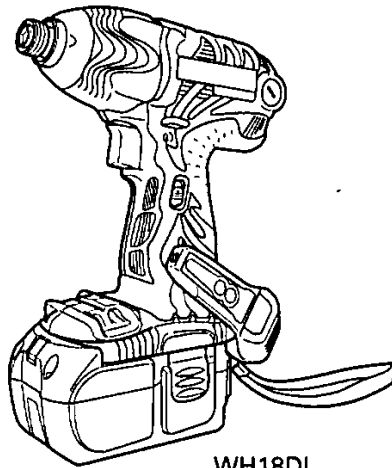


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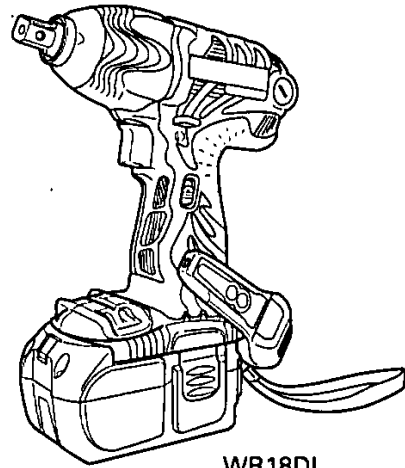
HITACHI

**Cordless Impact Driver/Wrench
Akku-Schlagschrauber
Perceuse/visseuse à percussion sur batterie
Avvitatore a impulso a batteria per viti e bulloni
Snoerloze slagschroevendraaier/sleutel
Atornillador/Llave de impacto a batería
Aparafusadora/Chave de impacto a bateria
Δραπανοκατσάβιδο Μπαταρίας/Κλειδί**

**WH 14DMR · WH 14DL · WH 18DMR · WH 18DL
WR 14DMR · WR 14DL · WR 18DMR · WR 18DL**



WH18DL



WR18DL

Read through carefully and understand these instructions before use.
Diese Anleitung vor Benutzung des Werkzeugs sorgfältig durchlesen und verstehen.
Lire soigneusement et bien assimiler ces instructions avant usage.
Prima dell'uso leggere attentamente e comprendere queste istruzioni.
Deze gebruiksaanwijzing s.v.p. voor gebruik zorgvuldig doorlezen.
Leer cuidadosamente y comprender estas instrucciones antes del uso.
Antes de usar, leia com cuidado para assimilar estas instruções.
Διαβάστε προσεκτικά και κατανοήσετε αυτές τις οδηγίες πριν τη χρήση.

Handling instructions
Bedienungsanleitung
Mode d'emploi
Istruzioni per l'uso
Gebruiksaanwijzing
Instrucciones de manejo
Instruções de uso
Οδηγίες χειρισμού

Hitachi Koki

GENERAL SAFETY RULES

WARNING!

Read all instructions

Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

The term "power tool" in all of the warnings listed below refers to your mains operated (corded) power tool or battery operated (cordless) power tool.

SAVE THESE INSTRUCTIONS

1) Work area

- a) **Keep work area clean and well lit.**
Cluttered and dark areas invite accidents.
- b) **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 of fumes.
- c) **Keep children and bystanders away while operating a power tool.**
Distractions can cause you to lose control.

2) Electrical safety

- a) **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.**
Unmodified plugs and matching outlets will reduce risk of electric shock.
- b) **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.**
There is an increased risk of electric shock if your body is earthed or grounded.
- c) **Do not expose power tools to rain or wet conditions.**
Water entering a power tool will increase the risk of electric shock.
- d) **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.**
Damaged or entangled cords increase the risk of electric shock.
- e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use.**
Use of a cord suitable for outdoor use reduces the risk of electric shock.

3) Personal safety

- a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.**
A moment of inattention while operating power tools may result in serious personal injury.
- b) **Use safety equipment. Always wear eye protection. Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.**
- c) **Avoid accidental starting. Ensure the switch is in the off position before plugging in.**
Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.

- d) **Remove any adjusting key or wrench before turning the power tool on.**

A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

- e) **Do not overreach. Keep proper footing and balance at all times.**

This enables better control of the power tool in unexpected situations.

- f) **Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts.**

Loose clothes, jewellery or long hair can be caught in moving parts.

- g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.**

Use of these devices can reduce dust related hazards.

4) Power tool use and care

- a) **Do not force the power tool. Use the correct power tool for your application.**

The correct power tool will do the job better and safer at the rate for which it was designed.

- b) **Do not use the power tool if the switch does not turn it on and off.**

Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

- c) **Disconnect the plug from the power source before making any adjustments, changing accessories, or storing power tools.**

Such preventive safety measures reduce the risk of starting the power tool accidentally.

- d) **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.**

Power tools are dangerous in the hands of untrained users.

- e) **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools operation.**

If damaged, have the power tool repaired before use.

Many accidents are caused by poorly maintained power tools.

- f) **Keep cutting tools sharp and clean.**

Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

- g) **Use the power tool, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed.**

Use of the power tool for operations different from intended could result in a hazardous situation.

5) Service

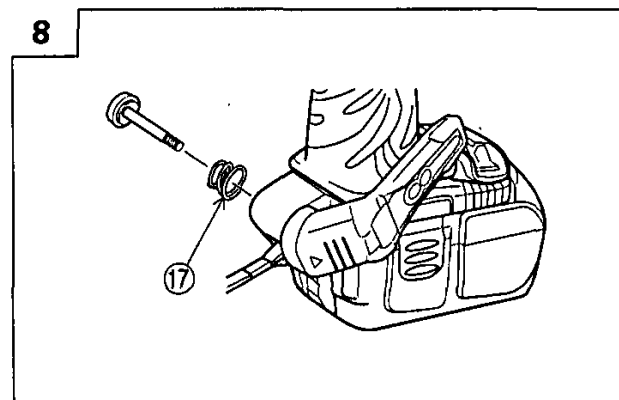
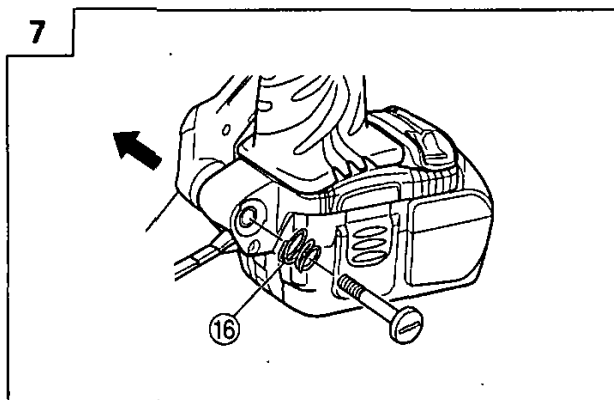
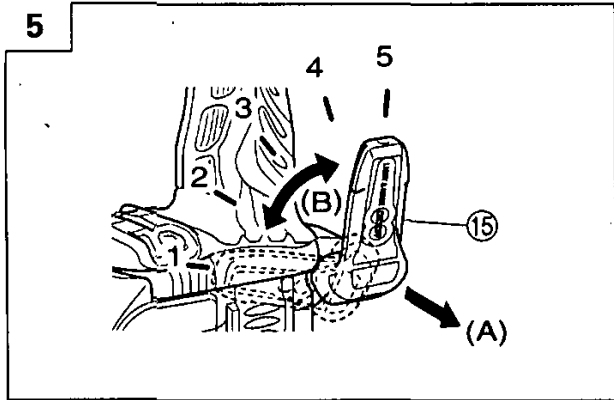
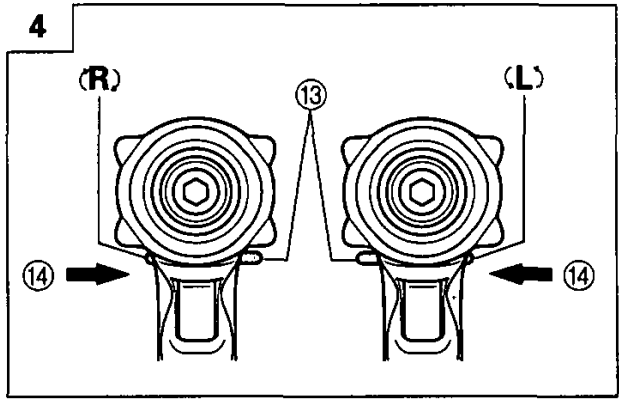
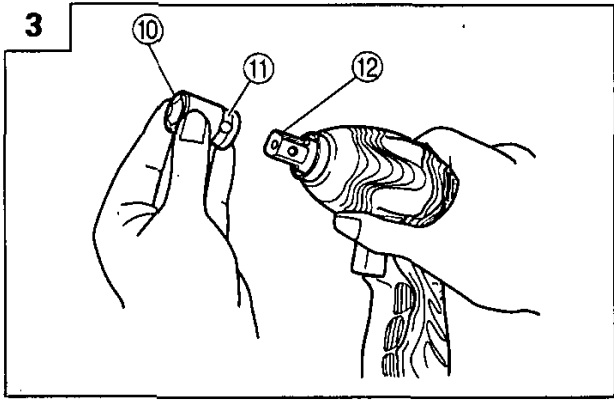
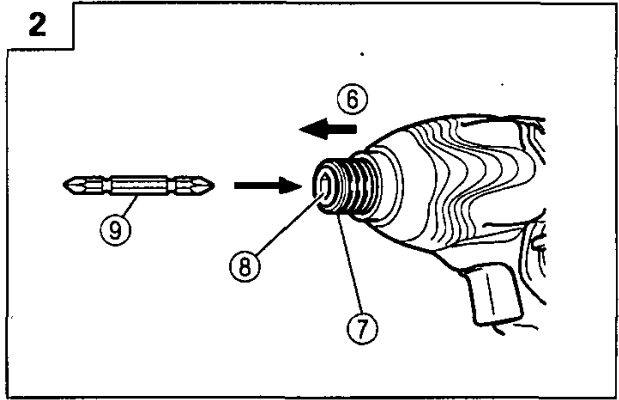
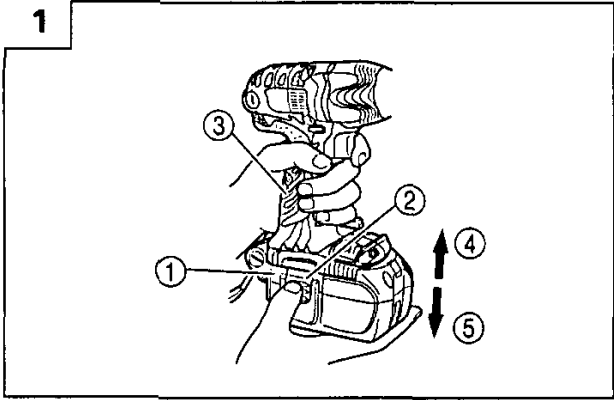
- a) **Have your power tool serviced by a qualified repair person using only identical replacement parts.**

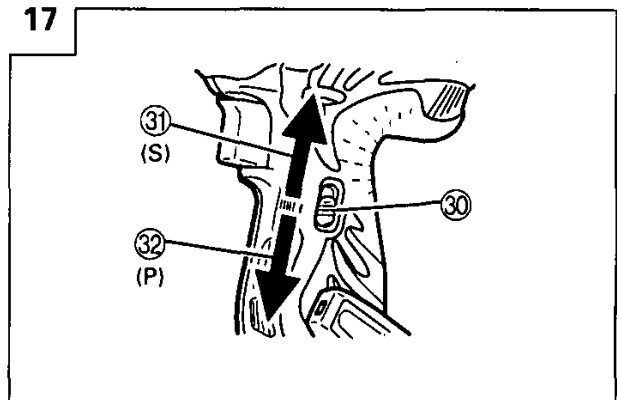
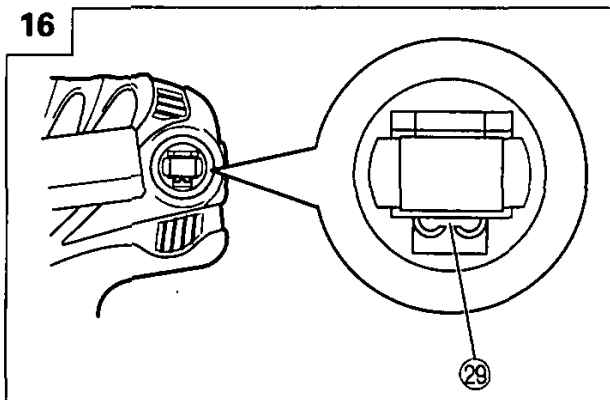
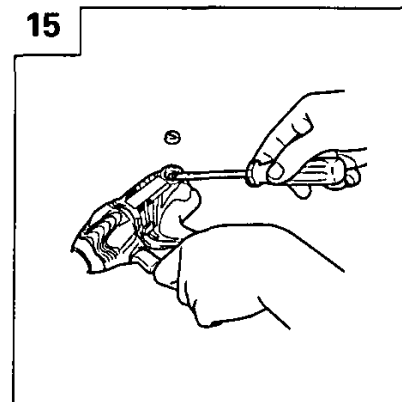
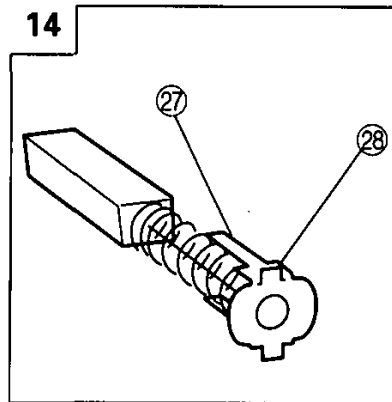
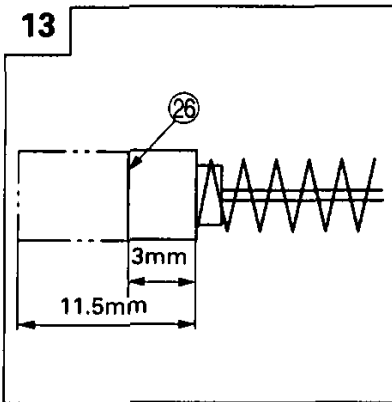
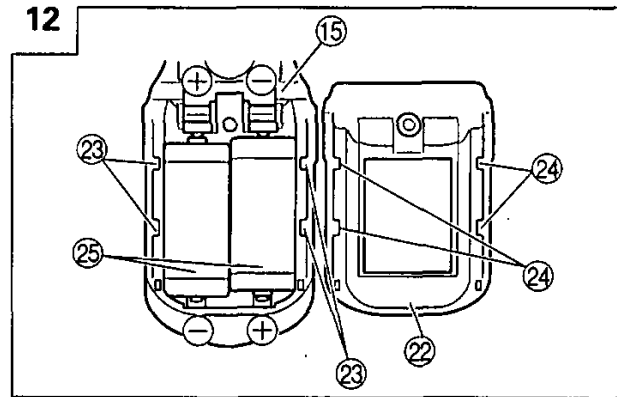
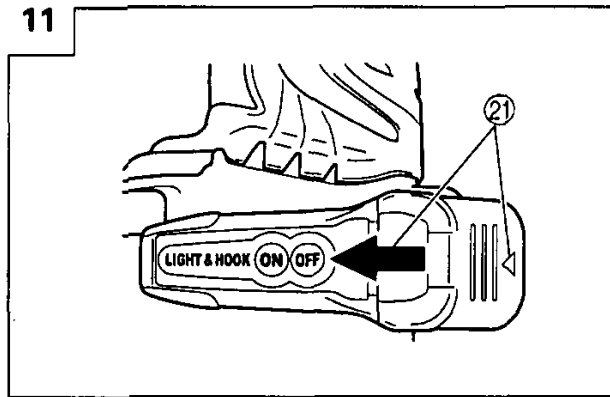
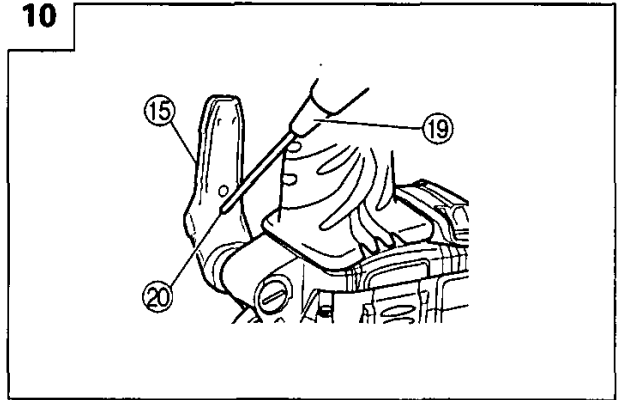
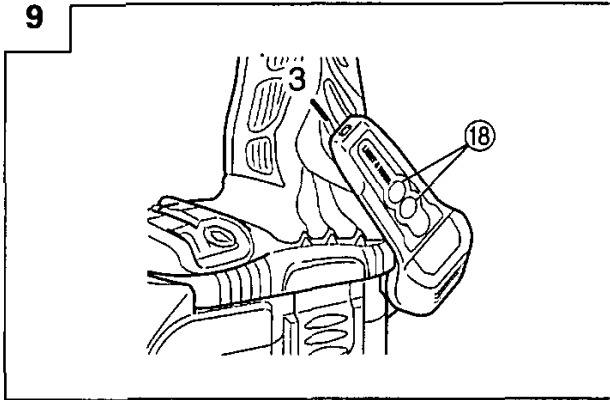
This will ensure that the safety of the power tool is maintained.

PRECAUTION

Keep children and infirm persons away.

When not in use, tools should be stored out of reach of children and infirm persons.





PRECAUTIONS FOR CORDLESS IMPACT DRIVER

1. This is portable tool for tightening and loosening screws. Use it only for these operation.
2. Use the earplugs if using for a long time.
3. One-hand operation is extremely dangerous; hold the unit firmly with both hands when operating.
4. After installing the driver bit, pull lightly out the bit to make sure that it does not come loose. If the bit is not installed properly, it can come loose during use, which can be dangerous.
5. Use the bit that matches the screw.
6. Tightening a screw with the impact driver at an angle to that screw can damage the head of the screw and the proper force will not be transmitted to the screw. Tighten with this impact driver lined up straight with the screw.
7. Always charge the battery at a temperature of 0 – 40°C.
A temperature of less than 0°C will result in over charging which is dangerous. The battery cannot be charged at a temperature greater than 40°C. The most suitable temperature for charging is that of 20 – 25°C.
8. Do not use the charger continuously.
When one charging is completed, leave the charger for about 15 minutes before the next charging of battery.
9. Do not allow foreign matter to enter the hole for connecting the rechargeable battery.
10. Never disassemble the rechargeable battery and charger.
11. Never short-circuit the rechargeable battery.
Short-circuiting the battery will cause a great electric current and overheat. It results in burn or damage to the battery.
12. Do not dispose of the battery in fire.
If the battery burnt, it may explode.
13. Do not insert object into the air ventilation slots of the charger.
Inserting metal objects or inflammables into the charger air ventilation slots will result in electrical shock hazard or damaged charger.
14. Bring the battery to the shop from which it was purchased as soon as the post-charging battery life becomes too short for practical use. Do not dispose of the exhausted battery.
15. Using an exhausted battery will damage the charger.

PRECAUTIONS FOR CORDLESS IMPACT WRENCH

1. This is a portable tool for tightening and loosening bolts and nuts. Use it only for these operation.
2. Use the earplugs if using for a long time.
3. One-hand operation is extremely dangerous; hold the unit firmly with both hands when operating.
4. Check that the socket is not cracked or broken. Broken or cracked sockets are dangerous. Check the socket before using it.
5. Secure the socket with the socket pin and the ring. If the socket pin or ring securing the socket is damaged, the socket may come off from the impact wrench, which is quite dangerous. Do not use socket pins or rings that are deformed, worn out, cracked, or in any other way damaged. Always make sure to install the socket pin and ring in the correct position.
6. Check the tightening torque.
The appropriate torque for tightening a bolt depends on the material the bolt is made of, its dimensions, grade, etc.

Also, the tightening torque generated by this impact wrench depends on the materials and dimensions of the bolt, how long the impact wrench is applied for the way in which the socket is installed, etc.

Also the torque when the battery has just been charged and when it is about to run out are slightly different. Use a torque wrench to check that the bolt has been tightened with the appropriate torque.

7. Stop the impact wrench before switching the direction of rotation. Always release the switch and wait for impact wrench to stop before switching the direction of rotation.
8. Never touch the turning part.
Do not allow the turning socket section to get near your hands or any other part of your body. You could be cut or caught in the socket. Also, be careful not to touch the socket after using continuously it for a long time. It gets quite hot and could burn you.
9. Never let the impact wrench turn without a load when using the universal joint.
If the socket turns without being connected to a load, the universal joint causes the socket to turn wildly.
You could get hurt or the movement of the socket could shake the impact wrench so much as to make you drop it.
10. Always charge the battery at a temperature of 0 – 40°C.
A temperature of less than 0°C will result in over charging which is dangerous. The battery cannot be charged at a temperature greater than 40°C. The most suitable temperature for charging is that of 20 – 25°C.
11. Do not use the charger continuously.
When one charging is completed, leave the charger for about 15 minutes before the next charging of battery.
12. Do not allow foreign matter to enter the hole for connecting the rechargeable battery.
13. Never disassemble the rechargeable battery and charger.
14. Never short-circuit the rechargeable battery.
Short-circuiting the battery will cause a great electric current and overheat. It results in burn or damage to the battery.
15. Do not dispose of the battery in fire.
If the battery burnt, it may explode.
16. Do not insert object into the air ventilation slots of the charger.
Inserting metal objects or inflammables into the charger air ventilation slots will result in electrical shock hazard or damaged charger.
17. Bring the battery to the shop from which it was purchased as soon as the post-charging battery life becomes too short for practical use. Do not dispose of the exhausted battery.
18. Using an exhausted battery will damage the charger.

CAUTION ON LITHIUM-ION BATTERY

To extend the lifetime, the lithium-ion battery equips with the protection function to stop the output. In the cases of 1 and 2 described below, when using this product, even if you are pulling the switch, the motor may stop. This is not the trouble but the result of protection function.

1. When the battery power remaining runs out (The battery voltage drops to about 12V (WH18DL, WR18DL) / about 8V (WH14DL, WR14DL)), the motor stops. In such case, charge it up immediately.
2. If the tool is overloaded, the motor may stop. In this case, release the switch of tool and eliminate causes of overloading. After that, you can use it again.

SPECIFICATIONS

Cordless Impact Driver

Model		WH14DMR	WH14DL	WH18DMR	WH18DL
Voltage		14.4V		18V	
No-Load speed	Power mode	0 – 2600 min ⁻¹			
	Save mode	0 – 2000 min ⁻¹			
Capacity (Ordinary bolt)		M6 – M14			
Tightening torque (Maximum)	Power mode	140 N·m		150 N·m	
	Save mode	75 N·m		80 N·m	
Rechargeable battery	2.0 Ah	EB14B: Ni-Cd (12 cells)	x	EB1820L: Ni-Cd (15 cells)	x
	2.6 Ah	EB1426H: Ni-MH (12 cells)	x	EB1826H: Ni-MH (15 cells)	x
	3.0 Ah	EB1430H: Ni-MH (12 cells)	EBL1430: Li-ion (4 cells)	EB1830H: Ni-MH (15 cells)	EBM1830: Li-ion (10 cells)
	3.3 Ah	EB1433X: Ni-MH (12 cells)	x	EB1833X: Ni-MH (15 cells)	x
Weight		1.8 Kg	1.5 Kg	2.0 Kg	1.6 Kg

Cordless Impact Wrench

Model		WR14DMR	WR14DL	WR18DMR	WR18DL
Voltage		14.4V		18V	
No-Load speed	Power mode	0 – 2600 min ⁻¹			
	Save mode	0 – 2000 min ⁻¹			
Capacity (Ordinary bolt)		M10 – M16			
Tightening torque (Maximum)	Power mode	200 N·m		220 N·m	
	Save mode	110 N·m		120 N·m	
Rechargeable battery	2.0 Ah	EB14B: Ni-Cd (12 cells)	x	EB1820L: Ni-Cd (15 cells)	x
	2.6 Ah	EB1426H: Ni-MH (12 cells)	x	EB1826H: Ni-MH (15 cells)	x
	3.0 Ah	EB1430H: Ni-MH (12 cells)	EBL1430: Li-ion (4 cells)	EB1830H: Ni-MH (15 cells)	EBM1830: Li-ion (10 cells)
	3.3 Ah	EB1433X: Ni-MH (12 cells)	x	EB1833X: Ni-MH (15 cells)	x
Weight		1.8 Kg	1.5 Kg	2.0 Kg	1.6 Kg

Charger

Model		UC14YFA	UC24YFA	UC18YG	UC18YRL
Charging voltage		7.2 – 14.4 V	7.2 – 24 V	7.2 – 18 V	7.2 – 18 V
Charging time	2.0 Ah : Ni-Cd	50 min.	50 min.	50 min.	30 min.
	2.6 Ah : Ni-MH	65 min.	65 min.	x	40 min.
	3.0 Ah : Ni-MH	70 min.	70 min.	x	45 min.
	3.3 Ah : Ni-MH	75 min.	75 min.	x	50 min.
	3.0 Ah : Li-ion	x	x	x	45 min.
Weight		0.6 Kg	0.6 Kg	0.3 Kg	0.6 Kg

Charge time is approximate. Actual charge time may vary.

“x” indicates that the battery pack is not compatible with that specific charger.

(UC18YG)

Before using the impact driver or impact wrench, charge the battery as follows.

1. **Connect the charger power cord to the receptacle**
Connecting the power cord will turn on the charger.
2. **Insert the battery into the charger**
Insert the battery firmly while observing its direction, until it contacts the bottom of the charger (the pilot lamp lights up).

CAUTION

If the pilot lamp does not light up, pull out the power cord from the receptacle and check the battery mounting condition.

About 50 minutes is required to fully charge the battery at a temperature of about 20°C. The pilot lamp goes off to indicate that the battery is fully charged.

The battery charging time becomes longer when a temperature is low or the voltage of the power source is too low.

When the pilot lamp does not go off even if more than 120 minutes have elapsed after starting of the charging, stop the charging and contact your HITACHI AUTHORIZED SERVICE CENTER.

CAUTION

If the battery is heated due to direct sunlight, etc., just after operation, the charger pilot lamp may not light up. At that time, cool the battery first, then start charging.

3. **Disconnect the charger power cord from the receptacle**
4. **Hold the charger tight and pull out the battery**

Regarding electric discharge in case of new batteries, etc.

As the internal chemical substance of new batteries and batteries that have not been used for an extended period is not activated, the electric discharge might be low when using them the first and second time. This is a temporary phenomenon, and normal time required for recharging will be restored by recharging the batteries 2 – 3 times.

How to make the batteries perform longer

- (1) Recharge the batteries before they become completely exhausted.
When you feel that the power of the tool becomes weaker, stop using the tool and recharge its battery. If you continue to use the tool and exhaust the electric current, the battery may be damaged and its life will become shorter.
- (2) Avoid recharging at high temperatures.
A rechargeable battery will be hot immediately after use. If such a battery is recharged immediately after use, its internal chemical substance will deteriorate, and the battery life will be shortened. Leave the battery and recharge it after it has cooled for a while.

PRIOR TO OPERATION

1. **Preparing and checking the work environment**
Make sure that the work site meets all the conditions laid forth in the precautions.

2. Checking the battery

Make sure that the battery is installed firmly. If it is at all loose it could come off and cause an accident.

3. Installing the bit (Impact driver)

Always follow the following procedure to install driver bit (Fig. 2).

- (1) Pull the guide sleeve ⑦ away from front of the tool.
- (2) Insert the bit ⑨ into the hexagonal hole in the anvil ⑧.
- (3) Release the guide sleeve ⑦ and it returns to its original position.

CAUTION

If the guide sleeve does not return to its original position, then the bit is not installed properly.

4. Selecting the socket matched to the bolt (Impact wrench)

Be sure to use a socket which is matched to the bolt to be tightened. Using an improper socket will not only result in insufficient tightening but also in damage to the socket or nut.

A worn or deformed hex. or square-holed socket will not give an adequate tightness for fitting to the nut or anvil, consequently resulting in loss of tightening torque.

Pay attention to wear of socket hole, and replace before further wear has developed.

5. Installing a socket (Impact wrench)

Select the socket to be used.

● Pin, O-ring type

- (1) Align the hole in the socket with the hole in the anvil and insert the anvil into the socket.
- (2) Insert the pin into the socket.
- (3) Attach the ring to the groove on the socket.

● Plunger type (Fig. 3)

Align the plunger located in the square part of the anvil ⑫ with the hole in the hex. socket ⑩. Then push the plunger, and mount the hex. socket ⑩ on the anvil ⑫. Check that the plunger is fully engaged in the hole. When removing the socket ⑩, reverse the sequence.

● Retaining ring type

- (1) Align the square portions of the socket and the anvil with each other.
- (2) Make sure to firmly install the socket by pushing it all the way into the anvil.
- (3) When removing the socket, pull it out of the anvil.

CAUTION

- Please use the designated attachments which are listed in the operations manual and Hitachi's catalog. Accidents or injuries could result from not doing so.
- Make sure to firmly install the socket in the anvil. If the socket is not firmly installed it might come out and cause injuries.

HOW TO USE

CAUTION on lithium-ion battery

To extend the lifetime, the lithium-ion battery equips with the protection function to stop the output. Therefore, if the tool is overloaded, the motor may stop. However, this is not the trouble but the result of protection function. In this case, release the switch of tool and eliminate the causes of overloading.

CAUTION

- When using the light equipped hook, pay sufficient attention so that the main equipment does not fall. If the tool falls, there is a risk of accident.

- Do not attach the tip tool except phillips bit to the tool main unit when carrying the tool main unit with the light equipped hook suspended from a waist belt. Injury may result if you carry the equipment suspended from the waist belt with sharp tipped components such as drill bit attached.

1. Using the light equipped hook

The light equipped hook can be installed on the right or left side and the angle can be adjusted in 5 steps between 0° and 80°.

- (1) Operating the hook
 - (a) Pull out the hook ⑮ toward you in the direction of arrow (A) and turn in the direction of arrow (B) (Fig. 5).
 - (b) The angle can be adjusted in 5 steps (0°, 20°, 40°, 60°, 80°).
Adjust the angle of the hook to the desired position for use.

(2) Switching the hook position

CAUTION

Incomplete installation of the hook may result in bodily injury when used.

- (a) Securely hold the main unit and remove the screw using a slotted head screwdriver or a coin (Fig. 6).
- (b) Remove the hook ⑮ and spring ⑯ (Fig. 7).
- (c) Install the hook ⑮ and spring ⑯ on the other side and securely fasten with screw (Fig. 8).

NOTE

Pay attention to the spring ⑯ orientation. Install the spring ⑯ with larger diameter ⑰ away from you (Fig. 8).

- (3) Using as an auxiliary light
 - (a) Press the switch ⑱ to turn off the light.
If forgotten, the light will turn off automatically after 15 minutes.
 - (b) The direction of the light can be adjusted within the range of hook positions 1 – 5 (Fig. 9).
 - Lighting time
AAAA manganese batteries: approx. 15 hrs.
AAAA alkali batteries: approx. 30 hrs.

CAUTION

Do not look directly into the light.
Such actions could result in eye injury.

- (4) Replacing the batteries
 - (a) Loosen the hook screw ⑳ with a phillips-head screwdriver (No. 1) ⑲ (Fig. 10).
Remove the hook cover ㉑ by pushing in the direction of the arrow (Fig. 11).
 - (b) Remove the old batteries and insert the new batteries. Align with the hook indications and position the plus (+) and minus (-) terminals correctly (Fig. 12).
 - (c) Align the indentation in the hook ⑮ main body with the protuberance of the hook cover ㉑, press the hook cover ㉑ in the direction opposite to that of the arrow ㉒ shown in Fig. 11 and then tighten the screw.
Use commercially available AAAA batteries (1.5 V) ㉓.

NOTE

Do not tighten the screw excessively. Such action could strip the screw threads.

CAUTION

- Failure to observe the following can result in battery leakage, rust or malfunction.

Position the plus (+) and minus (-) terminals correctly. Replace both batteries at the same time. Do not mix old and new batteries.

Remove exhausted batteries from the hook immediately.

- Do not discard batteries together with normal trash and do not throw batteries into fire.
- Store batteries out of the reach of children.
- Use batteries correctly in accordance with the battery specifications and indications.

2. Check the rotational direction

The bit rotates clockwise (viewed from the rear side) by pushing the R-side of the push button ㉔.

The L-side of the push button is pushed to turn the bit counterclockwise (See Fig. 4) (The (L) and (R) marks are provided on the body).

CAUTION

The push button cannot be switched while the impact driver is turning. To switch the push button, stop the impact driver, then set the push button.

3. Switch operation

- When the trigger switch is depressed, the tool rotates. When the trigger is released, the tool stops.
- The rotational speed can be controlled by varying the amount that the trigger switch is pulled. Speed is low when the trigger switch is pulled slightly and increases as the trigger switch is pulled more.

4. Change rotation speed

As shown in Fig.17, when the rotation switch-over lever ㉕ is slid to the lower side, the power mode ㉖ (P) is set. And when slid to upper side, the save mode ㉗ (S) is set.

Please use the save mode (S) when you want to lower Maximum tightening torque.

CAUTION

In the work of the save mode (S), avoid the continuous screw-tightening as temperature of electronic components of the converter switch increases.

5. Tightening and loosening screws (Impact driver)

Install the bit that matches the screw, line up the bit in the grooves of the head of the screw, then tighten it. Push the impact driver just enough to keep the bit fitting the head of the screw.

CAUTION

Applying the impact driver for too long tightens the screw too much and can break it.

Tightening a screw with the impact driver at an angle to that screw can damage the head of the screw and the proper force will not be transmitted to the screw. Tighten with this impact driver lined up straight with the screw.

OPERATIONAL CAUTIONS

1. Resting the unit after continuous work

After use for continuous bolt-tightening work, rest the unit for 15 minutes or so when replacing the battery. The temperature of the motor, switch, etc., will rise if the work is started again immediately after battery replacement, eventually resulting in burnout.

NOTE

Do not touch the protector, as it gets very hot during continuous work.

2. Cautions on use of the speed control switch

This switch has a built-in, electronic circuit which steplessly varies the rotation speed. Consequently, when the switch trigger is pulled only slightly (low speed rotation) and the motor is stopped while continuously driving in screws, the components of the electronic circuit parts may overheat and be damaged.

3. Use a tightening time suitable for the screw

The appropriate torque for a screw differs according to the material and size of the screw, and the material being screwed etc., so please use a tightening time suitable for the screw. In particular, if a long tightening time is used in the case of screws smaller than M8, there is a danger of the screw breaking, so please confirm the tightening time and the tightening torque beforehand.

4. Work at a tightening torque suitable for the bolt under impact

The optimum tightening torque for nuts or bolts differs with material and size of the nuts or bolts. An excessively large tightening torque for a small bolt may stretch or break the bolt. The tightening torque increases in proportion to the operation time. Use the correct operating time for the bolt.

5. Holding the tool

Hold the impact wrench firmly with both hands. In this case hold the wrench in line with the bolt.

It is not necessary to push the wrench very hard. Hold the wrench with a force just sufficient to counteract the impact force.

6. Confirm the tightening torque

The following factors contribute to a reduction of the tightening torque. So confirm the actual tightening torque needed by screwing up some bolts before the job with a hand torque wrench. Factors affecting the tightening torque are as follows.

(1) Voltage

When the discharge margin is reached, voltage decreases and tightening torque is lowered.

(2) Operating time

The tightening torque increases when the operating time increases. But the tightening torque does not increase above a certain value even if the tool is driven for a long time.

(3) Diameter of bolt

The tightening torque differs with the diameter of the bolt. Generally a larger diameter bolt requires larger tightening torque.

(4) Tightening conditions

The tightening torque differs according to the torque ratio; class, and length of bolts even when bolts with the same size threads are used. The tightening torque also differs according to the condition of the surface of workpiece through which the bolts are to be tightened. When the bolt and nut turn together, torque is greatly reduced.

(5) Using optional parts (Impact wrench)

The tightening torque is reduced a little when an extension bar, universal joint or a long socket is used.

(6) Clearance of the socket (Impact wrench)

A worn or deformed hex. or a square-holed socket will not give an adequate tightness to the fitting between the nut or anvil, consequently resulting in loss of tightening torque.

Using an improper socket which does not match to the bolt will result in an insufficient tightening torque.

MAINTENANCE AND INSPECTION

1. Inspecting the driver bit (Impact driver)

Using a broken bit or one with a worn out tip is dangerous because the bit can slip. Replace it.

2. Inspecting the socket (Impact wrench)

A worn or deformed hex. or a square-holed socket will not give an adequate tightness to the fitting between the nut or anvil, consequently resulting in loss of tightening torque. Pay attention to wear of a socket holes periodically, and replace with a new one if needed.

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 may result in serious hazard.

4. 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.


5. Inspecting the carbon brushes (Fig. 13)



The motor employs carbon brushes which are consumable parts. Since an excessively worn carbon brush can result in motor trouble, replace the carbon brush with new ones 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.

NOTE

When replacing the carbon brush with a new one, be sure to use the Hitachi Carbon Brush Code No. 999054.

6. Replacing carbon brushes

Take out the carbon brush by first removing the brush cap and then hooking the protrusion of the carbon brush  with a slotted head screw driver, etc., as shown in Fig. 15.

When installing the carbon brush, choose the direction so that the nail of the carbon brush  agrees with the contact portion outside the brush tube . Then push it in with a finger as illustrated in Fig. 16. Lastly, install the brush cap.

CAUTION

Be absolutely sure to insert the nail of the carbon brush into the contact portion outside the brush tube. (You can insert whichever one of the two nails provided.)

Caution must be exercised since any error in this operation can result in the deformed nail of the carbon brush and may cause motor trouble at an early stage.

7. Cleaning of the outside

When the impact driver and impact wrench are stained, wipe with a soft dry cloth or a cloth moistened with soapy water. Do not use chloric solvents, gasoline or paint thinner, as they melt plastics.

8. Storage

Store the impact driver and impact wrench in a place in which the temperature is less than 40°C, and out of reach of children.

9. Service parts list

CAUTION:

Repair, modification and inspection of Hitachi Power Tools must be carried out by a Hitachi Authorized Service Center.

This Parts List will be helpful if presented with the tool to the Hitachi Authorized Service Center when requesting repair or other maintenance. In the operation and maintenance of power tools, the safety regulations and standards prescribed in each country must be observed.

MODIFICATION:

Hitachi Power Tools are constantly being improved and modified to incorporate the latest technological advancements.

Accordingly, some parts may be changed without prior notice.

GUARANTEE

We guarantee Hitachi Power Tools in accordance with statutory/country specific regulation. This guarantee does not cover defects or damage due to misuse, abuse, or normal wear and tear. In case of complaint, please send the Power Tool, undismantled, with the GUARANTEE CERTIFICATE found at the end of this Handling instruction, to a Hitachi Authorized Service Center.

NOTE

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

IMPORTANT

Correct connection of the plug

The wires of the mains lead are coloured in accordance with the following code:

Blue: -Neutral
Brown: -Live

As the colours of the wires in the mains lead of this tool may not correspond with the coloured markings identifying the terminals in your plug proceed as follows: The wire coloured blue must be connected to the terminal marked with the letter N or coloured black.

The wire coloured brown must be connected to the terminal marked with the letter L or coloured red.

Neither core must be connected to the earth terminal.

NOTE

This requirement is provided according to BRITISH STANDARD 2769: 1984.

Therefore, the letter code and colour code may not be applicable to other markets except United Kingdom.

Information concerning airborne noise and vibration

The measured values were determined according to EN60745 and declared in accordance with ISO 4871.

Measured A-weighted sound power level:

100dB (WH14DMR, WH14DL)

101dB (WR14DMR, WR14DL,

WH18DMR, WH18DL)

103dB (WR18DMR, WR18DL)

Measured A-weighted sound pressure level:

89dB (WH14DMR, WH14DL)

90dB (WR14DMR, WR14DL,

WH18DMR, WH18DL)

92dB (WR18DMR, WR18DL)

Uncertainty KpA:3dB(A)

Wear ear protection.

The typical weighted root mean square acceleration value:

9.1 m/s² (WH14DMR, WH14DL)

7.4 m/s² (WR14DMR, WR14DL)

9.2 m/s² (WH18DMR, WH18DL)

6.3 m/s² (WR18DMR, WR18DL)

ALLGEMEINE SICHERHEITSMASSNAHMEN

WARNUNG!

Lesen Sie sämtliche Hinweise durch
Wenn nicht sämtliche nachstehenden Anweisungen befolgt werden, kann es zu Stromschlag, Brand und/oder ernsthaften Verletzungen kommen.
Der Begriff „Elektrowerkzeug“ bezieht sich in den folgenden Warnhinweisen auf Elektrowerkzeuge mit Netz- (schnurgebunden) oder Akkubetrieb (schnurlos).

BEWAHREN SIE DIESE ANWEISUNGEN AUF

1) Arbeitsbereich

- a) Sorgen Sie für einen sauberen und gut ausgeleuchteten Arbeitsbereich.
Zugestellte und dunkle Bereiche ziehen Unfälle förmlich an.
- b) Verwenden Sie Elektrowerkzeuge niemals an Orten, an denen Explosionsgefahr besteht – zum Beispiel in der Nähe von leicht entflammaren Flüssigkeiten, Gasen oder Stäuben.
Bei der Arbeit mit Elektrowerkzeugen kann es zu Funkenbildung kommen, wodurch sich Stäube oder Dämpfe entzünden können.
- c) Sorgen Sie bei der Arbeit mit Elektrowerkzeugen dafür, dass sich keine Zuschauer (insbesondere Kinder) in der Nähe befinden.
Wenn Sie abgelenkt werden, können Sie die Kontrolle über das Werkzeug verlieren.

2) Elektrische Sicherheit

- a) Elektrowerkzeuge müssen mit passender Stromversorgung betrieben werden.
Nehmen Sie niemals irgendwelche Änderungen am Anschlussstecker vor.
Verwenden Sie bei Elektrowerkzeugen mit Schutzkontakt (geerdet) niemals Adapterstecker.
Stecker im Originalzustand und passende Steckdosen reduzieren das Stromschlagrisiko.
- b) Vermeiden Sie Körperkontakt mit geerdeten Gegenständen wie Rohrleitungen, Heizungen, Herden oder Kühlschränken.
Bei Körperkontakt mit geerdeten Gegenständen besteht ein erhöhtes Stromschlagrisiko.
- c) Setzen Sie Elektrowerkzeuge niemals Regen oder sonstiger Feuchtigkeit aus.
Wenn Flüssigkeiten in ein Elektrowerkzeug eindringen, erhöht sich das Stromschlagrisiko.
- d) Verwenden Sie die Anschlusschnur nicht missbräuchlich. Tragen Sie das Elektrowerkzeug niemals an der Anschlusschnur, ziehen Sie es nicht damit heran und ziehen Sie den Stecker nicht an der Anschlusschnur aus der Steckdose. Halten Sie die Anschlusschnur von Hitzequellen, Öl, scharfen Kanten und beweglichen Teilen fern.
Beschädigte oder verdrehte Anschlusschnüre erhöhen das Stromschlagrisiko.
- e) Wenn Sie ein Elektrowerkzeug im Freien benutzen, verwenden Sie ein für den Außeneinsatz geeignetes Verlängerungskabel.
Ein für den Außeneinsatz geeignetes Kabel vermindert das Stromschlagrisiko.

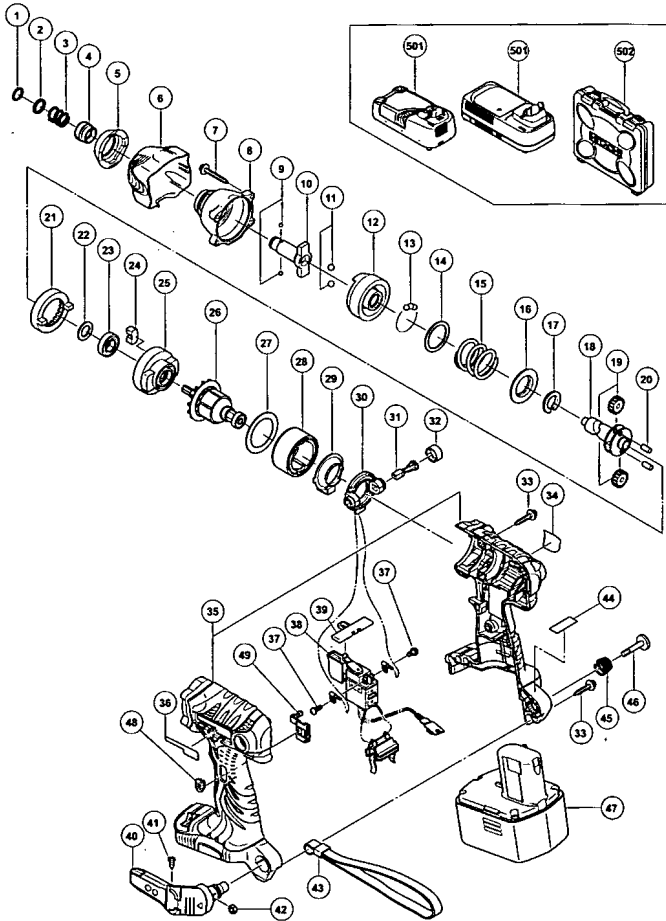
3) Persönliche Sicherheit

- a) Bleiben Sie wachsam, achten Sie auf das, was Sie tun, und setzen Sie Ihren Verstand ein, wenn Sie mit Elektrowerkzeugen arbeiten.
Benutzen Sie keine Elektrowerkzeuge, wenn Sie müde sind oder unter Einfluss von Drogen, Alkohol oder Medikamenten stehen.

Bei der Arbeit mit Elektrowerkzeugen können bereits kurze Phasen der Unaufmerksamkeit zu schweren Verletzungen führen.

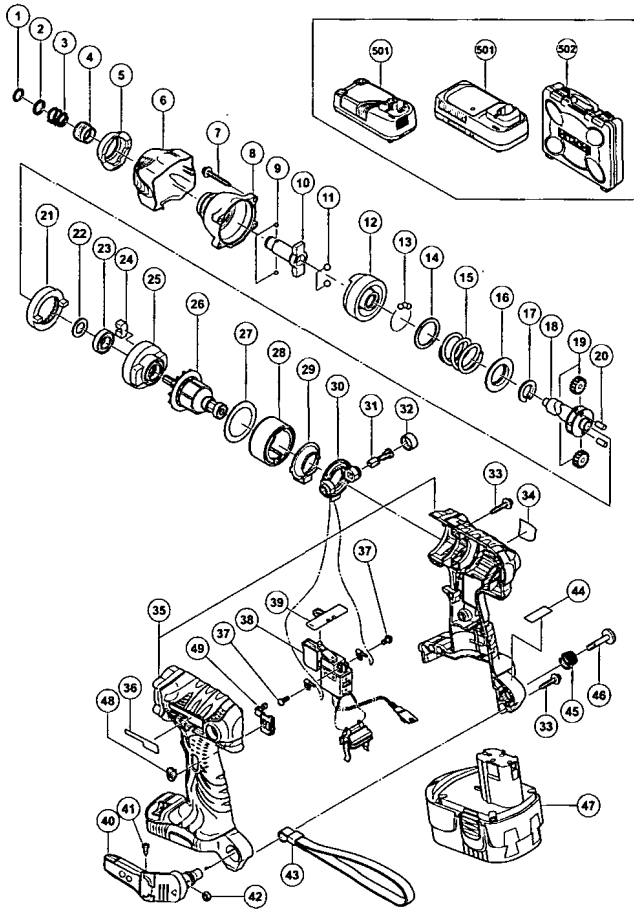
- b) Benutzen Sie Schutzausrüstung. Tragen Sie immer einen Augenschutz.
Schutzausrüstung wie Staubmaske, rutschsichere Sicherheitsschuhe, Schutzhelm und Gehörschutz senken das Verletzungsrisiko bei angemessenem Einsatz.
 - c) Vermeiden Sie unbeabsichtigten Anlauf. Achten Sie darauf, dass sich der Schalter in der Aus- (Off-) Position befindet, ehe Sie den Stecker einstecken.
Das Herumtragen von Elektrowerkzeugen mit dem Finger am Schalter und das Einstecken des Steckers bei betätigtem Schalter zieht Unfälle regelrecht an.
 - d) Entfernen Sie sämtliche Einstellwerkzeuge (Einstellschlüssel), ehe Sie das Elektrowerkzeug einschalten.
Ein an einem beweglichen Teil des Elektrowerkzeugs angebrachter Schlüssel kann zu Verletzungen führen.
 - e) Sorgen Sie für einen festen Stand. Achten Sie jederzeit darauf, sicher zu stehen und das Gleichgewicht zu bewahren.
Dadurch haben Sie das Elektrowerkzeug in unerwarteten Situationen besser im Griff.
 - f) Kleiden Sie sich richtig. Tragen Sie keine lose Kleidung oder Schmuck. Halten Sie Haar, Kleidung und Handschuhe von beweglichen Teilen fern.
Lose Kleidung, Schmuck oder langes Haar kann von beweglichen Teilen erfasst werden.
 - g) Wenn Anschlüsse für Staubabsaug- und -sammelvorrichtungen vorhanden sind, sorgen Sie dafür, dass diese richtig angeschlossen und eingesetzt werden.
Die Verwendung solcher Vorrichtungen kann Staub-bezogene Gefahren mindern.
- #### **4) Einsatz und Pflege von Elektrowerkzeugen**
- a) Überansprechen Sie Elektrowerkzeuge nicht. Benutzen Sie das richtige Elektrowerkzeug für Ihren Einsatzzweck.
Das richtige Elektrowerkzeug erledigt seine Arbeit bei bestimmungsgemäßem Einsatz besser und sicherer.
 - b) Benutzen Sie das Elektrowerkzeug nicht, wenn es sich nicht am Schalter ein- und ausschalten lässt. Jedes Elektrowerkzeug, das nicht mit dem Schalter betätigt werden kann, stellt eine Gefahr dar und muss repariert werden.
 - c) Ziehen Sie den Netzstecker, ehe Sie Einstellarbeiten vornehmen, Zubehörtelle tauschen oder das Elektrowerkzeug verstauen.
Solche präventiven Sicherheitsmaßnahmen verhindern den unbeabsichtigten Anlauf des Elektrowerkzeugs und die damit verbundenen Gefahren.
 - d) Lagern Sie nicht benutzte Elektrowerkzeuge außerhalb der Reichweite von Kindern, lassen Sie nicht zu, dass Personen das Elektrowerkzeug bedienen, die nicht mit dem Werkzeug selbst und/oder diesen Anweisungen vertraut sind.
Elektrowerkzeuge in ungeschulten Händen sind gefährlich.
 - e) Halten Sie Elektrowerkzeuge in Stand. Prüfen Sie auf Fehlausrichtungen, sicheren Halt und Leichtgängigkeit beweglicher Teile, Beschädigungen von Teilen und auf jegliche andere Zustände, die sich auf den Betrieb des Elektrowerkzeugs auswirken können.
Bei Beschädigungen lassen Sie das Elektrowerkzeug reparieren, ehe Sie es benutzen.

WH14DMR



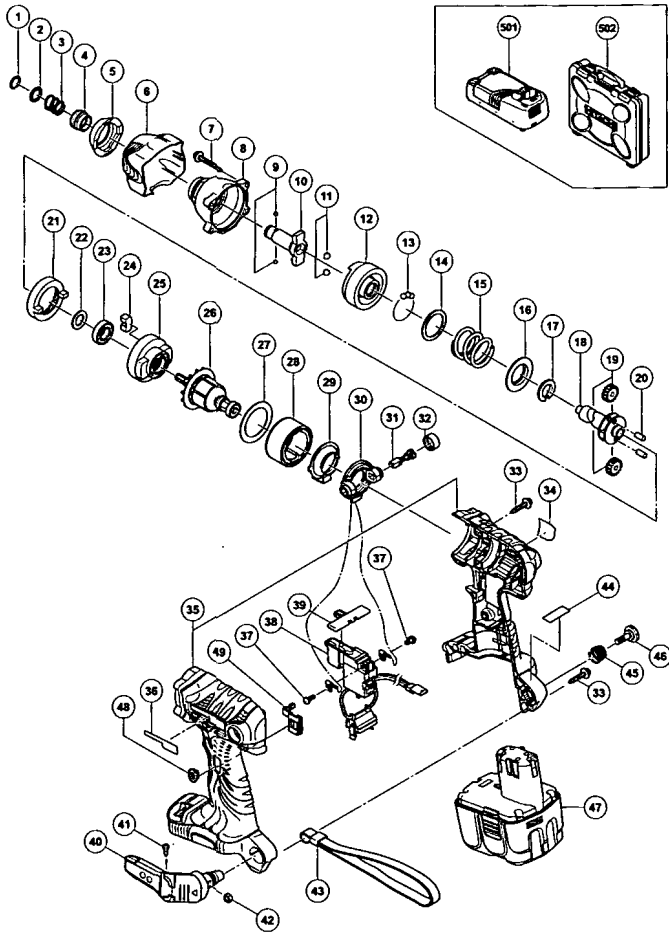
Item No.	Part Name
1	RETAINING RING
2	WASHER (D)
3	GUIDE SPRING (C)
4	GUIDE SLEEVE (D)
5	FRONT CAP (C)
6	PROTECTOR (D)
7	TAPPING SCREW (W/SP. WASHER) D4x25
8	HAMMER CASE
9	STEEL BALL D3.5
10	ANVIL
11	STEEL BALL D5.556
12	HAMMER
13	STEEL BALL D3.175
14	WASHER (J)
15	HAMMER SPRING (F)
16	WASHER (S)
17	STOPPER (B)
18	SPINDLE
19	IDLE GEAR SET
20	NEEDLE ROLLER (A)
21	RING GEAR (D)
22	WASHER (E)
23	BALL BEARING 6901VVCMP52L
24	DAMPER (A)
25	INNER COVER (B)
26	ARMATURE ASS'Y
27	SIDE YOKE (A)
28	MAGNET (F)
29	DUST GUARD FIN (B)
30	BRUSH BLOCK
31	BRUSH 5x6x11.5
32	BRUSH CAP
33	TAPPING SCREW (W/FLANGE) D4x20
34	NAME PLATE
35	HOUSING (A),(B) SET
36	HITACHI PLATE
37	MACHINE SCREW (W/SP. WASHER)
38	DC-SPEED CONTROL SWITCH
39	PUSHING BUTTON (B)
40	HOOK ASS'Y (W/LIGHT)
41	TAPPING SCREW D2x6
42	V-LOCK NUT
43	STRAP
44	LABEL
45	HOOK SPRING
46	SPECIAL SCREW M5
47	BATTERY
48	LEVER (A)
49	LEVER (B)
501-1	CHARGER (UC18YRL)
501-2	CHARGER (UC14YFA)
502	CASE

WH18DMR



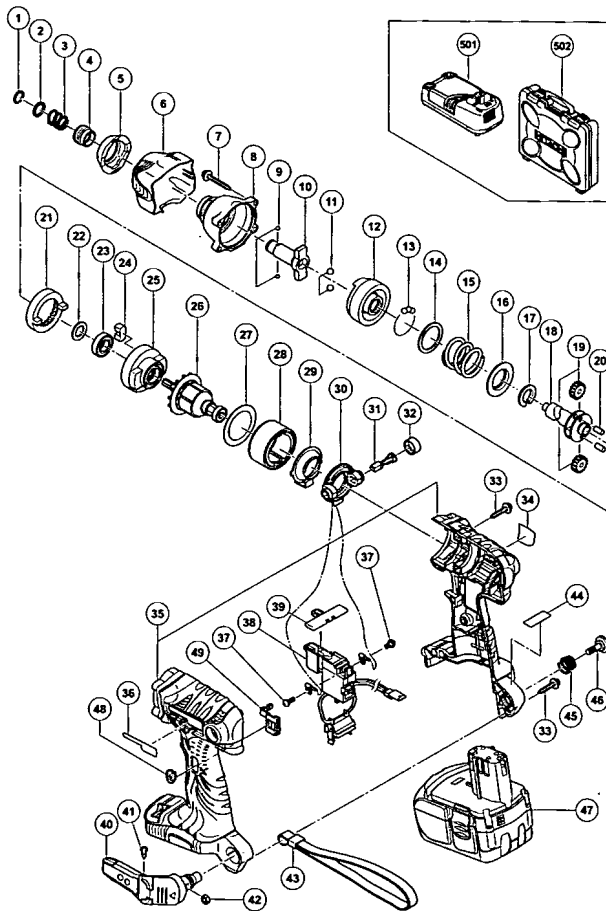
Item No.	Part Name
1	RETAINING RING
2	WASHER (D)
3	GUIDE SPRING (C)
4	GUIDE SLEEVE (D)
5	FRONT CAP (C)
6	PROTECTOR (D)
7	TAPPING SCREW (W/SP. WASHER) D4x25
8	HAMMER CASE
9	STEEL BALL D3.5
10	ANVIL
11	STEEL BALL D5.556
12	HAMMER
13	STEEL BALL D3.175
14	WASHER (J)
15	HAMMER SPRING (F)
16	WASHER (S)
17	STOPPER (B)
18	SPINDLE
19	IDLE GEAR SET
20	NEEDLE ROLLER (A)
21	RING GEAR (D)
22	WASHER (E)
23	BALL BEARING 6901VVCMP2L
24	DAMPER (A)
25	INNER COVER (B)
26	ARMATURE ASS'Y
27	SIDE YOKE (A)
28	MAGNET (F)
29	DUST GUARD FIN (B)
30	BRUSH BLOCK
31	BRUSH 5x6x11.5
32	BRUSH CAP
33	TAPPING SCREW (W/FLANGE) D4x20
34	NAME PLATE
35	HOUSING (A),(B) SET
36	HITACHI PLATE
37	MACHINE SCREW (W/SP. WASHER)
38	DC-SPEED CONTROL SWITCH
39	PUSHING BUTTON (B)
40	HOOK ASS'Y (W/LIGHT)
41	TAPPING SCREW D2x6
42	V-LOCK NUT
43	STRAP
44	LABEL
45	HOOK SPRING
46	SPECIAL SCREW M5
47	BATTERY
48	LEVER (A)
49	LEVER (B)
501-1	CHARGER (UC18YRL)
501-2	CHARGER (UC24YFA)
502	CASE

WH14DL



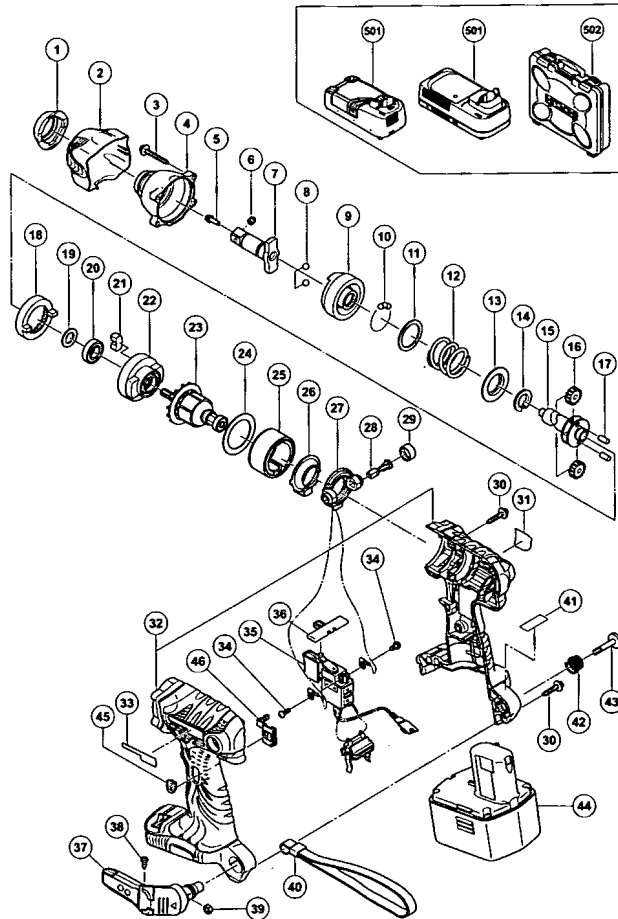
Item No.	Part Name
1	RETAINING RING
2	WASHER (D)
3	GUIDE SPRING (C)
4	GUIDE SLEEVE (D)
5	FRONT CAP (C)
6	PROTECTOR (D)
7	TAPPING SCREW (W/SP. WASHER) D4 x 30
8	HAMMER CASE
9	STEEL BALL D3.5
10	ANVIL
11	STEEL BALL D5.556
12	HAMMER
13	STEEL BALL D3.175
14	WASHER (J)
15	HAMMER SPRING (F)
16	WASHER (S)
17	STOPPER (B)
18	SPINDLE (C)
19	IDLE GEAR (A) SET
20	NEEDLE ROLLER (A)
21	RING GEAR (D)
22	WASHER (E)
23	BALL BEARING 6901VVCMP52L
24	DAMPER (A)
25	INNER COVER (B)
26	ARMATURE AND PINION SET
27	SIDE YOKE (A)
28	MAGNET (F) ASS'Y
29	DUST GUARD FIN (B)
30	BRUSH BLOCK
31	CARBON BRUSH 5 x 6 x 11.5
32	BRUSH CAP
33	TAPPING SCREW (W/FLANGE) D4 x 20
34	NAME PLATE
35	HOUSING (A),(B) SET
36	HITACHI PLATE
37	MACHINE SCREW (W/SP. WASHER) M3 x 5
38	DC-SPEED CONTROL SWITCH
39	PUSHING BUTTON (B)
40	HOOK ASS'Y (W/LIGHT)
41	TAPPING SCREW D2 x 6
42	V-LOCK NUT M5
43	STRAP
44	LABEL
45	HOOK SPRING
46	SPECIAL SCREW (A) M5
47	BATTERY
48	LEVER (A)
49	LEVER (B)
501	CHARGER (MODEL UC18YRL)
502	CASE

WH18DL



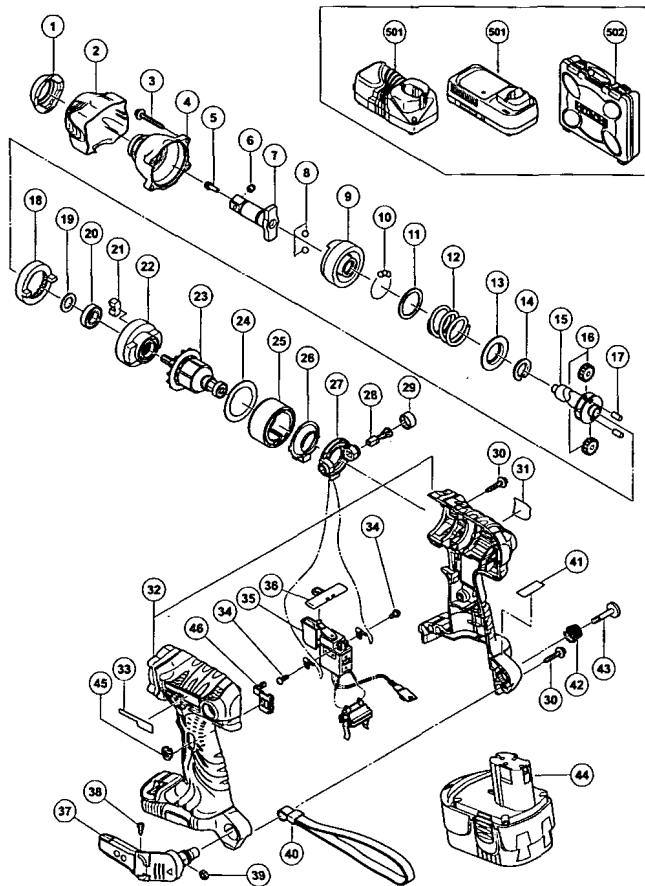
Item No.	Part Name
1	RETAINING RING
2	WASHER (D)
3	GUIDE SPRING (C)
4	GUIDE SLEEVE (D)
5	FRONT CAP (C)
6	PROTECTOR (D)
7	TAPPING SCREW (W/SP. WASHER) D4 x 30
8	HAMMER CASE
9	STEEL BALL D3.5
10	ANVIL
11	STEEL BALL D5.556
12	HAMMER
13	STEEL BALL D3.175
14	WASHER (J)
15	HAMMER SPRING (F)
16	WASHER (S)
17	STOPPER (B)
18	SPINDLE (C)
19	IDLE GEAR (A) SET
20	NEEDLE ROLLER (A)
21	RING GEAR (D)
22	WASHER (E)
23	BALL BEARING 6901VVCMP52L
24	DAMPER (A)
25	INNER COVER (B)
26	ARMATURE AND PINION SET
27	SIDE YOKE (A)
28	MAGNET (F) ASS'Y
29	DUST GUARD FIN (B)
30	BRUSH BLOCK
31	CARBON BRUSH 5 x 6 x 11.5
32	BRUSH CAP
33	TAPPING SCREW (W/FLANGE) D4 x 20
34	NAME PLATE
35	HOUSING (A),(B) SET
36	HITACHI PLATE
37	MACHINE SCREW (W/SP. WASHER) M3 x 5
38	DC-SPEED CONTROL SWITCH
39	PUSHING BUTTON (B)
40	HOOK ASS'Y (W/LIGHT)
41	TAPPING SCREW D2 x 6
42	V-LOCK NUT M5
43	STRAP
44	LABEL
45	HOOK SPRING
46	SPECIAL SCREW (A) M5
47	BATTERY
48	LEVER (A)
49	LEVER (B)
501	CHARGER (MODEL UC18YRL)
502	CASE

WR14DMR



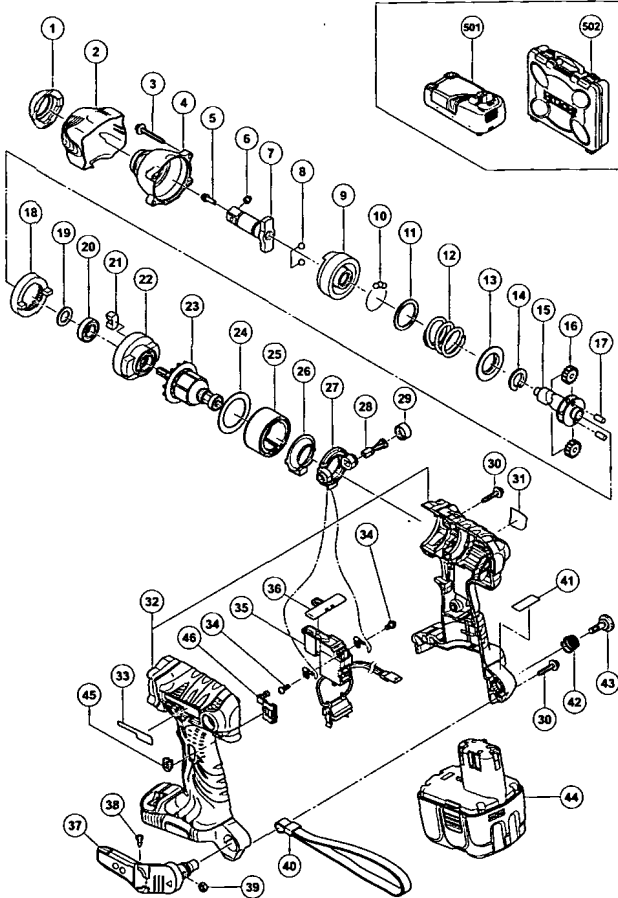
Item No.	Part Name
1	FRONT CAP (C)
2	PROTECTOR (D)
3	TAPPING SCREW (W/SP. WASHER) D4x30
4	HAMMER CASE
5	PIN RETAINER (B)
6	PLUNGER (B)
7	ANVIL (A) ASS'Y
8	STEEL BALL D5.556
9	HAMMER
10	STEEL BALL D3.175
11	WASHER (J)
12	HAMMER SPRING (F)
13	WASHER (S)
14	STOPPER (B)
15	SPINDLE
16	IDLE GEAR SET
17	NEEDLE ROLLER (A)
18	RING GEAR (D)
19	WASHER (E)
20	BALL BEARING 6901VVCMP52L
21	DAMPER (A)
22	INNER COVER (B)
23	ARMATURE ASS'Y
24	SIDE YOKE (A)
25	MAGNET (F)
26	DUST GUARD FIN (B)
27	BRUSH BLOCK
28	CARBON BRUSH 5x6x11.5
29	BRUSH CAP
30	TAPPING SCREW (W/FLANGE) D4x20
31	NAME PLATE
32	HOUSING (A),(B) SET
33	HITACHI PLATE
34	MACHINE SCREW (W/SP. WASHER) M3x5
35	DC-SPEED CONTROL SWITCH
36	PUSHING BUTTON (B)
37	HOOK ASS'Y (W/LIGHT)
38	TAPPING SCREW D2x6
39	V-LOCK NUT M5
40	STRAP
41	LABEL
42	HOOK SPRING
43	SPECIAL SCREW M5
44	BATTERY
45	LEVER (A)
46	LEVER (B)
500-1	CHARGER (UC18YRL)
500-2	CHARGER (UC14YFA)
502	CASE

WR18DMR



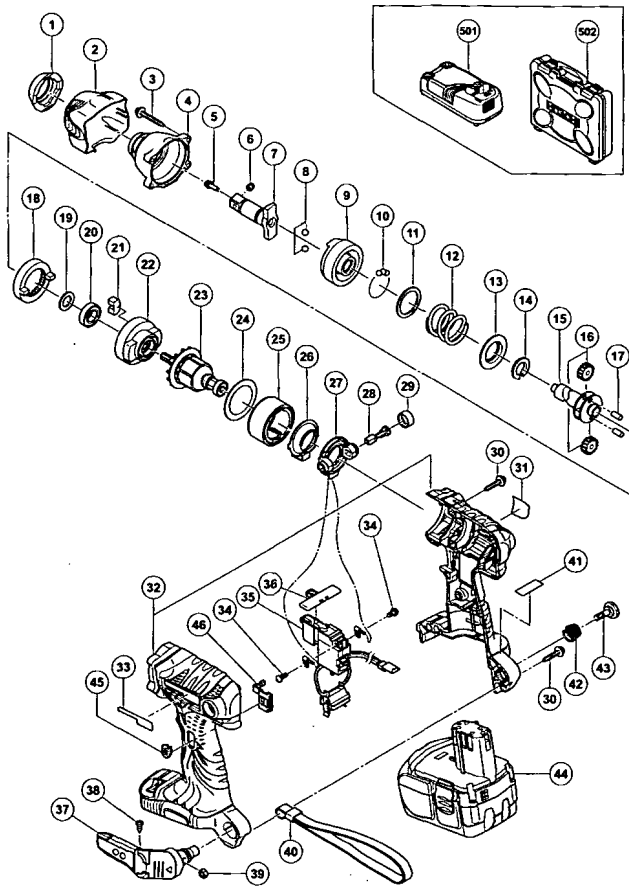
Item No.	Part Name
1	FRONT CAP (C)
2	PROTECTOR (D)
3	TAPPING SCREW (W/SP. WASHER) D4x30
4	HAMMER CASE
5	PIN RETAINER (B)
6	PLUNGER (B)
7	ANVIL (A) ASS'Y
8	STEEL BALL D5.556
9	HAMMER
10	STEEL BALL D3.175
11	WASHER (J)
12	HAMMER SPRING (F)
13	WASHER (S)
14	STOPPER (B)
15	SPINDLE
16	IDLE GEAR SET
17	NEEDLE ROLLER (A)
18	RING GEAR (D)
19	WASHER (E)
20	BALL BEARING 6901VVCMP52L
21	DAMPER (A)
22	INNER COVER (B)
23	ARMATURE ASS'Y
24	SIDE YOKE (A)
25	MAGNET (F)
26	DUST GUARD FIN (B)
27	BRUSH BLOCK
28	CARBON BRUSH 5x6x11.5
29	BRUSH CAP
30	TAPPING SCREW (W/FLANGE) D4x20
31	NAME PLATE
32	HOUSING (A).(B) SET
33	HITACHI PLATE
34	MACHINE SCREW (W/SP. WASHER) M3x5
35	DC-SPEED CONTROL SWITCH
36	PUSHING BUTTON (B)
37	HOOK ASS'Y (W/LIGHT)
38	TAPPING SCREW D2x6
39	V-LOCK NUT M5
40	STRAP
41	LABEL
42	HOOK SPRING
43	SPECIAL SCREW M5
44	BATTERY
45	LEVER (A)
46	LEVER (B)
500-1	CHARGER (UC18VRL)
500-2	CHARGER (UC24YFA)
502	CASE

WR14DL



Item No.	Part Name
1	FRONT CAP (C)
2	PROTECTOR (D)
3	TAPPING SCREW (W/SP. WASHER) D4 x 30
4	HAMMER CASE
5	PIN RETAINER (B)
6	PLUNGER (B)
7	ANVIL (A)
8	STEEL BALL D5.556
9	HAMMER
10	STEEL BALL D3.175
11	WASHER (J)
12	HAMMER SPRING (F)
13	WASHER (S)
14	STOPPER (B)
15	SPINDLE (C)
16	IDLE GEAR (A) SET
17	NEEDLE ROLLER (A)
18	RING GEAR (D)
19	WASHER (E)
20	BALL BEARING 6901VVCMP52L
21	DAMPER (A)
22	INNER COVER (B)
23	ARMATURE AND PINION SET
24	SIDE YOKE (A)
25	MAGNET (F) ASS'Y
26	DUST GUARD FIN (B)
27	BRUSH BLOCK
28	CARBON BRUSH 5 x 6 x 11.5
29	BRUSH CAP
30	TAPPING SCREW (W/FLANGE) D4 x 20
31	NAME PLATE
32	HOUSING (A),(B) SET
33	HITACHI PLATE
34	MACHINE SCREW (W/SP. WASHER) M3 x 5
35	DC-SPEED CONTROL SWITCH
36	PUSHING BUTTON (B)
37	HOOK ASS'Y (W/LIGHT)
38	TAPPING SCREW D2X6
39	V-LOCK NUT M5
40	STRAP
41	LABEL
42	HOOK SPRING
43	SPECIAL SCREW (A) M5
44	BATTERY
45	LEVER (A)
46	LEVER (B)
501	CHARGER (MODEL UC18YRL)
502	CASE

WR18DL



Item No.	Part Name
1	FRONT CAP (C)
2	PROTECTOR (D)
3	TAPPING SCREW (W/SP. WASHER) D4 x 30
4	HAMMER CASE
5	PIN RETAINER (B)
6	PLUNGER (B)
7	ANVIL (A)
8	STEEL BALL D5.556
9	HAMMER
10	STEEL BALL D3.175
11	WASHER (J)
12	HAMMER SPRING (F)
13	WASHER (S)
14	STOPPER (B)
15	SPINDLE (C)
16	IDLE GEAR (A) SET
17	NEEDLE ROLLER (A)
18	RING GEAR (D)
19	WASHER (E)
20	BALL BEARING 6901VVCMP52L
21	DAMPER (A)
22	INNER COVER (B)
23	ARMATURE AND PINION SET
24	SIDE YOKE (A)
25	MAGNET (F) ASS'Y
26	DUST GUARD FIN (B)
27	BRUSH BLOCK
28	CARBON BRUSH 5 x 6 x 11.5
29	BRUSH CAP
30	TAPPING SCREW (W/FLANGE) D4 x 20
31	NAME PLATE
32	HOUSING (A),(B) SET
33	HITACHI PLATE
34	MACHINE SCREW (W/SP. WASHER) M3 x 5
35	DC-SPEED CONTROL SWITCH
36	PUSHING BUTTON (B)
37	HOOK ASS'Y (W/LIGHT)
38	TAPPING SCREW D2 x 6
39	V-LOCK NUT M5
40	STRAP
41	LABEL
42	HOOK SPRING
43	SPECIAL SCREW (A) M5
44	BATTERY
45	LEVER (A)
46	LEVER (B)
501	CHARGER (MODEL UC18YRL)
502	CASE