise (viewed from the rear side) by pushing the R-side of the reversing switch lever. The L-side of the lever is pushed to turn the bit counterclockwise.

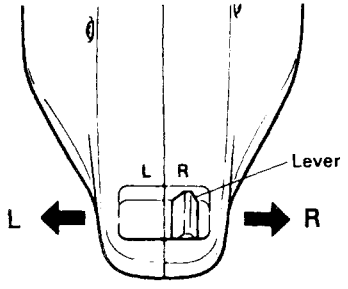


Fig. 4 (DV20V2·DV14V)

CAUTION
Never change the direction of bit rotation while operating. Turn the power switch OFF before changing the direction of bit rotation: otherwise, burning of the motor will result.
Always use the hammer drill with clockwise rotation, when using it as an hammer drill.

8. Fixing the side handle

Loosen the knob bolt on the side handle, and attach the side handle to the gear cover in a position convenient for drilling. Match the projecting part of the handle to the groove on the gear cover, and firmly tighten the knob bolt. To remove the side handle, loosen the knob bolt and rotate the handle.

To attach a depth stopper on the side handle, insert the gauge into the U-shaped groove on the side handle, adjust the position of the depth stopper in accordance with the desired depth of the hole, and firmly tighten the knob bolt.

9. IMPACT to ROTATION changeover (Fig. 5)

The Hammer Drill can be switched from IMPACT (impact plus rotation) to ROTATION (rotation only) by sliding the change plate. When boring concrete, stone, tile or similar hard materials, sliding the change plate to IMPACT side. The drill head impacts against the material while continuing to rotate.

When boring metal, wood or plastic or tightening the screw, sliding the change plate to ROTATION side. The drill rotates as an ordinary electric drill.

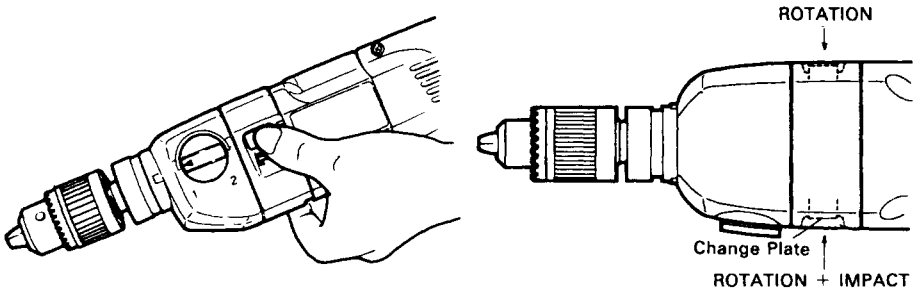


Fig. 5

CAUTION

- Do not use the Hammer Drill in the IMPACT function if the material can be bored by rotation only. Such action will not only reduce drill efficiency, but may also damage the drill tip.
- The change plate may not slide smoothly when changing from hammer drill mode to drill mode (**Fig. 5**).

  In this case, switch ON and operate the machine for few seconds.

  The spindle shaft will then be pushed forward, and the change plate can be moved smoothly.

10. High-speed/Low-speed changeover

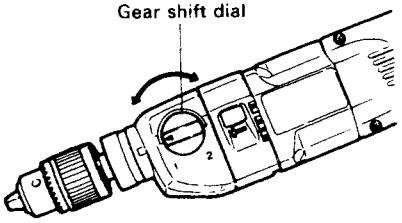


Fig. 6 (DV20V2·DV20V3·DV20T)

To change speed, rotate the gear shift dial as indicated by the arrow in **Fig. 6**. The numeral "1" engraved on the drill body denotes low speed, the numeral "2" denotes high speed.

HOW TO USE

1 Speed adjustment and switch operation

○ The drill speed can be adjusted from 0 through full speed by regulating the trigger-squeezing force. The more the trigger is squeezed, the faster the drill rotates. When the trigger is squeezed fully, the speed is the maximum.

○ Pulling the trigger switch and pushing the stopper, it keeps the switched-on condition which is convenient for continuous running. When switching off, the stopper can be disconnected by pulling the trigger again.

2. When using as a Drill or a Hammer Drill

(1) Pressing force of the drill

You cannot drill holes more quickly even if you press the drill with a stronger force than necessary. It not only damages tip of drill bits and decreases the efficiency of operation, but also shortens the life of the drill.

(2) In case of penetrating holes

Drill bits can be broken when the material being drilled is penetrated. It is important to decrease pressing force just before penetrating.

CAUTION

In continuous operation, conduct no-load operation for five seconds after completing a drilling job.

(3) When a thick drill bit is used

Your arm is subjected to larger reaction force when a thicker drill bit is used. Be careful not to be moved by the reaction force. For this, establish a foothold, hold the unit tightly with both hands perpendicularly to the material being drilled.

3. When driving machine screws

When the trigger switch is pressed, the motor starts. The drill rotates by attaching the bit to the groove of screw head, and by pushing the head together with the driver main body, it tightens the screw.

CAUTIONS

○ Exercise care not to excessively prolong driving time, otherwise, the screws may be damaged by excessively force.

○ Apply the screwdriver perpendicularly to the screw head when driving a screw; otherwise, the screw head or bit will be damaged, or driving force will not be fully transferred to the screw.

4. When driving wood screws

(1) Selecting a suitable driver bit

Employ plus-head screws, if possible, since the driver bit easily slips off the heads of minus-head screws.

(2) Driving in wood screws

○ Prior to driving in wood screws, make pilot holes suitable for them in the wooden board. Apply the bit to the screw head grooves and gently drive the screws into the holes.

○ After rotating the screwdriver at low speed for a while until a wood screw is partly driven into the wood, squeeze the trigger more strongly to obtain the optimum driving force.

CAUTION

Exercise care in preparing a pilot hole suitable for the wood screw taking the hardness of the wood into consideration. Should the hole the excessively small or shallow, requiring much power to drive the screw into it, the thread of the wood screw may sometimes be damaged.

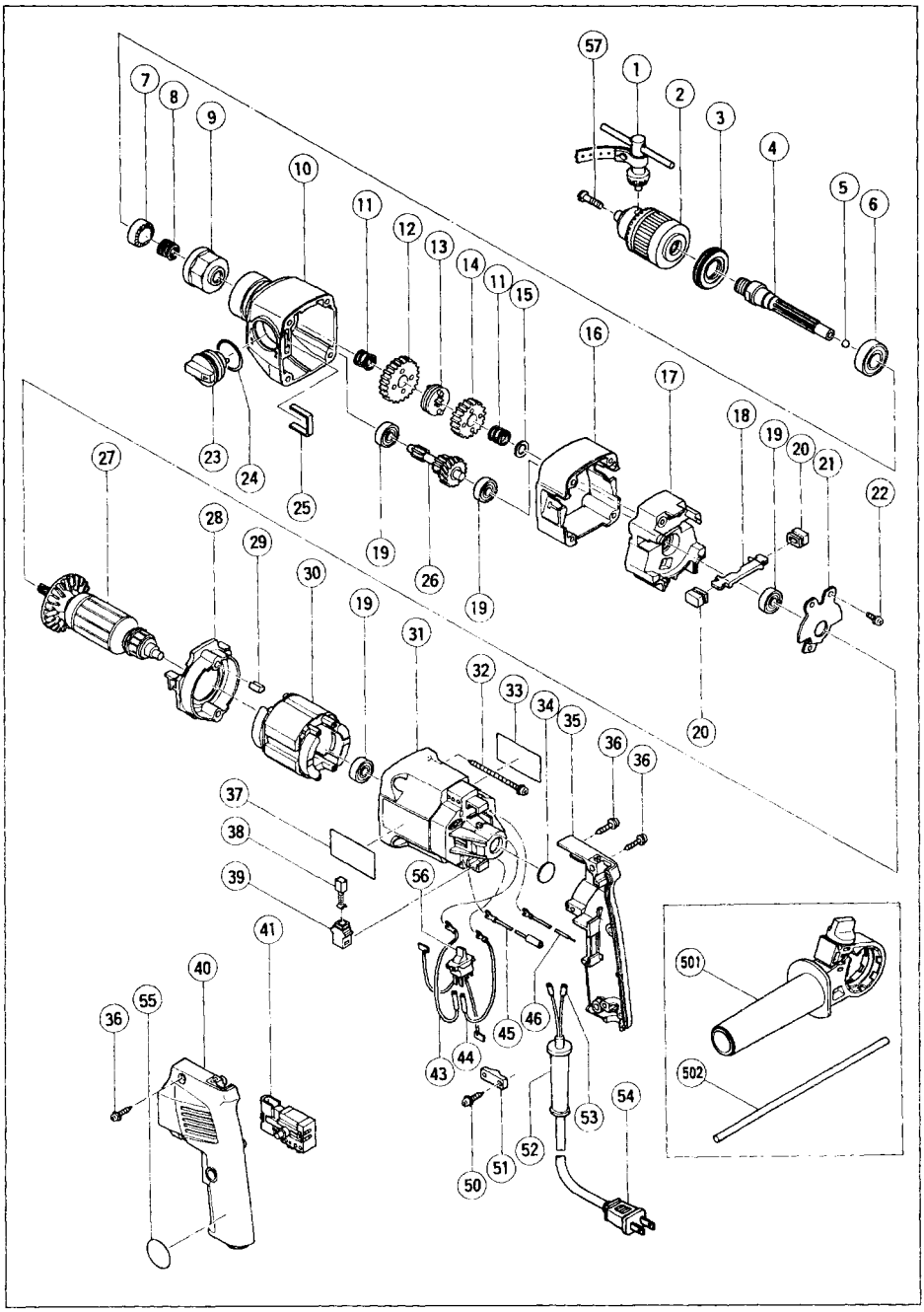
MAINTENANCE AND INSPECTION

1. **Inspecting the driver bit**
   Since continued use of a worn driver bit will damage screw heads, replace the driver bit as soon as excessive wear is noticed.
2. **Inspecting the drill bit**
   Continued use of a worn and/or damaged drill bit will result in reduced drilling efficiency and may seriously overload the drill motor. Inspect the drill bit frequently and replace it as necessary.
3. **Inspecting the mounting screws**
   Regularly inspect all mounting screws and ensure that they are properly tightened. Should any of the screws be loose, retighten them immediately. Failure to do so could result in serious hazard.
4. **Inspecting the carbon brushes**
   For your continued safety and electrical protection, carbon brush inspection and replacement on this tool should ONLY be performed by an AUTHORIZED HITACHI POWER TOOL REPAIR SHOP.
5. **Maintenance of the motor**
   The motor unit winding is the very "heart" of the power tool. Exercise due care to ensure the winding does not become damaged and/or wet with oil or water.

NOTE

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

DV20V2


57
1
2
3
4
5
6
7
8
9
10
11
12
13
14
11
15
16
17
18
19
20
21
22
23
24
25
19
26
19
27
28
29
30
19
31
32
33
34
35
36
36
37
38
39
41
56
40
36
55
43
44
45
46
50
51
52
53
54
501
502
20

DV20V2

Item No.	Part Name	
1	Chuck Wrench	10G
2	Drill Chuck	13VLR
3	Dust Seal	
4	Spindle	
5	Steel Ball	D4.76
6	Ball Bearing (6002DDCM)	
7	Ratchet (B)	
8	Spring (B)	
9	Ratchet Sleeve	
10	Gear Cover	
11	Spring	
12	Low Speed Gear	
13	Clutch Disc	
14	High Speed Gear	
15	Washer	
16	Outer Cover	
17	Inner Cover Ass'y	
18	Changing Plate	
19	Ball Bearing (608VVC2)	
20	Push Button	
21	Bearing Holder	
22	Machine Screw	M5 × 12
23	Shifting Lever	
24	O-Ring	
25	Shifting Spring	
26	Second Pinion	
27	Armature	
28	Fan Guide	
29	Rubber Bushing	
30	Stator	
31	Housing	
32	Tapping Screw	D5 × 60
33	Name Plate	
34	Bearing Seal	

Item No.	Part Name	
35	Handle (A)	
36	Tapping Screw	D4 × 16
37	HITACHI Label	
38	Carbon Brush	
39	Brush Holder	
40	Handle (B)	
41	Speed Control Switch	
43	Internal Wire (A)	
44	Internal Wire (A)	
45	Internal Wire (C)	
46	Internal Wire (C)	
50	Tapping Screw	D4 × 16
51	Cord Clip	
52	Cord Armor	
53	Tube (D)	
54	Cord	
55	Mark Plate	
56	Reversing Switch	
57	Special Screw	
501	Side Handle	
502	Depth Stopper	

Parts are subject to possible modification without notice due to improvements.
The drawing and the list are parts structural drawing and parts list of model DV20V2.
For other models refer to the drawing and the list.

Hitachi Koki Co.,Ltd.

Nippon Bldg., 2-6-2, Ohtemachi,
Chiyoda-Ku, Tokyo 100, Japan

903
Code No. 99515062 N
Printed in Japan