

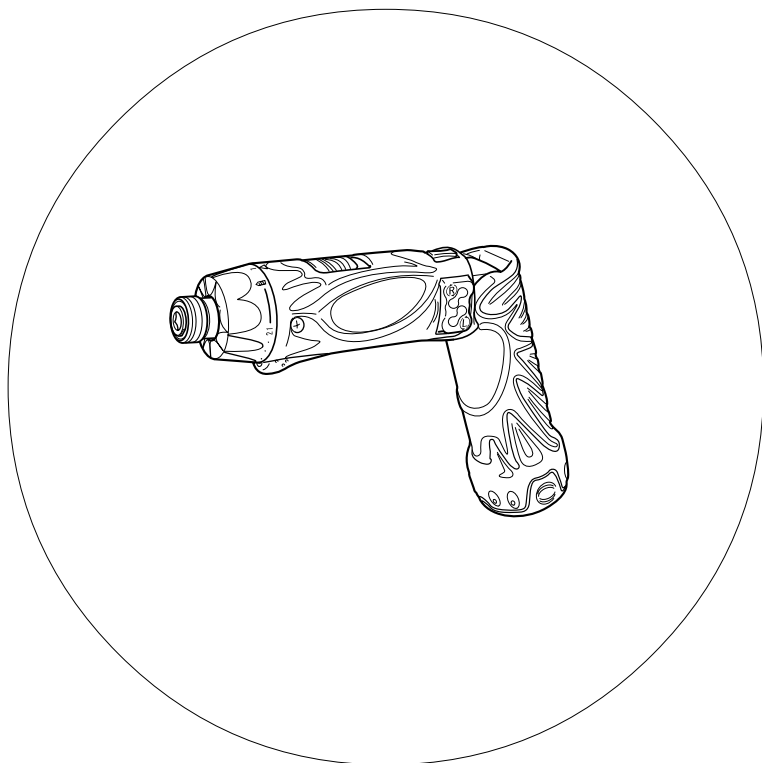
HITACHI

日立牌充电式起子电钻 Cordless Driver Drill

DB 3DL

使用说明书

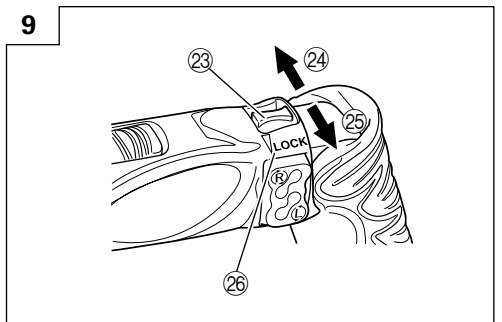
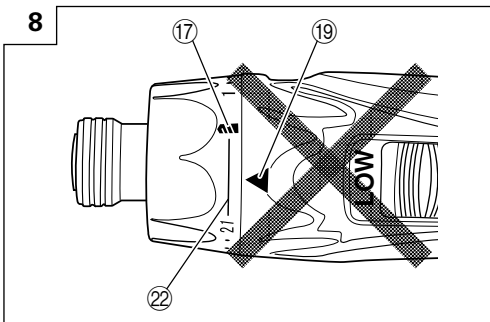
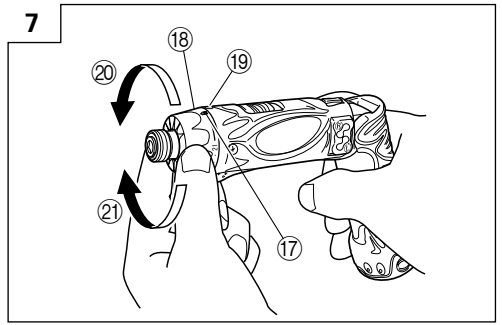
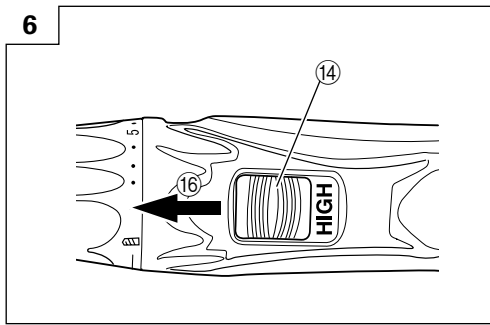
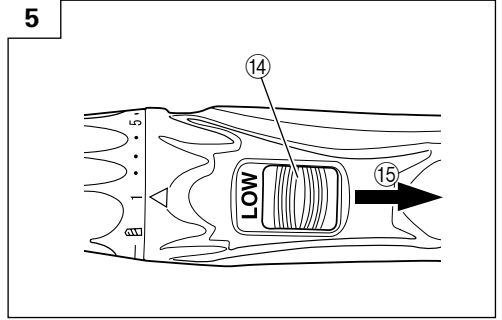
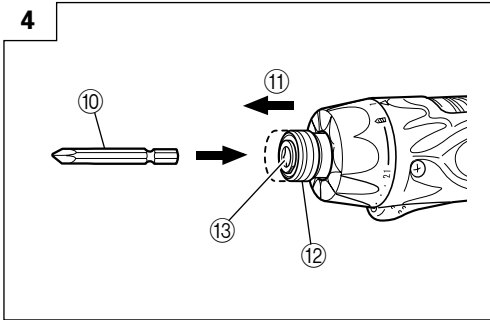
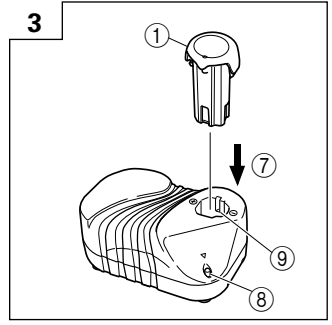
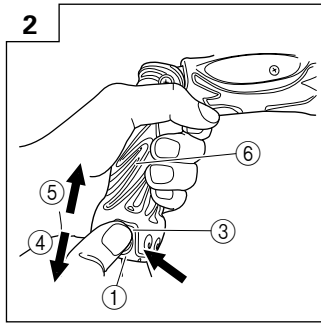
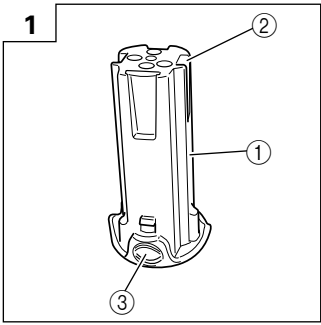
HANDLING INSTRUCTIONS



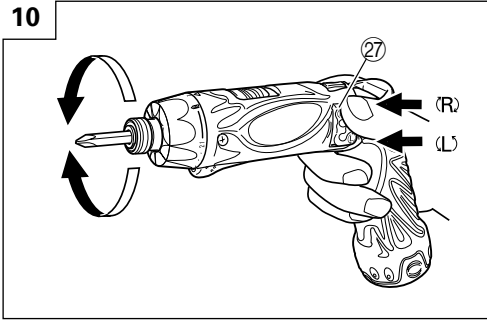
使用前务请详加阅读

Read through carefully and understand these instructions before use.

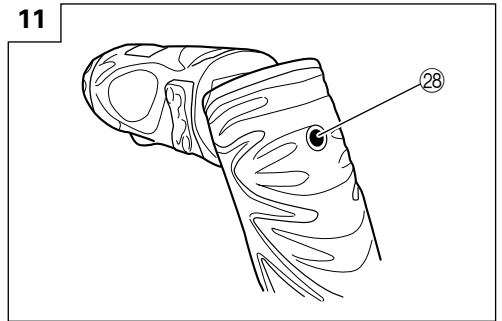
Hitachi Koki



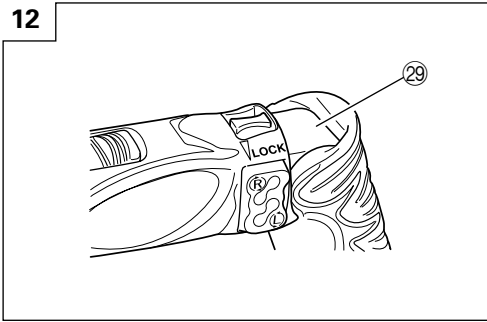
10



11



12



①	3.6 V 充电式电池	3.6 V Rechargeable battery
②	端子孔	Terminal hole
③	电池释放按钮	Battery release button
④	拉出	Pull out
⑤	插入	Insert
⑥	把手	Handle
⑦	插入	Insert
⑧	指示灯	Pilot lamp
⑨	充电式电池连接孔	Hole for connecting the rechargeable battery
⑩	起子钻头	Driver bit
⑪	移动	Movement
⑫	导套	Guide sleeve
⑬	铁中的六角孔	Hexagonal hole in the socket
⑭	变速开关	Shift knob
⑮	低速	Low speed
⑯	高速	High speed
⑰	电钻机标记	Drill mark
⑱	离合器转盘	Clutch dial
⑲	三角标记	Triangle mark
⑳	弱	Weak
㉑	强	Strong
㉒	黑线	Black line
㉓	锁定开关	Lock switch
㉔	解锁	Unlock
㉕	锁定	Lock
㉖	▼ 锁定	▼ Lock
㉗	主开关	Main switch
㉘	照明灯开关	Light switch
㉙	弯曲部分	Bending portion

一般安全规则

警告！

阅读说明

没有按照以下列举的说明而使用或操作将导致触电、着火和/或严重伤害。

在所有以下列举的警告中术语“电动工具”指市电驱动（有线）电动工具或电池驱动（无线）电动工具。

保存这些说明

1) 工作场地

- a) 保持工作场地清洁和明亮。
混乱和黑暗的场地会引发事故。
- b) 不要在易爆环境，如有易燃液体、气体或粉尘的环境下操作电动工具。
电动工具产生的火花会点燃粉尘或气体。
- c) 让儿童和旁观者离开后操纵电动工具。
分心会使你放松控制。

2) 电气安全

- a) 电动工具插头必须与插座相配。
绝不能以任何方式改装插头。
需接地的电动工具不能使用任何转换插头。
未经改装的插头和相配的插座将减少触电危险。
- b) 避免人体接触接地表面，如管道、散热片和冰箱。
如果你身体接地会增加触电危险。
- c) 不得将电动工具暴露在雨中或潮湿环境中。
水进入电动工具将增加触电危险。
- d) 不得滥用电线。
绝不能用电线搬运、拉动电动工具或拔出其插头。
让电动工具远离热、油、锐边或运动部件。
受损或缠绕的电线会增加触电危险。
- e) 当在户外使用电动工具时，使用适合户外使用的外接电线。
适合户外使用的电线将减少触电危险。

3) 人身安全

- a) 保持警觉，当操作电动工具时关注所从事的操作并保持清醒。
切勿在有疲倦、药物、酒精或治疗反应下操作电动工具。
在操作电动工具期间精力分散会导致严重人身伤害。
- b) 使用安全装置。始终配戴护目镜。
安全装置，诸如适当条件下的防尘面具、防滑安全鞋、安全帽、听力防护等装置能减少人身伤害。
- c) 避免突然启动。
确保开关在插入插头时处于关断位置。
手指放在已接通电源的开关上或开关处于接通时插入插头可能会导致危险。

- d) 在电动工具接通之前，拿掉所有调节钥匙或扳手。
遗留在电动工具旋转零件上的扳手或钥匙会导致人身伤害。
 - e) 手不要伸得太长。
时刻注意脚下和身体平衡。
这样在意外情况下能很好地控制电动工具。
 - f) 着装适当。
不要穿宽松衣服或佩带饰品。
让你的头发、衣服和袖子远离运动部件。
宽松衣服、配饰或长发可能会卷入运动部件。
 - g) 如果提供了与排屑装置、集尘设备连接用的装置，则确保他们连接完好且使用得当。
使用这些装置可减少碎屑引起的危险。
- #### 4) 电动工具使用和注意事项
- a) 不要滥用电动工具，根据用途使用适当的电动工具。
选用适当的设计额定值的电动工具会使你工作更有效、更安全。
 - b) 如果开关不能接通或关断工具电源，则不能使用该电动工具。
不能用开关来控制的电动工具是危险的且必须进行修理。
 - c) 在进行任何调节、更换附件或贮存电动工具之前，必须从电源上拔掉插头和/或将电池盒脱开电源。
这种防护性措施将减少电动工具突然起动的危险。
 - d) 将闲置电动工具贮存在儿童所及范围之外，并且不要让不熟悉电动工具或对这些说明不了解的人操作电动工具。
电动工具在未经训练的用户手中是危险的。
 - e) 保养电动工具。检查运动件的安装偏差或卡住、零件破损情况和影响电动工具运行的其他条件。
如有损坏，电动工具必须在使用前修理好。
许多事故由维护不良的电动工具引发。
 - f) 保持切削刀具锋利和清洁。
保养良好的有锋利切削刃的刀具不易卡住而且容易控制。
 - g) 按照使用说明书以及打算使用的电动工具的特殊类型要求的方式，考虑作业条件和进行的作业来使用电动工具、附件和工具的刀头等。
将电动工具用作那些与要求不符的操作可能会导致危险情况。
- #### 5) 维修
- a) 将你的电动工具送交专业维修人员，必须使用同样的备件进行更换。
这样将确保所维修的电动工具的安全性。

注意事项

不可让儿童和体弱人士靠近工作场所。
应将不使用的工具存放在儿童和体弱人士接触不到的地方。

充电式起子电钻机使用上的注意事项

1. 务请在10°C~40°C的温度下进行充电。温度低于10°C将会导致充电过度，极其危险。电池不能在高于40°C的温度下充电。
最适合于充电的温度是20~25°C。
2. 充电结束时，在下节电池充电之前，请先将充电器放置大约15分钟。
请不要连续充电两节电池以上。
3. 勿让杂质进入充电式电池连结口内。
4. 切勿拆卸充电式电池与充电器。

5. 切勿使充电式电池短路。使电池短路将会造成很大的电流和过热，从而烧坏电池。
6. 请勿将电池丢入火中。
电池受热将会爆炸。
7. 在墙壁、地板或天花板上钻孔时，应检查是否有埋设的电源线等。
8. 充电后电池寿命太短不够使用时，请尽快将电池送往经销店。请勿将用过的电池乱丢。
9. 请勿使用耗竭了的电池，否则会损坏充电器。
10. 请勿将异物插入充电器的通风口。
若将金属异物或易燃物插入通风口的话，将会引起触电事故或使充电器受损。

规格

电动工具

无负荷速度（低/高）		200/600 转/分	
能力	钻孔	金属（厚 1.0 毫米）	钢材：2 毫米， 铝材：2 毫米
	螺丝 紧固	机用螺丝	5 毫米
		木螺丝	3.5 毫米（直径）× 20 毫米（长） （应有导孔）
充电式电池		EBM315：锂离子3.6 V （1.5 Ah 1节）	
重量		0.4 kg	

充电器

型式	UC3SFL
充电电压	3.6 V
重量	0.3 kg

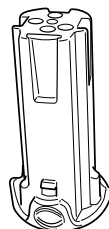
标准附件

- 1 十字槽头螺丝刀头（2号×50L）..... 1
- 2 电池（EBM315）..... 1
- 3 充电器（UC3SFL）..... 1
- 4 塑料盒..... 1

标准附件可能不预先通告而已予更改。

选购附件（分开销售）

1. 电池（EBM315）



选购附件可能不预先通告而已予更改。

用途

- 旋紧和拆除机用螺丝、木螺丝、自攻螺丝等。
- 钻各种金属。

电池的拆卸/安装法

1. 电池的拆卸法

请先抓住把手，然后再推压电池释放按钮（2个）以取下电池（参照图1和图2）。

注意：

切勿使电池短路。

2. 电池的安装法

插入电池时请注意极性（参照图2）。

充电

使用电动工具之前，按下述方法将电池进行充电。

1. 将充电器的电源线连接到插座。
2. 将电池插入充电器。

将电池牢牢地插入充电器直至其接触到充电器底部，并如图3所示检查电极。

插入电池后充电器会亮起（指示灯亮起）。

注意：

如果指示灯不亮，则请从插座上拔出电源线插头并检查电池的安装情况。

指示灯熄灭表示电池已经充好。

注意：

作业停止后，如电池（因晒太阳等原因）而变热，充电指示灯会不亮。这时，应先让电池冷却，然后再充电。

- 关于充电时间

表1给出了根据电池类型所需的充电时间。

表1 20°C下的充电时间（分钟近似值）

电池电压(V)	电池容量(Ah)	
	1.5 Ah	
3.6 V	EBM315	30分钟

注：

根据环境温度的不同，充电时间可能会有所变化。

3. 从电源插座拔出充电器的电源线。
4. 握紧充电器并取出电池。

注：

充电完成后，请先从充电器内取出电池，然后加以妥善保存。

关于新电池等的放电

因新的和长期未使用的充电式电池内部的化学物质无活性，故第一次和第二次使用时其放电能力可能较低。这是暂时现象，这种电池充电2-3次后即可恢复其充电所需的正常时间。

较长时间保持电池性能的方法

- (1) 在电池电力完全耗尽之前进行充电。
感到电动工具的能力变弱时，请停止使用并给电池充电。若您继续使用电动工具并耗尽电力，电池可能会损坏或其使用寿命缩短。
- (2) 避免在高温环境中充电。
使用后充电式电池的温度将迅速升高。若使用后立即对这种电池进行充电，其内部化学物质会劣化，电池使用寿命将缩短。请稍等片刻，待电池冷却后再进行充电。

注意：

- 连续使用电池充电器时，电池充电器将会升温，进而生成导致故障的因素。一旦充电完成，请闲置15分钟后再进行下次充电。
- 如果电池安装正确而电池充电器无法工作，则电池或充电器可能会出现故障。请将其带往授权的维修中心进行检测。

作业之前

1. 工作环境的准备和检查

请按下列注意事项检查工作环境是否适当。

使用方法

较长时间保持电池性能的方法

- 在电池电力完全耗尽之前进行充电。
感到电动工具的能力变弱时，请停止使用并给电池充电。若您继续使用电动工具并耗尽电力，电池可能会损坏或其使用寿命缩短。

1. 安装钻头。

请务必按照下列步骤安装击入式钻头（图4）。

- (1) 向前拉导套。
- (2) 将钻头插入套筒的六角孔。
- (3) 松开导套，导套随后返回到原始位置。

注意:

如果导套没有返回到原始位置, 则说明没有正确安装钻头。

2. 拆卸钻头。

请按照钻头安装方法相反的要点进行拆卸。

3. 自动主轴锁机械结构

主开关关闭时, 钻头锁定到位, 电动工具作为手动起子机使用。

4. 确认电池安装正确。

5. 改变转速

请用变速开关来改变转速。请按箭头方向移动变速开关(请参照图 5 和图 6)。


如果变速开关被设在“LOW”位置, 钻机则低速旋转; 如果变速开关被设在“HIGH”位置, 钻机则高速旋转。

注意:

- 当用变速开关改变转速时, 应确保电源开关已被断开。
如果在马达旋转过程中改变速度, 则会损坏齿轮。
- 操作需要更大的力时, 请将变速开关设为“LOW”。如果设为“HIGH”并使用本机, 则可能导致马达烧毁或过早出现故障。

6. 确认离合器转盘的位置(请参照图 7)

本机的旋紧转矩可根据离合器转盘的位置设定来调节。

- (1) 当把本机作为起子使用时, 请将离合器转盘上的“1、5、9……21”中的某个数字或黑点与机身外侧上的三角标记对齐。
- (2) 当把本机作为钻机来使用时, 请将离合器转盘的钻机标记“”与机身外侧上的三角标记对齐。

注意:

- 离合器转盘不能设在数字“1、5、9……21”之间或黑点之间。
- 当离合器转盘位于“21”和钻机标记中部的黑线之间时, 请勿使用本机, 否则会造成损坏。
(请参照图8)

7. 旋紧转矩的调节

(1) 旋紧转矩

旋紧转矩的强度应与螺丝直径相对应。如果转矩过大, 螺丝头则会损坏或受损。务请按螺丝直径来调节离合器转盘的位置。

(2) 旋紧转矩的指示(请参照图 7)

螺丝类型及受紧固的材料不同, 则旋紧转矩也不同。

本机采用离合器转盘上的“1、5、9……21”以及黑点来指示旋紧转矩。旋紧转矩在位置“1”时最小, 在最大数字处时最大。

(3) 调节旋紧转矩(请参照图 7)

转动离合器转盘并使离合器转盘上的数字“1、5、9……21”或点与机身外侧上的三角标记对齐。按所需转矩将离合器转盘向小转矩或大转矩方向调节。

注意:


- 当把本机用作钻机时, 马达可能会被锁住而停止转动。请在使用起子电钻过程中不要锁住马达。
- 将变速开关设为“HIGH”(高速)且离合器转盘位置为“17”或“21”时, 可能会出现离合器无法啮合且马达被锁定的现象。在这种情况下, 请将变速开关设为“LOW”(低速)。
- 如果马达被锁定, 则请立即关闭电源。如果马达被锁定一段时间, 则马达或电池可能烧毁。
- 如果冲击时间过长, 螺丝可能会因旋紧力过大而折断。

8. 开关操作

(1) 锁定开关

电动工具配有锁定开关。如需激活主开关锁定, 请将锁定开关移到“ LOCK”位置。将锁定开关移到相反的位置即可操作电动工具。(图9)

注意:

携带或存放电动工具时, 请务必将锁定开关设在“ LOCK”位置, 以防其意外启动。

(2) 主开关

主开关用作马达开关和旋转方向选择开关。主开关按到其上指示的“R”时, 钻头顺时针旋转。主开关按到其上指示的“L”时, 钻头逆时针旋转。松开主开关时, 电动工具随即停止。(图10)

9. 使用照明灯

按下照明灯开关时, 照明灯亮起。再次按下照明灯开关时, 照明灯熄灭。(图11)

注意:

请勿直视照明灯, 否则可能导致损伤眼睛。

10. 使用直排或枪焊配置

在密闭空间内使用时，请以直排配置使用电动工具。在其他位置使用时，请以枪焊配置使用电动工具。请选择最适合电动工具应用的配置。如果更改配置，则电动工具会在啮合到位时发出卡嗒声。弯曲（或伸出）电动工具直至听到声音为止。

注意：

如果以枪焊配置使用电动工具，则请勿在返回到直排配置时伸出电动工具的弯曲部分。请注意，弯曲部分可能会夹到手指或手的其他部位，从而可能会造成伤害（图 12）。

11. 使用范围和建议



表 2 给出了基于本机机械结构的各种可用工作范围。

表 2

工作		建议
钻孔	钢材	用于钻孔。
	铝材	
螺丝紧固	机用螺丝	使用与螺丝直径相配的钻头或套筒。
	木螺丝	钻好导孔后使用。

12. 选择旋紧力和转速的方法

表 3

用途		离合器转盘的位置	转速选择（变速开关的位置）	
			LOW（低速）	HIGH（高速）
螺丝紧固	机用螺丝	1 - 21	用于直径在 5 毫米以下的螺丝捣。	用于直径在 3 毫米以下的螺丝。
	木螺丝	1 - 	用于公称直径在 3.5 毫米以下的螺丝。	——
钻孔	金属		用于采用金属加工钻头的钻孔作业。	——

注意：

- 表 3 中给出的选择例子应作为一般标准来考虑。在实际工作中使用的都是不同类型的紧固螺丝和受紧固的材料，因此理应进行适当的调节。
- 在机用螺丝处于 HIGH（高速）的状态下使用起子电钻机时，因旋紧转矩过大，螺丝可能会损坏或钻头可能会松弛。使用机用螺丝时，请在 LOW（低速）的状态下使用起子电钻机。

2. 检查安装螺钉

要经常检查安装螺钉是否紧固妥善。若发现螺钉松了，应立即重新扭紧，否则会导致严重事故。

3. 电动机的维护

电动机绕线是电动工具的“心脏部”应仔细检查有无损伤，是否被油液或水沾湿。

4. 清理外部

冲击电钻机沾污时，用干软布或沾肥皂水的布擦拭。切勿使用氯溶液、汽油或稀释剂，以免塑胶部分溶化。

5. 收藏

冲击电钻机应收藏于温度低于 40°C 和小孩拿不到的地方。

维护和检查

1. 检查工具

由于使用已经钝化的工具会降低效率并可能引起马达故障，因此一旦注意到磨损情况，就应及早磨快或更换工具。

6. 维修零部件一览表

注意：

日立牌电动工具的维修、改造和检查须由经日立公司授权的维修中心进行。

当要求维修或其他保养服务时，若将此零部件一览表与电动工具一起呈交给经日立公司授权的维修中心，将有助于维修或保养工作。

在操作和维修电动工具时，必须遵守贵国制定的安全的有关规则和标准。

改造：

日立牌电动工具经常加以改善和改造以采用最新的先进技术。

因此，某些零部件可能变更，恕不另行通知。

注：

为求改进，本手册所载规格可能不预先通告而已予更改。

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 DRIVER DRILL

- Always charge the battery at a temperature of 10 – 40°C. A temperature of less than 10°C will result in over charging which is dangerous. The battery cannot be charged at a temperature higher than 40°C.
The most suitable temperature for charging is that of 20 – 25°C.
- When one charging is completed, leave the charger for about 15 minutes before the next charging of battery.
Do not charge more than two batteries consecutively.
- Do not allow foreign matter to enter the hole for connecting the rechargeable battery.
- Never disassemble the rechargeable battery and charger.

- 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.
- Do not dispose of the battery in fire.
If the battery is burnt, it may explode.
- When drilling in wall, floor or ceiling, check for buried electric power cord, etc.
- 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.
- Using an exhausted battery will damage the charger.
- 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.

SPECIFICATIONS

POWER TOOL

No-load speed (Low/High)		200 / 600 min ⁻¹	
Capacity	Drilling	Metal (Thickness 1.0 mm)	Steel: 2 mm, Aluminum: 2 mm
	Driving	Machine screw	5 mm
		Wood screw	3.5 mm (diameter) × 20 mm (length) (Requires a pilot hole)
Rechargeable battery		EBM315: Li-ion 3.6 V (1.5 Ah 1 cell)	
Weight		0.4 kg	

CHARGER

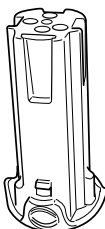
Model	UC3SFL
Charging voltage	3.6 V
Weight	0.3 kg

STANDARD ACCESSORIES

- ① Plus driver bit (No. 2 × 50L) 1
 - ② Battery (EBM315) 1
 - ③ Charger (UC3SFL) 1
 - ④ Plastic case 1
- Standard accessories are subject to change without notice.

OPTIONAL ACCESSORIES (sold separately)

- Battery (EBM315)



APPLICATIONS

- Driving and removing of machine screws, wood screws, tapping screws, etc.
- Drilling of various metals

BATTERY REMOVAL/INSTALLATION

1. Battery removal

Hold the handle tightly and push the battery release buttons (2 pcs.) to remove the battery (see **Figs. 1** and **2**).

CAUTION:

Never short-circuit the battery.

2. Battery installation

Insert the battery while observing its polarities (see **Fig. 2**).

CHARGING

Before using the driver drill, charge the battery as follows.

- Connect the charger's power cord to a receptacle.
- Insert the battery into the charger.
Firmly insert the battery into the charger till it contacts the bottom of the charger and checking the polarities as shown in **Fig. 3**.

Inserting the battery will turn on 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.

The pilot lamp goes off to indicate that the battery is fully charged.

CAUTION

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

- Regarding recharging time

Table 1 shows the recharging time required according to the type of battery.

Table 1 Recharging time (approx. min.) at 20°C

Battery voltage (V)	Battery capacity (Ah)	
	1.5 Ah	
3.6 V	EBM315	30 min.

NOTE: The recharging time may vary according to the ambient temperature.

3. Disconnect the charger's power cord from the receptacle.
4. Hold the charger firmly and pull out the battery.

NOTE:

After operation, pull out batteries from the charger first, and then keep the batteries properly.

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.

CAUTION:

- When the battery charger has been continuously used, the battery charger will be heated, thus constituting the cause of the failures. Once the charging has been completed, give 15 minutes rest until the next charging.
- If the battery charger does not work while the battery is mounted correctly, it is probable that the battery or

charger is malfunctioning. Take it to your authorized Service Center.

PRIOR TO OPERATION

1. Setting up and checking the work environment

Check if the work environment is suitable by following the precautions.

HOW TO USE

How to make the batteries perform longer

- 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.

1. Installing the bit

Always follow the following procedure to install driver bit. (Fig. 4)

- (1) Pull the guide sleeve forward.
- (2) Insert the bit into the hexagonal hole in the socket.
- (3) Release the guide sleeve 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.

2. Removing the bit

Please do the opposite point on the method of installing bit.

3. Automatic spindle-lock mechanism

When the main switch is off, the bit is locked in place, and the tool can be used as a manual screwdriver.

4. Confirm that the battery is mounted correctly

5. Change rotation speed

Operate the shift knob to change the rotational speed. Move the shift knob in the direction of the arrow (see Figs. 5 and 6).

When the shift knob is set to "LOW", the drill rotates at a low speed. When set to "HIGH", the drill rotates at a high speed.

CAUTION:

- When changing the rotational speed with the shift knob, confirm that the switch is off. Changing the speed while the motor is rotating will damage the gears.

- When a large force is required for operation, set the shift knob to "LOW". If "HIGH" is set and the unit is used, it may cause the motor to burn out or malfunction prematurely.

6. Confirm the clutch dial position (See Fig. 7)

The tightening torque of this unit can be adjusted according to the clutch dial position, at which the clutch dial is set.

- (1) When using this unit as a screwdriver, line up the one of the numbers "1, 5, 9 ... 21" on the clutch dial, or the black dots, with the triangle mark on the outer body.
- (2) When using this unit as a drill, align the clutch dial drill mark "▲▼" with the triangle mark on the outer body.

CAUTION

- The clutch dial cannot be set between the numerals "1, 5, 9 ... 21" or the black dots.

- Do not use with the clutch dial numeral between “21” and the black line at the middle of the drill mark. Doing so may cause damage (See Fig. 8).

7. Tightening torque adjustment

(1) Tightening torque

Tightening torque should correspond in its intensity to the screw diameter. When too strong torque is used, the screw head may be broken or be injured. Be sure to adjust the clutch dial position according to the screw diameter.

(2) Tightening torque indication (See Fig. 7)

The tightening torque differs depending on the type of screw and the material being tightened. The unit indicates the tightening torque with the numbers “1, 5, 9 ... 21” on the clutch dial, and a black dots. The tightening torque at position “1” is the weakest and the torque is strongest at the highest number.

(3) Adjusting the tightening torque (See Fig. 7)

Rotate the clutch dial and line up the numbers “1, 5, 9 ... 21” on the clutch dial, or the dots, with the triangle mark on the outer body. Adjust the clutch dial in the weak or the strong torque direction according to the torque you need.

CAUTION

- The motor rotation may be locked to cease while the unit is used as drill. While operating the driver drill, take care not to lock the motor.
- When setting the shift knob to “HIGH” (high speed) and the position of the clutch dial is “17” or “21”, it may happen that the clutch does not engaged and that the motor is locked. In such a case, please set the shift knob to “LOW” (low speed).
- If the motor is locked, immediately turn the power off. If the motor is locked for a while, the motor or battery may be burnt.
- Too long hammering may cause the screw broken due to excessive tightening.

8. Switch operation

(1) Lock switch

The tool is equipped with a lock switch. To activate the main switch lock, move the lock switch to the “▼

LOCK” position. Move the lock switch to the opposite position to operate the tool. (Fig. 9)

CAUTION:

Always set the lock switch to the “▼ LOCK” position when carrying or storing the tool eliminate unintentional starting.

(2) Main switch

The main switch functions as a motor switch and rotational direction selector switch. When the main switch is pushed to “R” indicated on the main switch, the bit rotates clockwise. When the main switch is pushed to “L” indicated on the main switch, the bit rotates counterclockwise. When the main switch is released, the tool stops. (Fig. 10)

9. Using the light

The light lights when the light switch is pushed. When the light switch is pushed again, the light is turned off. (Fig. 11)

CAUTION:

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

10. Using in the Straight or Pistol Configuration

Use the tool in the straight configuration when using in confined spaces. Use it in the pistol configuration when using in other locations. Select the configuration that best matches the tool application. When changing the configuration, the tool will make a clicking sound when it snaps into position. Bend (or extend) the tool until the clicking sound is heard.

CAUTION:

When using the tool in the pistol configuration, do not hold onto the bending portion of the tool when returning to the straight configuration. Your finger or other part of the hand may be pinched by the bending portion resulting in possible injury (Fig. 12).

11. The scope and suggestions for uses



The usable scope for various types of work based on the mechanical structure of this unit is shown in Table 2.

Table 2

Work		Suggestions
Drilling	Steel	Use for drilling purpose.
	Aluminum	
Driving	Machine screw	Use the bit or socket matching the screw diameter.
	Wood screw	Use after drilling a pilot hole.

12. How to select tightening torque and rotational speed

Table 3

Use		Cap Position	Rotating speed selection (Position of the shift knob)	
			LOW (Low speed)	HIGH (High speed)
Driving	Machine screw	1 – 21	For 5 mm or smaller diameter screws	For 3 mm or smaller diameter screws
	Wood screw	1 – 	For 3.5 mm or smaller nominal diameter screws	_____
Drilling	Metal		For drilling with a metal working drill bit	_____

CAUTION:

- The selection examples shown in **Table 3** should be considered as general standard. As different types of tightening screws and different materials to be tightened are used in actual works proper adjustments are naturally necessary.
- When using the driver drill with a machine screw at HIGH (high speed), a screw may damage or a bit may loose due to the tightning torque is too strong. Use the driver drill at LOW (low speed) when using a machine screw.

NOTE:

The use of the battery EBM315 in a cold condition (below 0 degree Centigrade) can sometimes result in the weakened tightening torque and reduced amount of work. This, however, is a temporary phenomenon, and returns to normal when the battery warms up.

MAINTENANCE AND INSPECTION

1. Inspecting the tool

Since use of as dull tool will degrade efficiency and cause possible motor malfunction, sharpen or replace the tool as soon as 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. Cleaning on the outside

When the driver drill is stained, wipe with a soft dry cloth or a cloth moistened with soapy water. Do not use chloric solvents, gasoline or paint thinner, for they melt plastics.

5. Storage

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

6. 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.

MODIFICATIONS:

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

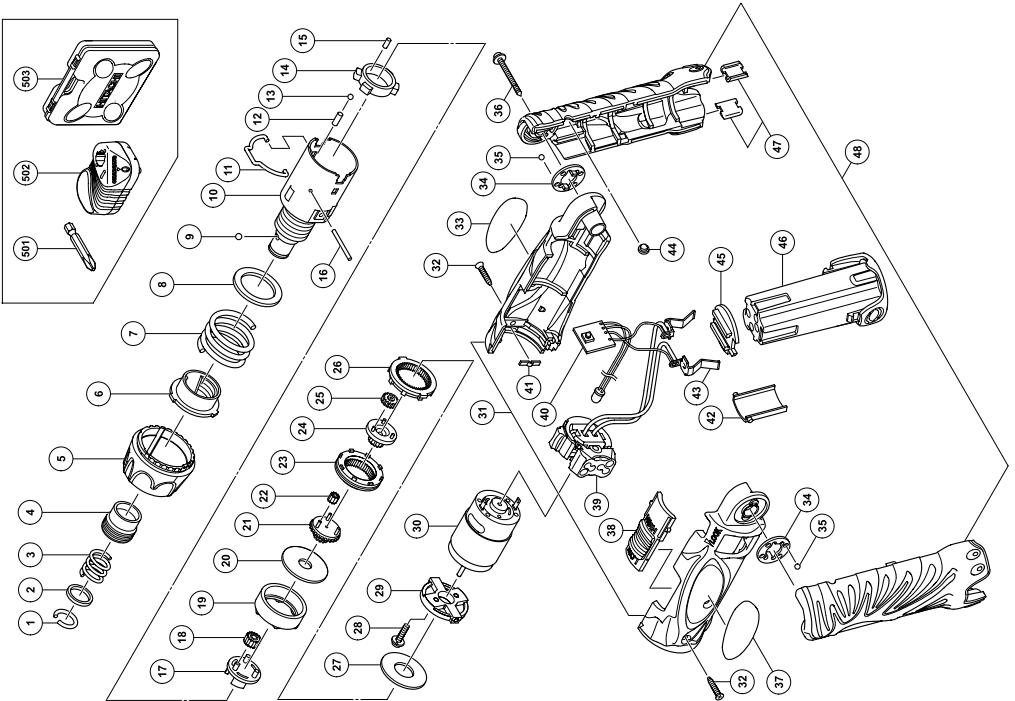
Accordingly, some parts may be changed without prior notice.

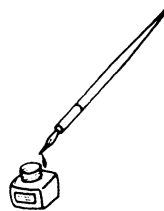
NOTE:

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

Part No.	Part Name	QTY
45	TERMINAL SUPPORT	1
46	BATTERY EBM315	1
47	CLIP	2
48	HANDLE (A), (B) SET	1
501	+DRIVER BIT	1
502	CHARGER (MODEL UC3SEL)	1
503	CASE	1

Part No.	Part Name	QTY
1	RETAINING RING	1
2	WASHER (D)	1
3	GUIDE SPRING	1
4	GUIDE SLEEVE	1
5	CLUTCH DIAL	1
6	NUT	1
7	SPRING	1
8	WASHER (D)	1
9	STEEL BALL D3.5	1
10	GEAR CASE	1
11	SHIFT ARM	1
12	PIN	3
13	STEEL BALL D3.0	3
14	LOCK RING	1
15	NEEDLE ROLLER	6
16	NEEDLE	2
17	CARRIER	1
18	PLANET GEAR (C) SET	1
19	RING GEAR	1
20	WASHER (B)	1
21	PINION (C)	1
22	PLANET GEAR (B) SET	1
23	SLIDE RING GEAR	1
24	PINION (B)	1
25	PLANET GEAR (A) SET	1
26	FIRST RING GEAR	1
27	WASHER (A)	1
28	SCREW M2.6x8	2
29	MOTOR SPACER	1
30	MOTOR	1
31	HOUSING (A),(B) SET	1
32	FLAT TAPPING SCREW D3x8	4
33	NAME PLATE	1
34	CLICK PLATE	2
35	STEEL BALL D3	4
36	TAPPING SCREW (W/FLANGE) D4x20	1
37	HITACHI LABEL	1
38	SHIFT KNOB	1
39	SWITCH	1
40	PCB	1
41	CLICK SPRING	1
42	HANDLE COVER	1
43	TERMINAL	2
44	BUTTON	1





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612
Code No. C99154121
Printed in China