

HiKOKI

DRILL

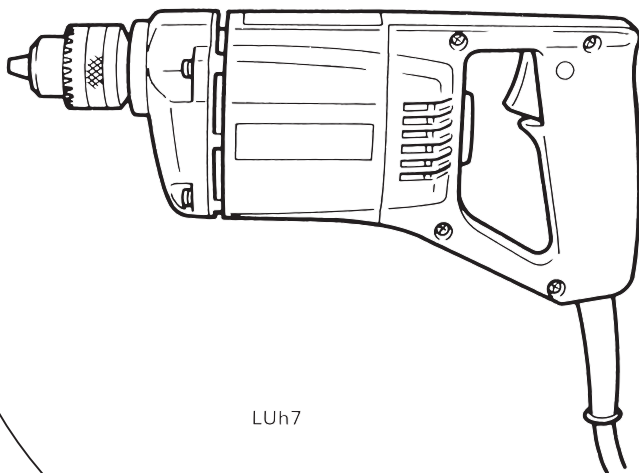
手提電鑽

LUh 7 • LUh-DH4

NU-DH4 • BUℓ-SH3

HANDLING INSTRUCTIONS

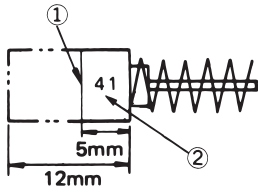
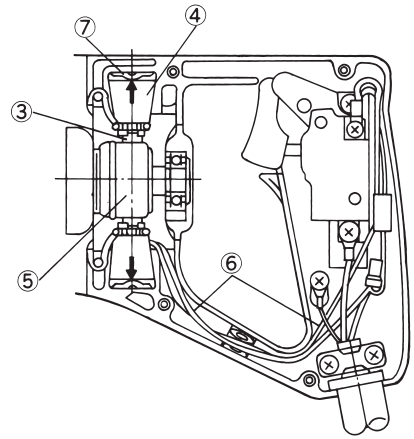
使用說明書



LUh7

Read through carefully and understand these instructions before use.

使用前務請詳加閱讀

1**2**

①	Wear limit	磨損極限
②	No. of carbon brush	碳刷號
③	Carbon brush	碳刷
④	Brush holder	刷子擱放架
⑤	Armature	轉子
⑥	Internal wiring	內部導線
⑦	Wedge	楔塊

GENERAL OPERATIONAL PRECAUTIONS

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 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 eye protection. Also use face or dust mask if cutting operation is dusty.
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. Use the power tools only for applications specified in the Handling Instructions.
 21. To avoid personal injury, use only the accessories or attachment recommended in these handling instructions or in the **HiKOKI** catalog.
 22. Let only the authorized service facility do the repairing.

The manufacturer will not be responsible for any damages or injuries caused by repair by unauthorized persons or by mishandling of the tool.
 23. To ensure the designed operational integrity of power tools, do not remove installed covers or screws.
 24. Do not touch movable parts or accessories unless the power source has been disconnected.
 25. Use your tool at lower input than specified on the nameplate; otherwise, the finish may be spoiled and working efficiency reduced by motor overload.
 26. Do not wipe plastic parts with solvent. Solvents such as gasoline, thinner, benzene, carbon tetrachloride, alcohol, ammonia and oil containing chloric annex may damage and crack plastic parts. Do not wipe them with such solvent. Wipe plastic parts with a soft cloth lightly dampened with soapy water.
 27. Use only original **HiKOKI** replacement parts.
 28. Disassemble this tool only for replacement of carbon brushes.
 29. Use the exploded assembly drawing on this handling instructions only for authorized servicing.

PRECAUTIONS ON USING DRILL

1. Do not make this drill work beyond the ability.
2. Operate the Electric Drill safely for correct use.
3. Hold the drill firmly and use it.
4. Do not wear the gloves while operating.
5. Never let the drill alone in the rotating conditions.
6. Avoid letting the revolution down largely by means of pressing it by force.
7. Take care of downward direction in the high position.
8. Before drilling into a wall, floor or ceiling, thoroughly confirm that no items such as electric cables or conduits are buried inside.

SPECIFICATIONS

Model		LUh7	LUh-DH4	NU-DH4	BU ℓ-SH3
Voltage (by areas) *		(110V, 115V, 120V, 127V, 220V, 230V, 240V) ~			
Input *		360W		400W	620W
No load speed		2200/min	3000/min	1250/min	1100/min
Capacity	Steel	6.5mm		10mm	13mm
	Wood	13mm		21mm	30mm
Drill chuck capacity		6.5mm		10mm	13mm
Weight (without cord)		1.9kg		2.2kg	2.6kg

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

STANDARD ACCESSORIES

<LUh7 • LUh-DH4>

(1) Cheuck Wrench1

<NU-DH4 • BU ℓ-SH3>

(1) Chuck Wrench1

(2) Side Handle1

Standard accessories are subject to change without notice.

APPLICATION

- Drilling holes on various metal, lumber and plastics.

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. Grounding

This tool should be grounded while in use to protect the operator from electric shock. The tool is equipped with a three conductor cord and grounding type plug to fit the proper grounding type receptacle. The green (or green and yellow) conductor in the cord is the grounding wire. Never connect the green (or green and yellow) wire to a live terminal.

3. 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.

4. 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.

Caution:

Damaged cord must be replaced or repaired.

5. Confirming condition of the environment

Confirm that the work site is placed under appropriate conditions conforming to prescribed precautions.

6. 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.

○How to select drill bits

- (1) When drilling holes in metals or plastics

For Model LUh7 and LUh-DH4

Use ordinary metalworking drill bits, applicable drill sizes range from min. 0.5mm to max. 6.5mm.

For Model NU-DH4

Use ordinary metalworking drill bits, applicable drill sizes range from min. 0.8mm to max. 10mm.

For Model BUℓ-SH3

Use ordinary metalworking drill bits, applicable drill sizes range from min. 1.2mm to max. 13mm.

- (2) When drilling holes in lumber

For Model LUh7 and LUh-DH4

Use woodworking drill bits of 13mm diam. or below. For small holes of 6.5mm diam. or below, use metalworking drill bits.

For Model NU-DH4

Use woodworking drill bits of 21mm diam. or below. For small holes of 6.5mm diam. or below, use metalworking drill bits.

For Model BUℓ-SH3

Use woodworking drill bits of 30mm diam. or below. For small holes of 6.5mm diam. or below, use metalworking drill bits.

7. 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

Pulling the trigger of switch and push the stopper, it keeps, the switch-on condition and it is convenient for the continuous running. When switched off, the stopper can be disconnected by means of pulling the trigger again.

4. Regarding the drill chuck

The drill chuck is secured to the spindle with a taper. Should the drill chuck be accidentally detached from the spindle, deposited on the chuck taper section and the spindle chuck mount, tap the side plane of the chuck after retracting its three claws, and reattach it to the spindle. Carefully handle the taper section so that its surface does not become scarred.

MAINTENANCE AND INSPECTION

Caution

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

1. Inspecting the drill bits

Since use of an abraded drill bits will cause motor malfunctioning and degraded efficiency, replace the drill bits with a new one or resharpening without delay when abrasion is noted.

2. 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.

3. 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.

4. Inspecting the carbon brushes (Fig. 1)

The motor employs carbon brushes which are consumable parts. Since an excessively worn carbon brush could result in motor trouble, replace a carbon brush with a new one which has the same brush No. shown in the figure when it becomes worn to or near the 'wear limit'. In addition, always keep carbon brushes clean and ensure that they slide freely within the brush holders.

5. Replacing a carbon brush (Fig. 2)

<Disassembly>

- (1) Loosen four machine screws and remove the handle cover.
- (2) Pull out the wedge with the pliers.
- (3) Push up the brush holder together with carbon brush in arrow direction with driver.

Caution : Exercise adequate care not to excessively strain the lead wire or damage it.

- (4) Remove the carbon brushes from the brush holders.

<Assembly>

- (1) Insert new carbon brushes in the brush holder.
- (2) Push the brush holders in the opposite arrow direction.
- (3) Push the wedge with the finger and then drive lightly it with the wood hammer. Exercise special care so that the brush holder is not cracked. Do not use the cracked brush holder. The cracked brush holder could cause electric shock. It is important to replace a cracked brush holder with a new brush holder.
- (4) Carefully ascertain that the internal wiring and so on are located at their regular positions, and that there is no possibility of the rotary part (armature) being contacted by the internal wiring or other items.
- (5) Reinstall the handle cover while exercising adequate care not to allow the internal wiring and so on to become caught in the housing, then tighten the handle cover with machine screws.

Cautions:

○When reassembling after replacing the carbon brushes, be sure to follow this assembling procedure. Should the internal wiring and so on contact the rotary part (armature) or be caught in the handle cover, there is a great risk of the user receiving an electric shock. Exercise the utmost care!

○When replacing the carbon brushes, do not tamper with parts other than those necessary for replacing.

6. Keeping after use

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

Note:

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

作業上的一般注意事項

1. 工作場所應打掃乾淨，清理妥當。雜亂無章將導致事故。
2. 確保妥適的作業環境。電動工具不可任其風吹雨打。不得在潮濕的地方作業。工作場所需保持充分的亮度。不可在存放易燃液體或氣體的地方使用電動工具。因為電動工具在作業時以及進行開關的通／斷操作時會發出火花，所以嚴禁在存放：漆、塗料、輕質汽油、沖淡劑、汽油、煤氣、膠黏劑以及其它爆炸性物質的地方使用。
3. 謹防觸電事故。應避免身體同地面上的例如：管道、散熱器、爐灶、冰箱等接觸。
4. 不可讓孩童靠近工作場所。與作業無關的訪客也必須保持安全距離。
5. 不使用的電動工具應存放到乾燥而孩童伸手不及的高處，並加鎖保管。
6. 不得使勁用力推壓。電動工具需按設計條件才能有效而安全地工作，絕不可勉強。
7. 妥選使用工具。不可用小型工具或附件去幹重活。不可用於規定外的作業。舉例說，用圓鋸進行伐木打枝或原木鋸切作業。
8. 工作時衣服穿戴要合適。不要讓松散的衣角或寶石類卷入轉動部份。屋外作業時，最好手戴橡膠手套，腳穿防滑膠鞋，同時要戴上能够籠罩長發的工作帽。
9. 絕大多數的電動工具作業時，均需戴安全眼鏡。進行粉塵飛揚的切削作業時，需戴防塵面罩。
10. 不要拿電線提起電動工具，也不得拉扯電線從電源插座拆除插頭。電線需從熱源和油液隔開，並避免與銳利的邊緣接觸。
11. 作業以安全第一為原則。工件要用夾具或臺鉗卡緊。這樣做，比用手按壓更為可靠，也能够讓雙手專心操作。
12. 作業時腳步要站穩，身體姿勢要保持平衡。
13. 工具應維護妥善，經常保持鋒利、清潔才能充分發揮性能，落實作業安全的要求。應按規定加注潤滑脂、更換附件。線纜應定期檢查，如發現損傷應即委託專業性的服務單位加以修復。延伸電纜如有損傷應予更換。手柄要保持乾燥，並防止沾附油脂類。
14. 不使用時、維修前以及更換附件（如：刀具、鑽頭、鋸具等）之前，都必須拆卸電源插頭才行。
15. 開動前務必把調整用鍵和扳手類拆除下來。這一點與安全有關，應養成習慣，嚴格遵守。
16. 謹防誤開動。插頭一插上電源插座，指頭就不可隨便接觸電源開關。插接電源之前，應先確認：開關是否切斷。
17. 屋外作業時，必須使用專用的延伸線纜。
18. 保持高度警覺，充分掌握情況，以正常的判斷力從事作業。疲憊時切不可開動電動工具。
19. 在繼續使用電動工具之前，應詳細檢查各部零件以及防護裝置有無損壞，以便決定能否正常工作，能否發揮正常效能。檢查轉動部份的對準、結合狀態、各零件有無異常、安裝是否妥善以及其它足以給工作帶來不良影響的情況。如防護以及其它零件損傷了。應即委託服務中心或其它適當單位進行修理或更換。開關一發現缺陷，應即委託服務中心加以更換。如開關不能正常地接通或切斷，絕不可使用該電動工具。
20. 不得使用電動工具去進行規定以外的其它作業。
21. 為了防止人體受傷，只能使用本說明書或HIKOKI牌產品目錄中所指定的附件。
22. 只能請授權的服務店來修理本工具。對於因非授權者的修理或因錯誤使用了本工具而造成的工具損傷或人體傷害，本製造公司概不負責。
23. 為了保證設計的完整性，電動工具的蓋罩和螺釘類不可隨便拆除。
24. 除非電線插頭已從電源插座拆下，絕不可接觸轉動部份或附件。
25. 應以低於銘牌上的額定輸入功率進行作業。否則電動機將過載而影響工作精度，並降低效率。
26. 不可使用溶劑擦拭塑料零件。因為：汽油、沖淡劑、輕質汽油、四氯化碳、酒精、阿摩尼亞以及含氯油液等都會使塑料損傷或發生龜裂，所以應避免使用。擦拭塑料製品，可以使用稍微沾濕了肥皂水的柔布。

27. 只能使用HIKOKI指定的更換零件。

28. 本電動工具只在更換碳刷時才可拆解。
29. 進行授權服務時、請使用本說明書中的組裝分解圖。

使用手提電鑽時的注意事項

1. 不要讓手提電鑽做超過性能指定範圍以外的工作。

2. 正確使用手提電鑽，確保操作安全。

3. 使用時握牢手提電鑽。

4. 操作時不要戴手套。
5. 不使用手提電鑽時絕不可任其處於運轉狀態。

6. 避免用力壓手提電鑽使轉速顯著下降。

7. 在高處操作時注意下方。

8. 在往牆上，地板或天在板內鑽孔時，要事先充分了解其中是否埋有電纜或其他管道。

規 格

型 式		LUh7	LUh-DH4	NU-DH4	BUℓ-SH3
電壓（按地區）*		(110V, 115V, 120V, 127V, 220V, 230V, 240V) ∼			
輸入功率*		360W		400W	620W
額定輸出功率		165W		180W	310W
無負荷速度		2200轉／分	3000轉／分	1250轉／分	1100轉／分
能 力	金 屬	6.5mm		10mm	13mm
	木 材	13mm		21mm	30mm
鑽 夾 頭		6.5mm		10mm	13mm
重量（不含線纜）		1.9kg		2.2kg	2.6kg

* 當須改變地區時應檢查產品上的銘牌

標 準 附 件

- <LUh7·LUh-DH4>

(1) 夾持器板手..... 1

<NU-DH4·BUℓ-SH3>

(1) 夾持器板手..... 1

(2) 側 柄..... 1

標準附件可能不預先通告而徑予更改。

用 途

- 在各種金屬，木材和塑料上鑽孔。

作 業 之 前

1. 電 源:

確認所使用的電源與工具銘牌上標示的規格是否相符。
2. 接 地:

這個工具在使用時一定要接地以防操作者受到電擊。工具是配備有三導線和接地式插銷以適應正常接地插座。在電纜中的綠色（或綠和黃）導線是接地線。千萬不要把綠地（綠和黃）線接到火線上。
3. 電源開關:

確認電源開關是否切斷。若電源開關接通，則插頭插入電源插座時電動工具將出其不意地立刻轉動，從而招致嚴重事故。

4. 延伸線纜：

若作業場所移到離開電源的地點，應使用容量足夠，銜裝合適的延伸線纜，並且要盡可能地短些。

注意：損壞的導線一定要更換或修理。

5. 確認工作環境

確認工作場地切實符合使用注意事項的條件。

6. 安裝鑽頭

用夾頭扳手擰緊鑽頭。在夾頭上有三個夾頭扳手可以插入的孔，平均用力擰三個孔固定鑽頭，不要只擰一個孔固定鑽頭。用上述的相反動作即可拆下鑽頭。

○ 怎樣選擇鑽頭

- (1) 在金屬或塑料上鑽孔時
用於LUh7和LUh-DH4
用普通金屬加工鑽頭，可用的鑽頭大小：從最小0.5mm到最大6.5mm。
用於NU-DH 4
用普通金屬加工鑽頭，可用的鑽頭大小：從最小0.8mm到最大10mm。
用於BU l -SH 3
用普通金屬加工鑽頭，可用的鑽頭大小：從最小1.2mm到最大13mm。
- (2) 在木材上鑽孔時
用於LUh7和LUh-DH4
用13mm或尺寸比其小的木工鑽頭。鑽等於或小於6.5mm的小孔徑時用金屬加工鑽頭。
用於NU-DH 4
用21mm或尺寸比其小的木工鑽頭。鑽等於或小於6.5mm的小孔徑時用金屬加工鑽頭。
用於BU l -SH 3
用30mm或尺寸比其小的木工鑽頭。鑽等於或小於6.5mm的小孔徑時用金屬加工鑽頭。

7. 檢查電源插座

如果電源插座上的插頭過鬆，一定要修理。修理時可與附近的電氣店聯系。如果用了這種接觸不良的插座，可能過熱引起各種事故。

手提電鑽的使用方法

1. 手提電鑽的壓力

不可用超過正常的壓力來加快鑽孔速度。這樣不僅會損壞鑽頭尖，降低工作效率，而且會縮短手提電鑽壽命。

2. 穿孔時

穿孔時鑽頭容易折斷破損，所以穿孔時一定要減小壓力。

3. 開關的操作

拉出開關起動器並按下停止器。保持開的狀態以便繼續工作。

4. 關於鑽頭夾頭

鑽頭夾頭是固定在帶圓錐形的主軸上的。如果偶然將鑽頭夾頭從安放夾頭錐形部分及主軸夾頭座上卸下，在使夾頭的三個卡爪縮進後堵住夾頭側面，使夾頭重附在主軸上。小心地裝卸錐形部分，使其表面不出傷痕。

維護和檢查

注意：

在維修檢查時，應關掉電源開關。並將電源插頭拔下。

1. 檢查鑽頭

由於使用磨損後的鑽頭會使馬達工作失常，並會降低效率。所以一旦發現鑽頭磨損，應立即用新的鑽頭或者磨鋒利的鑽頭進行更換。

2. 檢查安裝螺釘

要經常檢查安裝螺釘是否緊固妥善。若發現螺釘鬆了，應立即重新扭緊，否則會導致嚴重的事故。

3. 電動機的維護

電動機繞線是電動工具的心臟部。應仔細檢查有無損傷，是否被油液或水沾濕。

4. 檢查碳刷（圖1）

馬達使用碳刷，它是消耗部品，因為使用過久的碳刷將會導致馬達故障，用具有相同碳刷號的新碳刷去更換舊的，碳刷編號用數字表示碳刷何時用舊或接近於磨損極限。此外，要經常保持碳刷清潔以及保證它在刷握裡能自由滑動。

5. 更換碳刷（圖2）

〈分解〉

- (1) 鬆開四個機器固定螺絲拆下手柄罩。
- (2) 用鉗子拉出楔塊。
- (3) 用打入工具向箭頭方向把碳刷托架和碳刷一起向上推。

注意：要十分小心不要扭曲或損壞導線

- (4) 從碳刷托架拆下碳刷。

〈裝配〉

- (1) 把新碳刷插入碳刷托架內。
- (2) 向箭頭的反方向推碳刷托架。
- (3) 用手指揪住楔塊然後用木鎚輕輕敲進去。要特別小心使碳刷托架不會破損。不可使用破損的碳刷托架。破損的碳刷托架會引起電擊。這時要用新的碳刷托架更換掉破損的碳刷托架。
- (4) 仔細檢查內部導線是否安放在合乎要求的位置上，內部導線或其它元件不應接觸到迴轉部分（轉子）。
- (5) 將手柄罩復位同時應加小心不要使內部導線等卡住外殼，用機器固定螺絲擰緊手柄罩。

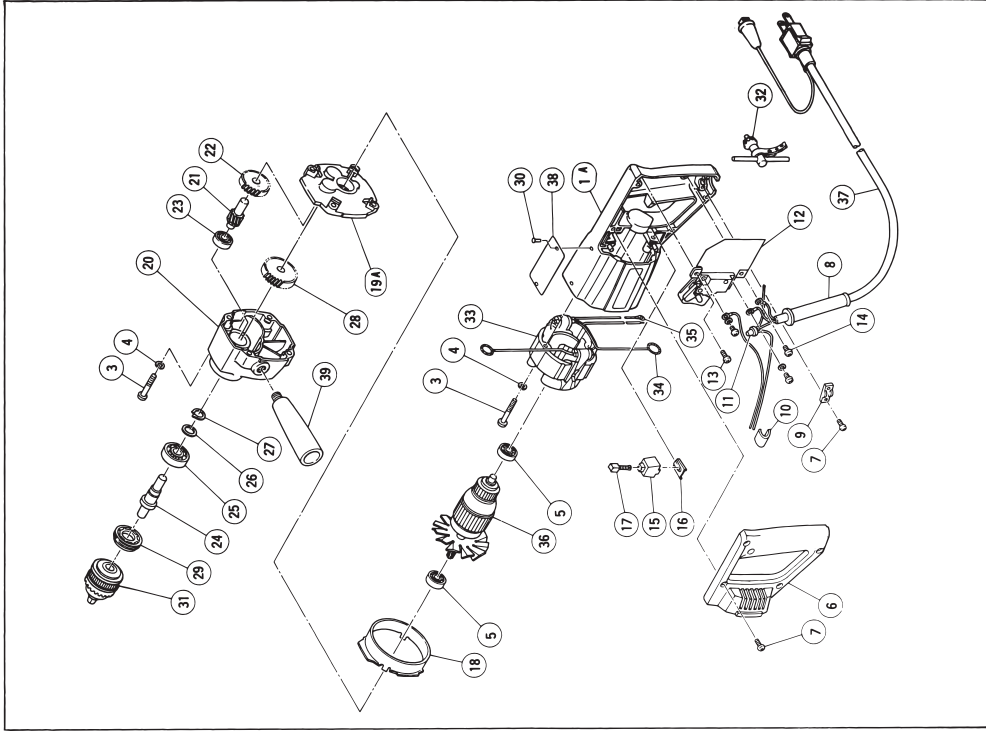
注意：

- 當更換碳刷後重新裝配時應遵照裝配步驟進行。
如果內部導線等接觸到迴轉部分（轉子）或被卡在手柄罩裏，操作者會受到電擊十分危險。要倍加小心。
- 當更換碳刷時除了更換時所需的步驟外擅改步驟。

6. 使用後的保管

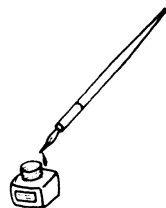
當不使用時，電動工具應保管在乾燥而孩子們又够不着的地方。

注：為求改進，本手冊所載規格可能不預先通告而徑予更改。



Item No.	Part Name
1A	Housing
3	Machine Screw M5×35
4	Spring Lock Washer
5	Ball Bearing (608ZZC2)
6	Handle Cover
7	Machine Screw M4×14
8	Cord Armor
9	Cord Clip
10	Vinyl Tube
11	Connector
12	Switch
13	Machine Screw M4×6
14	Brass Machine Screw M4×6
15	Brush Holder
16	Wedge
17	Carbon Brush
18	Fan Guide
19A	Inner Cover
20	Gear Cover
21	Second Pinion
22	First Gear
23	Ball Bearing (608ZZC2)
24	Spindle
25	Ball Bearing (6201ZZCM)
26	Washer
27	C-Type Retaining Ring
28	Final Gear
29	Bearing Cap
30	Rivet D2.5×3.2
31	Drill Chuck 10ELA
32	Chuck Wrench 6.5G
33	Stator Assy
34	Brush Terminal
35	Terminal (A)
36	Armature
37	Cord
38	Name Plate
39	Side Handle

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 NU-DH4. For other models refer to the drawing and the list.



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