

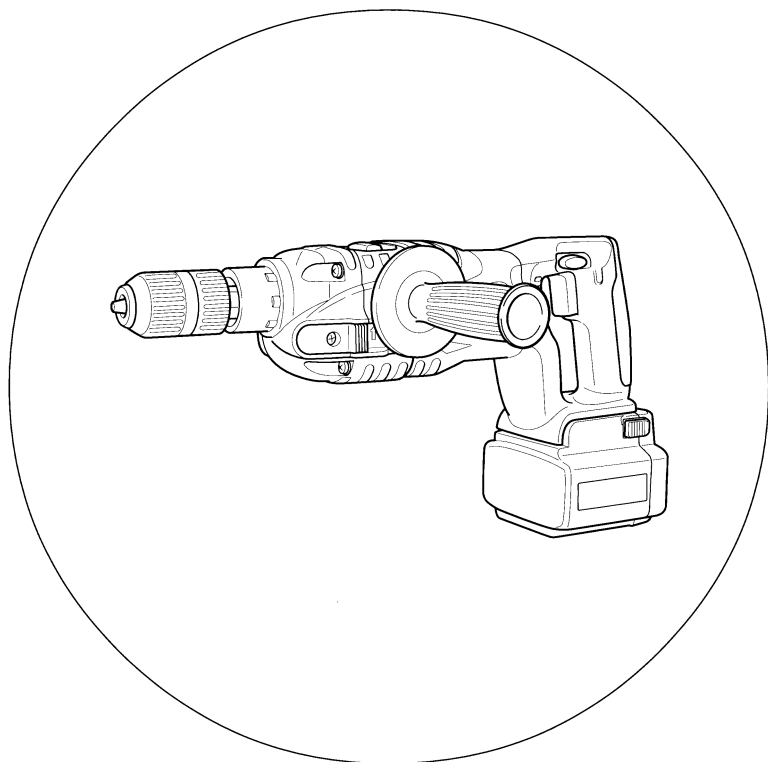
HITACHI

日立牌充电式冲击电钻 CORDLESS IMPACT DRILL

DV 24DV

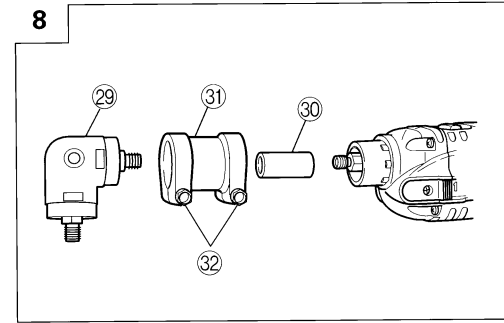
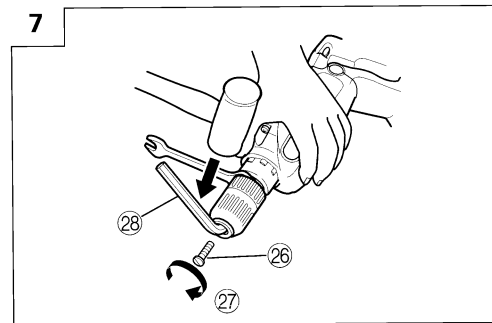
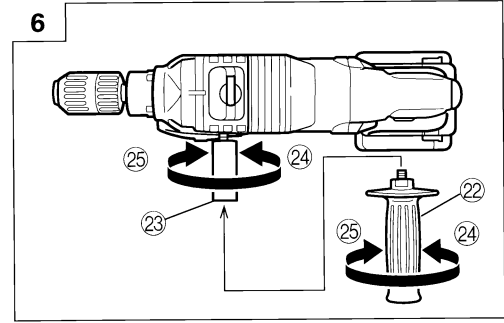
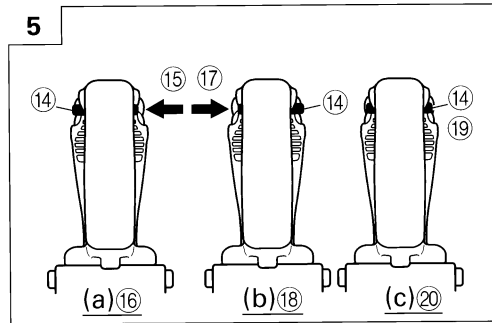
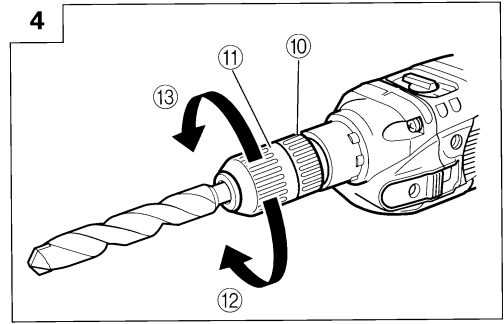
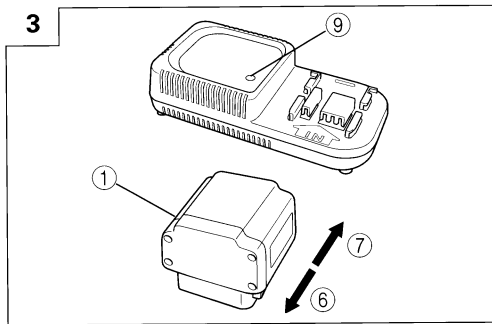
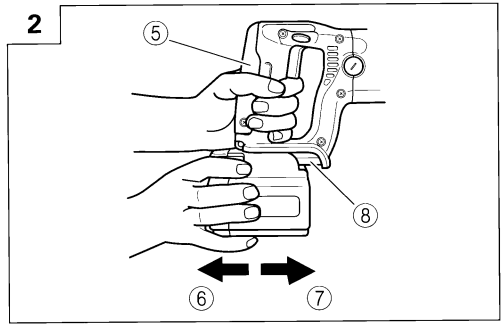
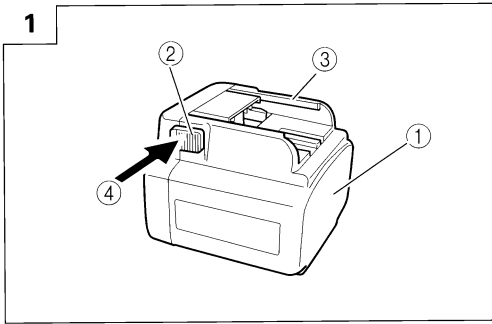
使用说明书

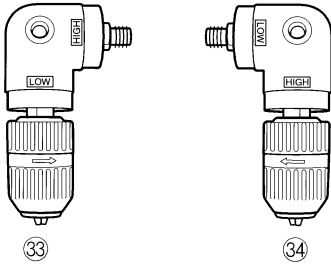
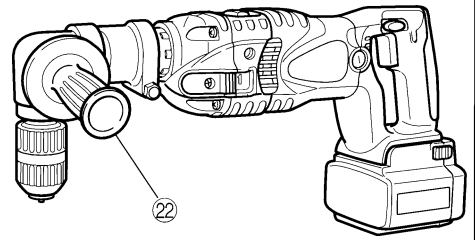
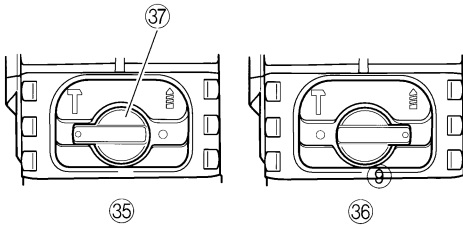
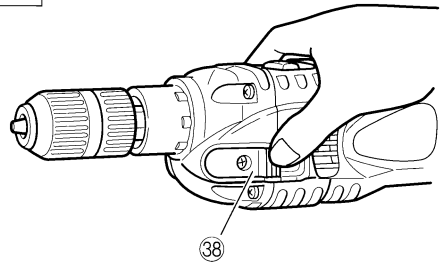
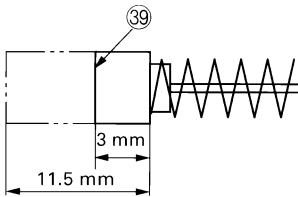
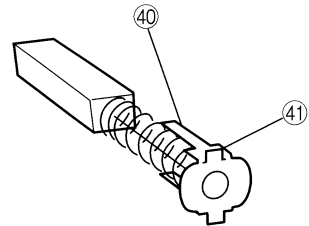
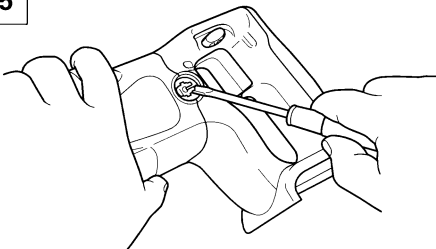
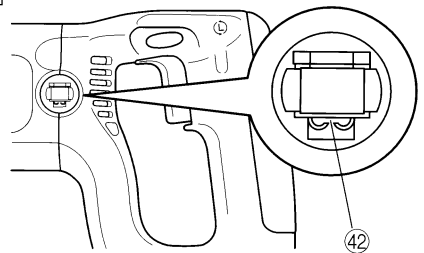
HANDLING INSTRUCTIONS



使用前务请详加阅读

Read through carefully and understand these instructions before use.



9**10****11****12****13****14****15****16**

①	充电式电池	Rechargeable battery
②	插销	Latch
③	电池导轨	Guide rail of battery
④	按	Push
⑤	把手	Handle
⑥	拉出	Pull out
⑦	插入	Insert
⑧	本体导轨	Guide rail of body
⑨	指示灯	Pilot lamp
⑩	环	Ring
⑪	导套	Sleeve
⑫	旋紧	Tighten
⑬	旋松	Loosen
⑭	按钮	Push button
⑮	按 (R) 侧	Push the (R) side
⑯	正转	Forward rotation
⑰	按 (L) 侧	Push the (L) side
⑱	反转	Reverse rotation
⑲	中心位置	Center position
⑳	不转	Does not rotate
㉑	从把手侧看的示意图	Diagram seen from the handle side
㉒	侧把手	Side handle
㉓	把手连接	Handle joint
㉔	旋紧	Tighten
㉕	旋松	Loosen
㉖	锁定螺栓	Locking screw
㉗	旋松	Loosen
㉘	六角头扳手	Hex. bar wrench
㉙	曲角部件	Angle unit
㉚	耦和器	Coupling
㉛	连接导套	Joint sleeve
㉜	夹紧螺栓	Clamping bolt
㉝	低速	Low speed
㉞	高速	High speed
㉟	冲击	Impact
㊱	旋转	Rotation
㊲	变速杆	Change lever
㊳	滑动锁定 (按和推)	Shift lock (Push and slide)
㊴	磨损极限	Wear limit
㊵	碳刷钉	Nail of carbon brush
㊶	碳刷突起	Protrusion of carbon brush
㊷	碳刷管外侧连接部分	Contact portion outside brush tube

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℃ 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。

充电式电圆锯使用上的注意事项

1. 务请在 0~40℃ 的温度下进行充电。温度低于 0℃ 将会导致充电过度，极其危险。电池不能在高于 40℃ 的温度下充电。最适合于充电的温度是 20~25℃。
2. 不要连续使用充电器。
一次充电完毕后，在 15 分钟内不要再次使用该充电器对电池充电。
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. 在对天花板、墙和地板钻孔时，要检查是否有埋设的电线和煤气管等。
8. 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。
9. 请勿使用耗竭了的电池，否则会损坏充电器。
10. 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。
11. 把钻头装入无缝夹盘时，请充分旋紧导套。如果没有旋紧导套，钻头会脱落而造成伤害。

规格

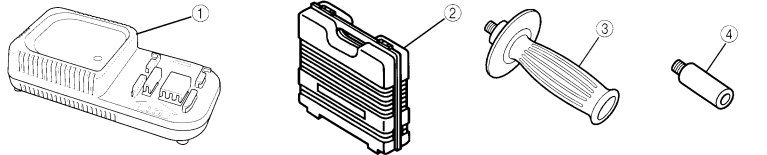
电动工具

型式	DV24DV	
无负荷速度 (1: 低/2: 高)	0-400/0-1750 转/分	
无负荷冲击率 (1: 低/2: 高)	0 - 7200/0-31500/分	
能力	水泥 (1: 低/2: 高)	20mm/10mm (深度 30mm)
	木材 (1: 低/2: 高)	38mm/20mm (厚度 40mm)
	金属 (1: 低/2: 高)	13mm/8mm (厚度 1.6mm)
充电式电池	EB2420 (2.0 Ah)	镍镉电池, 24 V
	EB2430 HA (3.0 Ah)	氧化镍金属电池, 24V
重量	4.0 kg	

充电器

型式	UC24YFB
充电电压	24 V
重量	0.6 kg

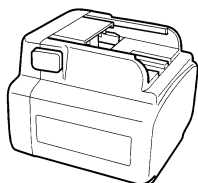
标准附件

DV24DV	
	<p>① 充电器 (UC24YFB) 1</p> <p>② 塑料箱 1</p> <p>③ 侧把手 1</p> <p>④ 把手连接 1</p>

标准附件可能不预先通告而已予更改。

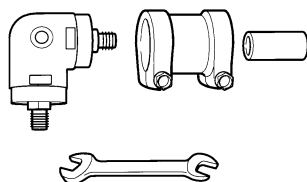
选购附件 (分开销售)

1. 电池 (EB2420、EB2430HA)



2. 曲角部件

用于在狭窄的地方钻孔。



3. 冲击钻头 (用于水泥)

直径 3.2mm - 20mm。

选购附件可能不预先通告而已予更改。

用途

- 用旋转和冲击：
对坚硬的物体钻孔（如水泥、砖和磁砖等）。
- 用旋转：
对金属、木材和塑料钻孔。

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 2）。






注意

切勿使电池短路。

2. 电池的安装法

把电池的导轨对准本体，插入电池。一定要把电池装紧。

表 1

指示灯的显示			
充电前	闪烁 (红色)	点亮 0.5 秒钟, 不点亮 0.5 秒钟 (熄灭 0.5 秒钟) 	
充电时	点亮 (红色)	连续点亮 	
充电完成	闪烁 (红色)	点亮 0.5 秒钟, 不点亮 0.5 秒钟 (熄灭 0.5 秒钟) 	
无法充电	闪动 (红色)	点亮 0.1 秒钟, 不点亮 0.1 秒钟 (熄灭 0.1 秒钟) 	电池或充电器有问题
无法充电	点亮 (绿色)	连续点亮 	电池温度太高, 以致无法充电。

(2) 关于充电式电池的温度

充电式电池的温度如下表所示, 在充电前应使已发热的电池冷却片刻。

表 2

电池类型	电池可充电的温度
EB2420	-5°C - 60°C
EB2430HA	0°C - 45°C

(3) 关于充电时间

根据充电器和电池的组合, 充电时间如图 3 所示。

充电

在使用电动工具之前, 请先按以下方法给电池充电。

1. 将充电器的电源线连接至电源插座。连接电源线时, 充电器的指示灯将闪烁呈红色 (以 1 秒的间隔)。
2. 将电池装入充电器。
如参考图 3 所示把电池放入充电器中。一定要把电池完全放入充电器中。
3. 充电

将电池插入充电器后, 充电开始, 并且, 充电器上的指示灯将持续点亮呈红色。

电池完全充电后, 指示灯将闪烁呈红色 (以 1 秒的间隔) (参见表 1)。

(1) 指示灯显示

根据充电器或充电式电池的情况, 指示灯的显示如表 1 所示。

表 3 充电时间 (于 20°C)

电池类型	充电时间
EB2420	约 50 分钟
EB2430HA	约 70 分钟

注

充电时间可能根据温度和电压而有变化。

4. 从电源插座拔下充电器的电源线。
5. 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

- 若在电池因长时间存放在有直射阳光的场所或刚使用后发热时进行充电，充电器的指示灯点亮呈绿色。遇此情况时，请先让电池冷却后再开始充电。
- 指示灯闪烁呈红色时（以 0.2 秒钟的间隔），请检查并取出充电器电池安装孔内的任何异物。若无异物，则可能电池或充电器发生故障。请带去经授权的维修中心检查。
- 因内置的微机需要约 3 秒钟才能确认正用 UC24YFB 进行充电的电池已被取出，因此请等待 3 秒钟后再重新插入电池继续充电。

作业之前

1. 钻头的安装和拆卸

- (1) 安装钻头
把钻头插入无键夹盘后，紧握环并向右转（从前方看是顺时针方向）把导套旋紧。（请参考图 4）
 - 如果导套在作业过程中变松，应将其更旋紧一些。旋得越紧，旋紧力就更大。
- (2) 拆卸钻头
紧握环并向左转（从前方看是逆时针方向）把导套旋松。（请参考图 4）

2. 选择合适的钻头

- 在水泥或砖块上钻孔时
请使用附件中指定的钻头。

- 在金属或塑料上钻孔时
请使用普通的钻金属钻头。
 - 在木材上钻孔时
请使用普通的钻木材钻头。
但如果钻孔小于 6.5mm 时，请使用钻金属钻头。
3. 务必正确安装电池。
 4. 检查钻头旋转方向（请参考图 5）
按按钮的 R（右）侧，钻头会顺时针转（从后方看）。（请参考图 5-a）。
按按钮的 L（左）侧，钻头会逆时针转。（请参考图 5-b）。
如果按钮放在中心位置，钻头就不会转。（请参考图 5-c）。
 5. 安装单侧把手和把手连接（请参考图 6）
对习惯使用左手或右手的人，可以在工具上安装单侧把手和把手连接。要安装单侧把手和把手连接，可以把它穿入要安装的一侧的安装座上，并旋紧。
 6. 安装曲角部件（选配附件）
 - (1) 从冲击钻取下无键转机夹盘（请参考图 7）
 - 要从冲击钻取下无键转机夹盘，尽可能旋松无键转机夹盘，拉出锁定螺栓（左手侧）。该螺栓是把无键转机夹盘锁定在转轴上的。然后把六角头扳手装在无键转机夹盘上，并把附件扳手放在曲角部件的六角开口中。把冲击钻固定在坚固的底座上，转动无键转机夹盘直到扳手成大约 30 度角，再用榔头敲击扳手使得无键转机夹盘向逆时针转动（从前方看）。这样可以从转轴上旋松无键转机夹盘，并可用手取下无键转机夹盘。

注意：

如果用榔头敲击扳手仍然取不下无键转机夹盘，不要过于用力敲击。请把冲击钻送到日立的特约维修中心。

(2) 安装曲角部件

- 取下无键转机夹盘后，给冲击钻轴加上耦和器。把连接导套连上齿轮罩，把曲角部件与连接导套的另一侧相连。然后轻轻向两个方向转动曲角部件，使耦和器中的六角型孔和曲角部件的六角型部分吻合。最后调节曲角部件的方向并用夹紧螺栓旋紧连接导套。用 686-784N.cm (70-80kgf.cm) 的扭力来逐步并平等地旋紧两个连接导套。（扭动旋紧螺栓上的开端扳手可增加力）。（请参考图 8）
- 用曲角部件低速工作时，把无键转机夹盘连在曲角部件上标有“LOW”的一端，并旋紧锁定螺栓。这

样设定的话，转动的速度会减至约 70%，转动扭力增加到约 150%。（请参考图 9）

- 用曲角部件高速工作时，把无键转机夹盘连在曲角部件上标有“HIGH”的一端，并旋紧锁定螺栓。这样设定的话，转动的速度会增至约 150%，转动扭力减少到约 70%。（请参考图 9）
- (3) 安装单侧把手和把手连接（请参考图 10）
单侧把手和把手连接可安装在曲角部件任何一侧，以便于习惯使用左手或右手的人使用。要安装单侧把手和把手连接，可以把它穿入要安装的一侧的安装座上，并旋紧。
- (4) 从曲角部件上取下无键转机夹盘
○ 用把无键转机夹盘从冲击钻上取下的同样方法，可以把无键转机夹盘从曲角部件上取下。但是，在旋松无键转机夹盘前，一定要先把曲角部件从冲击钻上取下。这样可以避免损坏冲击钻的齿轮。在旋松无键转机夹盘前，使用提供的开端扳手来固定住把曲角部件的钻轴。

注意：

如果敲击扳手仍然取不下无键转机夹盘，不要过于用力敲击。请把冲击钻送到日立的特约维修中心。

7. 从冲击改成旋转（请参考图 11）

转动变速杆，冲击钻可以从冲击（冲击并旋转）变成旋转（只旋转）。在水泥、石块、磁砖和相似的坚硬物体上钻孔时，要把变速杆转在冲击侧。此时钻头在转动的同时会冲击。在金属、木材和塑料上钻孔时，要把变速杆转到转动侧。此时冲击钻就变成了普通的电钻了。

注意：

- 不要对木材金属等物体使用冲击功能。这不仅会降低钻动效率，还会损坏钻头。
- 从冲击钻变成电钻方式时，转动变速杆的可能会不顺利。（请参考图 11）
此时，让电钻再工作几秒钟，使钻轴再向前推一些，就可以较容易地转动变速杆了。

8. 高速和低速的改变（请参考图 12）

在改变速度前，冲击钻一定要完全停止。改变速度时，压下钻轴，并把它推到如参考图 12 中箭头所示的合适位置。刻在冲击钻体上的“1”表示低速，“2”表示高速。

实际操作

1. 开关操作

- 压下开关扳机，钻机钻动。松开扳机，钻机停止。
- 扳机拉出的量可以控制钻动速度。扳机拉出少许时，速度低，拉出多时，速度快。
- 松开扳机时，制动会即刻开始。

2. 作为冲击钻或电钻使用时

- (1) 冲击钻的压力
给冲击钻施加过分的压力，并不能使钻孔钻得更快些。过分的压力不仅会损坏钻头，降低效率，还会降低钻头的使用寿命。
- (2) 在钻透孔时
当物体被钻透时，钻头可能会折断。在物体即将被钻透时，一定要降低压力。

注意

连续工作时，在完成一个钻孔后，要无负荷地转动 5 秒钟。

- (3) 使用粗钻头时
使用粗钻头时，手臂会受到强大的反作用力。手臂一定不要被反作用力移动。可以找一个立足点，用双手拿住钻机垂直向下钻。

注

在寒冷的条件（低于摄氏零度）下使用电池 EB2430HA 会减弱钻动扭力和减少工作量。这只是暂时现象。在电池变热后会恢复正常。

维护和检查

1. 检查钻头

连续使用磨损的或损坏的钻头会降低钻动效率并可能导致钻机马达的过载。要经常检查钻头并适时更换。

2. 检查安装螺丝：

定期检查所有的安装螺丝并确保它们均被正常拧紧。若有某些螺丝松弛，请立即将其拧紧。否则，会导致发生重大危险。

3. 马达的保养

马达装置线圈是电动工具的“心脏”。须特别注意，确保线圈不受损和（或）被油或水浸湿。

4. 检查炭刷（图 13）

马达使用炭刷这种消耗品。因过度磨损的炭刷会导致马达发生故障，因此，当炭刷磨损或接近“磨损极限”时，请换上新的炭刷。此外，请始终保持炭刷的清洁，并确保它能在炭刷盒里自由滑动。

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：

换上新的炭刷时，请一定使用日立牌炭刷（代码号：999058）。

注

为求改进，本手册所载规格可能不预先通告而已予更改。

5. 更换炭刷

如图 15 所示，先取下刷帽，然后用平头螺丝刀等钩住炭刷的突起部分，取出炭刷。

安装炭刷时，选择方向，使炭刷钉对准炭刷管外面的连接部分。如图 16 所示，用手指将其推入。最后安装刷帽。

注意：

务请将炭刷钉插入炭刷管外面的连接部分。（可插入附带的两个炭刷钉中的任何一个）。

须特别注意，因此操作的任何差错均会导致炭刷钉变形，并且可能在很早的阶段就导致马达发生故障。

6. 清洁外部

冲击钻沾污时，用软布或沾肥皂水的布擦拭。不要使用氯溶液、汽油或稀释剂。

7. 存放

请存放在温度低于 40°C 并远离小孩的场所。

8. 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。

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 clothing or jewelry. They can be caught in moving parts. Rubber gloves and 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 genuine 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. Let only the authorized service facility 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 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 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 allow foreign matter to enter the hole for connecting the rechargeable battery.
4. Never disassemble the rechargeable battery and charger.
5. 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.
6. Do not dispose of the battery in fire. If the battery is burnt, it may explode.
7. When drilling into wall, floor or ceiling, check for buried electric power cable, gas pipe, etc.
8. 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.
9. Using an exhausted battery will damage the charger.
10. 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.
11. 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

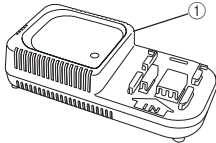
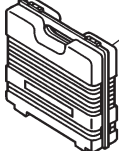
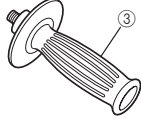

POWER TOOL

Model	DV24DV	
No-load speed (1: Low/2: High)	0 – 400/0 – 1750 min ⁻¹	
No-load impact rate (1: Low/2: High)	0 – 7200/0 – 31500/min.	
Capacity	Concrete (1: Low/2: High)	20 mm/10 mm (Depth 30 mm)
	Wood (1: Low/2: High)	38 mm/20 mm (Thickness 40 mm)
	Steel (1: Low/2: High)	13 mm/8 mm (Thickness 1.6 mm)
Rechargeable battery	EB2420 (2.0 Ah)	Ni-Cd battery, 24 V
	EB2430 HA (3.0 Ah)	Ni-MH battery, 24 V
Weight	4.0 kg	

CHARGER

Model	UC24YFB
Charging voltage	24 V
Weight	0.6 kg

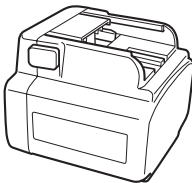
STANDARD ACCESSORIES

DV24DV					
					<ul style="list-style-type: none"> ① Charger (UC24YFB) 1 ② Plastic case 1 ③ Side handle 1 ④ Handle joint 1

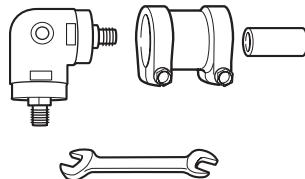
Standard accessories are subject to change without notice.

OPTIONAL ACCESSORIES (sold separately)

- Battery (EB2420, EB2430HA)



- Angle unit
For use in drilling holes in narrow spaces



- Impact drill bit (for concrete)
3.2 mm – 20 mm dia.

Optional accessories are subject to change without notice.

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 short 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 been cooled for a while.

CAUTION

- If the battery has been heated right after operation (or due to sunlight, etc.), the charger's pilot lamp may not light in red. In such a case, first let the battery cool, then start charging.
- When the pilot lamp flickers in red quickly (at 0.2-second intervals), check for and take out any foreign objects in the charger's battery installation hole. If there are no foreign objects, it is probable that the battery or charger is malfunctioning. Take it to your authorized Service Center.
- Since the built-in micro computer takes about 3 seconds to confirm that the battery being charged with UC24YFB is taken out, wait for a minimum of 3 seconds before reinserting it to continue charging. If the battery is reinserted within 3 seconds, the battery may not be properly charged.

PRIOR TO OPERATION

1. Mounting and dismounting of the bit.

- (1) Mounting the bit
After inserting a drill bit into the keyless 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. 4)
- If the sleeve becomes loose during operation, tighten it further. The tightening force becomes stronger when the sleeve is tightened moreover.
- (2) Dismounting the bit
Firmly grasp the ring and loosen the sleeve by turning it toward the left (in the counterclockwise direction as viewed from the front). (See Fig. 4)

2. Selecting the appropriate drill bit

- When boring concrete or brick
Use the drill bits specified in the Optional Accessories.
- When boring metal or plastic
Use an ordinary metalworking drill bit.

- When boring wood
Use an ordinary woodworking drill bit.
However, when drilling 6.5 mm or smaller holes, use a metalworking drill bit.

3. Confirm that the battery is mounted correctly.

4. Confirm the direction of bit rotation (Fig. 5)
The bit rotates clockwise (viewed from the rear side) by pushing the R-side of the push button. (Fig. 5-a)

The L-side of the push button is pushed to turn the bit counterclockwise. (Fig. 5-b)

The motor does not rotate if the push button is set to the center position. (Fig. 5-c)

5. Installing the side handle and handle joint (Fig. 6)

A Side handle and handle joint can be installed on either side of the tool for right or left handed use. To install the side handle and handle joint, thread it into the socket on the desired side of the tool and tighten it securely.

6. Attaching the angle unit. (Optional accessory)

- (1) Removing keyless chuck from impact drill (Fig. 7)
 - To remove the keyless chuck from the impact drill, open the keyless chuck jaws as far as possible and turn out the locking screw (left hand thread). This screw locks the keyless chuck to the spindle. Install the hex. bar wrench into the keyless chuck. Place the accessory wrench in the hexagonal opening of the angle unit spindle. Tightly restrain the impact drill on a firm base. Turn the keyless chuck until the wrench is at about a 30° angle to the bench top and strike the wrench sharply with a hammer so the keyless chuck turns in the counterclockwise direction (viewed from the front side). This should loosen the keyless chuck from the spindle which has a right hand thread and you will be able to remove the keyless chuck by hand.

CAUTION:

If the keyless chuck cannot be removed by striking the wrench, don't strike the wrench forcibly and send the impact drill to a HITACHI AUTHORIZED SERVICE CENTER.

- (2) Attaching the angle unit.
 - After removing the keyless chuck, engage the coupling to the impact drill spindle. Fit the joint sleeve to the gear cover, attach the angle unit to the other end of the joint sleeve, and turn the angle unit slightly in either direction so the hex. hole in the coupling engages the hex. portion of the angle unit spindle. Adjust the direction of the angle unit and tighten the joint sleeve by clamping bolts. Tighten two clamping bolts equally and gradually in turn with a torque of 686-784N·cm (70-80kgf·cm) (extent of force which can be subjected by only a wrist with the open end wrench provided to tight clamping bolts.). (Fig. 8)
 - To operate the angle unit at low speed, attach the keyless chuck to the angle unit spindle at the side marked "LOW" and secure the locking screw. At this setting, the drilling speed is decreased to about 70% and the drilling torque is increased to about 150%. (Fig. 9)
 - To operate the angle unit at high speed, attach the keyless chuck to the angle unit spindle at the side marked "HIGH" and secure the locking screw. At this setting, the drilling speed is increased to about 150% and the drilling torque is decreased to about 70%. (Fig. 9)

- (3) Installing the side handle and handle joint (**Fig. 10**)
The side handle and handle joint can be installed on either side of the angle unit for right or left handed use. To install the side handle and handle joint, thread it into the socket on the desired side of the angle unit and tighten it securely.
- (4) Removing keyless chuck from angle unit
- The keyless chuck can be removed from angle unit in the same manner it was removed from the impact drill; however, ALWAYS REMOVE ANGLE UNIT FROM THE IMPACT DRILL BEFORE ATTEMPTING TO LOOSEN KEYLESS CHUCK. This will prevent damage of impact drills gear. Use open end wrench provided to hold angle unit spindle before attempting to loosen keyless chuck.

CAUTION:

If the keyless chuck cannot be removed by striking the wrench, don't strike the wrench forcibly and send the impact drill to a HITACHI AUTHORIZED SERVICE CENTER.

7. IMPACT to ROTATION changeover (Fig. 11)

The Impact Drill can be switched from IMPACT (impact plus rotation) to ROTATION (rotation only) by turning the change lever. When boring concrete, stone, tile or similar hard materials, turning the change lever to IMPACT side. The drill head impacts against the material while continuing to rotate. When boring metal, wood or plastic, turning the change lever to ROTATION side. The impact drill can be used as an ordinary electric drill.

CAUTION

- Do not use the IMPACT function for the material such as woods or metals. Such usage will not only reduce drill efficiency, but may also damage the drill tip.
 - The change lever may not turn smoothly when changing from impact drill mode to drill mode. (**Fig. 11**)
In this case, operate the machine for few seconds. The spindle shaft will then be pushed forward, and the change lever can be moved smoothly.
- 8. High-speed/Low-speed changeover (Fig. 12)**
Prior to changing speed, ensure that the impact drill has come to a complete stop. To change speed, depress the shift lock and slide in to the appropriate direction, as indicated by the arrow in **Fig. 12**. The numeral "1" engraved in the impact drill body denotes low speed, the numeral "2" denotes high speed.

PRACTICAL HANDLING PROCEDURES

1. Switch operation

- When the switch trigger is depressed, the tool rotates. When the switch trigger is released, the tool stops.
- The rotational speed of the impact drill can be controlled by varying the amount that the switch trigger is pulled. Speed is low when the switch trigger is pulled slightly and increases as the switch trigger is pulled more.
- When releasing the switch trigger, the brake will be applied for immediate stopping.

2. When using as a Drill or an Impact Drill

- (1) Pressing force of the impact drill
You cannot drill holes more quickly even if you

press the impact drill with a stronger force than necessary. It not only damages tip of drill bit and decreases the efficiency of operation, but also shortens the life of the drill tip.

(2) In case of penetrating holes

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

CAUTION

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

(3) When a thick drill bit is used

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

NOTE

The use of the battery EB2430HA in a cold condition (below 0 degree Centigrade) can sometimes result in the weakened drilling 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 drill bit

Continued use of a worn and/or damaged drill bit will result in reduced drilling efficiency and may seriously overload the drill motor. Inspect the drill bit frequently and replace it as necessary.

2. Inspecting the mounting screws

Regularly inspect all mounting screws and ensure that they are properly tightened. Should any of the screws be loose, retighten them immediately. Failure to do so could result in serious hazard.

3. Maintenance of the motor

The motor unit winding is the very "heart" of the power tool.
Exercise due care to ensure the winding does not become damaged and/or wet with oil or water.

4. Inspecting the carbon brushes (Fig. 13)

The motor employs carbon brushes which are consumable parts. Since and 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. 999058.

5. 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 flat 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.

6. Cleaning of 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, as they melt plastics.

7. Storage

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

8. 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:

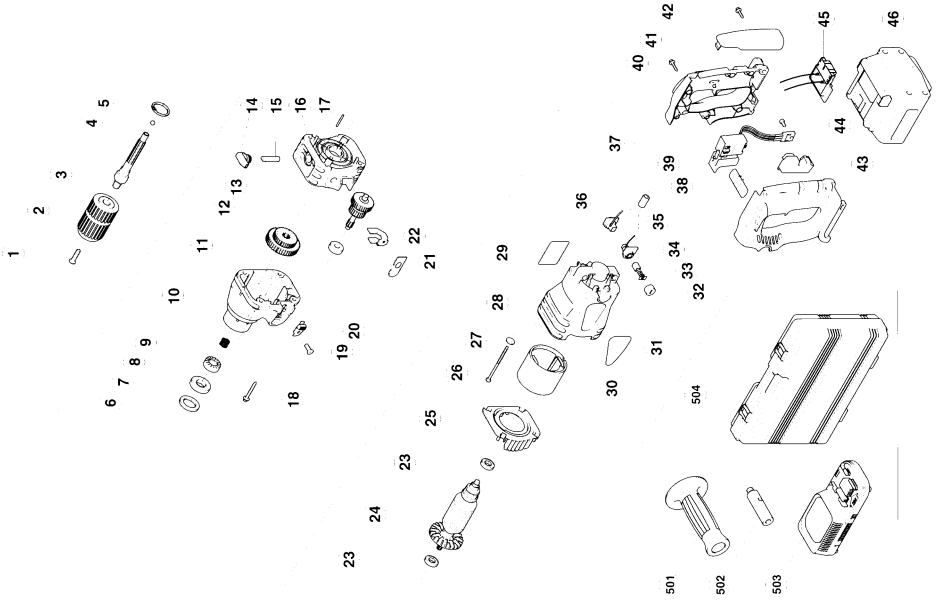
Hitachi Power Tools are constantly being improved and modified to incorporate the latest technological advancements.

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

NOTE

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

A	B	C	D	A	B	C	D
1	995-344	1	M6x25	27	319-956	2	
2	315-966	1	13VLR-N	28	319-808	1	
3	319-792	1		29	--	--	1
4	959-150	1	D6.35	30	319-789	1	
5	948-001	1		31	--	--	1
6	319-794	1		32	319-791	2	
7	600-2VV	1	6002VVCMP2SL	33	999-058	2	
8	319-795	1		34	319-813	1	
9	984-101	1		35	319-814	1	
10	319-793	1		36	318-247	1	
11	319-796	1		37	319-809	1	
12	935-522	1		38	319-760	1	
13	319-797	1		39	319-811	1	
14	319-801	1		40	305-490	4	D4x30
15	319-802	1		41	319-790	1	
16	319-787	1		42	304-035	2	D4x25
17	316-271	1	D2.5x25.8	43	319-812	1	
18	319-803	4	D5x65	44	993-963	1	M3x12
19	319-955	1	M4x14	45	319-810	1	
20	319-799	1		46	319-805	1	EB2420
21	319-800	1		46	319-807	1	EB2430HA
22	319-798	1		501	981-205	1	
23	608-VVM	2	608VVC2PS2L	502	319-791	1	
24	360-553	1	"23"	503	UC24YFB	1	
25	319-788	1		504	319-815	1	
26	960-108	2	D4x60				



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