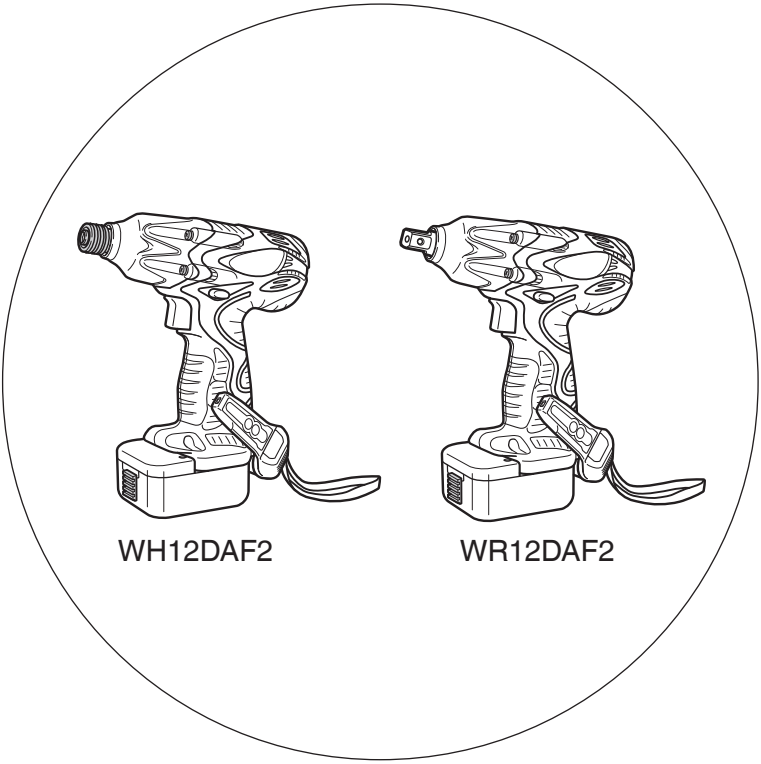
HiKOKI

中文

English

充电式冲击起子机 / 扳手
Cordless Impact Driver/Wrench

WH 12DAF2 • WR 12DAF2



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电动工具通用安全警告

⚠警告！

阅读所有警告和所有说明。
不遵照以下警告和说明会导致电击、着火和 / 或严重伤害。

保存所有警告和说明书以备查阅。

在所有下列的警告中术语“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。

1）工作场地的安全
   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作电动工具。
   注意力不集中会使操作者失去对工具的控制。

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电击危险。
   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电击危险。
   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电击危险。
   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。使电线远离热源、油、锐边或运动部件。
   受损或缠绕的软线会增加电击危险。

e）当在户外使用电动工具时，使用适合户外使用的外接软线。
适合户外使用的软线将减少电击危险。

f）如果在潮湿环境下操作电动工具是不可避免的，应使用剩余电流动作保护器（ＲＣＤ）。
使用ＲＣＤ可减小电击危险。

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。当你感到疲倦，或在有药物、酒精或治疗反应时，不要操作电动工具。
在操作电动工具时瞬间的疏忽会导致严重人身伤害。

b）使用个人防护装置。始终佩戴护目镜。
安全装置，诸如适当条件下使用防尘面具、防滑安全鞋、安全帽、听力防护等装置能减少人身伤害。

c）防止意外起动。确保开关在连接电源和／或电池盒、拿起或搬运工具时处于关断位置。
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）手不要伸展得太长。时刻注意立足点和身体平衡。
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戴饰品。让衣服、手套和头发远离运动部件。
宽松衣服、佩饰或长发可能会卷入运动部件中。

g）如果提供了与排屑、集尘设备连接用的装置，要确保它们连接完好且使用得当。
使用这些装置可减少尘屑引起的危险。

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。
选用适当设计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／或使电池盒与工具脱开。
这种防护性措施将减少工具意外起动的危险。

d）将闲置不用的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。
电动工具在未经培训的用户手中是危险的。

e）保养电动工具。检查运动件是否调整到位或卡住，检查零件破损情况和影响电动工具运行的其他状况。如有损坏，电动工具应在使用前修理好。

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，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。
将电动工具用于那些与其用途不符的操作可能会导致危险。

5）电池式工具使用和注意事项

a）只用制造商规定的充电器充电。
将适用于某种电池盒的充电器用到其他电池盒时会发生着火危险。

b）只使用配有特制电池盒的电动工具。
使用其他电池盒会发生损坏和着火危险。

c）当电池盒不用时，将它远离其他金属物体，例如回形针、硬币、钥匙、钉子、螺钉或其他小金属物体，以防一端与另一端连接。
电池端部短路会引起然烧或火灾。

d）在滥用条件下，液体会从电池中溅出；避免接触。如果无意间碰到了，用水冲洗。如果液体碰到了眼睛，还要寻求医疗帮助。
从电池中溅出的液体会发生腐蚀或燃烧。

6）维修

a）将你的电动工具送交专业维修人员，使用同样的备件进行修理。
这样将确保所维修的电动工具的安全性。

注意！

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。

充电式冲击起子机使用上的注意事项

1. 本工具为手提式工具，用于旋紧和旋松螺丝。请不要用于其它作业。
2. 如长时间进行作业，请使用耳塞。
3. 单手操作非常危险。操作时请用双手握紧电动工具。
4. 安装好起子机的钻头以后，请轻轻地将钻头往外拉确认钻头是否松驰。如钻头安装得不妥当，在使用时钻头可能会松驰而引起危险。
5. 请使用与螺丝相配的钻头。
6. 用本冲击起子机旋紧螺丝时，如冲击起子机与螺丝之间的位置不成直线，则会损坏螺丝头，同时起子机的旋转力也不能被妥善地传给螺丝。所以，旋紧螺丝时，请使起子机与螺丝成一直线。
7. 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℃。

8. 一次充电完成后，请将充电器搁置 15 分钟以上，然后再进行下一次充电。
   请勿连续给两节以上的电池充电。
9. 勿让杂质进入电池连结口内。
10. 切勿拆卸电池与充电器。
11. 切勿使电池短路。
    使电池短路将会造成很大的电流和过热，从而烧坏电池。
12. 请勿将电池丢入火中。
    电池受热将会爆炸。
13. 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。
14. 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。
15. 请勿使用耗竭了的电池，否则会损坏充电器。

充电式冲击扳手的使用注意事项

1. 本工具为手提式工具，用于旋紧和旋松螺栓和螺帽。
2. 如长时间进行作业，请使用耳塞。
3. 单手操作非常危险。操作时请用双手握紧电动工具。
4. 检查确认套筒没有破裂。
   破裂的套筒非常危险。使用套筒前请进行检查。
5. 用套筒销子和 O 形环固定套筒。
   如果固定套筒的销子和 O 形环受损，套筒可能会从冲击扳手上脱落，这种情况非常危险。如果套筒的销子和 O 形环变形、磨损、破裂或有其他方面的损坏，请不要使用。请务必将套筒的销子和 O 形环安装在正确的位置。
6. 检查旋紧扭矩。
   旋紧螺栓的适当扭矩取决于螺栓的制造材料、尺寸、等级等。
   另外，本冲击扳手产生的旋紧扭矩也取决于螺栓的材料和尺寸，以及套筒安装方式所要求的冲击扳手的长度。
   另外，在电池刚充完电时和电池快用完时，扭矩也略有不同。可使用扭矩扳手来检查螺栓是否已按适当的扭矩旋紧。另外，在电池刚充完电时和电池快用完时，扭矩也略有不同。可使用扭矩扳手来检查螺栓是否已按适当的扭矩旋紧。
7. 在转换旋转方向之前先让冲击扳手停下来。在转换旋转方向之前，务必松开开关，等冲击扳手停下来。
8. 禁止接触旋转部位。
   不要让旋转的套筒部分靠近手或身体其他部位。否则可能会被套筒割伤或卡住。另外，在套筒长时间持续使用之后，注意不要碰到套筒。因为套筒变得很热，可以将人灼伤。

9. 使用万向接头时，不要让冲击扳手空负荷旋转。
   如果在没有连接负荷时让套筒旋转，万向接头会造成套筒剧烈旋转。
   这样会造成人身伤害；套筒的剧烈运动还会震动冲击扳手以致扳手脱落。
10. 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℃。
11. 一次充电完成后，请将充电器搁置 15 分钟以上，然后再进行下一次充电。
    请勿连续给两节以上的电池充电。
12. 勿让杂质进入电池连结口内。
13. 切勿拆卸电池与充电器。
14. 切勿使电池短路。
    使电池短路将会造成很大的电流和过热，从而烧坏电池。
15. 请勿将电池丢入火中。
    电池受热将会爆炸。
16. 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。
17. 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。
18. 请勿使用耗竭了的电池，否则会损坏充电器。

符号

警告！

如下所示的符号用于本机。使用前请务必理解其含意。

	阅读所有安全警告和所有指示。

规格

电动工具

型式	WH12DAF2	WR12DAF2
空载转速	0 – 2500 /min	
能力	M4 – M8（小螺丝） M5 – M12（普通螺丝） M5 – M10（高张力螺栓）	M6 – M14（普通螺丝） M4 – M10（高张力螺栓）
旋紧扭矩	最大 110 N·m {1120 kgf·m} 在 20℃充足电后，旋螺 M12 高张力螺栓(硬度区分为 12.9)时，螺旋时间为 3 秒。	最大 130 N·m {1330 kgf·m} 在 20℃充足电后，旋螺 M12 高张力螺栓(硬度区分为 12.9)时，螺旋时间为 3 秒。
电池	EB1214S：镍镉电池，12 V（1.4 Ah，10 节电池）	
	EB1220BL：镍镉电池，12 V（2.0 Ah，10 节电池）	
	EB1226HL：镍氢电池，12 V（2.6 Ah，10 节电池）	
重量	1.6 kg（EB1214S 安装）	

充电器

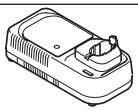
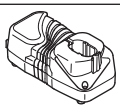
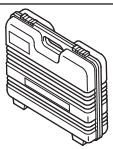
型式	UC14YFA	UC18YG
充电时间	EB1214S: 约 30 分（20℃时）	EB1214S: 约 30 分（20℃时）
	EB1220BL: 约 50 分（20℃时）	EB1220BL: 约 50 分（20℃时）
	EB1226HL: 约 60 分（20℃时）	×
充电电压	7.2 V – 14.4 V	7.2 V – 18 V
重量	0.6 kg	0.3 kg

“×”表示没有用指定的充电器进行充电。

注：充电时间会根据温度和电源电压产生变化。

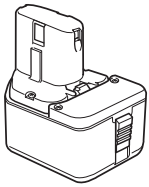
标准附件

除了主机（1 台）外，产品包中还包括表中所列的附件。

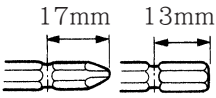
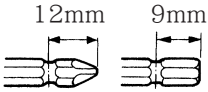
		WH12DAF2	WR12DAF2
充电器 (UC14YFA 或 UC18YG)	 UC14YFA  UC18YG	1	1
塑料盒		1	1

选购附件（分开销售）

1. 电池（EB1214S, EB1220BL, EB1226HL）



2. 对于 WH12DAF2
   起子刀头和砧座的附件尺寸有两种类型。请参考下表并为您的 WH12DAF2 选取适当的起子刀头和砧座附件尺寸。

附件尺寸		购买地点
型 – L		韩国、台湾、香港、中华人民共和国、新加坡
型 – S		其他地区。

3. 关于 WR12DAF2
   WR12DAF2 型是 12.7 正方形起子机规格。请选择具有适当附件尺寸的砧座。

用途

<WH12DAF2>
○ 用于旋紧和拆除小螺丝、小螺栓等。
<WR12DAF2>
○ 旋紧或旋松固定结构性物品的各类螺栓和螺母。

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）。

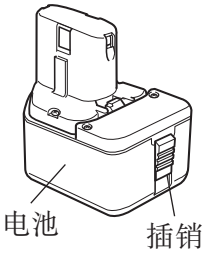


图 1

注意！

切勿使电池短路。

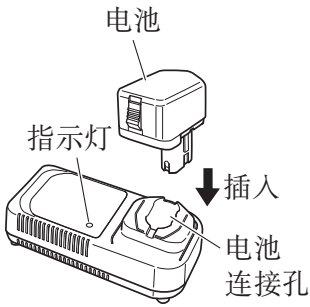
2. 电池的安装法
   插入电池时请注意极性（参照图 2）。

图 2

充电

<UC14YFA>
使用电动工具前，请如下所述对电池进行充电。

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
   按照图 3 所示方向将电池用力插入，直到电池接触到充电器盒的底部。



<UC14YFA>
图 3

注意！

若电池按相反方向插入，不仅无法进行充电，而且可能导致如充电器两端变形等问题。

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**第 10 页的表 1**）。

(1) 指示灯显示

根据充电器或电池的情况，指示灯的显示如表 1 所示。

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。
过热而等待	点亮 （绿色）	连续点亮	电池温度太高，以致无法充电。

(2) 关于电池的温度

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 电池的充电范围

电池	可以对电池进行充电的温度
EB1214S, EB1220BL	-5℃ – 60℃
EB1226HL	0℃ – 45℃

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。

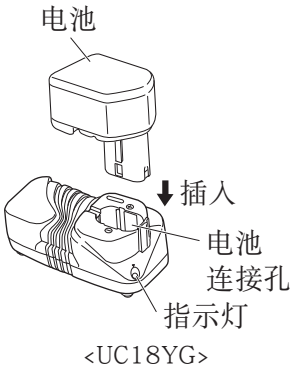
感到电动工具的能力变弱时，请停止使用并给电池充电。若您继续使用电动工具并耗尽电力，电池可能会损坏或其使用寿命缩短。

(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！

○ 若在电池因长时间放置在受阳光直射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。在此情况下，先将电池冷却后再开始充电。
○ 指示灯闪动呈红色时（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 UC14YFA 进行充电的电池已被取出，因此请待 3 秒钟后再重新插入电池继续充电。如果在 3 秒内将电池重新插入，电池可能不能正确充电。

<UC18YG>
使用电源工具前，请按以下方式为电池充电。
1. 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。
2. 将电池插入充电器
按正确的电极方向插入电池直至其接触到充电器底部（此时指示灯亮起）（见图 4）。



<UC18YG>
图 4

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。

○ 关于电池的温度。
电池的温度如表 3 所示。

表 3 电池充电范围

电池	可以对电池进行充电的温度
EB1214S, EB1220BL	0℃ – 45℃

○ 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。
如果充电已超过超过120分而指示灯仍不熄灭，则应停止充电并与您的HiKOKI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. 将充电器电线从插头拔下
4. 抓稳充电器并取出电池

注：

充电后，先将电池从充电器中取出，然后妥善存放。

关于使用新电池等情况下的放电

由于新电池和未经长期使用的电池的内部化学物质没有活性，在前一两次使用时放电量会较低。这只是暂时现象，通过 2 至 3 次充电后，将会恢复充电所需正常时间。

怎样让电池使用时间更长

(1) 在电池电量完全耗尽之前给电池充电。
在感觉工具的动力变弱时，停止使用工具并为电池充电。
如果继续使用工具消耗电流，可能会造成对电池的损坏，电池使用寿命会缩短。

(2) 避免在高温下充电。
充电电池在刚使用后会发热。如果在电池刚使用后为电池充电，电池的内部化学物质的性能会下降，电池使用寿命会缩短。请先将电池放置一会，待电池冷却后再进行充电。

作业之前

1. 工作环境的准备和检查
请确认工作环境确实附加注意事项中所规定的所有条件。
2. 电池的检查
请确认电池是否装紧了。如电池稍有松驰，则电池可能会掉出来而引起事故。
3. 钻头的安装（WH12DAF2）
请务必要按照下列顺序安装起子机的钻头（图 5）。

(1) 向后拉出导套。
(2) 将钻头插入铁砧中的六角孔。
(3) 松开，导套便会回到其原来位置。

注意！

如导筒不回到其原来位置，则说明钻头没有安装好。

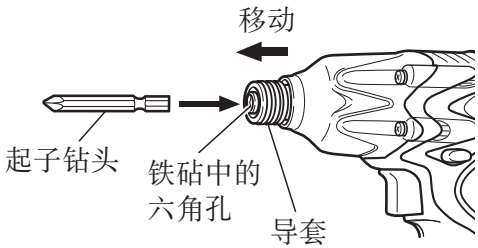


图 5

4. 选择与螺栓匹配的套筒
（WR12DAF2）
请务必使用与要旋紧的螺栓相匹配的套筒。使用不合适的套筒不仅无法充分旋紧螺栓，而且会损坏套筒或螺母。

磨损或变形的六角形或方形套筒没有足够的紧密性与螺母或砧座吻合，因此会造成旋紧扭矩的降低。
请注意套筒孔的磨损，在进一步磨损产生之前进行更换。
最后，按照第 5 项的规定安装套筒。“可选择附件”部分详细说明了螺栓尺寸和套筒间的关系。套筒根据其六角形孔的两面角宽度命名。

5. 安装套筒（WR12DAF2）
选择要使用的套筒。

● 销子、O 形环的类型（图 6 和图 7）

(1) 将套筒的孔与砧座的孔对准并将砧座插入套筒。
(2) 将销子插入套筒。
(3) 将 O 形环套到套筒的凹槽上。

● 柱塞式（图 8）
将砧座方形部分上的柱塞与六角形套筒的孔对准。然后推动柱塞，将六角形套筒安装到砧座上。检查柱塞是否与套筒完全吻合。要卸下套筒时，按相反的顺序操作。

图 6

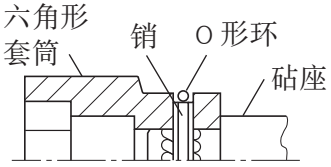


图 7

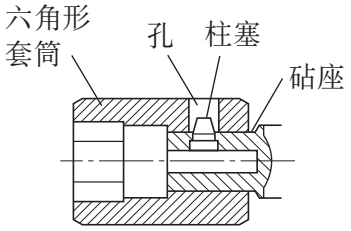


图 8

使用方法

注意！

○ 使用装有标灯的挂钩时，千万注意不要让主要设备掉落。如果工具掉落，则有发生事故的危险。
○ 在用腰带上悬挂的装有标灯的挂钩携带工具主体时，请不要在工具主体上装配除菲利浦刀头以外的尖头工具。如果在腰带上悬挂带有尖头部件（如钻头）的设备，可能会造成伤害。

1. 使用轻便挂钩
可将轻便挂钩安装在左侧或右侧，并可在 0 度和 80 度之间分 5 级调节角度。

(1) 操作挂钩

(a) 按箭头方向（A）朝身边拉出挂钩，并按箭头方向（B）转动。（图 9）

(b) 可分 5 级调节角度（0°，20°，40°，60°，80°）。
请将挂钩调节到操作所需的位置。

(2) 切换挂钩位置。

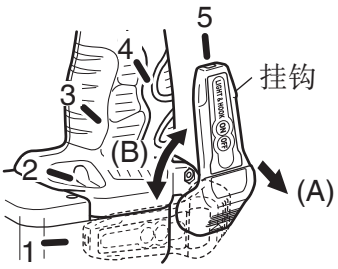


图 9

注意！

不完整地安装挂钩可能会在使用时导致伤害。

(a) 紧紧抓住主机并用槽头螺丝刀或硬币取下螺钉。（图 10）

(b) 取下挂钩和弹簧。（图 11）

(c) 将挂钩和弹簧安装在另一侧并用螺钉固定。（图 12）

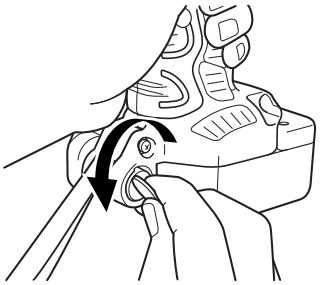


图 10

注：

请注意弹簧的方向。请按较大直径朝外的方向安装弹簧。（图 12）

(3) 使用辅助灯

(a) 按下开关可关闭灯。如果忘记关灯，15 分钟后灯会自动熄灭。

(b) 可在挂钩位置 1 － 5 范围内调整照明方向（图 13）。

○ 照明时间
AAAA 锰电池：大约 15 小时
AAAA 碱性电池：大约 30 小时

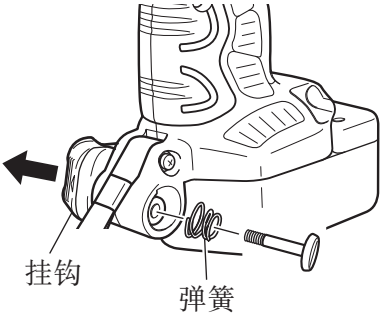


图 11

注意！

切勿直视辅助灯，否则会伤害眼睛。

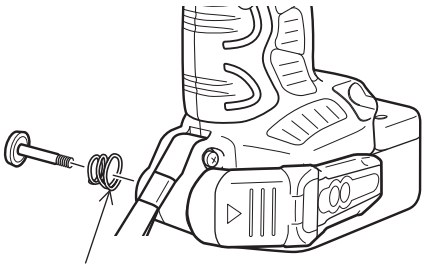


图 12

图 13

(4) 更换电池

(a) 使用十字螺丝起子（1 号）松开挂钩螺钉（图 14）。
按照箭头方向推开挂钩盖（图 15）。

(b) 取出旧电池，装入新电池。根据挂钩指示正确安放正极（+）与负极（−）（图 16）。

(c) 将挂钩主体上的缺口与挂钩盖上的凸起对齐，依图 15 中的箭头相反的方向按下挂钩盖，并旋紧螺钉。
使用市售 AAAA 电池（1.5V）。

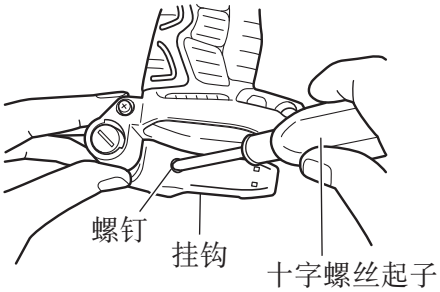


图 14

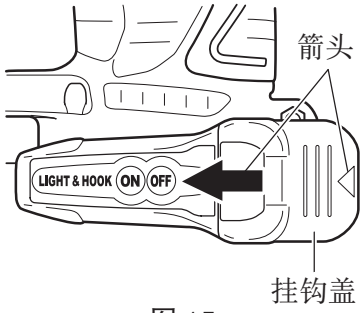


图 15

注：
切勿过度旋紧螺钉，否则会损坏螺钉的螺纹。

注意！

○ 不遵守以下事项会导致电池泄漏、生锈或发生故障。
正确放置电池正极（+）与负极（−）。
一次更换两节电池，切勿混合使用新旧电池。
即时取出耗尽的电池。

○ 切勿将电池与一般垃圾一起丢弃，切勿将电池放入火中。

○ 将电池放在儿童不能触及的地方。

○ 根据电池规格与说明正确使用电池。

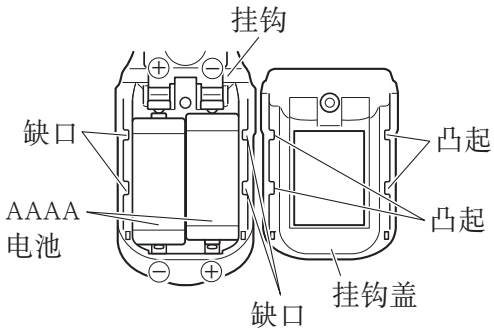


图 16

2. 检查旋转方向
按下按钮的 R 侧，钻头便以顺时针方向（从背面观看时）旋转。
按下按钮的 L 侧，钻头则以你时针方向旋转。（请参照图 17）（机身上有 L（L）和 R（R）标志）

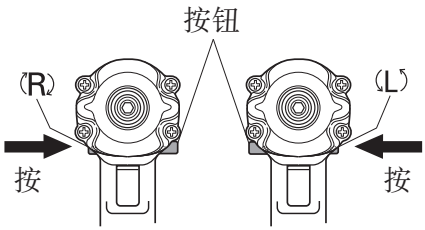


图 17

注意！

在冲击起子机运转期间，无法切换按钮。要切换按钮时，先停止冲击起子机运转，然后再设定按钮。

3. 开关操作

○ 按启动开关时，电动工具开始转动。松开启动开关，电动工具则停止转动。

○ 可通过改变拉动启动开关的量来控制其转速。轻拉启动开关，转速较低；用力拉动，则转速加快。

4. 螺丝的旋紧和旋松（WH12DAF2）

请安装与螺丝相配的钻头。请先将钻头插进螺丝头的槽中，然后再旋紧螺丝。请勿用过大的力按住冲击起子机，只要不使钻头不离开螺丝头即可。

注意！

冲击时间过长时，会将螺丝旋得太紧以致会损坏螺丝和钻头尖。

用本冲击起子机旋紧螺丝时，如冲击起子机与螺丝之间的位置不成直线，则会损坏螺丝头，同时起子机的旋转力也不能被妥善地传给螺丝。所以，旋紧螺丝时，请使起子机与螺丝成一直线。

5. 可旋紧的螺钉数（WH12DAF2）

有关一次充电可旋紧的螺钉数，请参照下表。

EB1214S

使用的螺钉	旋紧数
木螺钉 ø4 × 50（软木）	约 190
机械螺钉 M8 × 16	约 500

根据环境温度和电池特性的不同，这些值可能略有变化。

6. 可以旋紧螺栓的次数（WR12DAF2）

关于一次充电可以旋紧螺栓的次数请参考下表。

EB1214S

使用的螺栓	旋紧次数
M12 × 45 高张力螺栓	约 87

这些数值可能会因环境温度和电池特性而略有变化。

注：

在寒冷环境（0℃以下）中使用 EB1226HL 电池有时会造成旋紧扭矩变弱以及作业量的减少。但是，这只是暂时现象，在电池变热后将会恢复正常。

操作上的注意事项

1. 连续作业后须让电动工具休息片刻
   在连续进行螺栓紧固作业后以及在更换电池后，请让电动工具暂停作业 15 分钟。如果在更换电池后立刻开始作业，马达和开关等的温度将会升高，结果导致烧毁。

注：
   请勿触摸锤盒，因在连续作业后它会变得很热。

2. 关于转速控制开关的注意事项
   此开关带有可无级改变转速的内置电路。因此，当轻拉启动开关（低速转动）并在连续旋紧螺丝中停止马达转动时，电路部分的组件可能会因过热而损坏。

3. 旋紧转矩
   在第 18 页的图 18 和第 19 页的 19 所示的不同条件下的螺栓的旋紧转矩（因螺丝尺寸而不同）示于第 19 页的图 20。请将该示例仅作为一般参考，因为旋紧转矩会根据旋紧条件的不同而变化。

注：
○ 如冲击时间较长的话，螺丝会被旋得太紧以致可能会损坏螺丝或钻头尖。
○ 旋紧螺丝时，如冲击起子机与螺丝之间的位置不成直线，则会损坏螺丝头，同时所规定的转矩也不能被妥善地传给螺丝。所以，旋紧螺丝时，请使起子机与螺丝成一直线。

4. 使用适宜于螺丝的旋紧时间
   根据螺丝的材料和尺寸以及所旋紧的材料等，其适宜的转矩有所不同，因此请使用适宜于该螺丝的旋紧时间。尤其是，如果对小于 M8 的螺丝使用过长的旋紧时间，则螺丝有损坏的危险。因此，请事先确认旋紧时间和旋紧转矩。

5. 以适于受冲击螺栓的旋紧扭矩进行操作
   螺栓和螺母最适宜的旋紧扭矩因螺栓或螺母的材料和尺寸而有所不同。对小螺栓使用过大的旋紧扭矩会扭曲或损坏螺栓。旋紧扭矩的增加与操作时间成正比。请使用正确的螺栓操作时间。

6. 把持工具
   用双手抓稳工具。在这种情况下抓住扳手对准螺栓。没有必要非常用力地推送扳手。抓住扳手，只要让力量足以抵消冲击力即可。

7. 确定旋紧扭矩
   下列因素会造成旋紧扭矩的下降。因此请在工作前用手工扭矩扳手来确定上紧螺栓所需的实际旋紧扭矩。影响旋紧扭矩的因素如下。

(1) 电压
   达到放电极限时，电压降低，旋紧扭矩也减少。

(2) 操作时间
   操作时间增加时旋紧扭矩也增加。但是，即使工具驱动很长的一段时间，旋紧扭矩也不会增大到超过某个特定值（见第 18 页的图 18 及第 19 页的 19）。

(3) 螺栓的直径

如图 18 及 19 所示，旋紧扭矩根据螺栓的直径变化。一般来说较大直径的螺栓需要较大的旋紧扭矩。

(4) 旋紧的状态

即使使用相同尺寸螺纹的螺栓，旋紧扭矩根据螺栓的扭矩比率、等级和长度也各不相同。旋紧扭矩还因螺栓所要上紧的加工件的表面状况而有所不同。螺栓和螺母一起转动时，扭矩会大大减少。

(5) 使用可选配件（WR12DAF2）

使用接长杆、万向接头或长套筒时，旋紧扭矩会略有减少。

(6) 套筒的间隙（WR12DAF2）

磨损或变形的六角形或方形孔套筒无法与螺母或砧座充分吻合，因此会造成旋紧扭矩的降低。

使用与螺栓不匹配的不合适套筒会造成扭矩不足。

(7) 根据电池电量，旋紧扭矩会有变化。(WR12DAF2)

图 21 显示 WR12DAF2 的旋紧扭矩与旋紧次数之间的关系。如图所示，随着旋紧次数增加,旋紧扭矩逐渐下降。特别是电量接近完全耗尽时,(图中的“a”部分)，部件的冲击力减弱，冲击的次数下降，扭矩会突然减少。这时应检查扭矩，如有必要，请进行充电。

<WH12DAF2>

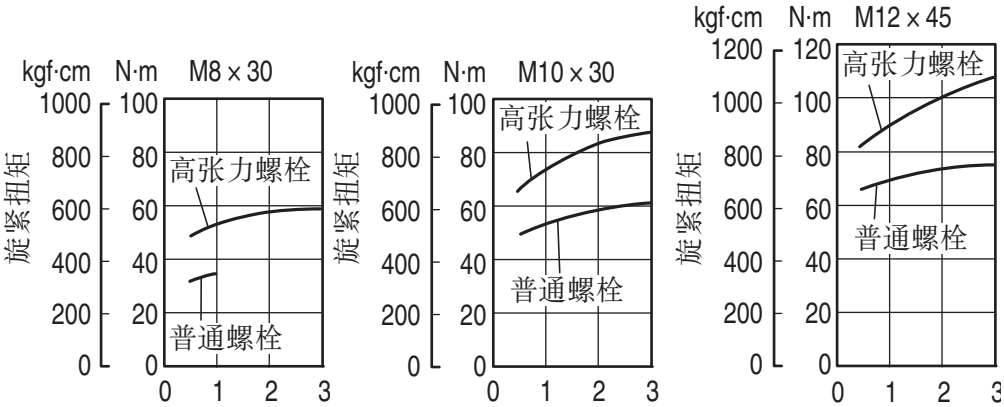


图 18

<WR12DAF2>

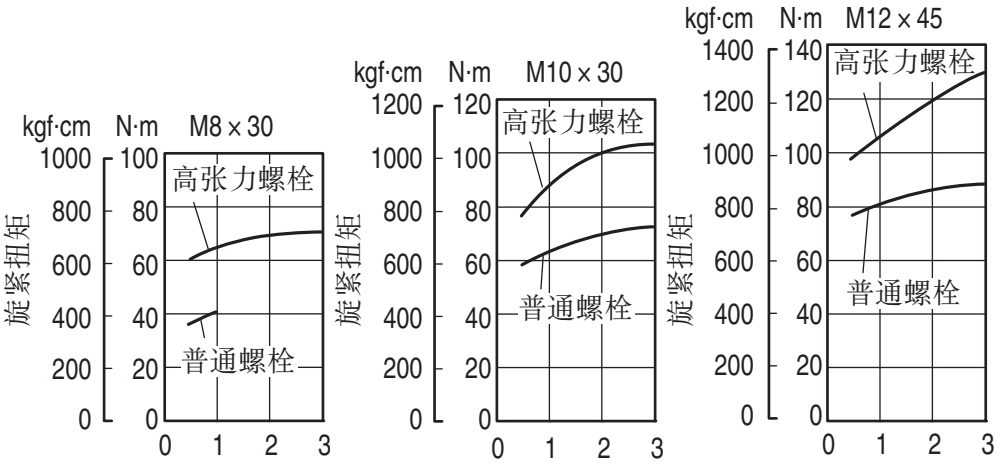
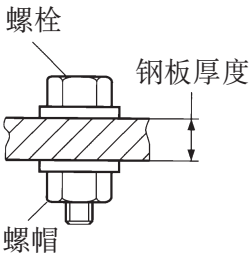


图 19



* 使用以下螺栓。
普通螺栓：张力级 4.8
高张力螺栓：张力级 12.9
张力级的说明：
（4- 螺栓的屈服点：32kgf/mm^2
8- 螺栓的拉力：40kgf/mm^2）

图 20

<WR12DAF2>

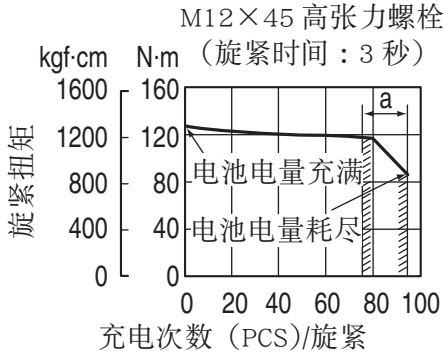


图 21

维护和检查

1. 检查起子机的钻头（WH12DAF2）
   继续使用已破损的钻头或钻头尖已磨损的钻头是非常危险的，因为钻头会滑脱。因此，请更换已破损的钻头或钻头尖已磨损的钻头。
2. 检查套筒（WR12DAF2）
   磨损或变形的六角形或方形孔套筒无法与螺母或砧座充分吻合，因此会造成旋紧扭矩的降低。请注意定期检查套筒孔的磨损状况，如有必要请更换新套筒。
3. 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。
4. 清理外部
   冲击起子沾污时，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，以免塑料部分溶化。
5. 收藏
   冲击起子应收藏于温度低于 40℃而为小孩拿不到的地方。
6. 维修零部件一览表

注意！

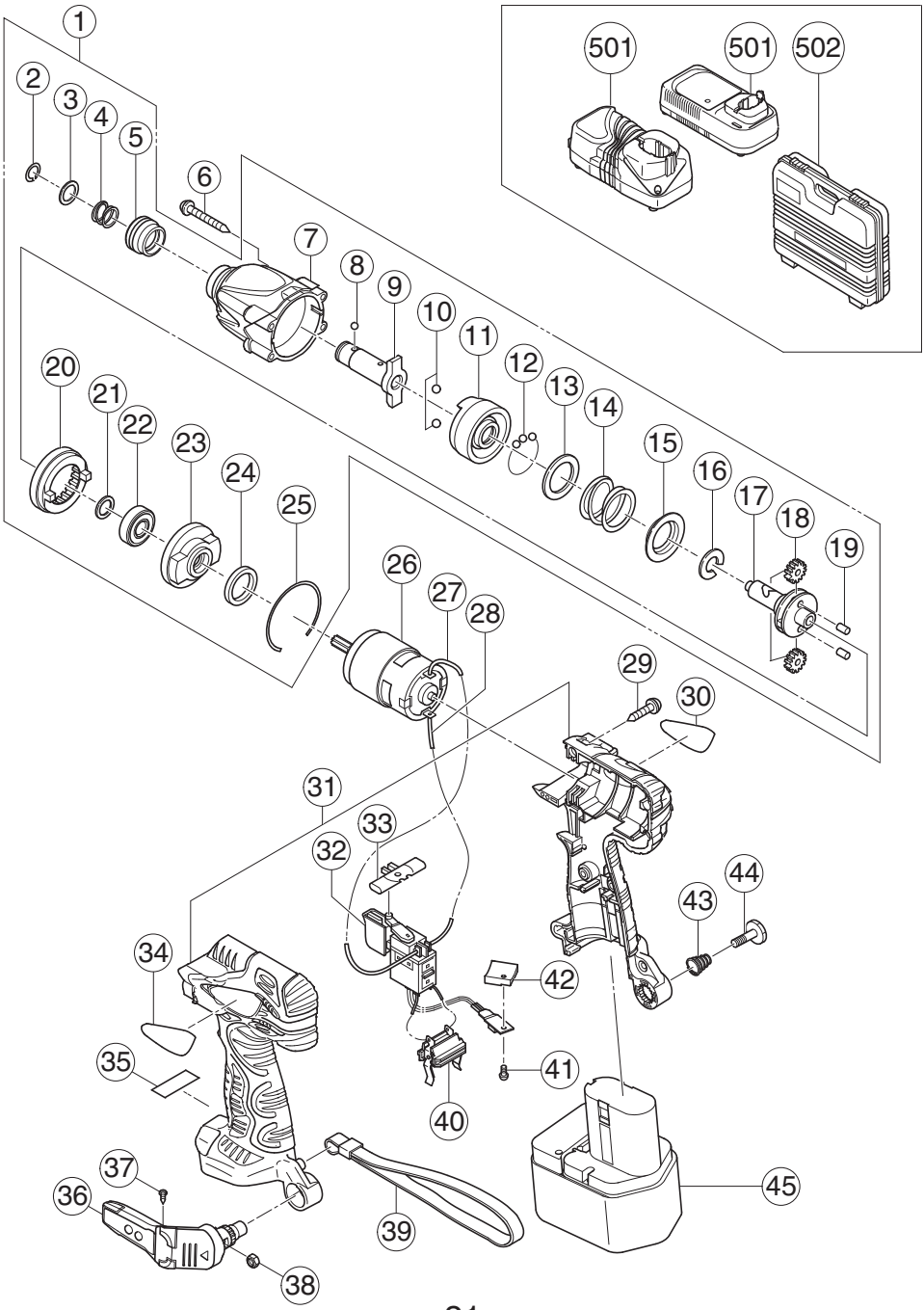
HiKOKI牌电动工具的维修、改造和检查须由经HiKOKI公司授权的维修中心进行。

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HiKOKI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。

维修零部件一览表

WH12DAF2

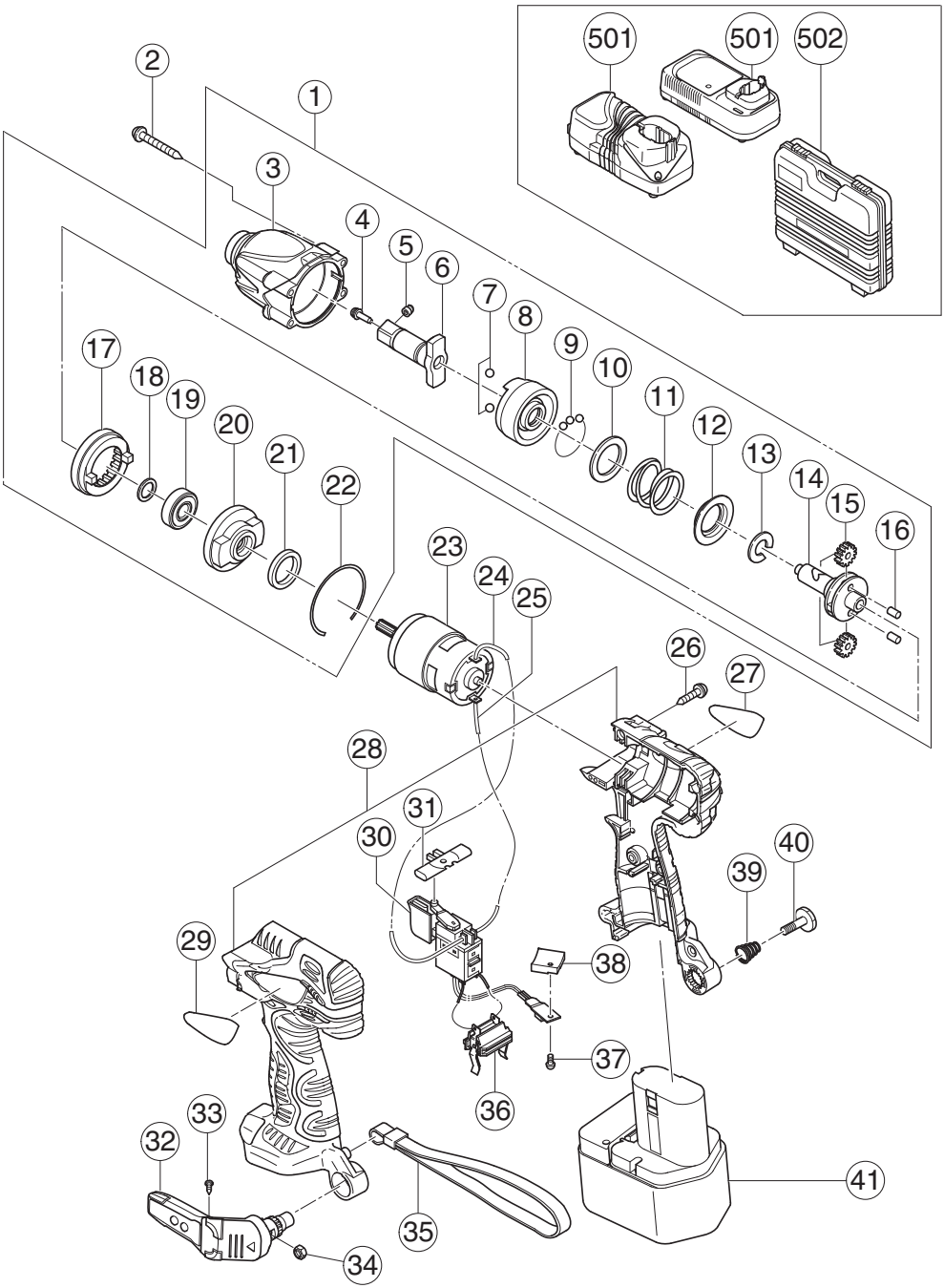


中文

项目号	代码号	使用数	备注
1-1	323-939	1	“2-5, 7-25”
1-2	324-854	1	S TYPE “2-5, 7-25”
2	315-984	1	
3	315-983	1	
4	320-409	1	
5	323-954	1	
6	992-630	4	D4 × 40
7	323-940	1	
8	319-535	1	D3.5
9-1	321-884	1	
9-2	321-915	1	S TYPE
10	959-154	2	D5.556
11	323-949	1	
12	321-934	28	D3
13	315-978	1	
14	323-944	1	
15	316-172	1	
16	316-171	1	
17	323-945	1	
18	323-941	2	
19	323-942	2	
20	323-946	1	
21	319-911	1	
22	690-1VV	1	6901VVCMPS2L
23	323-947	1	
24	321-894	1	
25	321-893	1	
26	323-948	1	
27	321-876	1	115L
28	321-877	1	60L
29	302-086	7	D4 × 20

项目号	代码号	使用数	备注
30	————	1	
31	324-855	1	
32	321-917	1	
33	321-871	1	
34	————	1	
35	————	1	
36	321-918	1	“37, 38”
37	321-672	2	D2 × 6
38	320-288	1	M5
39	306-952	1	
40	323-710	1	
41	320-777	1	
42	320-776	1	
43	319-926	1	
44	319-927	1	M5
45-1	————	1	EB1214S
45-2	————	1	EB1220BL
45-3	————	1	EB1226HL
501-1	————	1	UC18YG
501-2	————	1	UC14YFA
502-1	324-359	1	
502-2	322-611	1	“GBR”

WR12DAF2


501
501
502
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中文

项目号	代码号	使用数	备注
1	324-856	1	“3-22”
2	992-630	4	D4 × 40
3	324-857	1	
4	323-194	1	
5	323-193	1	
6	323-192	1	
7	959-154	2	D5.556
8	323-949	1	
9	321-934	28	D3
10	315-978	1	
11	323-944	1	
12	316-172	1	
13	316-171	1	
14	323-945	1	
15	323-941	2	
16	323-942	2	
17	323-946	1	
18	319-911	1	
19	690-1VV	1	6901VVCMPS2L
20	323-947	1	
21	321-894	1	
22	321-893	1	
23	323-948	1	
24	321-876	1	115L
25	321-877	1	60L
26	302-086	7	D4 × 20
27	———	1	
28	324-855	1	
30	321-917	1	
31	321-871	1	
29	———	1	

项目号	代码号	使用数	备注
32	321-918	1	“33, 34”
33	321-672	2	D2 × 6
34	320-288	1	M5
35	306-952	1	
36	323-710	1	
37	320-777	1	
38	320-776	1	
39	319-926	1	
40	319-927	1	M5
41-1	———	1	EB1214S
41-2	———	1	EB1220BL
41-3	———	1	EB1226HL
501-1	———	1	UC18YG
501-2	———	1	UC14YFA
502-1	324-359	1	
502-2	322-611	1	“GBR”

CONTENTS

GENERAL POWER TOOL SAFETY WARNINGS

⚠ WARNING

Read all safety warnings and all instructions.
Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

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

1) **Work area safety**
   a) **Keep work area clean and well lit.**
   Cluttered or 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 or 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.

f) **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.**
Use of an RCD 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 personal protective equipment. Always wear eye protection.**
Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

c) **Prevent unintentional starting. Ensure the switch is in the off position before connecting to power source and/or battery pack, picking up or carrying the tool.**
Carrying power tools with your finger on the switch or energising 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 dust collection 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 and/or the battery pack from the power tool 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 tool's 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, taking into account the working conditions and the work to be performed.**
Use of the power tool for operations different from those intended could result in a hazardous situation.

5) **Battery tool use and care**

a) **Recharge only with the charger specified by the manufacturer.**
A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.

b) **Use power tools only with specifically designated battery packs.**
Use of any other battery packs may create a risk of injury and fire.

c) **When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another.**
Shorting the battery terminals together may cause burns or a fire.

d) **Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.**
Liquid ejected from the battery may cause irritation or burns.

6) **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.

CAUTION

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 IMPACTDRIVER

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

PRECAUTIONS FOR CORDLESS IMPACT WRENCH

1. This is a portable tool for tightening and loosening bolts and nuts. Use it only for these operation.
2. Use the earplugs if using for a long time.
3. One-hand operation is extremely dangerous; hold the unit firmly with both hands when operating.
4. Check that the socket is not cracked or broken.
   Broken or cracked sockets are dangerous. Check the socket before using it.

5. **Secure the socket with the socket pin and the ring.**
   If the socket pin or ring securing the socket is damaged, the socket may come off from the impact wrench, which is quite dangerous. Do not use socket pins or rings that are deformed, worn out, cracked, or in any other way damaged. Always make sure to install the socket pin and ring in the correct position.
6. **Check the tightening torque.**
   The appropriate torque for tightening a bolt depends on the material the bolt is made of, its dimensions, grade, etc.
   Also, the tightening torque generated by this impact wrench depends on the materials and dimensions of the bolt, how long the impact wrench is applied for the way in which the socket is installed, etc.
   Also the torque when the battery has just been charged and when it is about to run out are slightly different. Use a torque wrench to check that the bolt has been tightened with the appropriate torque.
7. **Stop the impact wrench before switching the direction of rotation. Always release the switch and wait for impact wrench to stop before switching the direction of rotation.**
8. **Never touch the turning part.**
   Do not allow the turning socket section to get near your hands or any other part of your body. You could be cut or caught in the socket. Also, be careful not to touch the socket after using continuously it for a long time. It gets quite hot and could burn you.
9. **Never let the impact wrench turn without a load when using the universal joint.**
   If the socket turns without being connected to a load, the universal joint causes the socket to turn wildly.
   You could get hurt or the movement of the socket could shake the impact wrench so much as to make you drop it.
10. **Always charge the battery at a temperature of 0 – 40°C.**
    A temperature of less than 0°C will result in over charging which is dangerous. The battery cannot be charged at a temperature greater than 40°C.
    The most suitable temperature for charging is that of 20 – 25°C.
11. **Do not use the charger continuously.**
    When one charging is completed, leave the charger for about 15 minutes before the next charging of battery.
12. **Do not allow foreign matter to enter the hole for connecting the battery.**
13. **Never disassemble the battery and charger.**
14. **Never short-circuit the battery.**
    Short-circuiting the battery will cause a great electric current and overheat. It results in burn or damage to the battery.
15. **Do not dispose of the battery in fire.**
    If the battery burnt, it may explode.
16. **Do not insert object into the air ventilation slots of the charger.**
    Inserting metal objects or inflammables into the charger air ventilation slots will result in electrical shock hazard or damaged charger.

17. **Bring the battery to the shop from which it was purchased as soon as the post-charging battery life becomes too short for practical use. Do not dispose of the exhausted battery.**
18. **Using an exhausted battery will damage the charger.**

SYMBOL

WARNING

The following show symbols used for the machine. Be sure that you understand their meaning before use.

	Read all safety warnings and all instructions.

SPECIFICATIONS

POWER TOOL

Model	WH12DAF2	WR12DAF2
No-load speed	0 – 2500 /min	
Capacity	M4 – M8 (Small screw) M5 – M12 (Ordinary bolt) M5 – M10 (High tension bolt)	M6 – M14 (Ordinary bolt) M6 – M10 (High tension bolt)
Tightening torque	Maximum 110 N·m {1120 kgf·cm} Tightening is M12 high tension bolt (strength grade 12.9), when fully charged at 20°C temp. Tightening time: 3 sec.	Maximum 130 N·m {1330 kgf·cm} Tightening is M12 high tension bolt (strength grade 12.9), when fully charged at 20°C temp. Tightening time: 3 sec.
Battery	EB1214S: Ni-Cd battery, 12 V (1.4 Ah 10 cells)	
	EB1220BL: Ni-Cd battery, 12 V (2.0 Ah 10 cells)	
	EB1226HL: Ni-MH battery, 12 V (2.6 Ah 10 cells)	
Weight	1.6 kg (EB1214S Installation)	

CHARGER

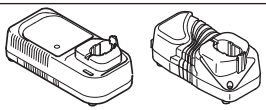
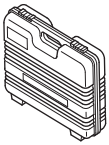
Model	UC14YFA	UC18YG
Charging time	EB1214S: Approx. 30 min. (at 20°C)	EB1214S: Approx. 30 min. (at 20°C)
	EB1220BL: Approx. 50 min. (at 20°C)	EB1220BL: Approx. 50 min. (at 20°C)
	EB1226HL: Approx. 60 min. (at 20°C)	×
Charging voltage	7.2 – 14.4 V	7.2 – 18 V
Weight	0.6 kg	0.3 kg

"x" Indicates that the battery pack is not compatible with that specific charger.

NOTE: The charging time may vary according to the ambient temperature and power source voltage.

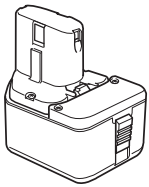
STANDARD ACCESSORIES

In addition to the main unit (1 unit), the package contains the accessories listed in the below.

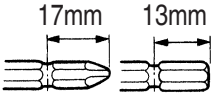
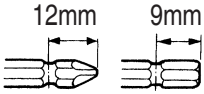
	WH12DAF2	WR12DAF2
Charger (UC14YFA or UC18YG)  UC14YFA UC18YG	1	1
Plastic case 	1	1

OPTIONAL ACCESSORIES (sold separately)

1. Battery (EB1214S, EB1220BL, EB1226HL)



2. For WH12DAF2
   There are two types of attachment sizes for the driver bit and the socket. Please refer to the table below and select the attachment size for the driver bit or socket that is appropriate for your WH12DAF2.

Attachment size		Purchase location
Type-L		Republic of Korea, Taiwan, Hong Kong, People's Republic of China, Republic of Singapore
Type-S		Other than above regions.

3. For WR12DAF2
   The WR12DAF2 type is a 12.7 square driver specification. Please select the socket with the appropriate attachment size.

APPLICATIONS

<WH12DAF2>
○ Driving and removing of small screws, small bolts, etc.
<WR12DAF2>
○ Tightening and loosening of all types of bolts and nuts, used for securing structural items.

BATTERY REMOVAL/INSTALLATION

1. Battery removal
   Hold the handle tightly and push the battery latch to remove the battery. (See **Fig. 1** and **2**)

CAUTION
Never short-circuit the battery.

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

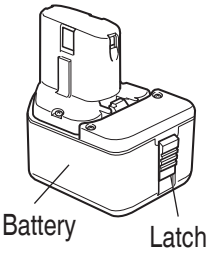


Fig. 1

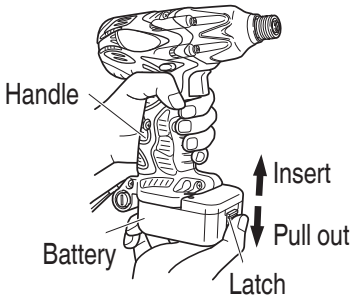
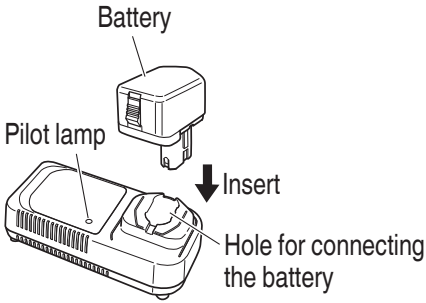


Fig. 2

CHARGING

<UC14YFA>
Before using the power tool, charge the battery as follows.

1. Connect the charger's power cord to a receptacle.
   When the power cord is connected, the charger's pilot lamp will blink in red. (At 1-second intervals.)
2. Insert the battery into the charger.
   Insert the battery firmly, in the direction shown in **Fig. 3**, until it contacts the bottom of the charger compartment.



<UC14YFA>
Fig. 3

CAUTION

If the battery is inserted in the reverse direction, not only recharging will become impossible, but it may also cause problems in the charger such as deformed recharging terminal.

3. Charging
When inserting a battery in the charger, charging will commence and the pilot lamp will light up continuously in red.
When the battery becomes fully recharged, the pilot lamp will blink in red. (At 1-second intervals.) (See **Table 1**)

(1) Pilot lamp indication
The indications of the pilot lamp will be as shown in **Table 1**, according to the condition of the charger or the battery.

Table 1

Indications of the lamps			
Before charging	Blinks (RED)	Lights for 0.5 seconds. Does not light for 0.5 seconds. (off for 0.5 seconds) 	
While charging	Lights (RED)	Lights continuously 	
Charging complete	Blinks (RED)	Lights for 0.5 seconds. Does not light for 0.5 seconds. (off for 0.5 seconds) 	
Charging impossible	Flikers (RED)	Lights for 0.1 seconds. Does not light for 0.1 seconds. (off for 0.1 seconds) 	Malfunction in the battery or the charger.
Charging impossible	Lights (GREEN)	Lights continuously 	The battery temperature is high, making recharging impossible.

(2) Regarding the temperatures of the battery
The temperatures for batteries are as shown in the table below, and batteries that have become hot should be cooled for a while before being recharged.

Table 2 Recharging ranges of batteries

Batteries	Temperatures at which the battery can be recharged
EB1214S, EB1220BL	–5°C – 60°C
EB1226HL	0°C – 45°C

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

NOTE

Be sure to pull out the battery from the charger after use, and then keep it.

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.

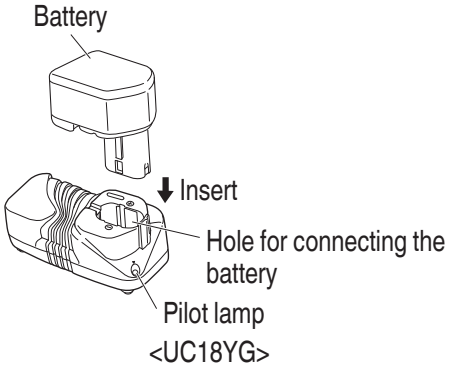
(2) Avoid recharging at high temperatures.
A battery will be hot immediately after use. If such a battery is recharged immediately after use, its internal chemical substance will deteriorate, and the battery life will be shortened. Leave the battery and recharge it after it has cooled for a while.

CAUTION

- **If the battery is charged while it is heated because it has been left for a long time in a location subject to direct sunlight or because the battery has just been used, the pilot lamp of the charger lights up green. In such a case, first let the battery cool, then start charging.**
- **When the pilot lamp flikers 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 UC14YFA 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.**

<UC18YG>
Before using the power tool, charge the battery as follows.

1. Connect the charger power cord to the receptacle
   Connecting the power cord will turn on the charger.
2. Insert the battery into the charger
   Insert the battery firmly while observing its direction, until it contacts the bottom of the charger (the pilot lamp lights up) (See **Fig. 4**).



<UC18YG>
Fig. 4

CAUTION

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

○ Regarding the temperatures of the battery
The temperatures for batteries are as shown in **Table 3**.

Table 3 Recharging ranges of batteries

Batteries	Temperatures at which the battery can be recharged
EB1214S, EB1220BL	0°C – 45°C

○ The pilot lamp goes off to indicate that the battery is fully charged.
The battery charging time becomes longer when a temperature is low or the voltage of the power source is too low.
When the pilot lamp does not go off even if more than 120 minutes have elapsed after starting of the charging, stop the charging and contact your HiKOKI 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's power cord from the receptacle
4. Hold the charger firmly and pull out the battery

NOTE

After charging, 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 battery will be hot immediately after use. If such a battery is recharged immediately after use, its internal chemical substance will deteriorate, and the battery life will be shortened. Leave the battery and recharge it after it has cooled for a while.

PRIOR TO OPERATION

1. Preparing and checking the work environment
   Make sure that the work site meets all the conditions laid forth in the precautions.
2. Checking the battery
   Make sure that the battery is installed firmly. If it is at all loose it could come off and cause an accident.
3. Installing the bit (WH12DAF2)
   Always follow the following procedure to install driver bit. (**Fig. 5**)

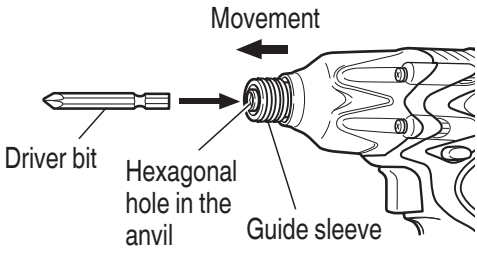


Fig. 5

(1) Pull the guide sleeve away from front of the tool.
(2) Insert the bit into the hexagonal hole in the anvil.
(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.

4. Selecting the socket matched to the bolt (WR12DAF2)
   Be sure to use a socket which is matched to the bolt to be tightened. Using an improper socket will not only result in insufficient tightening but also in damage to the socket or nut. A worn or deformed hex. or square-holed socket will not give an adequate tightness for fitting to the nut or anvil, consequently resulting in loss of tightening torque.
   Pay attention to wear of socket hole, and replace before further wear has developed.
   Finally, install the socket prescribed in Item 5. The section on "Optional Accessories" details the relationship between bolt sizes and sockets. Sockets are named according to the dihedral width of the hexagonal hole.
5. Installing a socket (WR12DAF2)
   Select the socket to be used.

● Pin, O-ring type (**Fig. 6** and **7**)
(1) Align the hole in the socket with the hole in the anvil and insert the anvil into the socket.
(2) Insert the pin into the socket.
(3) Attach the ring to the groove on the socket.

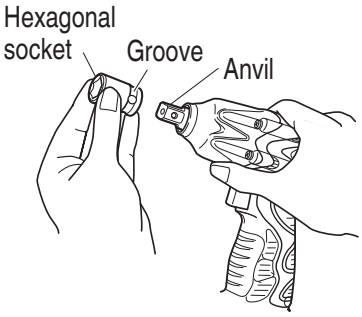


Fig. 6

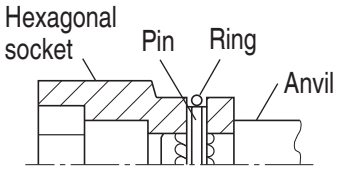


Fig. 7

● Plunger type (**Fig. 8**)
Align the plunger located in the square part of the anvil with the hole in the hex. socket. Then push the plunger, and mount the hex. socket on the anvil. Check that the plunger is fully engaged in the hole. When removing the socket, reverse the sequence.

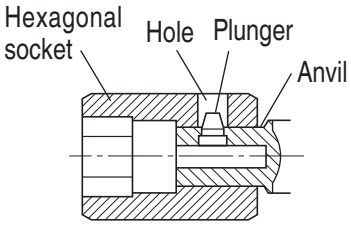


Fig. 8

HOW TO USE

CAUTION

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

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

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

(1) Operating the hook
   (a) Pull out the hook toward you in the direction of arrow (A) and turn in the direction of arrow (B). (**Fig. 9**)
   (b) The angle can be adjusted in 5 steps (0°, 20°, 40°, 60°, 80°).
   Adjust the angle of the hook to the desired position for use.

(2) Switching the hook position

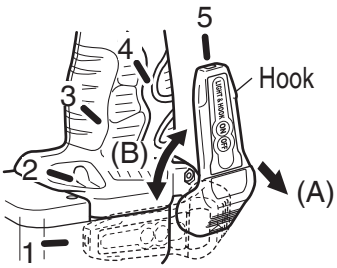


Fig. 9

Fig. 10

CAUTION

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

   (a) Securely hold the main unit and remove the screw using a slotted head screwdriver or a coin. (**Fig. 10**)
   (b) Remove the hook and spring. (**Fig. 11**)

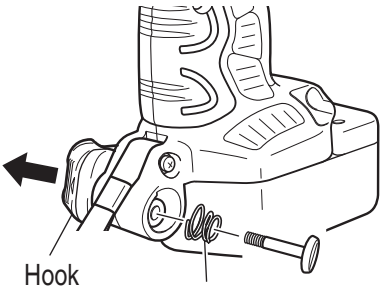


Fig. 11

(c) Install the hook and spring on the other side and securely fasten with screw. (**Fig. 12**)

NOTE

Pay attention to the spring orientation. Install the spring with larger diameter away from you. (**Fig. 12**)

(3) Using as an auxiliary light

(a) Press the switch to turn off the light. If forgotten, the light will turn off automatically after 15 minutes.

(b) The direction of the light can be adjusted within the range of hook positions 1 - 5. (**Fig. 13**)

○ Lighting time
AAAA manganese batteries: approx. 15 hrs.
AAAA alkali batteries: approx. 30 hrs.

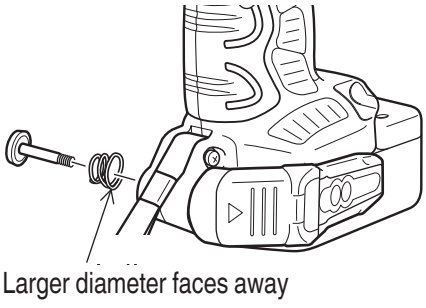


Fig. 12

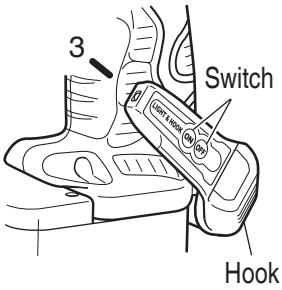


Fig. 13

CAUTION

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

(4) Replacing the batteries

(a) Loosen the hook screw with a phillips-head screwdriver (No. 1). (**Fig. 14**)
Remove the hook cover by pushing in the direction of the arrow. (**Fig. 15**)

(b) Remove the old batteries and insert the new batteries. Align with the hook indications and position the plus (+) and minus (–) terminals correctly. (**Fig. 16**)

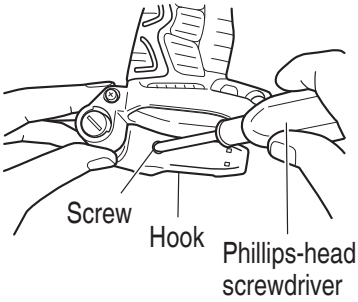


Fig. 14

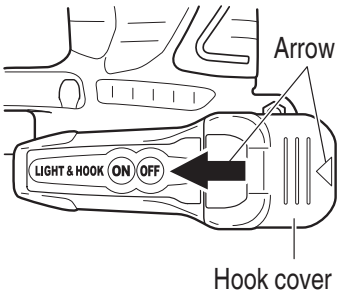


Fig. 15

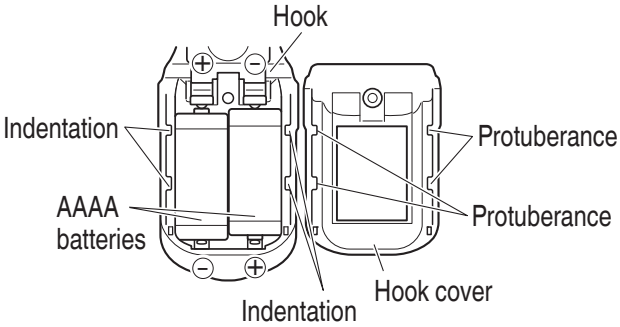


Fig. 16

(c) Align the indentation in the hook main body with the protuberance of the hook cover, press the hook cover in the direction opposite to that of the arrow shown in **Fig. 15** and then tighten the screw.
Use commercially available AAAA batteries (1.5 V).

NOTE

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

CAUTION

- **Failure to observe the following can result in battery leakage, rust or malfunction.**
  Position the plus (+) and minus (–) terminals correctly.
  Replace both batteries at the same time. Do not mix old and new batteries.
  Remove exhausted batteries from the hook immediately.
- **Do not discard batteries together with normal trash and do not throw batteries into fire.**
- **Store batteries out of the reach of children.**
- **Use batteries correctly in accordance with the battery specifications and indications.**

2. Check the rotational direction
The bit rotates clockwise (viewed from the rear side) by pushing the R-side of the push button. The L-side of the push button is pushed to turn the bit counterclockwise. (See **Fig. 17**) (The ⟨L⟩ and ⟨R⟩ marks are provided on the body.)

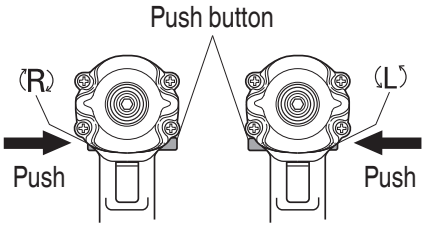


Fig. 17

CAUTION

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

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

4. Tightening and loosening screws (WH12DAF2)
Install the bit that matches the screw, line up the bit in the grooves of the head of the screw, then tighten it.
Push the impact driver just enough to keep the bit fitting the head of the screw.

CAUTION

Applying the impact driver for too long tightens the screw too much and can break it.
Tightening a screw with the impact driver at an angle to that screw can damage the head of the screw and the proper force will not be transmitted to the screw.
Tighten with this impact driver lined up straight with the screw.

5. Number of screws tightenings possible (WH12DAF2)
   Please refer to the table below for the number of screw tightened possible with one charge.

EB1214S

Screw used	No. of tightenings
Wood screw ø4 × 50 (Soft wood)	Approx. 190
Machine screw M8 × 16	Approx. 500

These values may vary slightly, according to surrounding temperature and battery characteristics.

6. Number of bolt tightened possible (WR12DAF2)
   Please refer to the table below for the number of bolt tightened possible with one charge.

EB1214S

Bolt used	No. of tightenings
M12 × 45 High tension bolt	Approx. 87

These values may vary slightly, according to surrounding temperature and battery characteristics.

NOTE

The use of the battery EB1226HL 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.

OPERATIONAL CAUTIONS

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

NOTE

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

2. Cautions on use of the speed control switch
   This switch has a built-in, electronic circuit which steplessly varies the rotation speed. Consequently, when the switch trigger is pulled only slightly (low speed rotation) and the motor is stopped while continuously driving in screws, the components of the electronic circuit parts may overheat and be damaged.
3. Tightening torque
   Refer to **Fig. 18 on page 42** and **Fig. 19 on page 43** for the tightening torque of bolts (according to size), under the conditions shown in **Fig. 20 on page 43**. Please use this example as a general reference, as tightening torque will vary according to tightening conditions.

NOTE

○ If a long striking time is used, screws will be strongly tightened. This may cause the screw to break, or may damage the tip of the bit.

○ If the unit is held at an angle to the screw being tightened, the head of the screw may be damaged, or the specified torque may not be transmitted to the screw. Always keep the unit and the screw being tightened in a straight line.

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

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

6. Holding the tool
Hold the impact wrench firmly with both hands. In this case hold the wrench in line with the bolt.
It is not necessary to push the wrench very hard. Hold the wrench with a force just sufficient to counteract the impact force.

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

(1) Voltage
When the discharge margin is reached, voltage decreases and tightening torque is lowered.

(2) Operating time
The tightening torque increases when the operating time increases. But the tightening torque does not increase above a certain value even if the tool is driven for a long time. (See **Fig. 18 on page 42** and **Fig. 19 on page 43**)

(3) Diameter of bolt
The tightening torque differs with the diameter of the bolt as shown in **Fig. 18 on page 42** and **Fig.19 on page 43**. Generally a larger diameter bolt requires larger tightening torque.

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

(5) Using optional parts (WR12DAF2)
The tightening torque is reduced a little when an extension bar, universal joint or a long socket is used.

(6) Clearance of the socket (WR12DAF2)
A worn or deformed hex. or a square-holed socket will not give an adequate tightness to the fitting between the nut or anvil, consequently resulting in loss of tightening torque. Using an improper socket which does not match to the bolt will result in an insufficient tightening torque.

(7) Tightening torque varies, depending on the battery's charge level. (WR12DAF2)
Fig. 21 show examples of the relationship between tightening torque and the number of tightenings, for WR12DAF2. As shown, tightening torque gradually weakens with the increase in the number of tightenings. In particular, as the torque decreases very close to the complete discharge ("a" margin in graph), the unit's impact weakens, the number of time impacts declines and tightening torque drops off abruptly. If this occurs, check torque level, then recharge the battery if necessary.

<WH12DAF2>

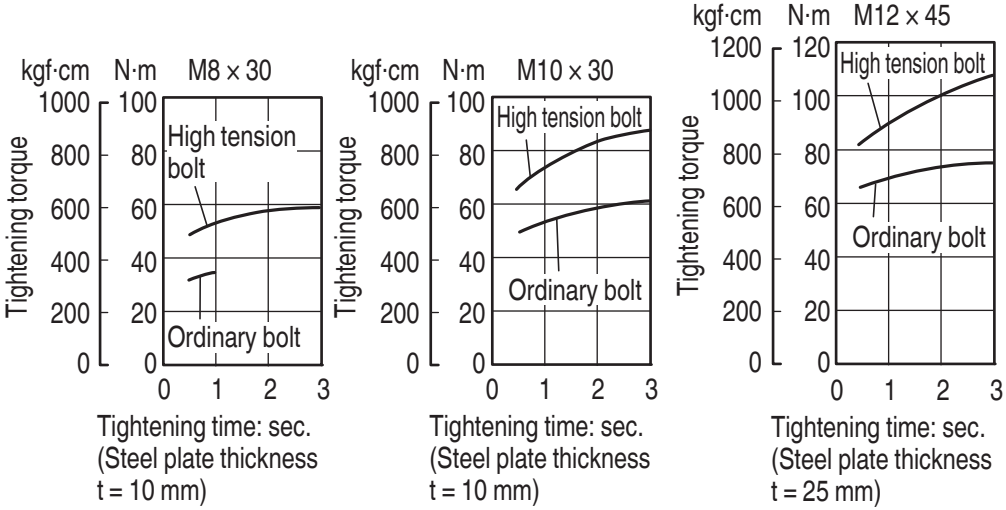


Fig. 18

<WR12DAF2>

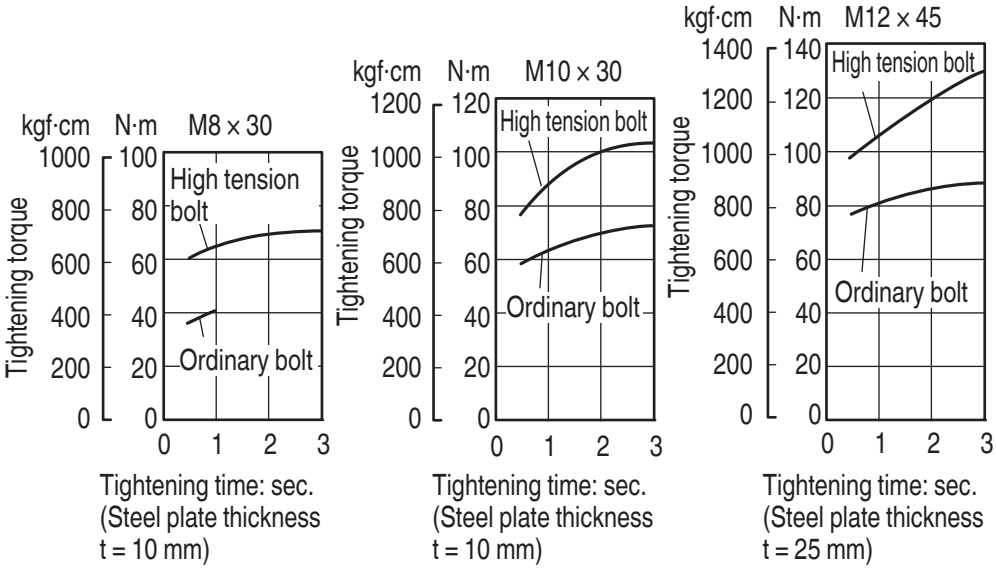
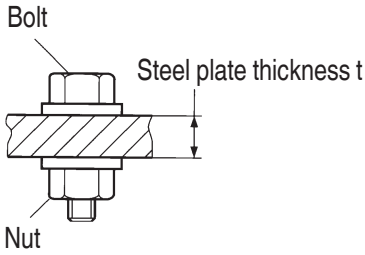


Fig. 19



* The following bolt is used.
Ordinary bolt: Strength grade 4.8
High tension bolt: Strength grade 12.9

(Explanation of strength grade:
4 — Yield point of bolt: 32 kgf/mm^2
8 — Pulling strength of bolt: 40 kgf/mm^2)

Fig. 20

<WR12DAF2>

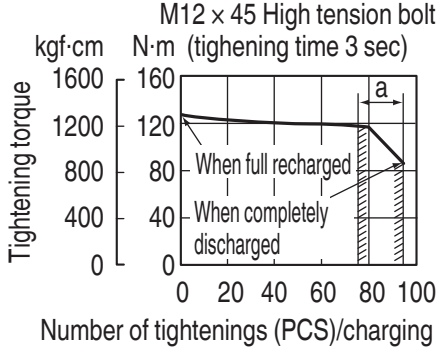


Fig. 21

MAINTENANCE AND INSPECTION

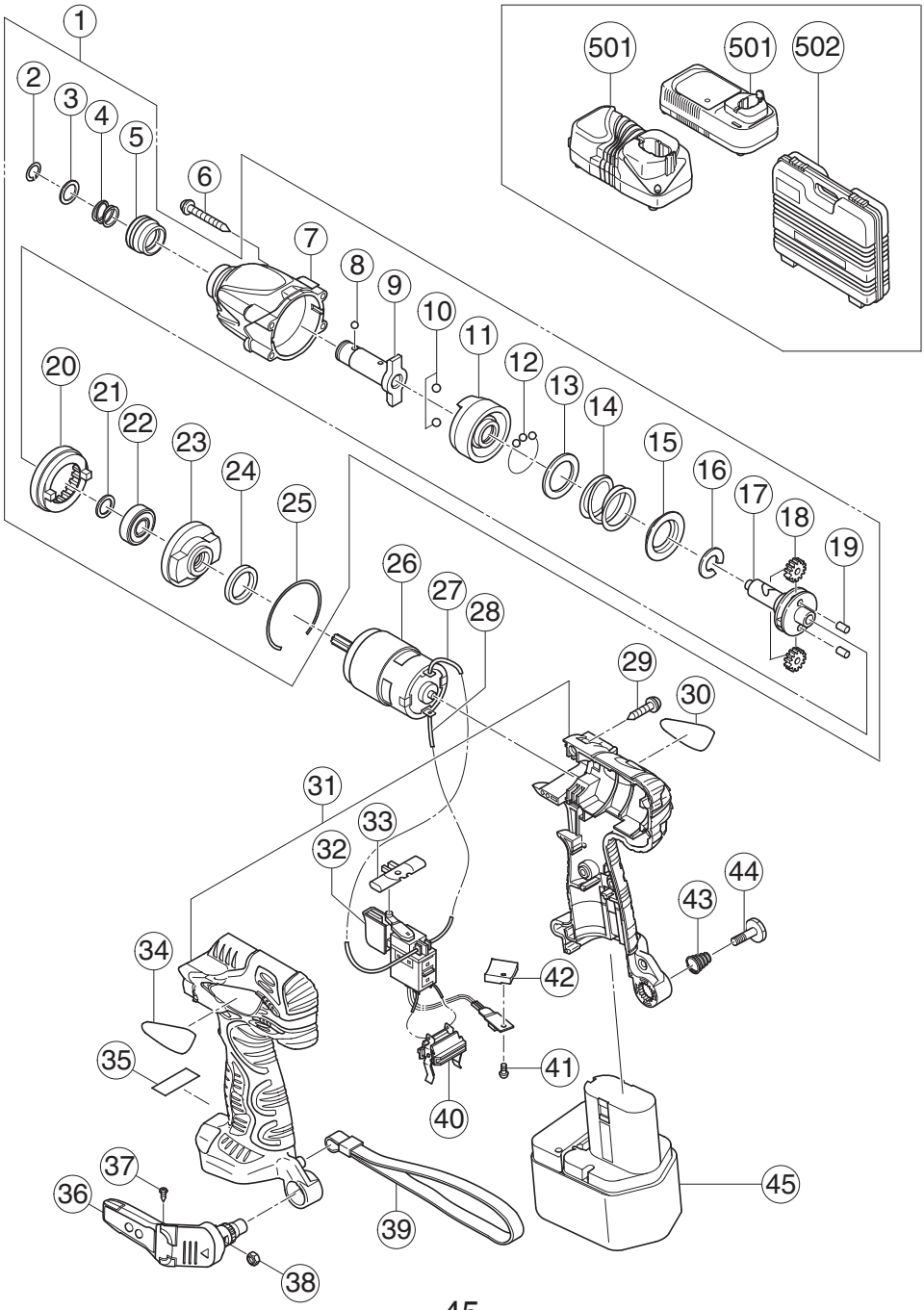
1. Inspecting the driver bit (WH12DAF2)
   Using a broken bit or one with a worn out tip is dangerous because the bit can slip. Replace it.
2. Inspecting the socket (WR12DAF2)
   A worn or deformed hex. or a square-holed socket will not give an adequate tightness to the fitting between the nut or anvil, consequently resulting in loss of tightening torque. Pay attention to wear of a socket holes periodically, and replace with a new one if needed.
3. Inspecting the mounting screws
   Regularly inspect all mounting screws and ensure that they are properly tightened. Should any of the screws be loose, retighten them immediately. Failure to do so may result in serious hazard.
4. Cleaning of the outside
   When the impact driver 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.
5. Storage
   Store the impact driver 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 HiKOKI Power Tools must be carried out by an HiKOKI Authorized Service Center.
This Parts List will be helpful if presented with the tool to the HiKOKI 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.

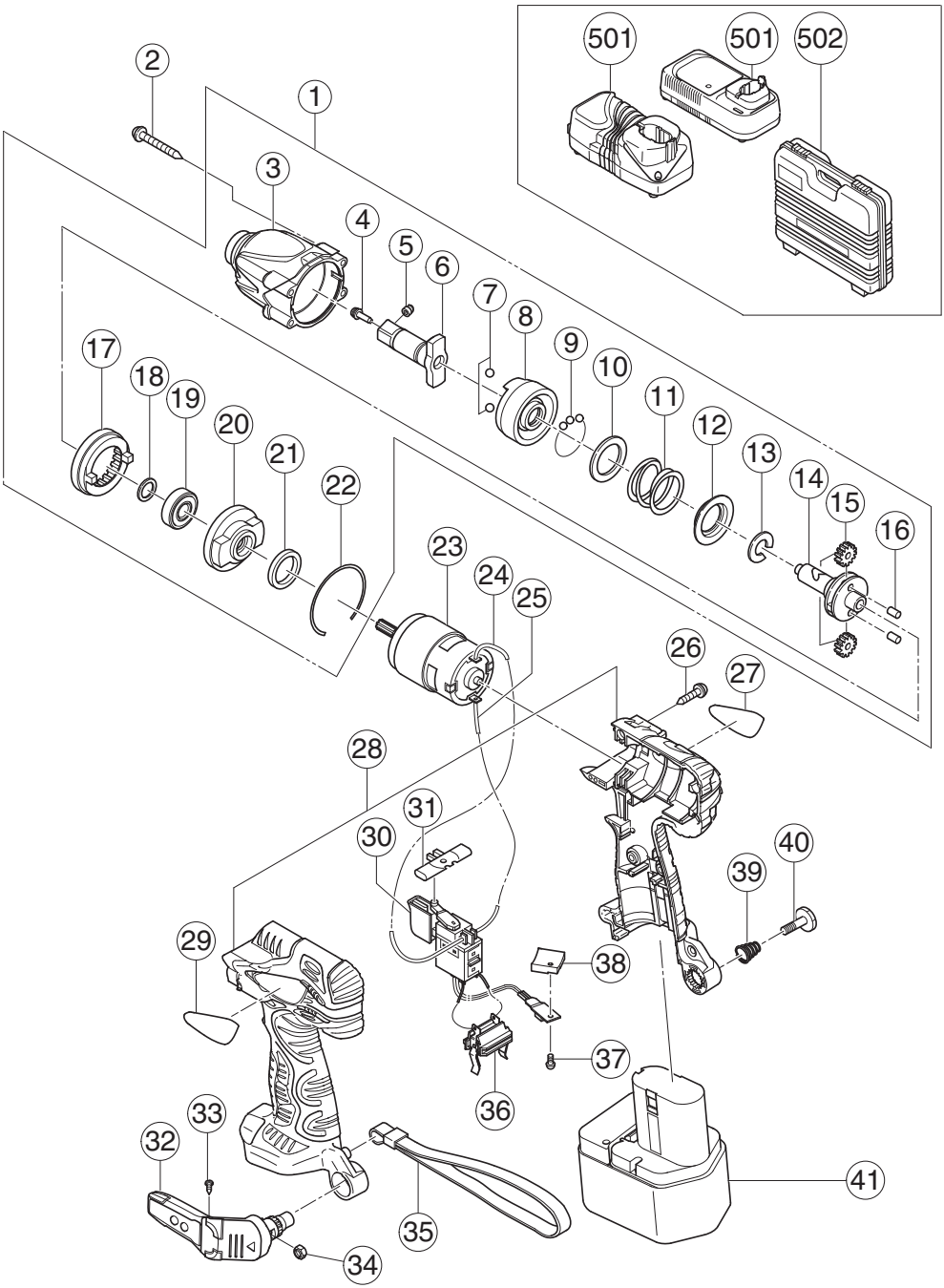
SERVICE PARTS LIST

WH12DAF2



Item No.	Code No.	No. Used	Remarks
1-1	323-939	1	“2-5, 7-25”
1-2	324-854	1	S TYPE “2-5, 7-25”
2	315-984	1	
3	315-983	1	
4	320-409	1	
5	323-954	1	
6	992-630	4	D4 × 40
7	323-940	1	
8	319-535	1	D3.5
9-1	321-884	1	
9-2	321-915	1	S TYPE
10	959-154	2	D5.556
11	323-949	1	
12	321-934	28	D3
13	315-978	1	
14	323-944	1	
15	316-172	1	
16	316-171	1	
17	323-945	1	
18	323-941	2	
19	323-942	2	
20	323-946	1	
21	319-911	1	
22	690-1VV	1	6901VVCMPS2L
23	323-947	1	
24	321-894	1	
25	321-893	1	
26	323-948	1	
27	321-876	1	115L
28	321-877	1	60L
29	302-086	7	D4 × 20
30	———	1	
31	324-855	1	
32	321-917	1	
33	321-871	1	
34	———	1	
35	———	1	
36	321-918	1	“37, 38”
37	321-672	2	D2 × 6
38	320-288	1	M5
39	306-952	1	
40	323-710	1	
41	320-777	1	
42	320-776	1	
43	319-926	1	
44	319-927	1	M5
45-1	———	1	EB1214S
45-2	———	1	EB1220BL
45-3	———	1	EB1226HL
501-1	———	1	UC18YG
501-2	———	1	UC14YFA
502-1	324-359	1	
502-2	322-611	1	“GBR”

WR12DAF2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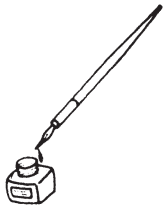
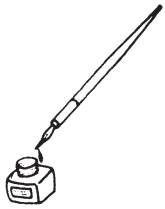
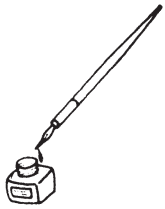
Item No.	Code No.	No. Used	Remarks
1	324-856	1	“3-22”
2	992-630	4	D4 × 40
3	324-857	1	
4	323-194	1	
5	323-193	1	
6	323-192	1	
7	959-154	2	D5.556
8	323-949	1	
9	321-934	28	D3
10	315-978	1	
11	323-944	1	
12	316-172	1	
13	316-171	1	
14	323-945	1	
15	323-941	2	
16	323-942	2	
17	323-946	1	
18	319-911	1	
19	690-1VV	1	6901VVCMPS2L
20	323-947	1	
21	321-894	1	
22	321-893	1	
23	323-948	1	
24	321-876	1	115L
25	321-877	1	60L
26	302-086	7	D4 × 20
27	———	1	
28	324-855	1	
30	321-917	1	
31	321-871	1	
29	———	1	
32	321-918	1	“33, 34”
33	321-672	2	D2 × 6
34	320-288	1	M5
35	306-952	1	
36	323-710	1	
37	320-777	1	
38	320-776	1	
39	319-926	1	
40	319-927	1	M5
41-1	———	1	EB1214S
41-2	———	1	EB1220BL
41-3	———	1	EB1226HL
501-1	———	1	UC18YG
501-2	———	1	UC14YFA
502-1	324-359	1	
502-2	322-611	1	“GBR”







服务中心
工机商业(中国)有限公司
上海市闵行区浦江工业园区三鲁路3585号7幢3楼

制造商
广东高壹工机有限公司
广东省广州市番禺区化龙镇工业路富裕围工业村

Koki Holdings Co., Ltd.

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编号：C99141423 G
发行日期：2018年6月
中国印刷