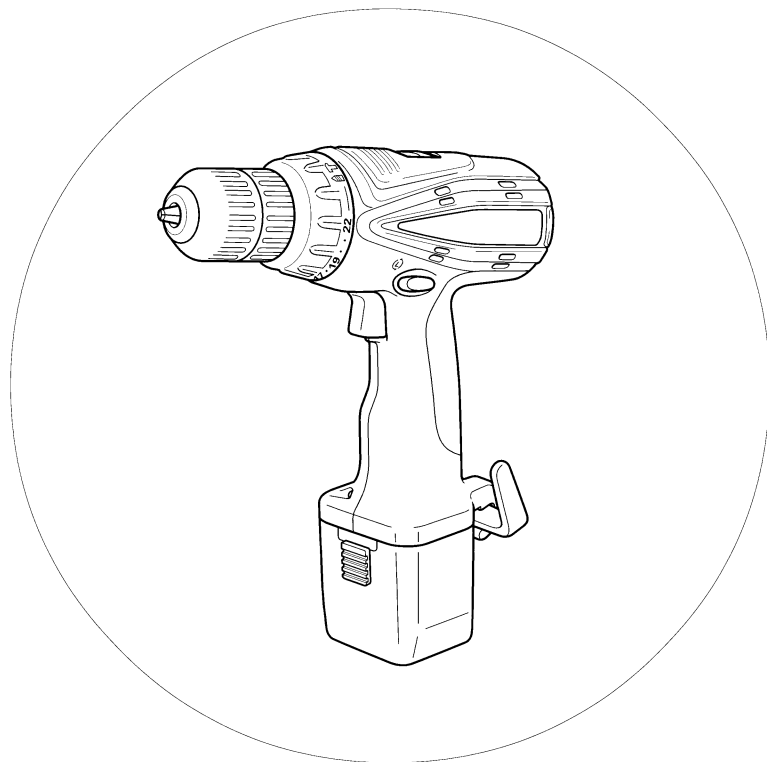


HITACHI

日立牌充电式冲击电钻 CORDLESS IMPACT DRILL

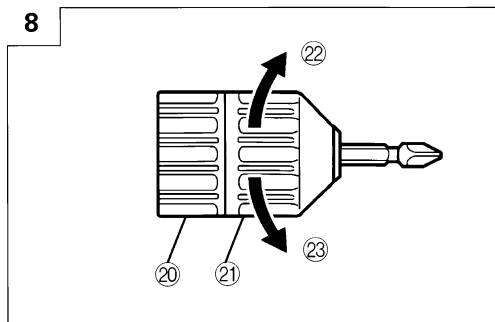
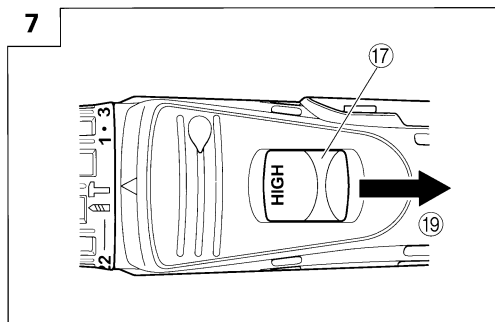
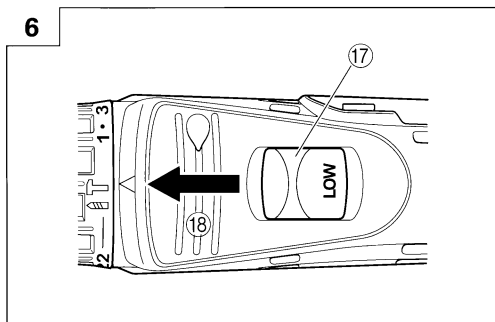
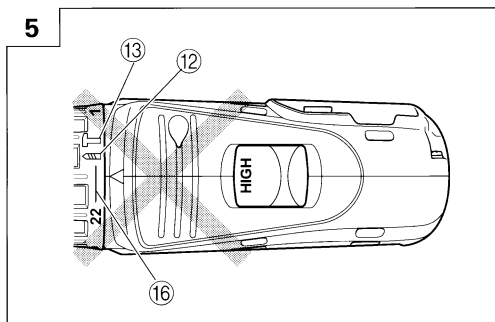
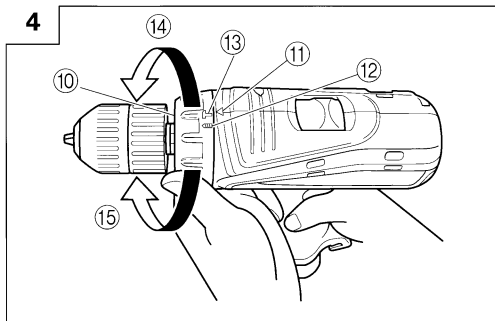
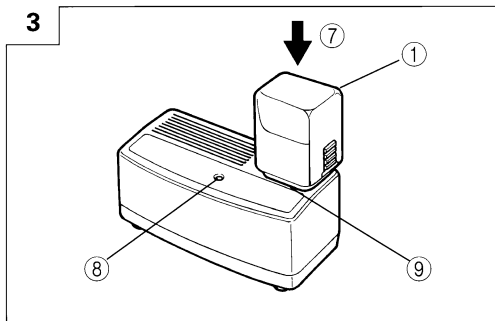
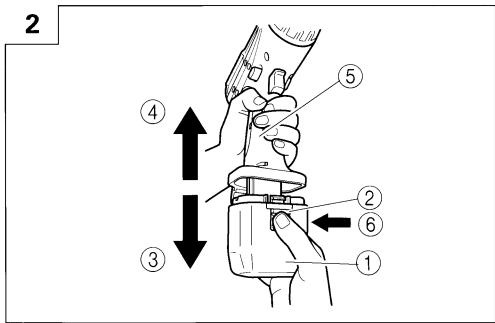
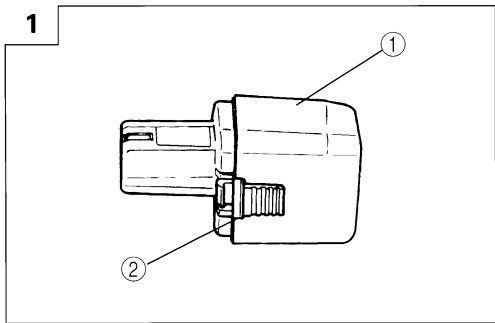
DV 12DV

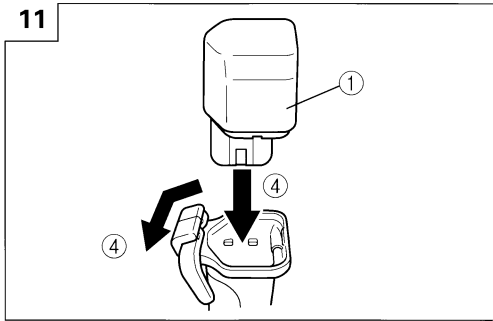
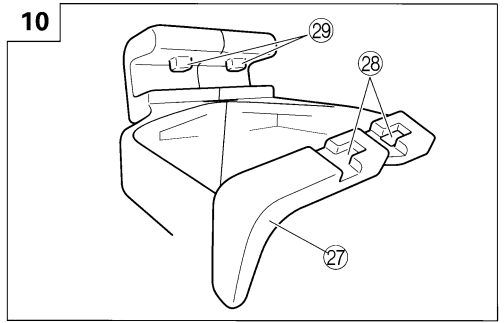
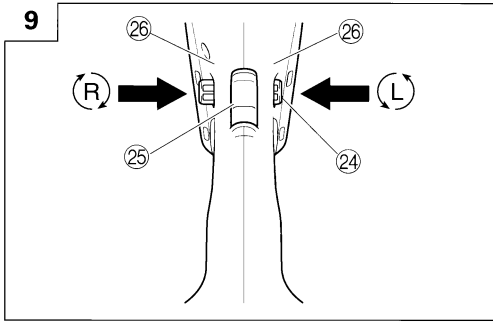
使用说明书
HANDLING INSTRUCTIONS



使用前务请详加阅读

Read through carefully and understand these instructions before use.





①	充电式电池	Rechargeable battery
②	插销	Latch
③	拉出	Pull out
④	插入	Insert
⑤	把手	Handle
⑥	按	Push
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	盖子	Cap
⑪	三角标记	Triangle mark
⑫	电钻标记	Drill mark
⑬	锤子标记	Hammer mark
⑭	弱	Weak
⑮	强	Strong
⑯	白线	White line
⑰	变速开关	Shift knob
⑱	低速	Low speed
⑲	高速	High speed
⑳	环	Ring
㉑	导套	Sleeve
㉒	旋紧	Tighten
㉓	旋松	Loosen
㉔	选择按钮	Selector button
㉕	扳机开关	Trigger switch
㉖	Ⓜ 和 Ⓛ 标记	Ⓜ and Ⓛ marks
㉗	挂钩	Hook
㉘	槽	Ditch
㉙	突起	Projection

作业上的一般注意事项

1. 工作场所应打扫干净，清理妥当。杂乱无章将导致事故。
2. 避免危险的环境，请勿让电动工具与充电器淋到雨，不可在潮湿地方使用电动工具和充电器，工作地点要保持明亮。
请勿在易燃或爆炸性物质附近使用电动工具和充电器。
不可在存放易燃液体或气体的地方使用电动工具和充电器。
3. 不可让孩童靠近工作场所。与作业无关的访客也必须保持安全距离。
4. 电动工具与充电器要先关掉开关再收藏。
不用时，要存放于小孩拿不到的干燥的高处或用锁匙锁上。请勿存放于温度高于40°C的地方。
5. 不得使劲用力推压。电动工具需按设计条件才能有效而安全地工作。绝不可勉强。
6. 妥选使用工具。不可用小型工具或附件去干重活。
7. 服装要穿戴齐整。衣服或服饰不可松弛，以免卷入活动部件内。在室外工作时，最好戴橡胶手套，穿上鞋袜。
8. 使用电动工具时，大部分需要戴安全眼镜。如果作业中灰尘多，还要戴上面具或防尘口罩。
9. 塞绳不可滥用。充电器切勿拿着塞绳搬动或从插座中拔出。不可让塞绳受热、沾油或碰到锐利的菱角。
10. 作业以安全第一为原则。工件要用夹具或台钳卡紧。这样做，比用手按压更为可靠，也能够让双手专心操作。
11. 作业时脚步要站稳，身体姿势要保持平衡。
12. 电动工具要小心保养。刀具要经常保持锋利、清洁，以确保性能与安全。请按照润滑剂和所变更的附件说明进行。
13. 充电器不用时或维修检查时，务请将充电器的插头从插座中拔出。
14. 拆下卡盘扳手和扳手。打开开关之前，总要先检查扳手是否从工具上卸下。
15. 谨防不慎打开开关。搬运钻机时，请勿将手指搁在开关上。
16. 请勿使用未经指定的充电器以免发生危险。
17. 只能使用日立指定的更换零件。

18. 不得使用电动工具去进行规定以外的其它作业。
19. 为了防止人体受伤，只能使用本说明书或日立牌产品目录中所指定的附件。
20. 只能请授权的服务店来修理本工具。对于因非授权者的修理或因错误使用了本工具而造成的工具损伤或人体伤害，本制造公司概不负责。
21. 为了保证设计的完整性，电动工具和充电器的盖罩和螺钉类不可随便拆除。
22. 务请在铭牌上规定的电压下使用充电器。
23. 除非电线插头已从电源插座拆下，绝不可接触转动部分或附件。
24. 使用前务请充电。
25. 请勿使用未经指定的电池。请勿将未经指定的普通干电池、充电式电池或汽车蓄电池连接于电动工具上。
26. 请勿使用含有升压器的变压器。
27. 请勿用引擎发电机或直流电源装置对电池进行充电。
28. 务请在室内进行充电。充电时，充电器和电池会稍微变热，因此，不要在直射阳光处充电，而应在湿度低、通风好的阴凉处进行充电。
29. 在高处作业时，要注意下面的动静。作业前，应先确认下面无人。
30. 进行授权服务时，请使用本说明书中的组装分解图。

充电式起子电钻机使用上的注意事项

1. 务请在10~40°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. 请勿连续使用充电器。充完1次电后，要等约15分钟再进行第2次充电。
3. 充电时间请勿超过2小时。电池约1小时便可充好，1小时后应停止充电。请拔出插座上的充电器电源线插头。
4. 勿让杂质进入充电式电池连结口内。
5. 切勿拆卸充电式电池与充电器。
6. 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。

7. 请勿将电池丢入火中。
电池受热将会爆炸。
8. 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。
9. 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。
10. 请勿使用耗竭了的电池，否则会损坏充电器。
11. 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。
12. 当把钻头装入无键夹盘时，请充分旋紧导套。如果导套没有旋紧，钻头则会松脱，从而造成伤害。

规格

电动工具

型式		DV12DV	
无负荷速率（低/高）		0-350/0-1250 转/分	
无负荷冲击速率（低/高）		0-5250/0-18750 转/分	
能力	钻孔	砖块	10 mm
		木料	18 mm
		金属	钢材：10 mm，铝材：10 mm
	螺丝 紧固	机用螺丝	6 mm
		木螺丝	5.1 mm（直径）× 32 mm（长） （应有导孔）
充电式电池（FEB12S）		镍镉电池，12 V	
重量		1.9 kg	

充电器

型式	UC12SD
充电时间	约 1 小时（20℃ 时）
充电电压	12V
重量	1.4kg

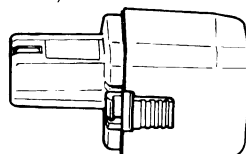
标准附件

DV12DV	① 十字槽头螺丝刀头 （2号×55L）..... 1
	② 充电器(UC12SD)..... 1
	③ 塑料盒 1
	④ 挂钩 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 (FEB12S)



2. 砖块用钻头

直径 6.5 mm，8 mm，9.5 mm，10 mm

选购附件可能不预先通告而已予更改。

用途

- 钻砖块和混凝土块等。
- 旋紧和拆除机用螺丝、木螺丝、自攻螺丝等。
- 钻各种金属。
- 钻各种木料。

电池的拆卸/安装法

1. 电池的拆卸法

请先紧抓住把手、然后再推压电池插销以拆下电池（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. 将电池插入充电器。

请先将电池的铭牌面向充电器的铭牌，然后将电池按进充电器直至电池碰到底面。（请参照图1和图3）

2. 将充电器的电源线插头插入插座。接好电源线后便开始充电（此时指示灯亮起）。

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。

在约20℃的温度下约需1小时便可完全充电。指示灯熄灭表示电池已经充好。

如果温度或电源电压偏低，电池充电时间则会延长。

如果充电已超过两个小时而指示灯仍不熄灭，则应停止充电并与您的日立授权维修中心联系。

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。

3. 将充电器电源线从交流电插座中拔出。

4. 抓住充电器，将电池拉出。

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

1. 确认盖子的位置（请参照图4）

本机的旋紧转矩可根据盖子的位置设定来调节。

- (1) 当把本机作为起子机使用时，请将盖子上的“1、3、5……22”中的某个数字或白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，请将盖子的钻机标记“”与机身外侧上的三角标记对齐。

注意

- 盖子不能设在数字“1、3、5……22”之间或白点之间。
- 当盖子位于“22”和钻机标记中部的白线之间时，请勿使用本机，否则会造成损坏。（请参照图5）

2. 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，螺丝头则会受损或折断。务请按螺丝直径来调节盖子的位置。

(2) 旋紧转矩的指示

螺丝类型及受紧固的材料不同，则旋紧转矩也不同。

本机采用盖子上的数字“1、3、5……22”以及白点来指示旋紧转矩。旋紧转矩在位置“1”时最小，在最大数字处时最大。（请参照图4）



(3) 调节旋紧转矩

转动盖子并使盖子上的数字“1、3、5……22”或白点与机身外侧上的三角标记对齐。按所需转矩将盖子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。请在使用起子电钻机过程中不要锁住马达。
- 如果冲击时间过长，螺丝可能会因旋紧力过大而折断。

3. 从旋转变为冲击（请参照图 4）

将电钻标记“”或锤子标记“”与机身外侧上的三角标记对齐，便可在“旋转（仅旋转）”和“冲击（冲击+旋转）”之间切换。

- 要在金属、木材或塑料上钻孔时，请切换为“旋转（仅旋转）”。
- 要在砖块或混凝土块上钻孔时，请切换为“冲击（冲击+旋转）”。

注意

若通常在“旋转”设定下进行的操作在“冲击”设定下进行，钻孔效果不但不会增强，反而可能会损坏钻头或其他零部件。

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。
- 当把变速开关设为“HIGH”（高速），且盖子位于“17”或“22”时，可能会出现离合器不能啮合和马达被锁住的现象。在这种情况下，请将变速开关设为“LOW”（低速）。
- 如果马达被锁住，则应立即断开电源。如果马达的锁定状态持续一会儿，马达或电池可能会被烧毁。

4. 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 6 和图 7）。

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。

5. 使用范围和建议





表 1 给出了基于本机机械结构的各种可用工作范围。

表 1

工作		建议
钻孔	砖块	用于钻孔。
	木料	
	钢材	
	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。

6. 选择旋紧力和转速的方法

表 2

用途		盖子的位置	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 - 22	用于直径在 4 mm 以下的螺丝。	用于直径在 6 mm 以下的螺丝。
	木螺丝	1 - 	用于公称直径在 5.1 mm 以下的螺丝。	用于公称直径在 3.8 mm 以下的螺丝。
钻孔	砖块		——	用于采用碳化物钻头的钻孔作业。
	木料		用于 18 mm 以下的直径。	用于 18 mm 以下的直径。
	金属		用于采用金属加工钻头的钻孔作业。	——

注意

- 表 2 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 HIGH（高速）设定下用机用螺丝使用冲击钻头时，因紧固转矩太强，可能发生螺丝损坏或钻头松弛。使用机用螺丝时，请在 LOW（低速）设定下使用冲击电钻。

7. 钻头的安装和拆卸

(1) 安装钻头

当把起子机钻头等插入无键钻机夹盘后，请紧握握环，同时右转（从前方看时为顺时针方向）导套将其旋紧。（请参照图 8）

- 如果导套在作业中变松，应将其旋得更紧一些。如果导套被旋得过紧，旋紧力则会变大。

(2) 拆卸钻头

请紧握握环，同时左转（从前方看时为逆时针方向）导套将其旋松。（请参照图 8）

注意：



- 当导套再也无法旋松时，请用老虎钳或类似的工具将钻头固定住。接着将离合器模式设在 1 和 10 之间，然后在操作离合器的同时将导套朝放松的一侧（左侧）转动。这样一来导套应当易于旋松了。

注

- 在主机上有一个十字形起子机钻头，朝前拉便可卸下。钻头用过之后，务请重新将其牢固地接在主体上。

8. 确认电池安装正确。

9. 检查旋转方向

按选择按钮的 R（右）侧，钻头便会顺时针（从后方看时）旋转；按选择按钮的 L（左）侧则使钻头逆时针旋转。（请参照图 9）。（机身上标有  和  标记。）

注意：

将本电钻用作冲击电钻时，请始终以顺时针方向旋转使用本电钻。

10. 开关操作

扣动扳机开关，则本机旋转；松开扳机，则本机停止。

- 钻机的转速可通过改变扳机开关的扣动幅度来控制：幅度小则速度低，幅度大则速度高。

注

- 当马达即将起转时，可能会产生一种嗡嗡声。这只不过是一种噪音，而非机器故障。

11. 钻入砖块时

过分用力按电钻绝不会提高钻孔速度。这不仅会损坏钻头或降低工作效率，而且还会缩短钻头的工作寿命。当钻入砖块时，请以 10~15 kg 的压力操作冲击电钻。

12. 使用挂钩

附带的挂钩仅单触便可安装在左侧或右侧或将其拆下。

请在需要时正确使用。

(1) 安装挂钩

在安装之前，先从工具内取出电池。然后插入吊钩，使挂钩的两处槽与工具的挂钩安装部分的两个突起相结合，检查并确认挂钩已牢牢固定。然后再装回电池。（请参照图 10 和 11）

(2) 取下挂钩

请按照安装时的相反顺序取下挂钩。

注意：

- 使用前固定挂钩。在未正确安装挂钩的状态下使用会导致受伤。
- 使用挂钩时，务请确认已装入电池。若在未装入电池的状态下使用挂钩，挂钩会移位或掉下而导致受伤。
- 将冲击电钻挂在腰带上携带时，请勿安装起子机钻头以外的东西。如果安装了带有锐利端的钻头等等，会导致受伤。

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。

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，否则会导致严重的事故。

3. 清理外部

冲击电钻沾污时，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。

4. 收藏

冲击电钻应收藏于温度低于40℃而为小孩拿不到的地方。

5. 维修零部件一览表

A: 项目号

B: 代码号

C: 使用数

D: 备注

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〔例如代码号和（或）设计〕可能变更，恕不另行通知。

注意：

为求改进，本手册所载规格可能不预先通告而已予更改。

GENERAL OPERATIONAL PRECAUTIONS

1. Keep work area clean. Cluttered areas and benches invite accidents.
2. Avoid dangerous environment. Don't expose power tools and charger to rain. Don't use power tools and charger in damp or wet locations. And keep work area well lit. Never use power tools and charger near flammable or explosive materials. Do not use tool and charger in presence of flammable liquids or gases.
3. Keep children away. All visitors should be kept safe distance from work area.
4. Store idle tools and charger. When not in use, tools and charger should be stored in dry, high or locked-up place-out of reach of children. Store tools and charger in a place where the temperature is less than 40°C.
5. Don't force tool. It will do the job better and safer at the rate for which it was designed.
6. Use right tool. Don't force small tool or attachment to do the job of a heavy duty tool.
7. Wear proper apparel. Do not wear loose clothing or jewelry. They can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoor.
8. Use eye protection with most tools. Also use face or dust mask if cutting operation is dusty.
9. Don't abuse cord. Never carry charger by cord or yank it to disconnect from receptacle. Keep cord from heat, oil and sharp edges.
10. 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.
11. Don't overreach. Keep proper footing and balance at all times.
12. Maintain tools with care. Keep tools sharp at all times, and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
13. When the charger is not in use, or when being maintained and inspected, disconnect its power cord from the AC outlet.
14. Remove chuck wrenches and wrenches. Form habit of checking to see that wrenches are removed from tool before turning it on.
15. Avoid accidental starting. Don't carry tool with finger on switch.
16. To avoid danger, always use only the specified charger.
17. Use only original HITACHI replacement parts.
18. Do not use power tools for applications other than those specified in the Handling Instructions.
19. To avoid personal injury, use only the accessories or attachment recommended in these handling instructions or in the HITACHI catalog.
20. If the supply cord of this charger is damaged, the charger must be returned to the HITACHI authorized service center for the cord to be replaced. Let only the authorized service center do the repairing. The Manufacturer will not be responsible for any damages or injuries caused by repair by the unauthorized persons or by mishandling of the tool.
21. To ensure the designed operational integrity of power tools and charger, do not remove installed covers or screws.
22. Always use the charger at the voltage specified on the nameplate.
23. Do not touch movable parts or accessories unless the battery has been removed.
24. Always charge the battery before use.
25. Never use a battery other than that specified. Do not connect a usual dry cell, a rechargeable battery other than that specified or a car battery to the power tool.
26. Do not use any transformer that has a booster.
27. Do not charge the battery from an engine electric generator or DC power supply.
28. Always charge indoors. Because the charger and battery heat slightly during charging, charge the battery in a place not exposed to direct sunlight; where the humidity is low and the ventilation good.
29. When working in a high place, pay attention to the activities below to make sure there are no people below.
30. Use the exploded assembly drawing on this handling instructions only for authorized servicing.

PRECAUTIONS FOR CORDLESS IMPACT DRILL

1. 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.
2. Do not use the charger continuously. When one charging is completed, leave the charger for about 15 minutes before the next charging of battery.
3. Do not charge the battery for more than 2 hour. The battery will be fully charged in about 1 hour and charging should be stopped when 1 hour has elapsed from commencement. Disconnect the charger power cord from the AC outlet.
4. Do not allow foreign matter to enter the hole for connecting the rechargeable battery.
5. Never disassemble the rechargeable battery and charger.
6. 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.
7. Do not dispose of the battery in fire. If the battery is burnt, it may explode.
8. When drilling into wall, floor or ceiling, check for buried electric power cable, etc.
9. 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.
10. Using an exhausted battery will damage the charger.
11. Do not insert foreign 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.
12. When mounting a bit into the keyless chuck, tighten the sleeve securely. If the sleeve is not tight, the bit may slip or come off, causing injury.

SPECIFICATIONS

POWER TOOL

Model		DV12DV	
No-load speed (Low/High)		0 – 350/0 – 1250 min ⁻¹	
No-load impact rate (Low/High)		0 – 5250/0 – 18750 min ⁻¹	
Capacity	Drilling	Brick	10 mm
		Wood	18 mm
		Metal	Steel: 10 mm, Aluminum: 10 mm
	Driving	Machine screw	6 mm
Wood screw		5.1 mm (diameter) × 32 mm (length) (Requires a pilot hole)	
Rechargeable battery (FEB12S)		Ni-Cd battery, 12 V	
Weight		1.9 kg	

CHARGER

Model	UC12SD
Charging time	Approx. 1 hour (at 20°C)
Charging voltage	12 V
Weight	1.4 kg

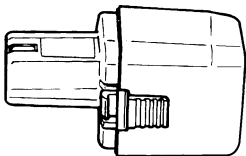
STANDARD ACCESSORIES

DV12DV	① Plus driver bit (No. 2 × 55L)	1
	② Charger (UC12SD)	1
	③ Plastic case	1
	④ Hook	1

Standard accessories are subject to change without notice.

OPTIONAL ACCESSORIES(sold separately)

1. Battery (FEB12S)



2. Drill bit for brick
Diameter, 6.5 mm, 8 mm, 9.5 mm, 10 mm

Optional accessories are subject to change without notice.

APPLICATIONS

- Drilling of brick and concrete block, etc.
- Driving and removing of machine screws, wood screws, tapping screws, etc.
- Drilling of various metals.
- Drilling of various woods.

BATTERY REMOVAL/INSTALLATION

1. Battery removal

Hold the handle tightly and push the battery latch 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 impact drill, charge the battery as follows.

1. Insert the battery in the charger.

Position the battery so that the nameplate faces toward the nameplate of the charger and press in the battery until it comes into contact with the bottom surface. (See Figs. 1 and 3.)

2. Connect the charger power cord to the receptacle. Connecting the power cord 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.

About 1 hour 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 two hours 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.

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

1. Confirm the cap position (see Fig. 4)

The three modes of screwdriver, drill and impact drill can be switched by the position of the cap in this unit.

- (1) When using this unit as a screwdriver, line up the one of the numbers "1, 3, 5 ... 22" on the cap, or the white dots, with the triangle mark on the outer body.
- (2) When using this unit as a drill, align the cap drill mark "▲" with the triangle mark on the outer body.
- (3) When using this unit as an impact drill, align the cap hammer mark "■" with the triangle mark on the outer body.

CAUTIONS

- The cap cannot be set between the numerals "1, 3, 5 ... 22" or the white dots.
- Do not use with the cap numeral between "22" and the white line at the middle of the drill mark. Doing so may cause damage. (See Fig. 5)

2. 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 cap position according to the screw diameter.

(2) Tightening torque indication

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, 3, 5 ... 22" on the cap, and a white dots. The tightening torque at position "1" is the weakest and the torque is strongest at the highest number. (See Fig. 4)

- (3) Adjusting the tightening torque
Rotate the cap and line up the numbers "1, 3, 5, ... 22" on the cap, or the white dots, with the triangle mark on the outer body. Adjust the cap in the weak or the strong torque direction according to the torque you need.

CAUTIONS

- The motor rotation may be locked to cease while the unit is used as drill. While operating the impact drill, take care not to lock the motor.
- Too long hammering may cause the screw broken due to excessive tightening.

3. Rotation to Impact changeover (See Fig. 4)

The "Rotation (Rotation only)" and "Impact (Impact + Rotation)" can be switched by aligning the drill mark "▲" or the hammer mark "■" with the triangle mark on the outer body.

- To make holes in the metal, wood or plastic, switch to "Rotation (Rotation only)".
- To make holes in bricks or concrete blocks, switch to "Impact (Impact + Rotation)".

CAUTION

If an operation which is normally performed at the "Rotation" setting is performed at "Impact" setting, the effect of making holes does not only increase but it may also damage the bit or other parts.

4. Change rotation speed

Operate the shift knob to change the rotational speed. Move the shift knob in the direction of the arrow (see Figs. 6 and 7).

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 setting the shift knob to "HIGH" (high speed) and the position of the cap is "17" or "22", 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.

5. 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.1.

Table 1

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

6. How to select tightening power and rotational speed

Table 2

Use		Cap Position	Rotating speed selection (Position of the shift knob)	
			LOW (Low speed)	HIGH (High speed)
Driving	Machine screw	1 — 22	For 4 mm or smaller diameter screw.	For 6 mm or smaller diameter screw.
	Wood screw	1 — 	For 5.1 mm or smaller nominal diameter screw.	For 3.8 mm or smaller nominal diameter screw.
Drilling	Brick		——	For drilling with a carbide tipped drill bit.
	Wood		For 18 mm or smaller diameters.	For 18 mm or smaller diameters.
	Metal		For drilling with a metal working drill bit	——

CAUTION

- The selection examples shown in **Table 2** 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 impact drill with a machine screw at HIGH (high speed), a screw may damage or a bit may loose due to the tightening torque is too strong. Use the impact drill at LOW (low speed) when using a machine screw.

7. Mounting and dismounting of the bit.

(1) Mounting the bit

After inserting a driver bit, etc. into the keyless drill chuck, firmly grasp the ring and tighten the sleeve by turning it toward the right (in the clockwise direction as viewed from the front). (See **Fig. 8**)

- If the sleeve becomes loose during operation, tighten it further. The tightening force becomes stronger when the sleeve is tightened additionally.

(2) Dismounting the bit

Firmly grasp the ring and loosen the sleeve by turning it toward the left (in the counter-clockwise direction as viewed from the front). (See **Fig. 8**)

CAUTION:



When it is no longer possible to loosen the sleeve, use a vise or similar instrument to secure the bit. Set the clutch mode between 1 and 11 and then turn the sleeve to the loose side (left side) while operating the clutch. It should be easy now to loosen the sleeve.

NOTE

- There is a plus driver bit on side of the main unit. The bit can be removed by pulling it forward. After using the bit, make sure to firmly attach it to the main body again.

8. Confirm that the battery is mounted correctly.

9. Check the rotational direction

The bit rotates clockwise (viewed from the rear side) by pushing the R-side of the selector button. The L-side of the selector button is pushed to turn the bit counterclockwise. (See **Fig. 9**). (The  and  marks are provided on the body.)

CAUTION:

Always use this unit with clockwise rotation, when using it as an impact drill.

10. Switch operation

When the trigger switch is depressed, the tool rotates. When the trigger is released, the tool stops.

- The rotational speed of the drill can be controlled by varying the amount that the trigger is pulled. Speed is low when the trigger switch is pulled slightly and increases as the trigger switch is pulled more.

NOTE

- A buzzing noise is produced when the motor is about to rotate; This is only a noise, not a machine failure.

11. For drilling into brick

Excessive pressing force never increases drilling speed. It will not only damage the drill tip or reduce working efficiency, but could also shorten the service life of drill bit. Operate the impact drill within 10-15 kg pressing force while drilling into brick.

12. Using the hook

The provided hook is so designed that it can be installed and removed on either right or left by one touch.

Use it correctly as occasion demands.

(1) Installing the hook

To begin with, remove the battery from the tool. Subsequently, insert the hook so that the grooves at 2 locations of the hook and the 2 protrusions of the hook installing part of the tool come together, check and confirm that the hook is securely fixed, and then install the battery. (See **Figs. 10 and 11**)

(2) Removing the hook

Remove the hook following the order of installation in reverse.

CAUTION

- Fix the hook securely before use. Any use with imperfect installation of the hook as is can result in injuries.
- When you use the hook, be absolutely sure that it is in a state where the battery is installed. If you use it in a state where the battery is removed, the hook can come off or drop and result in injuries.
- When you carry it hanging on a waist belt, do not install it on the drill chuck, but you can do so on the driver bit. If drills and the like with a sharp point are installed, injuries can result.

MAINTENANCE AND INSPECTION

1. Inspecting the tool

Since use of a 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. Cleaning on the outside

When the impact 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.

4. Storage

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

5. Service parts list

A : Item No.

B : Code No.

C : No. Used

D : Remarks

CAUTION:

Repair, modification and inspection of Hitachi Power Tools must be carried out by an 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.

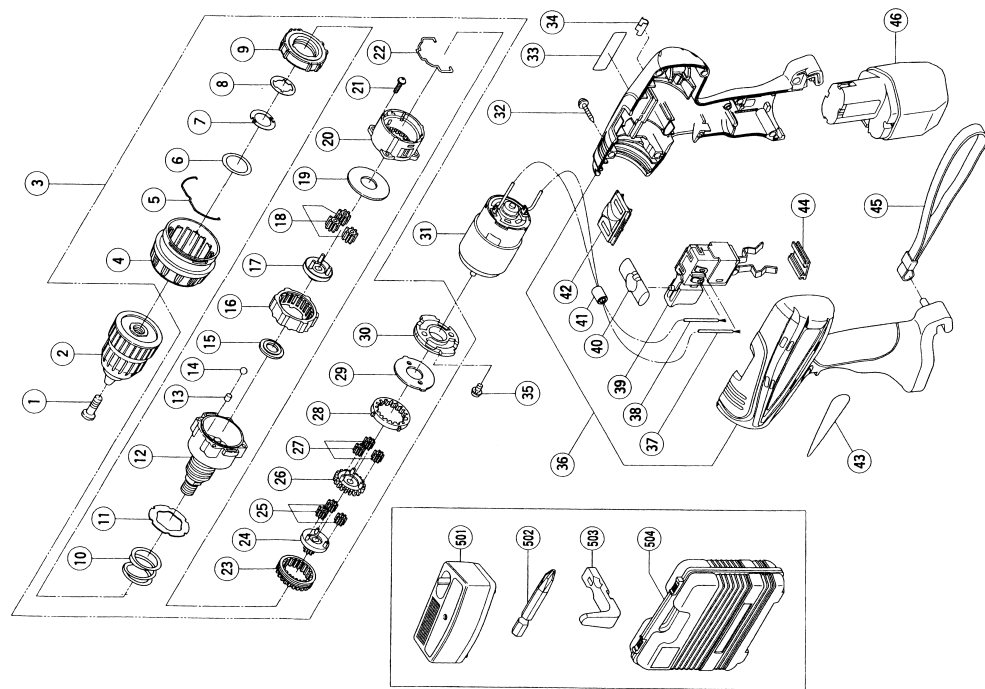
MODIFICATIONS:

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

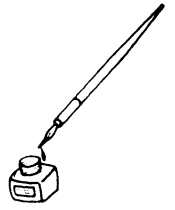
Accordingly, some parts (i.e. code numbers and/or design) may be changed without prior notice.

NOTE

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



A	B	C	D	A	B	C	D
1	311-959	1		39	318-245	1	
2	310-154	1	10VLR-N	40	319-760	1	
3	319-959	1	"4-30"	41	318-247	1	
4	319-763	1		42	318-234	1	
5	319-754	1		43	----	1	
6	320-088	1		44	315-141	1	
7	320-089	1		45	306-952	1	
8	320-090	1		46	318-239	1	FEB12S
9	319-743	1		501	UC12SD	1	
10	319-742	1		502	318-236	1	
11	320-131	1		502	319-964	1	
12	319-960	1		504	319-967	1	
13	319-744	6					
14	306-936	6	D5				
15	319-746	1					
16	319-745	1					
17	319-747	1					
18	319-769	3					
19	312-704	1					
20	319-748	1					
21	320-087	4					
22	319-753	1					
23	319-750	1					
24	319-749	1					
25	319-768	3					
26	319-751	1					
27	319-767	3					
28	319-752	1					
29	312-716	1					
30	316-955	1					
31	319-966	1					
32	313-687	7	D3x16				
33	----	1					
34	318-237	1					
35	317-333	2	M4x6				
36	319-965	1					
37	319-759	1	L100MM				
38	319-758	1	L130MM				



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