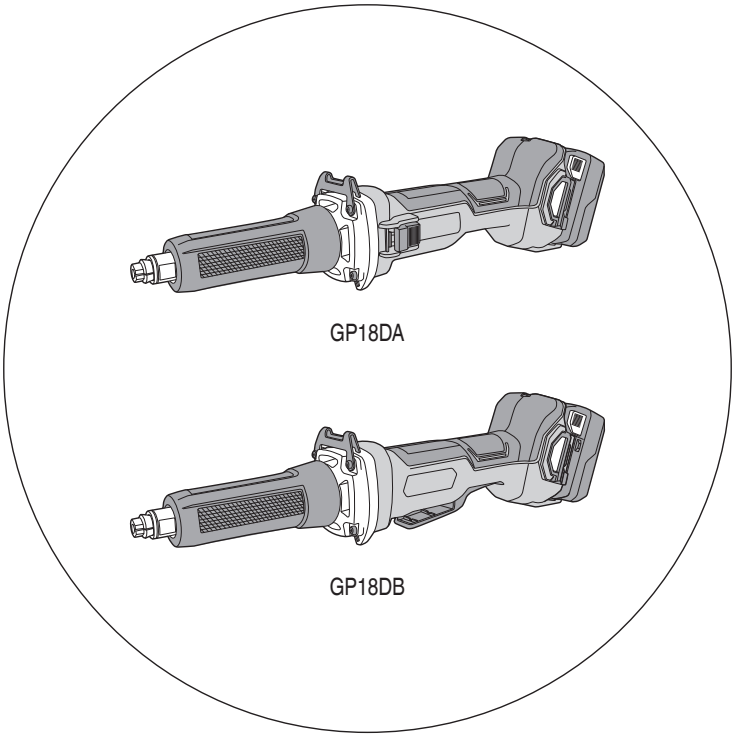
HiKOKI

中文

English

充电式电磨
Cordless Die Grinder

GP 18DA • GP 18DB



保留备用
Keep for future reference

使用说明书
Handling instructions

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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。

磨削操作的通用安全警告

a）该电动工具是用于实现磨光机、砂光机、钢丝刷、抛光机、雕刻或切断工具功能的。请阅读随电动工具提供的所有安全警告、说明、图解和规格说明。
不了解以下所列所有说明将导致电击、着火和 / 或严重伤害。

b）不推荐用该电动工具进行诸如磨削、砂光、钢丝刷光、抛光或切断等操作。
电动工具不按指定的功能去操作，可能会发生危险和引起人身伤害。

c）不使用非工具制造商推荐和专门设计的附件。否则该附件可能被装到你的电动工具上，而它不能保证安全操作。

d) **磨削附件的额定速度必须至少等于电动工具上标出的最大速度。**磨削附件以比其额定速度大的速度运转会发生爆裂和飞溅。

e) **附件的外径和厚度必须在电动工具额定能力范围之内。**不正确的附件尺寸不能得到充分控制。

f) **砂轮、砂光辊筒或任何其他附件的轴孔尺寸必须适合于安装到电动工具的主轴或夹头上。**如果配件与动力工具的装载硬件不匹配，可能导致工具失去平衡、剧烈振动和失去控制。

g) **安装了芯轴的砂轮、砂光辊筒、切具或其他附件必须充分插入夹头或夹盘中。**如果芯轴握持不充分和 / 或砂轮的悬垂时间过长，则安装的砂轮可能会松动并高速弹出。

h) **请勿使用损坏的附件。在每次使用前，请检查附件，例如砂轮是否有切屑和裂纹，砂光辊筒是否有裂纹、撕裂或过度磨损，钢丝刷是否松动或金属丝是否破裂。如果电动工具或附件跌落了，检查是否有损坏或安装没有损坏的附件。检查和安装附件后，让自己和旁观者的位置远离旋转附件的平面，并以电动工具最大空载速度运行 1 分。**损坏的附件通常在该试验时会碎裂。

i) **戴上防护用品。根据适用情况，使用面罩、安全护目镜或安全眼镜。适用时，戴上防尘面具、听力保护器、手套和能挡小磨料或工件碎片的工作围裙。**眼防护罩必须挡住各种操作产生的飞屑。防尘面具或口罩必须能过滤操作产生的颗粒。长期暴露在高强度噪声中会引起失聪。

j) **让旁观者与工作区域保持一安全距离。任何进入工作区域的人必须戴上防护用品。**工件或破损附件的碎片可能会飞出并引起紧靠着操作区域的旁观者的伤害。切割附件触及带电导线会使电动工具外露的金属零件带电，并使操作者触电。

k) **在操作过程中，切削附件可能会触碰到隐藏的线缆，因此仅可握住电动工具的绝缘夹持面。**切割附件接触“带电”导线可能会使电动工具的裸露金属部件“带电”，并可能造成操作者触电。

l) **在启动过程中，始终牢牢地手持工具。**电动机的反作用扭矩在加速至全速时，会导致工具弯曲。

m) **如切实可行，尽量使用夹扣支撑工件。使用时，切勿一只手握住小工件，另一只手握住工具。**夹紧小工件便于您用手操控工具。定位销杆、管道或导管等柱状物在切割时易滚动，并可能使钻头卡住或弹向您。

n) **直到附件完全停止运动才放下电动工具。**旋转的附件可能会抓住表面并拉动电动工具而让你失去对工具的控制。

o) **更换钻头或进行任何调整后，请确保已牢固旋紧夹头螺母、夹盘或其他任何调整装置。**松动的调整装置可能会意外移动，从而导致失控，此时松动的旋转部件会被大力抛出。

p) **当携带电动工具时不要开动它。**
意外地触及旋转附件可能会缠绕你的衣服而使附件伤害身体。

q) **经常清理电动工具的通风口。**
电动机风扇会将灰尘吸进机壳，过多的金属粉末沈积会导致电气危险。

r) **不要在易燃材料附件操作电动工具。**
火星可能会点燃这些材料。
s) **不要使用需用冷却液的附件。**
用水或其他冷却液可能会导致电腐蚀或电击。

反弹和相关警告

反弹是旋转砂轮、砂光带、刷子或任何其他附件被挤压、卡住时的一种瞬间反作用现象。被挤压或卡住会导致旋转附件快速停转，并使失控的电动工具沿与附件旋转的反向受力。

例如，如果砂轮被工件缠绕或卡住，伸入卡住点的砂轮边缘可能会进入材料表面而引起砂轮爬出或反弹。砂轮可能飞向或飞离操作者，这取决于砂轮在卡住点的运动方向。在此条件下砂轮也可能碎裂。

反弹是电动工具误用和 / 或不正确操作工序或条件的结果，可以通过采取以下给出的适当预防措施得以避免。

a) **保持紧握电动工具，使你的身体和手臂处于正确状态以抵抗反弹力。**如果采取适当的预防措施，操作者可以控制反弹力。
b) **当在尖角、锐边等处作业时要特别小心。避免附件的弹跳和缠绕。**
尖角、锐边和弹跳具有缠绕旋转附件的趋势并引起反弹的失控。
c) **请勿安装带锯齿的锯条。**这些锯片会产生频繁的反弹和失控。
d) **始终将钻头以与切口脱离材料相同的方向（与切屑抛出的方向相同）进给到材料中。**沿错误的方向进给工具会导致钻头的切口离开工件，并沿错误的进给方向拉动工具。
e) **当使用旋转锉、切割砂轮、高速切具或碳化钨切具时，请始终牢牢固定住工件。这些砂轮在凹槽中若稍有倾斜，将被卡住并反弹。**切割砂轮卡住时，通常会破裂。旋转锉、高速切具或碳化钨切具卡住时，可能会从凹槽中弹出并导致工具失控。

砂磨或砂磨切断操作的专用安全警告

a) **对于您的电动工具，仅可使用推荐的砂轮类型和应用范畴。例如：不要用切割砂轮的侧面进行磨削。**
施加到砂轮侧面的力可能会使其碎裂。
b) **对于带螺纹的圆锥磨头，仅可使用尺寸和长度正确的，带平肩法兰的无损砂轮芯轴。**
合适的芯轴将减少破损的可能性。

c) 不要“夹”住切割砂轮或施加过大的压力。不要试图做过深的切割。
对砂轮施加过大的应力会增加负载以及砂轮在切割时易于扭曲或卡住的可能性，并增加反弹或砂轮破损的可能性。

d) 请勿将手放在旋转砂轮的同一直线上或后方。
操作时如果砂轮从手中脱离，可能发生的反弹或许会直接将高速旋转的砂轮和电动工具抛向您。

e) 当砂轮被挤压、卡住或由于任何原因中断切割时，请关闭电动工具并保持不动，直至砂轮完全停止。决不要试图当砂轮仍然运转时使切割砂轮脱离切割，否则会发生反弹。
请调查并采取更正措施，以消除造成砂轮被挤压或卡住的原因。

f) 不能在工件上重新起动切割操作。让砂轮达到全速后再小心地重新进入切割。
如果电动工具在工件上重新起动，砂轮可能会卡住，爬出或反弹。

g) 支撑住板材或超大工件可使得砂轮卡住和反弹的危险降到最低限度。
大工件凭借自重而下垂。必须在工件靠近切割线处和砂轮两侧近工件边缘处放置支承。

h) 当进行“盲切割”进入墙体或其他盲区时要格外小心。
伸出的砂轮可能会割到煤气管或水管，电线或由此引起反弹的物体。

充电式电磨的一般安全说明

— 确认砂轮上所标示的转速等于或大于磨光机的额定转速；
— 确保砂轮尺寸与磨光机相符；
— 须按照厂家的使用说明书小心存放和使用磨轮；
— 使用前检查砂轮，不要使用破损、有裂缝或有其他缺陷的产品；
— 确保所安装的砂轮和节点已按照厂家的使用说明固定；
— 确保使用随研磨产品附带的吸油纸或在需要时使用吸油纸；
— 在使用前确保已正确安装并拧紧研磨产品，并在安全场所在空载状态下运转 30 秒钟，若有较大的振动或察觉到其他缺陷，则应立即停止运转。遇此情况时，检查电动工具以究明原因；
— 若电动工具配备保护装置，切勿在未使用此保护装置时使用电动工具；
— 请勿将独立的减速轴衬或接头，以便使用大孔砂轮；
— 有关要用螺纹孔砂轮来安装的工具，确保砂轮的螺纹足够长，以适合轴长；
— 检查工件已被正确固定；
— 请勿使用切断砂轮进行侧面研磨；
— 确保使用时产生的火花不会引起危险，例如不要溅在身体上或点燃易燃物；
— 在多尘的条件下工作时，确保通风口畅通无堵塞现象。如果需要清除灰尘，首先使电动工具断开电源（使用非金属物品）并避免损坏内部零件；
— 始终采用视力和听力保护。必须使用其他个人保护装置，如口罩、手套、头盔和围裙等。

中文

— 在切断本电动工具的电源之后，砂轮仍会继续旋转一段时间，请注意此事项。
— 勿让杂质进入充电式电池连结口内。
— 切勿拆卸充电式电池与充电器。
— 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。
— 请勿将电池丢入火中。
电池受热将会爆炸。
— 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。
— 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。

其它安全警告

1 确保要使用的砂轮型号正确、无裂纹或表面缺陷。同时确保砂轮已正确安装，弹性夹头已牢牢旋紧。
2. 本机不可施加过大压力使其过载，这样才能延长机器的使用寿命并确保加工质量。在大部分的用法中，机器本身的重量即够研磨。加压过大将导致转速降低、表面加工不良以及过载，从而使机器寿命缩短。
3. 在切断本电动工具的电源之后，砂轮仍会继续旋转一段时间。
关闭机器后，请勿在砂轮完全停止前将其放下。以免造成严重事故，而且还可以减少吸入机器的尘埃及切屑量。
4. 未使用本电动工具时，请断开电源。
5. 在拆装砂轮之前，请务必关闭机器并拔出电池，以免发生严重事故。
6. 请小心制动器反弹。
此款充电式电磨配备了电力制动器，可以在松开开关时发挥作用。制动器发挥作用时，可能会出现反弹现象，因此请务必牢牢握住机身。
7. 请勿使用工具或电池端子（电池安装部位）明显变形的产品。
否则，安装电池后可能会短路，造成冒烟或起火。
8. 请清除工具端子（电池安装部位）上的削屑和灰尘。
○ 使用前请确保电池上没有堆积削屑和灰尘。
○ 在使用过程中，请尽量避免工具上的削屑或灰尘掉落在电池上。
○ 暂时不使用工具时或使用后，应将工具存放在不会掉落削屑或灰尘的地方。否则可能短路，造成冒烟或起火。

电池和充电器的使用注意事项

1. 请始终在 -10 至 40℃的环境温度下对电池进行充电。温度低于 -10℃将导致危险的过充电。不得在高于 40℃的温度下对电池进行充电。
   最适于充电的温度是 20 至 25℃。
2. 请勿连续使用充电器。
   充电结束后，在下次充电之前请将充电器放置约 15 分钟。
3. 勿让杂质进入可充电电池的连接口内。
4. 切勿拆卸可充电电池或充电器。
5. 切勿使可充电电池短路。
   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. 使用耗尽的电池会损坏充电器。
8. 充电后的电池寿命太短不够使用时，请尽快将本电池送往购买时的经销店。
   请勿将用过的电池乱丢。
9. 请勿将异物插入充电器的通风口。
   将金属物体或易燃物插入充电器的通风口会导致触电事故或损坏充电器。

锂离子电池使用注意事项

为延长使用期限，锂离子电池备配停止输出的保护功能。
若是在使用本产品时发生下列 1 至 3 的情况，即使按下开关，马达也可能停止。这并非故障，而是启动保护功能的结果。

1. 在残留的电池电力即将耗尽时，马达会停止。
   在这种情况下，请立即予以充电。
2. 若工具超过负荷，马达亦可能停止。在这种情况下，请松开工具的开关，试着消除超过负荷的原因。之后您就可以再度使用。
3. 若电池在过载工作情况下过热，电池电力可能会中止。
   在这种情况下，请停止使用电池，让电池冷却。之后您就可以再度使用。

此外，请留心下列的警告及注意事项。

警告！

为防止发生电池漏电、发热、冒烟、爆炸及提前点燃，请确保留意下列事项。

1. 确保电池上没有堆积削屑及灰尘。

○ 在工作时确定削屑及灰尘没有掉落在电池上。
○ 确定所有工作时掉落在电动工具上的削屑和灰尘没有堆积在电池上。
○ 请勿将未使用的电池存放在曝露于削屑和灰尘的位置。
○ 在存放电池之前，请清除任何可能附着在上面的削屑和灰尘，并请切勿将它与金属零件（螺丝、钉子等）存放在一起。

2. 请勿以钉子等利器刺穿电池、以铁锤敲打、踩踏、丢掷电池，或将其剧烈撞击。
3. 切勿使用明显损坏或变形的电池。
4. 使用电池时请勿颠倒电极。
5. 请勿直接连接电源插座或汽车点烟器孔座。
6. 请依规定方式使用电池，切勿移作他用。
7. 如果已过了再充电时间，电池仍无法完成充电，请立即停止继续再充电。
8. 请勿将电池放置于高温或高压处，例如微波炉、烘干机或高压容器内。
9. 在发觉有渗漏或异味时，请勿接近远离火源。
10. 请勿在会产生强烈静电的地方使用。
11. 如有电池渗漏、异味、发热、褪色或变形，或在使用、充电或存放时出现任何异常，请立即将它从装备或电池充电器拆下，并停止使用。
12. 请勿浸泡电池或让任何液体流入电池内部。导电液体进入（如水），可能造成电池损坏，甚至可导致火灾或爆炸。将电池存放在阴凉、干燥的地方，远离易燃物品。必须避免将电池置于腐蚀性气体环境中。

注意！

1. 若电池渗漏出的液体进入您的眼睛，请勿搓揉眼睛，并以自来水等干净清水充分冲洗，立刻送医。
   若不加以处理，液体可能会导致眼睛不适。
2. 若液体渗漏至您的皮肤或衣物，请立即以自来水等清水冲洗。
   上述情况可能会使皮肤受到刺激。
3. 若初次使用电池时发现生锈、异味、过热、褪色、变形及／或其它异常情况时，请勿使用并将该电池退还给供货商或厂商。

警告！

如果导电异物进入锂离子电池端子之间，可能发生短路，并造成火灾危险。存放电池时，请遵循下列事项。

○ 请勿在存储盒中放入导电的切屑、铁钉、钢丝、铜线或其他导线。
○ 或者将电池装在电动工具中，或者在牢固按入电池盖并挡住通风孔后再存放，以防止短路（参照图 1）。

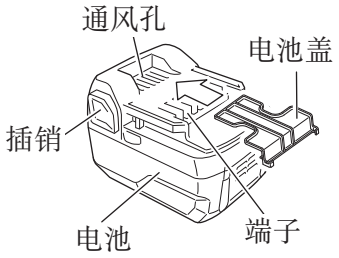


图 1

锂离子电池运输

当运输一个锂离子电池，请注意以下预防措施。

警告！

告知运输公司，包装内包含一个锂离子电池，告知该公司其功率输出并且要按照运输公司的指引安排运输。

- 功率输出超过 100 Wh 的锂离子电池被视作危险物品运输分类并且需要特别申请程序。
- 对于境外运输，您必须遵守国际法以及输入国的规章和条例。

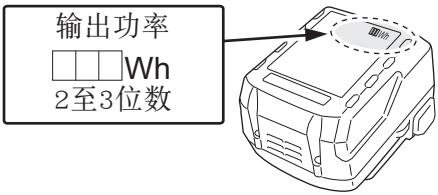


图 2

符号

警告！

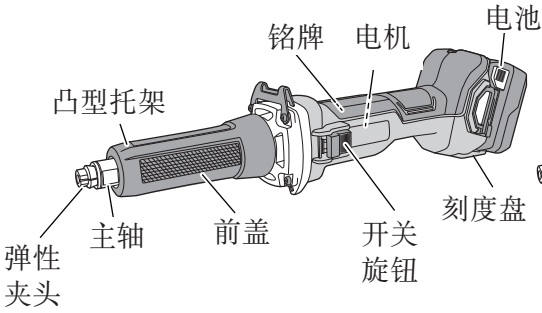
如下所示的符号用于本机。使用前请务必理解其含意。

	为降低伤害风险，用户必须阅读使用说明书

零件名称

1. 电动工具

○ GP18DA



○ GP18DB

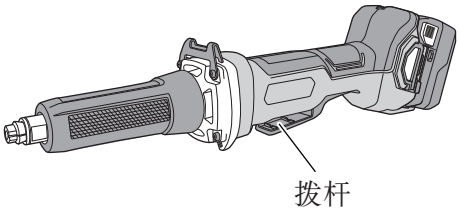
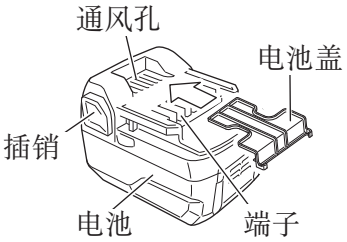


图 3

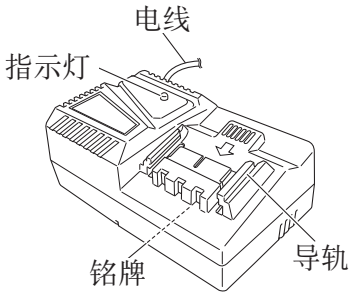
2. 电池



<BSL1850C>

图 4

3. 电池充电器



<UC18YFSL>

图 5

规格

电动工具

型式		GP18DA • GP18DB
电压		18V
空载转速		传输模式：7000–29000/min
砂轮	圆周速度	80m/秒
电池		BSL1850C: 锂离子 18V(5.0Ah, 5 节)
重量		2.3kg (安装 BSL1850C)

注：

HiKOKI 将不断研究和研发新产品，因此，如规格发生变更，恕不另行通知。

电子控制

○ 缓慢启动

通过调节启动时的转数来减轻对操作者的反冲力。

○ 过载保护

在操作过程中,如果电机过载,此保护功能可以断开电机电源,明显降低转速。
过载保护功能激活时，电机会停止。
在这种情况下，请松开工具的开关，试着消除过载的原因。
然后再重新使用。

○ 过热保护

在操作过程中，如果电机过热，此保护功能可以断开电机电源，使电动工具停止运行。
过热保护功能激活时，电机会停止。
在这种情况下，请松开工具的开关，冷却数分钟。
然后再重新使用。

○ 防重启功能

电源为接通状态时，该工具在安装电池后也不会重启。切断工具电源后，该功能就会取消。

○ 制动功能

当开关被关闭时，会激活制动器，将停止电机的旋转。

○ 反冲保护

反冲保护功能可在操作过程中轮转速突然下降时（如在切割操作期间轮锁定等）切断电机电源并停止电动工具。

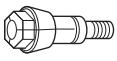
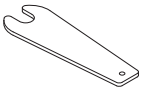
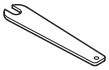
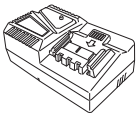
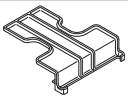
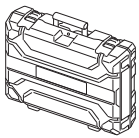
充电器

型式	UC18YFSL
充电电压	14.4V–18V
重量	0.5kg

标准附件

GP18DA • GP18DB 分为 2JC 型和 NNK 型两种。各型号的附件请参见以下列表。

表 1

		GP18DA • GP18DB	
		(2JC)	(NNK)
	弹性夹头 (6 mm)	1	1
	扳手 (17 mm)	1	1
	扳手 (12 mm)	1	1
	充电器 (UC18YFSL)	1	—
	电池 (BSL1850C)	2	—
	电池盖	2	—
	塑料盒	1	—

用途

○ 压力加工、冲模铸造及模制用冲模的抛光。
○ 螺纹切割冲模、工件及其它小型零件的抛光。
○ 工件及机器零件的内部打磨。

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 6）。

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 6）

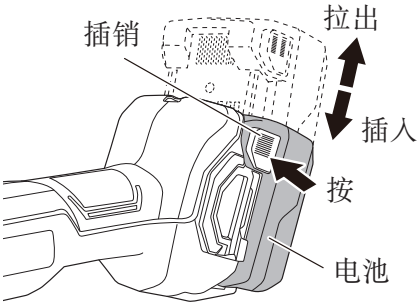


图 6

充电

使用电动工具之前，按下述方法将电池进行充电。

1. 将充电器的电源线连接到插座。
   将充电器插头连接到插座时，指示灯闪烁红色（间隔为 1 秒）。
2. 将电池插入充电器。
   如图 7 所示，将电池紧紧地插入充电器。
3. 充电
   将电池插入充电器后，将开始充电，指示灯会持续点亮呈红色。
   电池完全充电后，指示灯将闪烁呈红色（以 1 秒的间隔）（参照如第 16 页的表 2）。

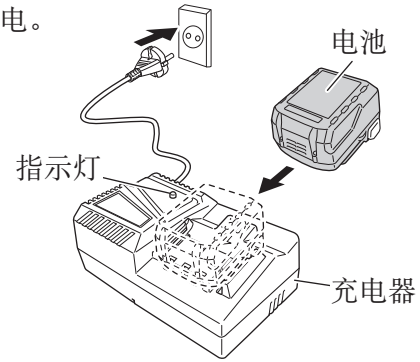


图 7

● 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 2 所示。

表 2

指示灯的显示			
指示灯（红色）	充电前	闪烁	点亮 0.5 秒钟，不点亮 0.5 秒钟（熄灭 0.5 秒钟）
	充电时	点亮	连续点亮
	充电完成	闪烁	点亮 0.5 秒钟，不点亮 0.5 秒钟（熄灭 0.5 秒钟）
	过热而等待	闪烁	点亮 1 秒钟，不点亮 0.5 秒钟（熄灭 0.5 秒钟）
	无法充电	闪动	点亮 0.1 秒钟，不点亮 0.1 秒钟（熄灭 0.1 秒钟）

		电池过热。无法充（电池冷却后开始进行充电）。
		电池或充电器有问题。

● 电池温度和充电时间相关资料。

温度和充电时间如表 3 所示

表 3

电池 ＼ 充电器		UC18YFSL
充电电压	V	14.4－18
重量	kg	0.5
电池可充电温度		0℃－50℃
电池容量的大致充电时间（20℃ 下）		
1.5Ah	分钟	22
2.0Ah	分钟	30
2.5Ah	分钟	35
3.0Ah	分钟	45
4.0Ah	分钟	60
5.0Ah	分钟	75
6.0Ah	分钟	90
8.0Ah	分钟	120
电池数		4－10

注：

充电时间可能根据环境温度和电压而有变化。

注意！

连续使用时，电池充电器温度将提升，因此会导致出现故障。完成充电后，下次充电前，请让电池充电器休息 15 分钟。

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：

充电后，先将电池从充电器中取出，然后妥善保存。

注意！

○ 如果电池长时间放置在阳光直接照射的地方或者刚刚使用完毕时，电池会变热。如果此时对电池充电，充电器上的指示灯会点亮 1 秒钟，不点亮 0.5 秒钟（熄灭 0.5 秒钟）。
在此情况下，先让电池冷却下来，然后再充电。

○ 指示灯闪动时（以 0.2 秒钟的间隔），请检查并取出充电器电池接口处的任何异物。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。

○ 由于内置的微型计算机需要大约 3 秒钟来确认使用充电器充电的电池已取出，所以请等待至少 3 秒钟后再将电池重新插入继续充电。如果电池在 3 秒内重新插入，电池可能无法正常充电。

○ 如果指示灯未以红色闪烁（每秒一次），但充电池电源线已连接至电源，表明充电器的保护电路可能已激活。
拔下电源线或插座，然后等待 30 秒左右再次连接。如果指示灯仍未以红色闪烁（每秒一次），请将充电器送还至 HiKOKI 授权服务中心。

作业之前

警告！

为避免发生严重事故，请确保开关处于关断位置，并取出电池。

1. 检查工作现场及周边区域
确保彻底检查工作区域并做好避免任何不安全情况的准备工作。查看本手册的安全章节部分。

2. 安装砂轮

警告！

如果使用尺寸或额定转速错误的砂轮，可能导致砂轮破损并造成严重的伤害。为避免发生此类危险，请参阅砂轮的额定转速和插图如下，确定砂轮的合适尺寸。若干指导原则：

(a) 仅可使用额定转速 29000/min 以上的砂轮。使用额定值较小的砂轮会导致其在操作中破裂并导致严重身体损伤。

(b) 尺寸 ℓ 应始终小于 13mm。尺寸过长可能导致过度振动、砂轮破损以及严重伤害的可能性。

(c) 当尺寸 d 为 6.35mm 时，砂轮直径（尺寸 D）应小于 50mm。切勿使用更大直径的砂轮。

(d) 当尺寸 d 为 3.175mm 时，砂轮直径（尺寸 D）应小于 10mm。

(e) 尺寸 L 根据尺寸 D 的不同而异。尺寸 D 增大时，尺寸 L 相应变长。(表 4)

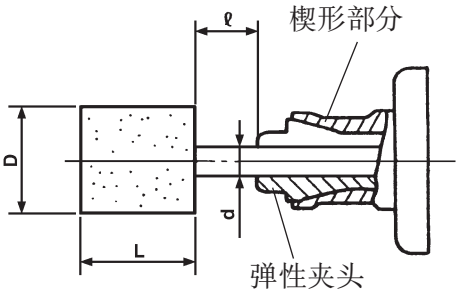


图 8

表4　　(ℓ = 13mm 时)

d	D	L
3.175mm	5mm	13mm
	6mm	20mm
	8mm	20mm
	10mm	20mm
6.35mm	13mm	38mm
	16mm	25mm
	20mm	25mm
	25mm	20mm
	32mm	13mm
	38mm	7mm

使用两把扳手即可简单地拆装砂轮。
（图 9）

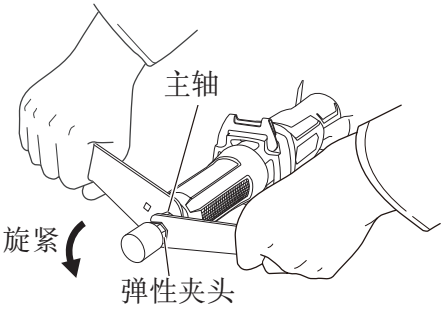


图 9

注：

○ 将直径小于常规轴直径（6.35mm）的轴插入夹头时或在无任何东西插入的状况下，切勿旋紧弹性夹头。否则会损坏弹性夹头。
○ 使用轴（3mm）时，请切换至适用于 3mm 轴的弹性夹头（另售）。
○ 安装带轴的砂轮时，请在图 8 所示的楔形部分涂上少量的主轴油（或缝纫机油）后再旋紧弹性夹头。

3. 侧手柄的使用方法（图 10、11）（另售）
请按照以下步骤将侧手柄安装至机器上：

(1) 拆除前盖。
从主机的凹陷处拆下前盖内侧的凸起部，然后拉出以拆除。如果凸起部难以拆下，请使用平头螺丝刀或类似工具拆除。

(2) 拧松侧手柄把手，然后从侧手柄套管的法兰部分将侧手柄插入到机器的凸型托架部分。

(3) 将侧手柄置于一个便于操作的位置，然后将侧手柄把手牢牢拧紧。

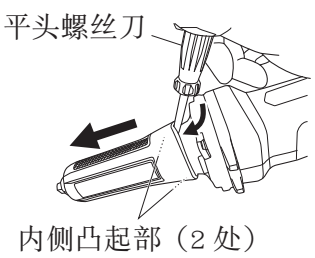


图 10

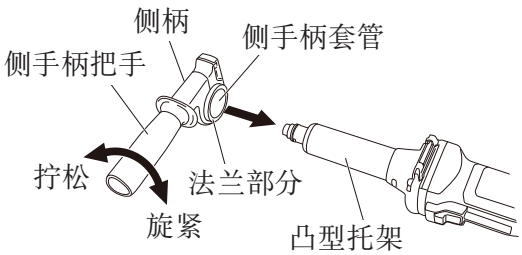


图 11

操作

警告！

- 操作该工具时，请戴上护目镜。
- 操作工具时，请确保手部、面部和其他身体部位远离砂轮和任何其他旋转部位。

注意！

为了延长使用寿命，锂离子电池应具有停止输出的保护功能。以在工具过载的情况下，马达可以停止运行。不过，这不是问题，重点是保护功能的结果。在这种情况下，将释放工具开关，并消除导致过载的原因。

注：

○ 为防止受伤，本产品有一项功能，可防止在插入电池时马达意外旋转。当开关处于开启（ON）位置时，如果插入电池，马达将不运转。安装电池后，将开关转到关闭（OFF）位置，然后重新转回到开启（ON）位置。

○ GP18DA 和 GP18DB 型号均配备有保护功能，一旦过载，将通过该功能关闭工具。

一旦工具因为过载而关闭，可以关闭然后重新打开电源。

过载会导致工具停止运转并保持超过 10 秒的时间，在此时间内，将无法通过关闭电源然后开启来重新运转工具。如果发生这种情况，可以拆下工具的电池，然后重新装上，之后打开电源开关即可。

1．开关操作

<GP18DA>（图 12）

将磨光机置为“ON”

紧紧握住磨光机，用手指将开关滑至“ON”位置以启动工具。松开开关将关闭工具。

为了继续操作，请将开关滑至“ON”位置，然后按下开关的“ON”位置，将其锁定到位。

将磨光机置为“OFF”

按下开关的“OFF”位置以解除锁定并关闭磨光机。

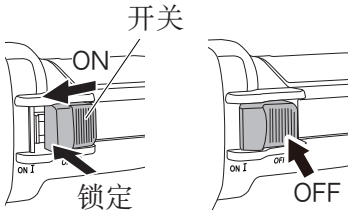


图 12

<GP18DB>（图 13）

如要打开磨光机，请沿Ⓐ方向滑动解锁杆，然后沿Ⓑ方向按下拨杆，如图13所示。松开拨杆便可将其关闭。

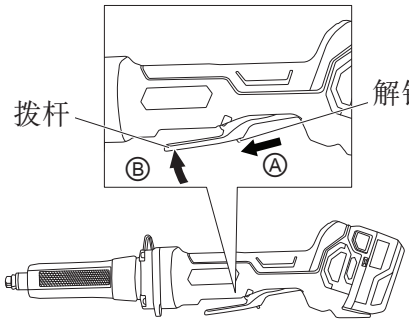


图 13

2. 关于模式切换功能

装置设有“传输模式”和“自动模式”。

○ 在传输模式下，磨光机的转数设定有5 档可供选择。

在传输模式下操作时，即使负载发生变化，设定的转数也将保持不变。

○ 在自动模式下，您可以通过在空载状态下减少最大转数，降低噪音和减少振动。

在自动模式下，如果负载在操作期间增加，则转数将增加。

另一方面，如果负载在操作期间减小，则转数将随之减小。（表 5）

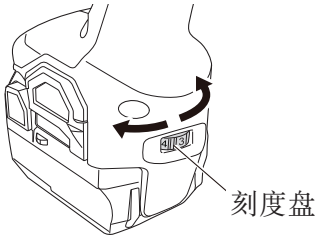


图14

○ 根据作业情况设置模式和表盘。（图 14）

表 5

模式	状态		转数 /min	用途
传输	表盘设置	1	7000	刷光/精加工
		2	13800	脱漆
		3	16600	除锈
		4	24400	除毛刺
		5	29000	磨削
自动		A	15000	待机时作业
			29000	磨削

注意！

- 在焊接设备附近使用磨光机时，转速可能会变得不稳定。请勿在焊接设备附近使用磨光机。
- 由于转数减少，以除全速模式（刻度盘 5）外的任意值使用本工具时，电动机都无法充分冷却。这可能导致电动机在超负荷保护装置启动前便被烧损或损坏。以除全速模式（刻度盘 5）外的任意值使用本工具时，务必使用工具轻轻用于材料表面。

警告！

不要强力按磨光机对表面进行研磨。重压会导致砂轮破损并且损坏。它也能损坏研磨的表面以及损坏磨光机的马达。

3. 砂轮的选择方法

砂轮的种类应根据需要打磨的材料而定。请选择适合打磨材料的砂轮。
下表是砂轮和要打磨材料之间的大致关系。

要打磨的材料	颗粒度	级别	粘合度	结构	粘合剂
软钢、硬钢、锻钢	WA	60－80	P	m	V
铸铁	C	36	M－O	m	V
黄铜、青铜、铝	C	36	J－K	m	V
陶瓷器	WA	60－80	M	m	V
合成纤维	C	36	K－M	m	V

带有轴的小号砂轮适用于打磨较小表面。小号砂轮的尺寸和形状示于第 26 页“选择附件”处。因砂轮轴的直径为 3 mm，请使用 HiKOKI 经销商作为选购配件单独销售的用于 3mm 轴的弹性夹头。

4. 磨削操作

(1) 磨削材料时，请将砂轮轻抵在待磨削材料上并高速旋转。请使用高转速电磨，以将压紧力降至最低。

(2) 砂轮的修整

安装砂轮后，请用修整器调整砂轮中心的偏差。
如果砂轮中心偏心，不仅无法进行精确的精加工，而且还会加剧磨光机的振动，以致降低其精度和耐用性。
运行不畅或破损的砂轮会损坏精加工表面或降低磨削效率。因此，请经常用修整器修整砂轮。

(3) 安装前，请先彻底检查砂轮是否存在裂纹、裂缝和其他异常情况。确保已夹紧并正确安装。

(4) 使用前，请测试电磨。
实际电磨之前，请先让所有其他人员离开测试区，然后对电磨进行测试。确保戴上护目镜。将电磨置为“ON”，确保其运行平稳无异常。
试运行的持续时间如下：
更换铵形砂轮需要 .....3 分钟以上时
启动日常工作需要 .....1 分钟以上时
(5) 仅可使用额定值合适的砂轮。
仅可使用额定转速
29000/min 以上的铵形砂轮。
使用额定值较小的砂轮会导致其在操作中破裂并造成严重身体损伤。

注意！

旋转砂轮会产生乱流。
在电磨完全停止前，请勿将其放置在多尘或脏污的区域内。

维护和检查

警告！

○ 确保关闭开关并取出电池。
○ 使用有裂纹、变形或者受损的砂轮可能会导致砂轮破裂并造成严重伤害。

1. 检查砂轮
确保砂轮没有裂缝，表面无缺陷。
2. 检查安装的螺丝
定期检查所有安装的螺丝，确保螺丝已完全拧紧。如果螺丝松动，请立即重新拧紧。否则可能导致严重的危险。

注意！

如果使用螺丝松动的电动工具，将非常危险。

3. 电动机的维护
电动机绕线是电动工具的“心脏部”应仔细检查有无损伤，是否被油液或水沾湿。
4. 检查端子（工具和电池）
确保端子上没有堆积削屑和灰尘。
在操作前、操作时和操作后需要时常检查。

注意！

请清除端子上的削屑或灰尘。
否则可能导致故障。

5. 清洁外部
   当充电式电磨脏污时，请用柔软的干布或沾有肥皂水的布片擦拭。请勿使用会溶化塑料的含氯溶剂、汽油或油漆稀释剂。
6. 清洁过滤器
   在使用之后，请拆除过滤器，并利用气枪或者其他工具，清扫过滤筛上的尘垢或者灰尘。（图 15）

注：

○ 如需清扫装置上的尘垢或者灰尘，请定期在空载状态下运转马达，并在拆除过滤器后，将干空气吹入通风孔。
马达内累积尘垢或者灰尘会导致损坏。

○ 在清洁之后，确保紧固地装好过滤器。

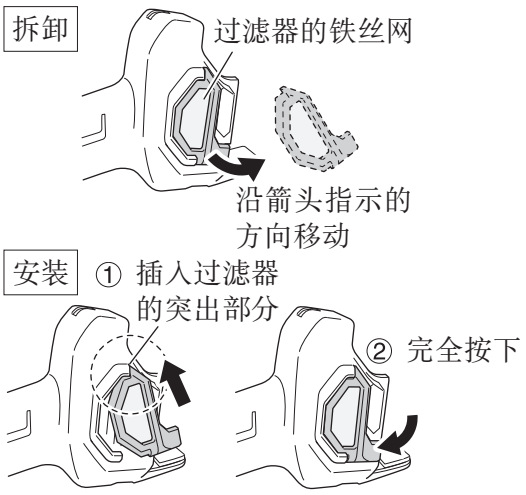


图 15

7. 电力耗尽的电池的处理方法

警告！

请勿将电力耗尽的电池丢弃。如果焚烧电池，可能会引起爆炸。该电池可回收利用。根据各国家和地区的法令法规，将电力耗尽的电池丢弃到城市垃圾中属于违法行为。请向当地的固体废弃物负责人员咨询具体回收事宜或妥善的处理方法。

8. 收藏
   充电式电磨应收藏于温度低于 40℃和小孩拿不到的地方。

注：

存放锂离子电池
在存放前请确保锂离子电池已完全充电。
电池在低电量的状态下长时间存放（3 个月或更长），可能会导致电池性能劣化，使用时间明显减少或无法进行充电。
但是，即使是使用时间明显减少的电池，通过反复充电和使用 2 ～ 5 次，有时也可恢复使用时间。
若反复充电和使用后电池的使用时间仍非常短，请认作为电池已达到了使用寿命并更换新的电池。

注意！

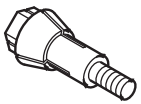
在操作和维修电动工具时，必须遵守贵国制定的安全的有关规则和标准。

关于 HiKOKI 牌无线电动工具的重要通知：
请确保始终使用我们指定的正版电池。如果使用我们指定以外的电池，或对电池进行拆卸和改动（例如拆卸和更换电池组件或其他内部部件），那么我们无法保证我们无线电动工具的安全性和使用性能。

选择附件

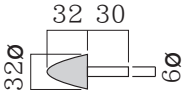
有关详细信息请联系HiKOKI授权服务中心。

弹性夹头



3 mm：932624
6 mm：332812
8 mm：985135
1/8"　：985136
1/4"　：932666Z
5/16"：331477

带 6 mm 轴的砂轮　(mm)



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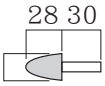
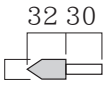
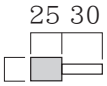


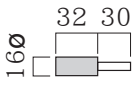
KA-2：939101



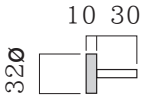
KA-3：939102



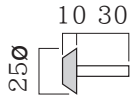
KA-4：939103



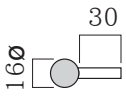
KA-5：939104



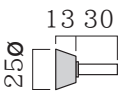
KA-6：939105



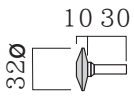
KA-7：939106



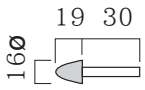
KA-8：939107



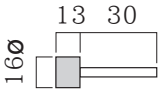
KA-9：939108



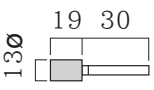
KA-10：939109



KA-11：949023

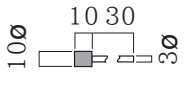


KA-12：949021

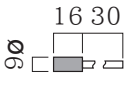


KA-13：949022

带 3 mm 轴的砂轮



KA-20：939110



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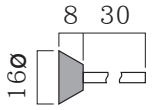

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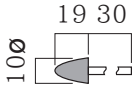

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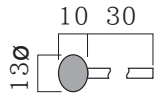

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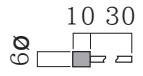

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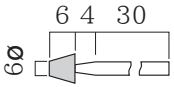

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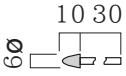

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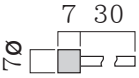

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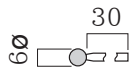

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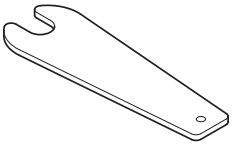

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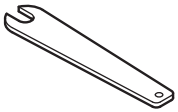

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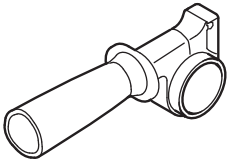

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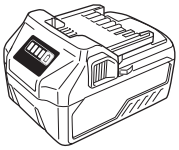

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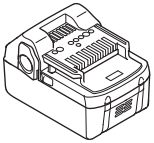

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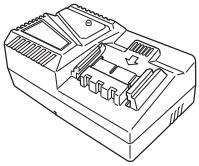

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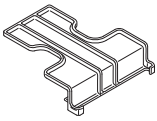

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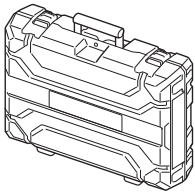


377353
塑料盒

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.

SAFETY WARNINGS COMMON FOR GRINDING OPERATIONS

a) **This power tool is intended to function as a grinder, sander, wire brush, polisher, carving or cut-off tool. Read all safety warnings, instructions, illustrations and specifications provided with this power tool.** *Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.*
b) **Operations such as grinding, sanding, wire brushing, polishing or cutting-off are not recommended to be performed with this power tool.** *Operations for which the power tool was not designed may create a hazard and cause personal injury.*
c) **Do not use accessories which are not specifically designed and recommended by the tool manufacturer.** *Just because the accessory can be attached to your power tool, it does not assure safe operation.*
d) **The RATED SPEED of the grinding accessories must be at least equal to the maximum speed marked on the power tool.** *Grinding accessories running faster than their RATED SPEED can break and fly apart.*
e) **The outside diameter and the thickness of your accessory must be within the capacity rating of your power tool.** *Incorrectly sized accessories cannot be adequately controlled.*
f) **The arbour size of wheels, sanding drums or any other accessory must properly fit the spindle or collet of the power tool.** *Accessories that do not match the mounting hardware of the power tool will run out of balance, vibrate excessively and may cause loss of control.*
g) **Mandrel MOUNTED WHEELS, sanding drums, cutters or other accessories must be fully inserted into the collet or chuck.** *If the mandrel is insufficiently held and/or the overhang of the wheel is too long, the MOUNTED WHEEL may become loose and be ejected at high velocity.*
h) **Do not use a damaged accessory. Before each use inspect the accessory such as abrasive wheels for chips and cracks, sanding drum for cracks, tear or excess wear, wire brush for loose or cracked wires. If power tool or accessory is dropped, inspect for damage or install an undamaged accessory. After inspecting and installing an accessory, position yourself and bystanders away from the plane of the rotating accessory and run the power tool at maximum no-load speed for one minute.** *Damaged accessories will normally break apart during this test time.*

i) **Wear personal protective equipment. Depending on application, use face shield, safety goggles or safety glasses. As appropriate, wear dust mask, hearing protectors, gloves and workshop apron capable of stopping small abrasive or workpiece fragments.** *The eye protection must be capable of stopping flying debris generated by various operations. The dust mask or respirator must be capable of filtrating particles generated by your operation. Prolonged exposure to high intensity noise may cause hearing loss.*

j) **Keep bystanders a safe distance away from work area. Anyone entering the work area must wear personal protective equipment.** *Fragments of workpiece or of a broken accessory may fly away and cause injury beyond immediate area of operation.*

k) **Hold power tool by insulated gripping surfaces only, when performing an operation where the cutting accessory may contact hidden wiring.** *Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.*

l) **Always hold the tool firmly in your hand(s) during the start-up.** *The reaction torque of the motor, as it accelerates to full speed, can cause the tool to twist.*

m) **Use clamps to support workpiece whenever practical. Never hold a small workpiece in one hand and the tool in the other hand while in use.** *Clamping a small workpiece allows you to use your hand(s) to control the tool. Round material such as dowel rods, pipes or tubing have a tendency to roll while being cut, and may cause the bit to bind or jump toward you.*

n) **Never lay the power tool down until the accessory has come to a complete stop.** *The spinning accessory may grab the surface and pull the power tool out of your control.*

o) **After changing the bits or making any adjustments, make sure the collet nut, chuck or any other adjustment devices are securely tightened.** *Loose adjustment devices can unexpectedly shift, causing loss of control, loose rotating components will be violently thrown.*

p) **Do not run the power tool while carrying it at your side.** *Accidental contact with the spinning accessory could snag your clothing, pulling the accessory into your body.*

q) **Regularly clean the power tool's air vents.** *The motor's fan will draw the dust inside the housing and excessive accumulation of powdered metal may cause electrical hazards.*

r) **Do not operate the power tool near flammable materials.** *Sparks could ignite these materials.*

s) **Do not use accessories that require liquid coolants.** *Using water or other liquid coolants may result in electrocution or shock.*

KICKBACK AND RELATED WARNINGS

Kickback is a sudden reaction to a pinched or snagged rotating wheel, sanding band, brush or any other accessory. Pinching or snagging causes rapid stalling of the rotating accessory which in turn causes the uncontrolled power tool to be forced in the direction opposite of the accessory's rotation.

For example, if an abrasive wheel is snagged or pinched by the workpiece, the edge of the wheel that is entering into the pinch point can dig into the surface of the material causing the wheel to climb out or kick out. The wheel may either jump toward or away from the operator, depending on direction of the wheel's movement at the point of pinching. Abrasive wheels may also break under these conditions.

Kickback is the result of power tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below.

a) **Maintain a firm grip on the power tool and position your body and arm to allow you to resist kickback forces.** *The operator can control kickback forces, if proper precautions are taken.*
b) **Use special care when working corners, sharp edges etc. Avoid bouncing and snagging the accessory.** *Corners, sharp edges or bouncing have a tendency to snag the rotating accessory and cause loss of control or kickback.*
c) **Do not attach a toothed saw blade.** *Such blades create frequent kickback and loss of control.*
d) **Always feed the bit into the material in the same direction as the cutting edge is exiting from the material (which is the same direction as the chips are thrown).** *Feeding the tool in the wrong direction causes the cutting edge of the bit to climb out of the work and pull the tool in the direction of this feed.*
e) **When using rotary files, cut-off wheels, high-speed cutters or tungsten carbide cutters, always have the work securely clamped.** *These wheels will grab if they become slightly canted in the groove, and can kickback. When a cut-off wheel grabs, the wheel itself usually breaks. When a rotary file, high-speed cutter or tungsten carbide cutter grabs, it may jump from the groove and you could lose control of the tool.*

SAFETY WARNINGS SPECIFIC FOR GRINDING AND ABRASIVE CUTTING-OFF OPERATIONS

a) **Use only wheel types that are recommended for your power tool and only for recommended applications. For example: do not grind with the side of a cut-off wheel.** Abrasive cut-off wheels are intended for peripheral grinding, side forces applied to these wheels may cause them to shatter.
b) **For threaded abrasive cones and plugs use only undamaged wheel mandrels with an unrelieved shoulder flange that are of correct size and length.** Proper mandrels will reduce the possibility of breakage.
c) **Do not "jam" a cut-off wheel or apply excessive pressure. Do not attempt to make an excessive depth of cut.** Overstressing the wheel increases the loading and susceptibility to twisting or snagging of the wheel in the cut and the possibility of kickback or wheel breakage.
d) **Do not position your hand in line with and behind the rotating wheel.** When the wheel, at the point of operation, is moving away from your hand, the possible kickback may propel the spinning wheel and the power tool directly at you.

e) When wheel is pinched, snagged or when interrupting a cut for any reason, switch off the power tool and hold the power tool motionless until the wheel comes to a complete stop. Never attempt to remove the cut-off wheel from the cut while the wheel is in motion otherwise kickback may occur.
Investigate and take corrective action to eliminate the cause of wheel pinching or snagging.

f) Do not restart the cutting operation in the workpiece. Let the wheel reach full speed and carefully re-enter the cut.
The wheel may bind, walk up or kickback if the power tool is restarted in the workpiece.

g) Support panels or any oversized workpiece to minimize the risk of wheel pinching and kickback.
Large workpieces tend to sag under their own weight. Supports must be placed under the workpiece near the line of cut and near the edge of the workpiece on both sides of the wheel.

h) Use extra caution when making a "pocket cut" into existing walls or other blind areas.
The protruding wheel may cut gas or water pipes, electrical wiring or objects that can cause kickback.

GENERAL SAFETY INSTRUCTIONS FOR CORDLESS DIE GRINDER

- **Check that speed marked on the wheel is equal to or greater than the rated speed of the grinder;**
- **Ensure that the wheel dimensions are compatible with the grinder;**
- **Abrasive wheels shall be stored and handled with care in accordance with manufacturer's instructions;**
- **Inspect the grinding wheel before use, do not use chipped, cracked or otherwise defective products;**
- **Ensure that mounted wheels and points are fitted in accordance with the manufacturer's instructions;**
- **Ensure that blotters are used when they are provided with the bonded abrasive product and when they are required;**
- **Ensure that the abrasive product is correctly mounted and tightened before use and run the tool at no-load for 30 seconds in a safe position, stop immediately if there is considerable vibration or if other defects are detected. If this condition occurs, check the machine to determine the cause;**
- **If a guard is equipped with the tool never use the tool without such a guard;**
- **Do not use separate reducing bushings or adapters to adapt large hole abrasive wheels;**
- **For tools intended to be fitted with threaded hole wheel, ensure that the thread in the wheel is long enough to accept the spindle length;**
- **Check that the work piece is properly supported;**
- **Do not use cutting off wheel for side grinding;**

— **Ensure that sparks resulting from use do not create a hazard e.g. do not hit persons, or ignite flammable substances;**
— **Ensure that ventilation openings are kept clear when working in dusty conditions, if it should become necessary to clear dust, first disconnect the tool from the mains supply (use non metallic objects) and avoid damaging internal parts;**
— **Always use eye and ear protection. Other personal protective equipment such as dust mask, gloves, helmet and apron should be worn;**
— **Pay attention to the wheel that continues to rotate after the tool is switched off.**
— **Do not allow foreign matter to enter the hole for connecting the rechargeable battery.**
— **Never disassemble the rechargeable battery and charger.**
— **Never short-circuit the rechargeable battery.**
Short-circuiting the battery will cause a great electric current and overheat. It results in burn or damage to the battery.
— **Do not dispose of the battery in fire.**
If the battery burnt, it may explode.
— **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.
— **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.**

ADDITIONAL SAFETY WARNINGS

1 **Ensure that the wheel to be utilized is the correct type and free of cracks or surface defects. Also ensure that the wheel is properly mounted and the collet chuck is securely tightened.**
2. **To prolong the life of the machine and ensure a first class finish, it is important that the machine should not be overloaded by applying too much pressure. In most applications, the weight of the machine alone is sufficient for effective grinding. Too much pressure will result in reduced rotational speed, inferior surface finish, and overloading which could reduce the life of the machine.**
3. **The wheel continues to rotate after the tool is switched off.**
After switching off the machine, do not put it down until the wheel has come to a complete stop. Apart from avoiding serious accidents, this precaution will reduce the amount of dust and swarf sucked into the machine.
4. **When the machine is not use, the power source should be disconnected.**
5. **Be sure to switch OFF and pull out the battery to avoid a serious accident before the wheel is assembling and disassembling.**
6. **Be careful of brake kickback.**
This cordless die grinder features an electric brake that functions when the switch is released. As there is some kickback when the brake functions, be sure to hold the main body securely.

7. **Do not use the product if the tool or the battery terminals (battery mount) are deformed.**
   Installing the battery could cause a short circuit that could result in smoke emission or ignition.
8. **Keep the tool's terminals (battery mount) free of swarf and dust.**

- **Prior to use, make sure that swarf and dust have not collected in the area of the terminals.**
- **During use, try to avoid swarf or dust on the tool from falling on the battery.**
- **When suspending operation or after use, do not leave the tool in an area where it may be exposed to falling swarf or dust.**
  Doing so could cause a short circuit that could result in smoke emission or ignition.

PRECAUTIONS FOR BATTERY AND CHARGER

1. **Always charge the battery at an ambient temperature of -10–40°C. A temperature of less than -10°C will result in over charging which is dangerous. The battery cannot be charged at a temperature greater 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 or 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. **Using an exhausted battery will damage the charger.**
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. **Do not insert objects into the air ventilation slots of the charger.**
   Inserting metal objects or flammable into the charger air ventilation slots will result in an electrical shock hazard or damage to the charger.

CAUTION ON LITHIUM-ION BATTERY

To extend the lifetime, the lithium-ion battery equips with the protection function to stop the output.
In the cases of 1 to 3 described below, when using this product, even if you are pulling the switch, the motor may stop. This is not the trouble but the result of protection function.

1. When the battery power remaining runs out, the motor stops.
   In such case, charge it up immediately.
2. If the tool is overloaded, the motor may stop. In this case, release the switch of tool and eliminate causes of overloading. After that, you can use it again.
3. If the battery is overheated under overload work, the battery power may stop.
   In this case, stop using the battery and let the battery cool. After that, you can use it again.

Furthermore, please heed the following warning and caution.

WARNING

In order to prevent any battery leakage, heat generation, smoke emission, explosion and ignition beforehand, please be sure to heed the following precautions.

1. Make sure that swarf and dust do not collect on the battery.
   - ○ During work make sure that swarf and dust do not fall on the battery.
   - ○ Make sure that any swarf and dust falling on the power tool during work do not collect on the battery.
   - ○ Do not store an unused battery in a location exposed to swarf and dust.
   - ○ Before storing a battery, remove any swarf and dust that may adhere to it and do not store it together with metal parts (screws, nails, etc.).
2. Do not pierce battery with a sharp object such as a nail, strike with a hammer, step on, throw or subject the battery to severe physical shock.
3. Do not use an apparently damaged or deformed battery.
4. Do not use the battery in reverse polarity.
5. Do not connect directly to an electrical outlets or car cigarette lighter sockets.
6. Do not use the battery for a purpose other than those specified.
7. If the battery charging fails to complete even when a specified recharging time has elapsed, immediately stop further recharging.
8. Do not put or subject the battery to high temperatures or high pressure such as into a microwave oven, dryer, or high pressure container.
9. Keep away from fire immediately when leakage or foul odor are detected.
10. Do not use in a location where strong static electricity generates.
11. If there is battery leakage, foul odor, heat generated, discolored or deformed, or in any way appears abnormal during use, recharging or storage, immediately remove it from the equipment or battery charger, and stop use.
12. Do not immerse the battery or allow any fluids to flow inside. Conductive liquid ingress, such as water, can cause damage resulting in fire or explosion. Store your battery in a cool, dry place, away from combustible and flammable items. Corrosive gas atmospheres must be avoided.

CAUTION

1. If liquid leaking from the battery gets into your eyes, do not rub your eyes and wash them well with fresh clean water such as tap water and contact a doctor immediately.
   If left untreated, the liquid may cause eye-problems.

2. **If liquid leaks onto your skin or clothes, wash well with clean water such as tap water immediately.**
   There is a possibility that this can cause skin irritation.
3. **If you find rust, foul odor, overheating, discolor, deformation, and/or other irregularities when using the battery for the first time, do not use and return it to your supplier or vendor**.

WARNING

If an electrically conductive foreign object enters the terminals of the lithium ion battery, a short-circuit may occur resulting in the risk of fire. Please observe the following matters when storing the battery.

- **Do not place electrically conductive cuttings, nails, steel wire, copper wire or other wire in the storage case.**
- **Either install the battery in the power tool or store by securely pressing into the battery cover until the ventilation holes are concealed to prevent short-circuits (See Fig. 1).**

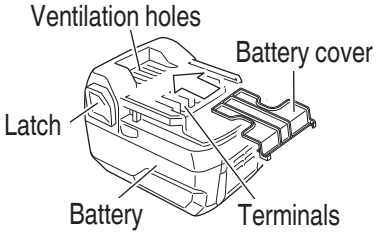


Fig. 1

REGARDING LITHIUM-ION BATTERY TRANSPORTATION

When transporting a lithium-ion battery, please observe the following precautions.

WARNING

Notify the transporting company that a package contains a lithium-ion battery, inform the company of its power output and follow the instructions of the transportation company when arranging transport.

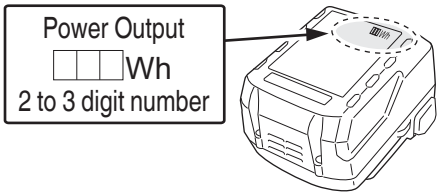


Fig. 2

- **Lithium-ion batteries that exceed a power output of 100 Wh are considered to be in the freight classification of Dangerous Goods and will require special application procedures.**
- **For transportation abroad, you must comply with international law and the rules and regulations of the destination country.**

SYMBOL

WARNING

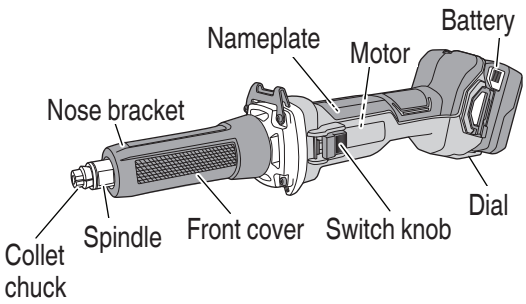
The following show symbols used for the machine. Be sure that you understand their meaning before use.

	To reduce the risk of injury, user must read instruction manual.

NAME OF PARTS

1. POWER TOOL

○ GP18DA



○ GP18DB

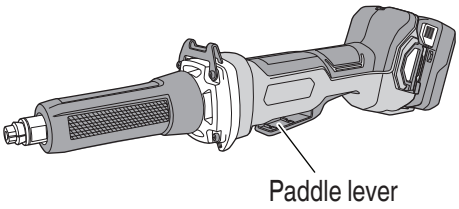
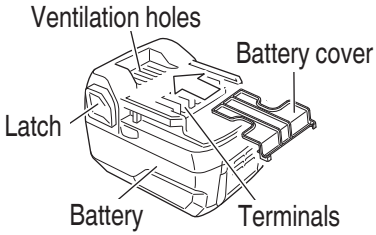


Fig. 3

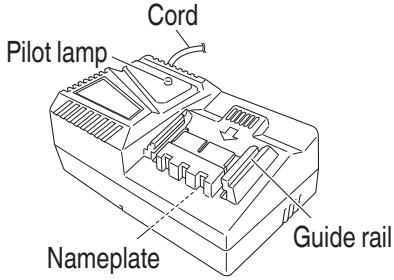
2. Battery



<BSL1850C>

Fig. 4

3. Battery Charger



<UC18YFSL>

Fig. 5

SPECIFICATIONS

POWER TOOL

Model		GP18DA • GP18DB
Voltage		18 V
Rated Speed		Transmission mode : 7000–29000 /min
Wheel	peripheral speed	80 m/s
Battery		BSL1850C: Li-ion 18 V (5.0 Ah, 5 cells)
Weight		2.3 kg (BSL1850C attached)

NOTE

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

Electronic control

- Soft start
  Reduces recoil against the operator by managing the number of rotations during startup.
- Overload protection
  This protection feature cuts off the power to the motor in the event of overloading of motor or a conspicuous reduction in rotational speed during operation.
  When the overload protection feature has been activated, the motor may stop.
  In this case, release the tool switch and eliminate causes of overloading.
  After that you can use it again.
- Overheat protection
  This protection feature cuts off the power to the motor and stops the power tool in the event of overheating of motor during operation.
  When the overheat protection feature has been activated, the motor may stop.
  In this case, release the tool switch and cool it down in a few minutes.
  After that you can use it again.
- Restart prevention function
  When the power is still switched on, the tool will not restart when a battery is installed. This function can be canceled once the tool is switched off.
- Braking Function
  Brake is activated when the switch is turned off, stopping the motor's rotation.
- Kickback Protection
  The kickback protection feature cuts off the power to the motor and stops the power tool in the event of a sudden drop in the rotational speed of the wheel during operation (for example, if the wheel locks during cutting operation, etc.).

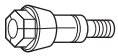
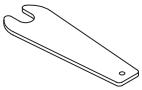
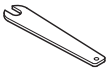
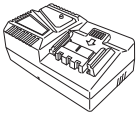
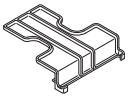
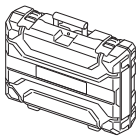
CHARGER

Model	UC18YFSL
Charging voltage	14.4 V–18 V
Weight	0.5 kg

STANDARD ACCESSORIES

GP18DA • GP18DB have two types which are designated as 2JC and NNK. For their respective accessories, see the Table below.

Table 1

		GP18DA • GP18DB	
		(2JC)	(NNK)
	Collet chuck (6 mm)	1	1
	Wrench (17 mm)	1	1
	Wrench (12 mm)	1	1
	Charger (UC18YFSL)	1	—
	Battery (BSL1850C)	2	—
	Battery cover	2	—
	Plastic case	1	—

APPLICATIONS

- Finishing of dies for press working, die casting and moulding.
- Finishing of thread cutting dies, tools and other small parts.
- Internal grinding of tools and machine parts.

BATTERY REMOVAL/INSTALLATION

1. Battery removal
   Hold the handle tightly and push the battery latches to remove the battery (see **Fig. 6**).

CAUTION

Never short-circuit the battery.

2. Battery installation
   Insert the battery while observing its polarities (see **Fig. 6**).

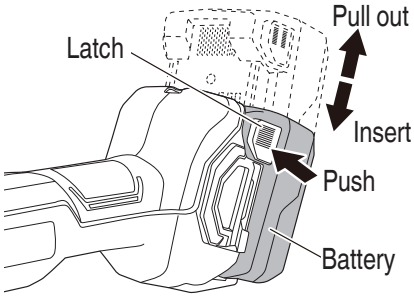


Fig. 6

CHARGING

Before using the power tool, charge the battery as follows.

1. Connect the charger's power cord to the receptacle.
   When connecting the plug of the charger to a receptacle, the pilot lamp will blink in red (At 1- second intervals).
2. Insert the battery into the charger.
   Firmly insert the battery into the charger as shown in **Fig. 7**.
3. Charging
   When inserting a battery in the charger, charging will commence and the pilot lamp will light continuously in red.
   When the battery becomes fully recharged, the pilot lamp will blink in red. (At 1-second intervals)
   (See **Table 2**)

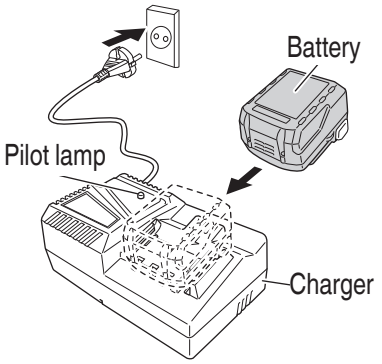
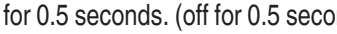


Fig. 7

- Pilot lamp indication
  The indications of the pilot lamp will be as shown in **Table 2**, according to the condition of the charger or the rechargeable battery.

Table 2

Indications of the pilot lamp				
Pilot lamp (red)	Before charging	Blinks	Lights for 0.5 seconds. Does not light for 0.5 seconds. (off for 0.5 seconds) 	
	While charging	Lights	Lights continuously 	
	Charging complete	Blinks	Lights for 0.5 seconds. Does not light for 0.5 seconds. (off for 0.5 seconds) 	
	Overheat standby	Blinks	Lights for 1 second. Does not light for 0.5 seconds. (off for 0.5 seconds)	Battery overheated. Unable to charge. (Charging will commence when battery cools)
	Charging impossible	Flickers	Lights for 0.1 seconds. Does not light for 0.1 seconds. (off for 0.1 seconds) 	Malfunction in the battery or the charger

- Regarding the temperatures and charging time of the battery.
  The temperatures and charging time will become as shown in **Table 3**.

Table 3

Battery / Charger		UC18YFSL
Charging voltage	V	14.4–18
Weight	kg	0.5
Temperatures at which the battery can be recharged		0°C–50°C
Charging time for battery capacity, approx. (At 20°C)		
1.5 Ah	min	22
2.0 Ah	min	30
2.5 Ah	min	35
3.0 Ah	min	45
4.0 Ah	min	60
5.0 Ah	min	75
6.0 Ah	min	90
8.0 Ah	min	120
Number of battery cells		4–10

NOTE

The recharging time may vary according to temperature and power source voltage.

CAUTION

When the battery charger has been continuously used, the battery charger will be heated, thus constituting the cause of the failures. Once the charging has been completed, give 15 minutes rest until the next charging.

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.

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 for 1 second, does not light for 0.5 seconds (off for 0.5 seconds). In such a case, first let the battery cool, then start charging.**
- **When the pilot lamp flickers (at 0.2-second intervals), check for and take out any foreign objects in the charger's battery connector. 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 charger 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.**
- **If the pilot lamp does not blink in red (every second) even though the charger cord is connected to the power, it indicates that the protection circuit of the charger may be activated.**
  Remove the cord or plug from the power and then connect it again after 30 seconds or so. If this does not cause the pilot lamp to blink in red (every second), please take the charger to the HiKOKI Authorized Service Center.

PRIOR TO OPERATION

WARNING

To avoid serious accident, ensure the switch is in the OFF position, and pull out the battery.

1. Check the work site and surrounding area
   Be sure that the work area has been thoroughly checked and prepared to avoid any unsafe conditions. Review the SAFETY section of this manual.

2. Installing a wheel

WARNING

USING A WRONG SIZED WHEEL OR A WRONG RATED ROTATION SPEED WHEEL CAN CAUSE WHEEL BREAKAGE AND RESULTING SERIOUS INJURY.
In order to avoid this hazard, refer to the following rated rotation speed wheel and the following illustration to determine the proper dimensions(s) of your wheel. Some guidelines:

(a) Use only wheels rated at 29000 /min or more. Using wheel rated less can lead to wheel disintegration during operation and cause serious bodily injury.
(b) Dimension ℓ should always be less than 13 mm. Longer lengths can result in excess vibration, wheel breakage, and the chance for serious injury.
(c) When dimension d is 6.35 mm, the diameter of the wheel (dimension D) should be less than 50 mm. NEVER use a longer diameter wheel.
(d) When dimension d is 3.175 mm, the diameter of the wheel (dimension D) should be less than 10 mm.
(e) Dimension L varies according to the dimension D. Dimension L can be longer as dimension D increase. (**Table 4**)

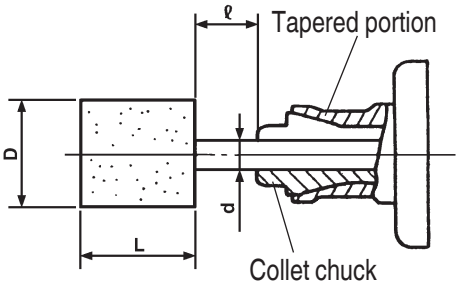


Fig. 8

Table 4 (When ℓ = 13 mm)

d	D	L
3.175 mm	5 mm	13 mm
	6 mm	20 mm
	8 mm	20 mm
	10 mm	20 mm
6.35 mm	13 mm	38 mm
	16 mm	25 mm
	20 mm	25 mm
	25 mm	20 mm
	32 mm	13 mm
	38 mm	7 mm

Wheels can be simply attached and detached by using two wrenches. (**Fig. 9**)

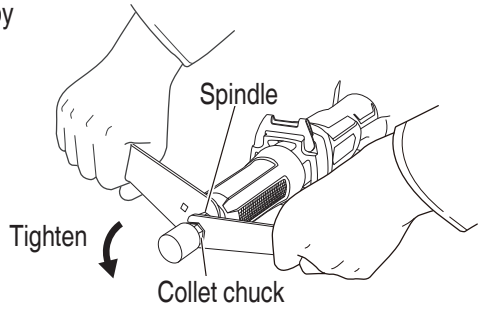


Fig. 9

NOTE

- Do not tighten the collet chuck by inserting a shaft thinner than the regular shaft diameter (6.35mm) in the chuck or in an empty condition. This practice will damage the collet chuck.
- When using a shaft (3 mm), switch to a collet chuck for 3 mm shaft (sold separately).
- When installing a wheel with shaft, tighten the collet chuck after applying a small quantity of spindle oil (or sewing machine oil) to the tapered portion indicated in **Fig. 8 on page 45**.

3. Using the side handle (**Fig. 10, 11**) (sold separately)
   Attach the side handle to the machine as follows.

(1) Remove the front cover.
   Detach the protrusion on the interior of the front cover from the hollow in the main unit and pull to remove. If the protrusion is difficult to detach, use a flat-head screwdriver or similar tool.

(2) Loosen the side handle grip and insert the side handle to the nose bracket part of the machine from the flange part of the side handle sleeve.

(3) Set the side handle to a position that is suited to the operation and then securely tighten the side handle grip.

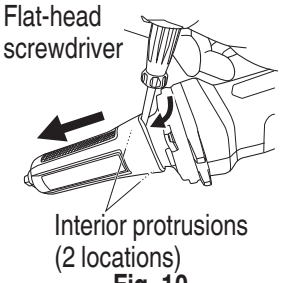


Fig. 10

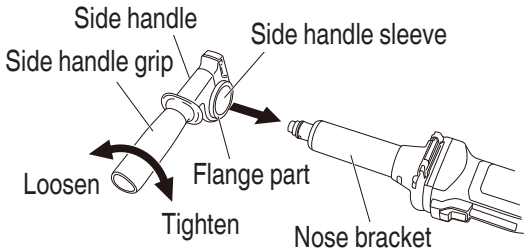


Fig. 11

OPERATION

WARNING

- **Wear eye protection when operating this tool.**
- **Keep your hands, face and other body parts away from the wheel and any other rotating parts, while operating the tool.**

CAUTION

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

NOTE

- To prevent injuries, this product has a function that prevents unexpected motor rotation when the battery is inserted. The motor will not run if the battery is inserter while the switch is still ON. After installing the battery, turn the switch off and then back on again.
- The GP18DA and GP18DB models are equipped with a protection function that will shut down the tool in the event of an overload.
  Should the tool shut down due to an overload, turn the power off and then turn it back on again.
  An overload that stops tool operation and lasts more than 10 seconds may not be released by turning the power off and on. Should this happen, remove the battery from the tool and reinstall it before turning on the power switch.

1. Switch operation

<GP18DA> (**Fig. 12**)

Turn the grinder “ON”

While holding the grinder firmly, slide the switch to the “ON” position with one finger to turn on the tool. Releasing the switch will turn off the tool.

For continued operation, slide the switch to the “ON” position and press down the “ON” position of the switch to lock it in place.

Turn the grinder “OFF”

Press the “OFF” position of the switch to release the lock and turn the grinder off.

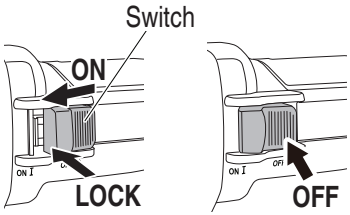


Fig. 12

<GP18DB> (**Fig. 13**)

To switch on, slide the off-lock lever in the direction of Ⓐ and press the paddle lever in the direction of Ⓑ as shown in **Fig. 13**. Release the paddle lever to switch off.

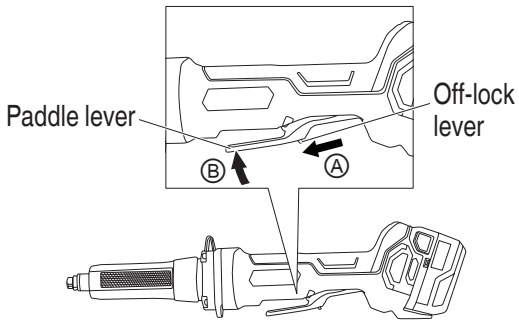


Fig. 13

2. About the mode change function
The unit has “Transmission mode” and “Auto mode”.

○ With Transmission mode, the grinder’s number of revolutions can be set at one of five stages.
When operating in Transmission mode, the set number of revolutions will be maintained regardless of changes in load.

○ With Auto mode, you can lower noise and vibration by lowering the maximum number of revolutions while in a no-load state.
While in Auto mode, the number of revolutions will be raised if the load becomes greater during operation.
On the other hand, the number of revolutions will be lowered if the load decreases during operation. (**Table 5**)

○ Set the mode and dial according to work application. (**Fig. 14**)

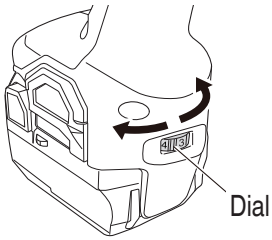


Fig. 14

Table 5

Mode	Status		Number of Revolutions (/min)	Use
Transmission	Dial Settings	1	7000	Polishing/finishing
		2	13800	Paint removal
		3	16600	Rust removal
		4	24400	Burr removal
		5	29000	Grinding
Auto		A	15000	Work on standby
			29000	Grinding

CAUTION

- **When using the grinder in the immediate vicinity of welding equipment, the rotational speed may become unstable. Do not use the grinder near welding equipment.**
- **When using the tool at any value except the full speed (Dial scale 5), the motor cannot be sufficiently cooled due to the decreased number of revolution. This could result in the risk of burning and damaging the motor before an overload protective mechanism starts to function. Make sure that you use the tool by lightly applying it to the surface of material when you use it at any value except the full speed (Dial scale 5).**

WARNING

Do not press the grinder forcibly against the surface to be ground. Heavy pressure can result in wheel breakage and serious injury. It can also damage the surface being ground or damage the grinder's motor.

3. Wheel selecting method
   Types of wheels are varied according to the materials to be ground. Select a wheel appropriate for the material to be ground.
   The following table is an outline of wheels and materials to be ground.

Materials to be ground	Grain	Grading	Bonding degree	Structure	Bonding agent
Mild steel, hard steel, forged steel	WA	60–80	P	m	V
Cast iron	C	36	M–O	m	V
Brass, bronze, aluminium	C	36	J–K	m	V
Ceramic	WA	60–80	M	m	V
Synthetic resin	C	36	K–M	m	V

Small-scaled wheels with shaft are prepared for grinding small surfaces. Their dimensions and shapes are shown in "SELECTING ACCESSORIES" on page 53.
Since wheel shaft diameter is 3 mm, use the collet chuck for 3 mm shaft sold separately by your HiKOKI dealer as an optional accessory.

4. Grinding operation

(1) Lightly press the wheel to the material to be ground when grinding materials, high-speed revolution is necessary. Use a die grinder with high-speed revolution, minimizing the pressing force.

(2) Dressing the wheel
After attaching a wheel, adjust deflection of the wheel center by using a dresser.
If the wheel center is eccentric, not only precise finishing cannot be achieved but also grinder vibration increases, lowering grinder accuracy and durability.
A clogged or worn wheel will soil the finishing surface or lower grinding efficiency.
Occasionally dress the wheel by applying the dresser.

(3) Thorougly check that the wheel is free of cracks, splits and other abnomalities before mounting. Make sure it is firmly clamped and has been properly mounted.

(4) Test the die grinder before using.
Before actually beginning the grinding work, test the die grinder by first clearing the area of all other personnel. Make sure you are wearing eye protection. Turn the die grinder “on”, and make sure the die grinder runs smoothly and shows no abnormalities.
Duration of the trial run is as follows:
When depressed center wheel is replaced ..... 3 minutes or more
When starting daily work ..... 1 minute or more

(5) Use only properly rated wheels.
Use only depressed center wheels rated at
29000 /min or more.
Using a wheel rated less can lead to wheel disintegration during operation and cause serious bodily injury.

CAUTION

The revolving wheel will create air turbulence.
Do no lay the die grinder down in areas of dust or dirt until it has come to a complete stop.

MAINTENANCE AND INSPECTION

WARNING

- **Be sure to turned off the switch and pull out the battery.**
- **Using cracked, deformed or damaged wheels can lead to wheel breakage and resulting serious injury.**

1. Inspecting the wheel
Ensure that the wheel is free of cracks and surface defects.
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.

CAUTION

Using this power tool with loosened screws is extremely dangerous.

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. Inspection of terminals (tool and battery)
   Check to make sure that swarf and dust have not collected on the terminals.
   On occasion check prior, during and after operation.

CAUTION

Remove any swarf or dust which may have collected on the terminals. Failure to do so may result in malfunction.

5. Cleaning on the outside
   When the cordless die grinder is stained, wipe with a soft dry cloth or a cloth moistened with soapy water. Do not use chloric solvents, gasoline or paint thinner, for they melt plastics.
6. Cleaning the filter
   After use, detach the filter and remove any grime or dust from the screen with an airgun or other tool. (**Fig. 15**)

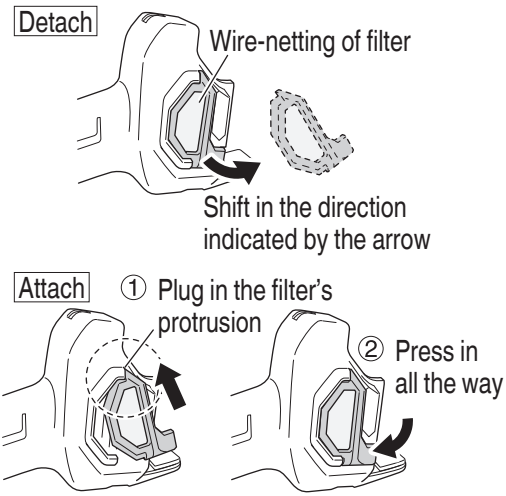


Fig. 15

NOTE

- To clear the unit of grime or dust, periodically run the motor in a no-load state and blow dry air into the ventilation hole with the filter removed. Accumulation of grime or dust accumulates in the motor can cause damage.
- After cleaning, make sure to securely attach the filter.

7. Disposal of the exhausted battery

WARNING

Do not dispose of the exhausted battery. The battery may explode if it is incinerated. The battery is recyclable. At the end of it’s useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

8. Storage

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

NOTE

Storing lithium-ion batteries.

Make sure the lithium-ion batteries have been fully charged before storing them.

Prolonged storage (3 months or more) of batteries with a low charge may result in performance deterioration, significantly reducing battery usage time or rendering the batteries incapable of holding a charge.

However, significantly reduced battery usage time may be recovered by repeatedly charging and using the batteries two to five times.

If the battery usage time is extremely short despite repeated charging and use, consider the batteries dead and purchase new batteries.

CAUTION

In the operation and maintenance of power tools, the safety regulations and standards prescribed in each country must be observed.

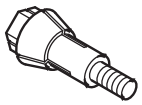
Important notice on the batteries for the HiKOKI cordless power tools

Please always use one of our designated genuine batteries. We cannot guarantee the safety and performance of our cordless power tool when used with batteries other than these designated by us, or when the battery is disassembled and modified (such as disassembly and replacement of cells or other internal parts).

SELECTING ACCESSORIES

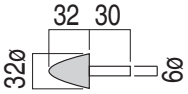
For details contact HiKOKI Authorized Service Center.

Collet chuck

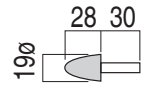


3 mm : 932624
6 mm : 332812
8 mm : 985135
1/8" : 985136
1/4" : 932666Z
5/16" : 331477

Wheel with 6 mm shaft (mm)



KA-1 : 939100



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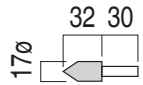
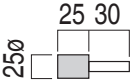


KA-3 : 939102



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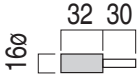

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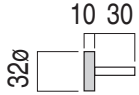
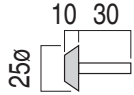
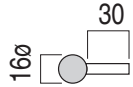


KA-6 : 939105



KA-7 : 939106



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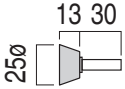

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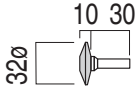
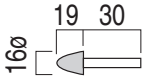
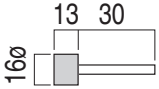


KA-10 : 939109



KA-11 : 949023



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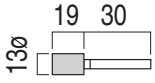
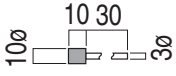


KA-13 : 949022

Wheel with 3 mm shaft



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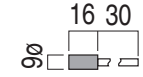

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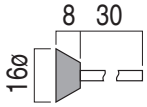

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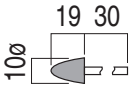

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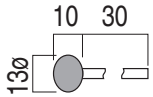

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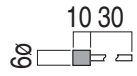

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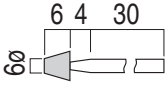

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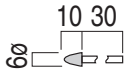

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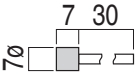

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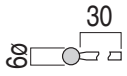

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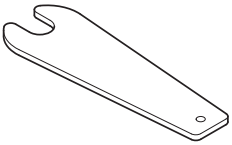
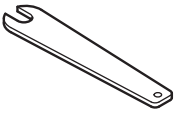
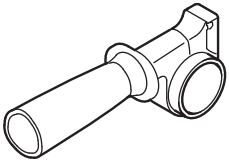


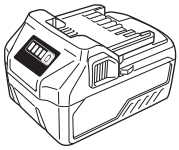
936638
Wrench (17 mm)



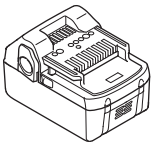
936553
Wrench (12 mm)



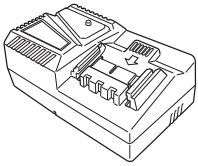
330060
Side handle



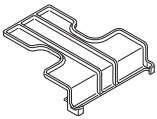
BSL36A18



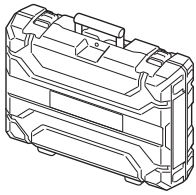
18 V (Li-ion)
Battery



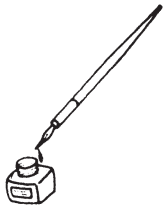
UC18YFSL (14.4 V–18 V)
Charger



329897
Battery cover



377353
Case



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Koki Holdings Co., Ltd.

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