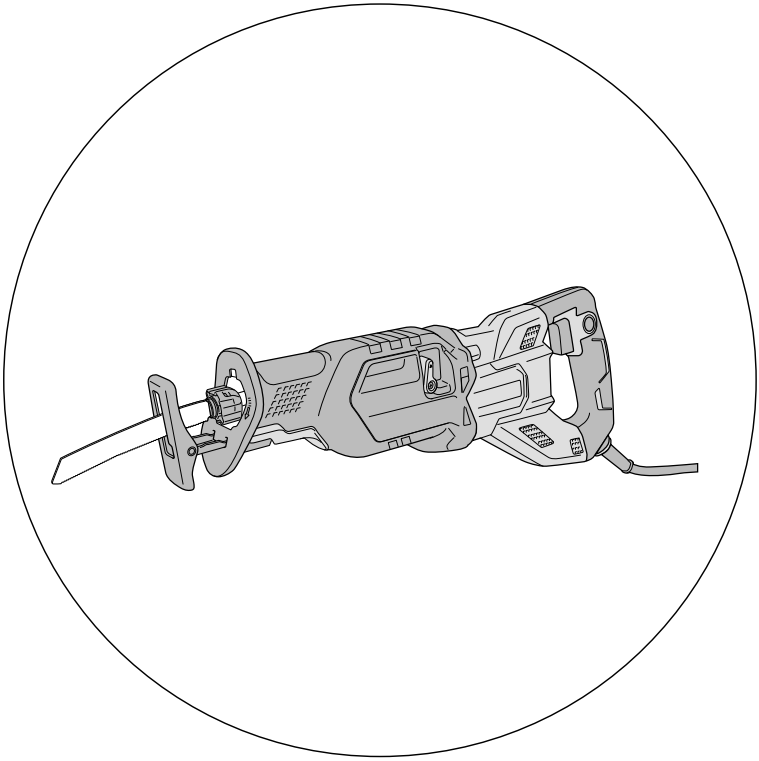
HiKOKI

电动往复锯
Reciprocating Saw

中文

English

CR 13VEY



保留备用
Keep for future reference

使用说明书
Handling instructions

目次

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) 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。

使用电动往复锯之前的注意事项

1. 在切削附件可能触及暗线或其自身软线之处进行操作时，要通过绝缘握持面来握持工具。切削附件碰到带电导线会使工具外露的金属零件带电从而使操作者受到电击。
2. 在墙上、地板上或天花板上切割时，请检查埋入的电线等。
3. 为保护您的听力请在工作时带上耳塞。
4. 切勿在工作中或刚刚结束工作时触摸锯条，因为在工作中锯条会变得很热，触摸其将会造成严重的烫伤。
5. 请务必拿紧该电动工具的把手和前盖，否则产生的反作用力可能会导致不正确的或甚至危险的操作。

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。

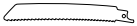
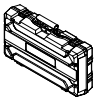
	为降低伤害风险，用户必须阅读使用说明书	n_0	空载转速
V	额定电压	/min	每分钟的振动次数
A	电流		警告
W	瓦		II 类工具

规格

电压	220 V ～
输入功率	1100 W
切锯能力	软钢管： 外径 130 mm 聚氯乙烯管： 外径 130 mm 木材： 厚度 300 mm 软钢板： 厚度 19 mm
空载转速	0 － 3000 /min
行程	32 mm
重量（不含线缆）	3.9 kg

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。

刀刃（141(S)号） 	1
塑料外壳 	1

选购附件（分开销售）

(1) 4 号刀刃
(2) 5 号刀刃
(3) 101 号刀刃
(4) 102 号刀刃
(5) 103 号刀刃
(6) 104 号刀刃
(7) 107 号刀刃
(8) 108 号刀刃
(9) 109 号刀刃
(10) 110 号刀刃
(11) 121 号刀刃
(12) 131 号刀刃
(13) 132 号刀刃
(14) 141(S) 号刀刃
(15) 142(S) 号刀刃
(16) 143(S) 号刀刃

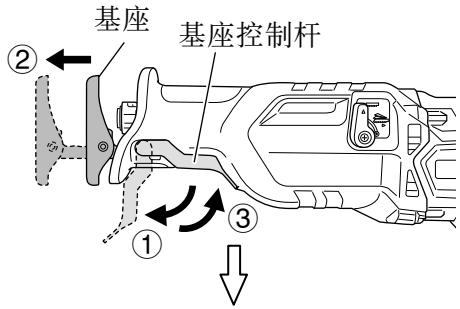
○ (1) － (2)：HCS 刀刃（HCS: 高速炭钢）
○ (3) － (16)：BI-METAL 刀刃
使用刀刃时，请参照第 14-15 页的表 3，表 4 和表 5。

用途

○ 金属和不锈钢管的切锯。
○ 各种木材的切锯。
○ 软钢板、铝板及铜板的切锯。
○ 苯酚树脂、聚氯乙烯等合成树脂的切锯。
详细内容，请参照第 13 页“刀刃的选择”一节的内容。

作业之前

1. 电源
   确认所使用的电源与工具铭牌上标示的规格是否相符。
2. 电源开关
   确认电源开关是否切断。若电源开关接通，则插头插入电源插座时电动工具将出其不意地立刻转动，从而招致严重事故。
3. 延伸线缆
   若作业场所移到离开电源的地点，应使用容量足够、铠装合适的延伸线缆，并且要尽可能地短些。
4. 检查插座
   如果插头插入插座后非常松动，就必须对插座进行修理。
   联系持证电工，进行妥善修理。
   如果使用这样的问题插座，可能会引起过热现象，进而造成严重危害。
5. 确认环境条件
   确认工作场所条件合适，且符合规定的预防措施。
6. 操作时产生的灰尘
   正常操作时产生的灰尘可能会影响操作员的身体健康。推荐戴上防尘面罩。
7. 安装锯条
   该工具采用了不使用扳钳或其他工具便可装卸锯条的可装卸式装置。



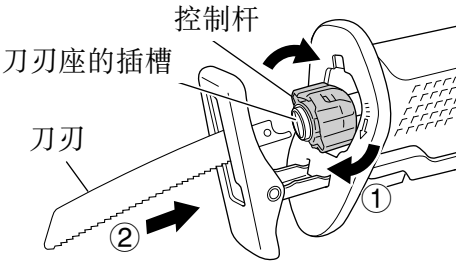


图 1

注意！

请务必关闭开关并拔下电源插头，以防止发生意外事故。

(1) 扭转控制杆，打开刀刃钳。
(2) 扭转控制杆，将刀刃座完全插入柱塞端部的插槽中。可朝上或朝下安装此刀刃。（图 1、图 2）

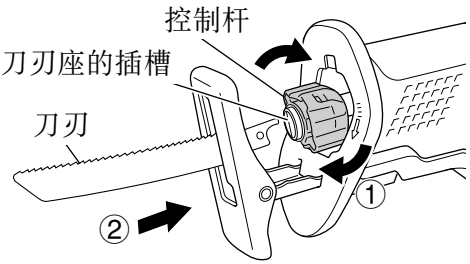


图 2

(3) 松开控制杆时，弹簧的弹力会使控制杆自动返回正确的位置。
(4) 用手试着拉刀刃背两三次，以确认刀刃已安装牢固。(图 3)

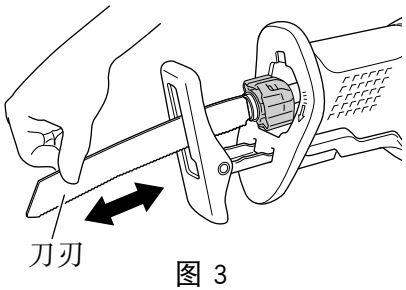


图 3

注意！

当拉动锯条时务必从后侧拉动，拉动锯条的其他部分将造成人身伤害。

8. 卸下锯条

注意！

请务必关闭开关并拔下电源插头，以防止发生意外事故。

(1) 转动控制杆后，将刀刃向下。刀刃会自行脱落。如果刀刃未掉下来，用手将刀刃拔出。(图 4、图 5)

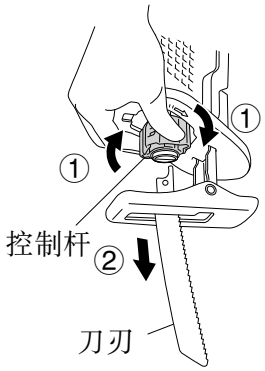


图 4

注意！

切勿用手触摸刚刚使用过的锯条，否则，灼热的金属极易烫伤您的皮肤。

当锯条损坏时

即使当刀刃破损并残留在刀刃座的小插槽内时，若扭转控制杆并使刀刃朝下，它仍会自行掉下。若未自行掉下，请按下述步骤将它取出。
(1) 若损坏的刀刃某部分粘在了刀刃座的小插槽中，拔出插条并将刀刃拔出。
(2) 若损坏的锯条藏在小插槽内部，请用锯条的尖部将其钩住并取出。(图 6)

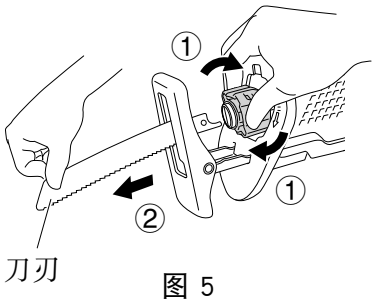


图 5

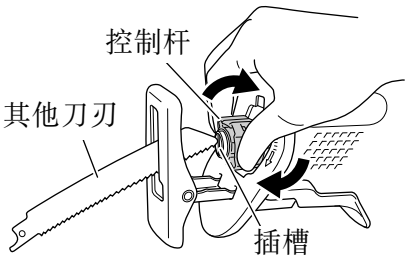


图 6

电锯的维护和检查

(1) 使用后，请用气刷或刷子清除掉锯条上的灰尘、泥土、尘沙或潮气等，以确保锯条的工作顺畅。(图 7)

注：

若在不干净或未润滑刀刃的状态下使用工具，控制杆的功能可能因积尘和碎屑而使控制杆运转不畅。此时可以扭转控制杆，并将刀刃座周围擦拭干净，吹走积尘。

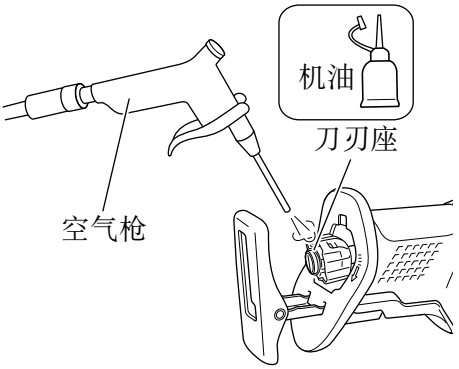


图 7

注意！

请勿使用带有磨损刀刃孔的刀刃。否则，刀刃可能会掉下，导致人员受伤。(图 8)

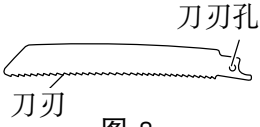


图 8

9. 调结基座

为最大限度地延长刀刃的使用寿命，请滑入或滑出基座，调整行程长度以便于高效使用。

(1) 顺时针扭转基座控制杆；使基座滑至适宜位置。可将基座调至 5 个位置。

(2) 逆时针扭转控制杆以固定基座。(图 9)

(3) 请确保基座不会对刀刃产生干扰。

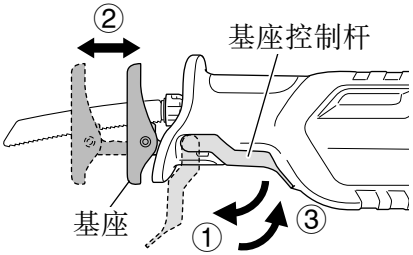


图 9

警告！

为了避免人员受伤和机器损坏，请勿在未安装基座的情况下操作本往复锯。否则可能会因刀刃座撞击工件而造成往复运动机构损坏。

使用方法

警告！

请勿触碰移动的部件。

注意！

○ 请勿在未拔下电源插头及手指扣住扳机的状态下携带本电动往复锯。否则因突然起动而造成人身伤害。

○ 在作业中请小心勿使锯屑、灰尘、水等通过柱塞部份进入机内。若锯屑等积于柱塞部份，请务必在使用前加以清除。

○ 请勿取下前盖。
务必从前盖的顶部拿住机身。(图 10)

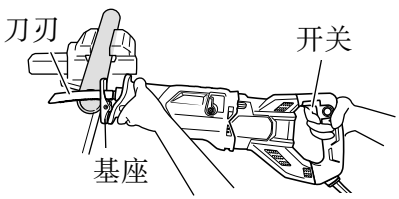


图 10

○ 在使用时，在切锯作业中请将底座压在材料上面。若未将底座紧紧压在工件上，振动会导致刀刃损坏。因此，有时刀刃端会接触管内壁，导致刀刃损坏。

○ 请选择长度最适当的刀刃。理论上，减去行程量后从刀刃座突出的刀刃长度应大于材料。(参照图 11 和图 13)
若切锯超过刀刃切锯能力的大工件、大木块等，刀刃可能会接触到管内壁和木料等，从而发生危险。(参照图 12 和图 14)

○ 移动刀刃进行切锯时，请勿将工具从工件上移开。

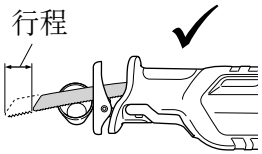


图 11

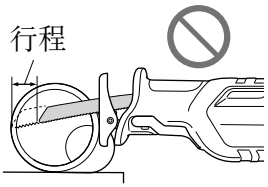


图 12

注：
请勿锁住马达。若马达锁住，请立即断开开关。若马达已被锁住一段时间，可能会使马达或电池烧损。

1. 开关的操作

(1) 开关止动片
此开关在拉动时会启动，当松开后会被禁用。
若要进行持续运转，请将开关拉动到位并按下制动器。
若要取消持续运转，请再一次将开关拉动到位直至制动器被松开，然后松开开关。(图 15)

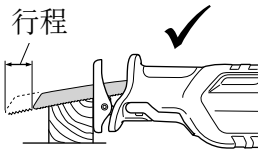


图 13

(2) 扳机开关
本工具配有控制各种速度的扳机开关。通过按压和松开搬钮可将工具打开或关闭，通过按压搬钮来调整至合适的电锯的速度（从铭牌标注的最小速度至最大速度），向下按时速度加大，松开时速度减小。(图 15)
以最低开始切锯，可保证预定切锯位置的正确性。可在获得适当的切锯深度之后，再提高切锯速度。

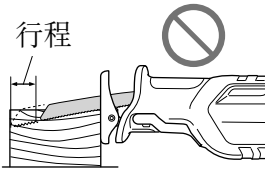


图 14

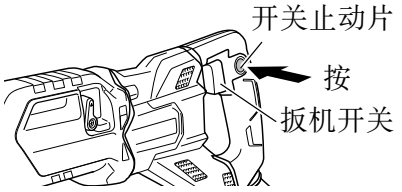


图 15

注意！

虽然本电动往复锯采用强力马达，但长时间低速切 锯将使负荷异常增加而可能导致过热。请避免在切锯作业中突然停机等错误操作，正确调整刀刃的往 复速度以确保稳定、顺畅的切锯作业。

2. 调整运行速度

注意！

○ 请勿撞击或损坏开关面板。

○ 请在松开扳机开关时选择模式。否则可能导致故障。

可根据机体开关的插入程度，将刀刃的行程量调节至任意级别。
此外，可利用模式选择开关选择行程量最大值。开关拉动的程度越大，则行程量越大。（图 16）
切锯作业启动时，开始将以低行程量（低速）准确切锯所需位置。实现准确切锯后，可增加行程量（高速），直至完成切锯。

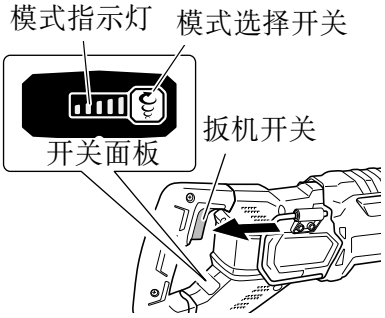


图 16

将插头插入并接通电源后，可按下模式选择开关对模式进行设定。（图 17）

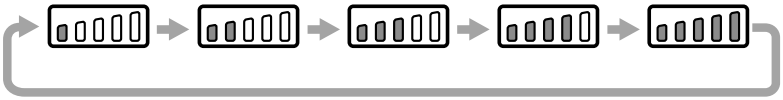


图 17

○ 速度变化模式可切换以下 5 档的最大行程量：最低速、低速，中速、高速和最高速。
指示灯的状态和速度如表 1 所示。

表 1

模式		指示灯状态	运转速度	用途
传输模式	最低速		0 － 1200 /min	不锈钢 塑料 纤维板
	低速		0 － 1700 /min	软钢板 铸铁管 L- 型角钢 铝 / 黄铜 / 铜
	中速		0 － 2000 /min	
	高速		0 － 2500 /min	石膏板 木材
	最高速		0 － 3000 /min	

注：
模式选择开关仅在插头插入电源且已拉动扳机开关时，方可对模式进行设定。

3. 行程调节
该电动工具具备刀刃前后移动的直线模式，以及刀刃上下前后移动的轨道模式。

对于木材等软材料，应用轨道模式可实现平滑的锯割操作，还可改善锯末排放以及与材料的联锁。

使用选择杆选择最适合当前任务的模式。（图 18 和图 19）

根据锯割材料的硬度以及所需的完成度选择最合适的模式。参照表 2 进行选择。

表 2

行程量模式	直线模式		轨道模式
动作轨迹	前后		前后 + 上下
材料硬度	硬材料	⟷	软材料
锯割速度	慢	⟷	快
完成度	光滑	⟷	粗糙

注

○ 如要对软材料进行整齐锯割，请选择直线模式。

○ 如果选择杆上堆积了灰尘或尘土，可能会导致其无法顺畅移动，因此请偶尔进行清洁。

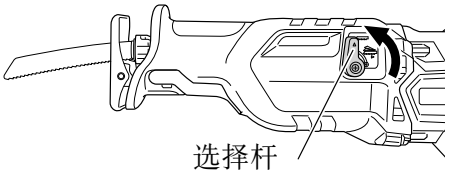


图 18

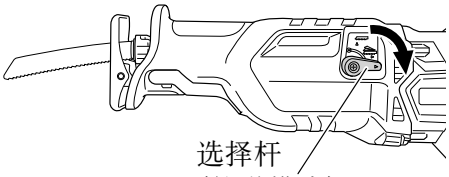


图 19

4. 挂钩的使用方法

使用挂钩可以在运转期间暂时悬挂机体（图 20、图 21）。

注意！

请勿用挂钩悬挂人。

使用挂钩时，请确保主要机体不会滑倒或倒落，或被风吹动等。

请勿将机器挂在腰带或裤子上，否则可能会导致事故。

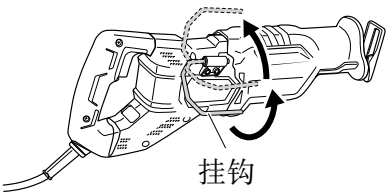


图 20

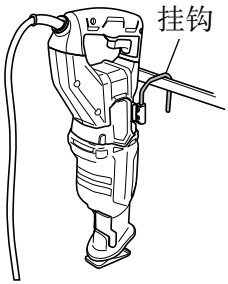


图 21

1. 切锯金属材料

注意！

○ 将底座紧紧按在工件之上。
○ 切锯时请勿给刀刃施加异常力量。否则很容易损坏刀刃。
○ 根据切割物的构成或锯条的不同有时马达会锁住。一旦马达锁住，请立即关闭开关。
○ 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。往复锯产生的火花会点燃粉尘或气体。

(1) 在作业前牢牢固定工件。（图 22）
(2) 在切锯金属材料时，请使用适当的机油（涡轮油等）。未使用液体机油时，请给工件涂上润滑油。

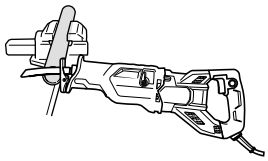


图 22

注意！

若未使用机油，刀刃的使用寿命会大幅缩短。

2. 切锯木料
切锯木料时，在开始操作前务必先牢牢固定工件。（图 23）

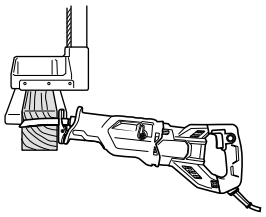


图 23

注意！

切锯时请勿给刀刃施加异常力量。同时，请将底座紧紧压在木料上。

3. 切锯曲线
建议使用第 14 页的表 4 中的 BI-METAL 刀刃，因为这种刀刃坚韧耐用。

注意！

将材料切割成小圆弧时须降低进料速度，速度过快可能会损坏刀刃。

4. 插入切锯
使用本电动往复锯，可在木合板和薄板材料上进行插入切锯。使用本电动往复锯，可在木合板和薄板材料上插入切锯。如图 27、图 28、图 29 所示。
请尽量使用短而薄的刀刃。为此，建议使用第 14 页表 4 中列出的 BI-METAL 刀刃号码 132 号。在切锯作业中请务必小心操作并遵守以下步骤。
径向切割时，请将行程模式调为直线模式。
(1) 请将底座的下部（或上部）压在切锯材料上，使刀刃前端脱离切锯材料并扣扳机。（图 24、图 27）
(2) 慢慢抬起把手并用刀刃一点一点地切入。（图 25、图 28）
(3) 紧紧抓住机身，直至刀刃完全切入材料。（图 26、图 29）

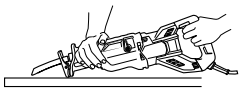


图 24

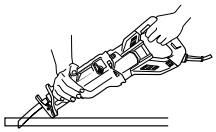


图 25

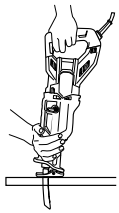


图 26

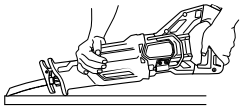


图 27

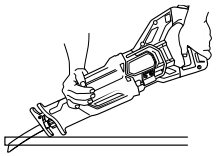


图 28

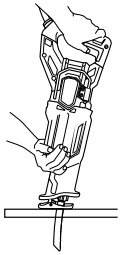


图 29

注意！

○ 避免对金属材料进行切锯，否则很容易损坏刀刃。
○ 在刀刃前端压在切锯材料上时切勿扣扳机。否则，当刀刃接触材料时很容易被损坏。
○ 务必紧紧抓住机身缓慢地进行切锯。在切锯作业中若对刀刃异常用力，则很容易损坏刀刃。

操作上的注意事项

连续作业后须让电动工具休息片刻
(1) 电动工具带有温度保护电路以保护马达。
长时间连续作业可能会导致机器温度升高、触发温度保护电路并自动停止作业。如果发生这种情况，请让电动工具冷却后再使用。
(2) 长时间连续使用本电钻，可能会导致机体过热，对马达及开关造成损害，因此使用本机请勿连续超过 15 分钟。

刀刃的选择

为了确保最大工作效率和效果，必须选择种类和厚度最适合切锯材料的刀刃。
注：
表中所示的工件尺寸，表示将底座设置于最靠近电动往复锯安装位置时的尺寸。须注意，若将底座安装在远离电动往复锯处，则工件尺寸将变小。

中文

1. HSC 刀刃的选择

   表 3 中 HCS 刀刃的刀刃号码标示于各刀刃的安装位置附近。请参照下面**表 3** 和**表 5** 来选择适当的刀刃。

表 3: HCS 刀刃

刀刃号码	用途	厚度（mm）
4 号	切锯和磨毛木料	50 － 70
5 号	切锯和磨毛木料	30 以下

注：

4 号 － 5 号 HSC 刀刃为另售件。

2. BI-METAL 刀刃的选择

   表 4 中的 BI-METAL 刀刃号码表示特殊套装附件。请参照下面**表 4** 和**表 5** 选择适当的刀刃。

表 4: BI-METAL 刀刃

刀刃号码	用途	厚度（mm）
101 号 103 号 109 号 141(S) 号	切锯外径小于 60 mm 的钢管和不锈钢管	2.5 － 6
102 号 104 号 110 号 142(S) 号 143(S) 号	切锯外径小于 100 mm 的钢管和不锈钢管	2.5 － 6
107 号	切锯外径小于 60 mm 的钢管和不锈钢管	3.5 以下
108 号	切锯外径小于 100 mm 的钢管和不锈钢管	3.5 以下
121 号	切锯和磨毛木料	100
131 号	多用途	100
132 号	多用途	100

注：

101 号至 132 号 BI-METAL 刀刃为另售件。

3. 选择用于其他材料的刀刃

表 5

切锯材料	材料性质	厚度（mm）	刀刃号码
铁板	软钢板	2.5 － 10	101, 102, 103, 104, 109, 110, 131, 141(S), 142(S), 143(S) 号
		3.5 以下	107, 108 号
有色金属	铝、铜和黄铜	5 － 20	101, 102, 103, 104, 109, 110, 131, 132, 141(S), 142(S), 143(S) 号
		5 以下	107, 108 号
合成树脂	苯酚树脂、蜜胺甲醛树脂等	10 － 50	101, 102, 103, 104, 131, 132, 141(S), 142(S), 143(S) 号
		5 － 30	107, 108, 109, 110 号
	聚氯乙烯树脂、丙烯酸树脂等	10 － 60	101, 102, 103, 104, 131, 132, 141(S), 142(S), 143(S) 号
		5 － 30	107, 108, 109, 110 号

维护和检查

警告！

在维护和检查期间，一定要“切断”电源，并将插座上的插头拔掉。

1. 检查刀刃
   如继续使用已钝了的或已损坏了的刀刃，会降低工作效率并可能会引起马达超负荷。因此，一旦注意到刀刃磨损，请立即用新刀刃更换之。

注意！

若使用较钝的刀刃作业，则切锯时产生的反作用力会增加。请避免使用未经维修的较钝刀刃。

2. 检查安装螺丝
   定期检查所有的安装螺丝并确保它们均被正常拧紧。若有某些螺丝松弛，请立即将其拧紧。否则，会导致发生重大危险。
3. 马达的保养
   马达装置线圈是电动工具的“心脏”。
   须特别注意，确保线圈不受损和（或）被油或水浸湿。
4. 更换电源线
   如果需要更换电源线，则必须由此代理的生产厂商进行操作，以免发生危险。
5. 维修零部件一览表

中文

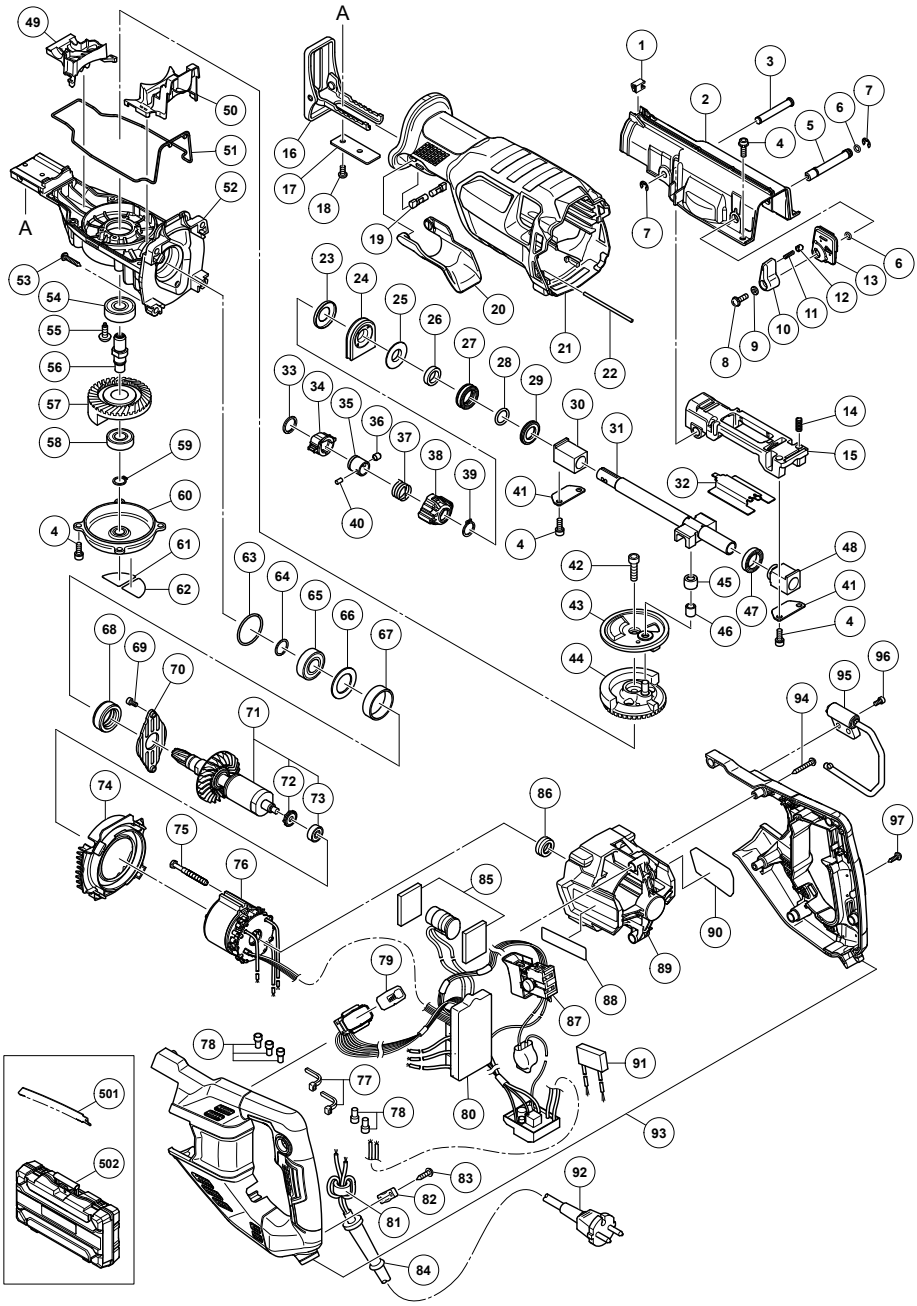
注意！

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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中文

项目号	零件名称	数量
1	LED 灯座	1
2	上盖	1
3	轴（A）	1
4	六角套筒 HD 螺栓（带垫圈）M5X16	12
5	转换轴	1
6	O 型环（S-5）	2
7	D6 轴用定位扣环(E 型）	2
8	密封螺钉（带垫圈）M4X12	1
9	螺栓垫圈 M4	1
10	转换旋钮	1
11	弹簧(B)	1
12	弹簧帽	1
13	手杆盘	1
14	弹簧（A）	2
15	柱塞夹持器	1
16	底座	1
17	底座盘	1
18	六角插销螺栓 M5X12	2
19	底座手杆轴	2
20	底座手杆	1
21	前盖	1
22	固定销	1
23	密封垫圈	1
24	尘封	1
25	套筒盘	1
26	毛毡	1
27	汽封套筒（A）	1
28	O 型环	1
29	汽封套筒（B）	1
30	含油轴承（A）	1
31	柱塞	1
32	盘（A）	1

项目号	零件名称	数量
33	弹性挡圈 D16	1
34	锯条架	1
35	轴套	1
36	固定销（A）	1
37	锯条弹簧	1
38	锯条架外壳	1
39	D13 轴用定位扣环	1
40	销	1
41	轴承盘	2
42	密封六角套筒 HD 螺栓 M6X20	1
43	轨道导板	1
44	齿轮	1
45	连接块	1
46	滚针轴承	1
47	滚珠轴承 6803	1
48	含油轴承（A）	1
49	润滑器（F）	1
50	润滑器（R）	1
51	填料	1
52	齿轮盖	1
53	自攻螺钉（附法兰）D5X30	4
54	滚珠轴承 6201VV	1
55	有槽 HD 螺钉（密封）M4X10	2
56	主轴	1
57	反转齿轮	1
58	滚珠轴承 6001VV	1
59	D12 轴用定位扣环	1
60	下盖	1
61	警示贴（B）	1
62	警示贴（A）	1
63	O 型环（包括 31.5）	1

项目号	零件名称	数量
64	同轴定位环 D15	1
65	滚珠轴承 6002VVCMPS2L	1
66	垫圈 D34.8	1
67	轴套	1
68	避震器	1
69	六角套筒 HD 螺栓 M5X8	2
70	轴承盖	1
71	转子总成	1
72	尘封（606）	1
73	滚珠轴承 606VV	1
74	风扇导架	1
75	六角 HD 自攻螺钉 D4X45	2
76	定子传感器 PCB	1
78	连接器 50092	5
79	嵌板	1
80	主开关总成 220V-240V	1
81	磁芯	1
82	线夹	1
83	自攻螺丝（附法兰）D4X16	2
84	电缆护套 D8.8	1
85	支架(B)	2
86	橡胶衬套	1
87	开关开关	1
88	商标	1
89	机壳	1
90	铭牌	1
91	干扰抑制器	1
92	电缆	1
93	把手 (A).(B) 座	1
94	自攻螺丝（附法兰）D4X30	2
95	挂钩	1

项目号	零件名称	数量
96	密封六角套筒 HD 螺栓 M5X10	2
97	自攻螺丝（附法兰）D4X20	4
501	曲线锯 NO.141（S）150L P.14	1
502	外箱	1

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) 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 ON USING RECIPROCATING SAW

1. **Hold the power tool by insulated gripping surfaces, when performing an operation where the cutting accessory may contact hidden wiring or its own cord. Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.**
2. **When cutting in wall, floor or ceiling, check for buried electric power cord, etc.**
3. **Wear earplugs to protect your ears during operation.**
4. **Do not touch the blade during or immediately after operation. The blade becomes very hot during operation and could cause serious burns.**
5. **Always hold the body handle and front cover of the power tool firmly. Otherwise the counterforce produced may result in inaccurate and even dangerous operation.**

SYMBOLS

WARNING

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

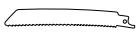
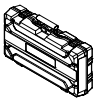
	To reduce the risk of injury, user must read instruction manual.	n_0	No-load speed
V	Rated voltage	/min	Oscillation per minute
A	Current		Warning
W	Watt		Class II tool

SPECIFICATIONS

Voltage	220 V ~
Power Input	1100 W
Capacity	Mild Steel Pipe: O.D. 130 mm Vinyl Chloride Pipe: O.D. 130 mm Wood: Depth 300 mm Mild Steel Plate: Thickness 19 mm
No-Load Speed	0 – 3000 /min
Stroke	32 mm
Weight (without cord)	3.9 kg

STANDARD ACCESSORIES

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

Blade (No. 141(S))		1
Plastic Case		1

OPTIONAL ACCESSORIES (sold separately)

(1) No. 4 Blade
(2) No. 5 Blade
(3) No. 101 Blade
(4) No. 102 Blade
(5) No. 103 Blade
(6) No. 104 Blade
(7) No. 107 Blade
(8) No. 108 Blade
(9) No. 109 Blade
(10) No. 110 Blade
(11) No. 121 Blade
(12) No. 131 Blade
(13) No. 132 Blade
(14) No. 141(S) Blade
(15) No. 142(S) Blade
(16) No. 143(S) Blade

○ (1) – (2): HCS Blades (HCS: Highspeed Carbon Steel)
○ (3) – (16): BI-METAL Blades.
Refer to **Table 3**, **4** and **5 on page 33-34** for use of the blades.

APPLICATIONS

○ Cutting metal and stainless steel pipe.
○ Cutting various lumbers.
○ Cutting mild steel plates, aluminum plates, and copper plates.
○ Cutting synthetic resins, such as phenol resin and vinyl chloride.
For details refer to the section entitled “SELECTION OF BLADES” on page 33.

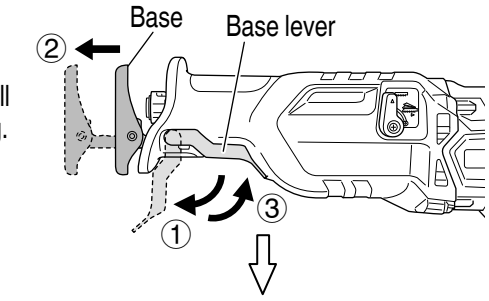
PRIOR TO OPERATION

1. Power source
   Ensure that the power source to be utilized conforms to the power requirement specified on the product nameplate.
2. Power switch
   Ensure that the power switch is in the OFF position. If the plug is connected to a receptacle while the power switch is in the ON position, the power tool will start operating immediately, which could cause a serious accident.
3. Extension cord
   When the work area is removed from the power source, use an extension cord of sufficient thickness and rated capacity. The extension cord should be kept as short as practicable.
4. Check the receptacle
   If the receptacle only loosely accepts the plug, the receptacle must be repaired.
   Contact a licensed electrician to make appropriate repairs.
   If such a faulty receptacle is used, it may cause overheating, resulting in a serious hazard.
5. Confirming condition of the environment
   Confirm that the work site is placed under appropriate conditions conforming to prescribed precautions.
6. Dust produced in operation
   The dust produced in normal operation may affect the operator’s health. To wear a dust mask is recommended.
7. Mounting the blade
   This unit employs a detachable mechanism that enables mounting and removal of saw blades without the use of a wrench or other tools.

CAUTION

Be absolutely sure to keep the switch turned off and the power cord unplugged to prevent any accident.

(1) Pivot the lever to open the blade clamp.
(2) Insert the saw blade all the way into the small slit of the blade holder with the lever pivoting. You can mount this blade either in the upward or downward direction. (**Fig. 1, Fig. 2**)
(3) When you release the lever, the spring force will return the lever to the correct position automatically.
(4) Pull the back of the saw blade two or three times by hand and check that the blade is securely mounted. (**Fig. 3**)



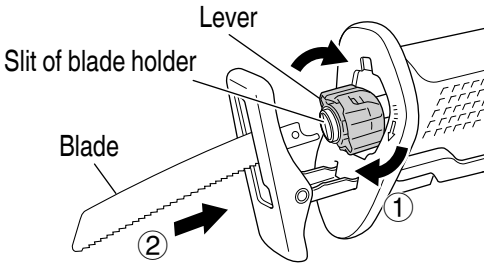


Fig. 1

CAUTION

When pulling the saw blade, be absolutely sure to pull it from the back. Pulling other parts of the blade will result in an injury.

8. Dismounting the blade

CAUTION

Be absolutely sure to keep the switch turned off and the power cord unplugged to prevent any accident.

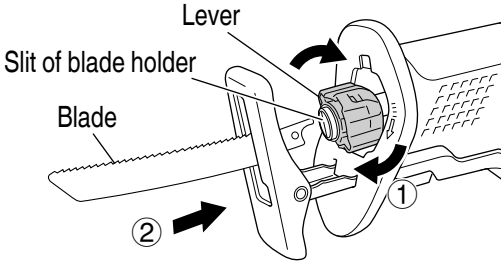


Fig. 2

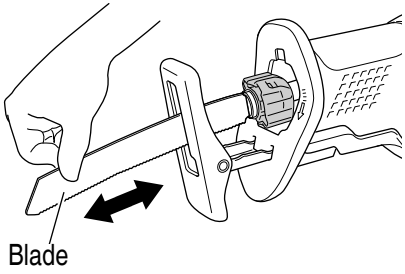


Fig. 3

(1) After pivoting the lever, point the blade downward. The blade should fall out on its own. If the blade fails to fall out, pull it out by hand. (**Fig. 4, Fig. 5**)

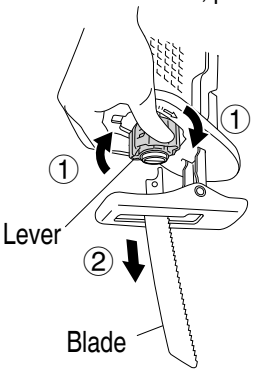


Fig. 4

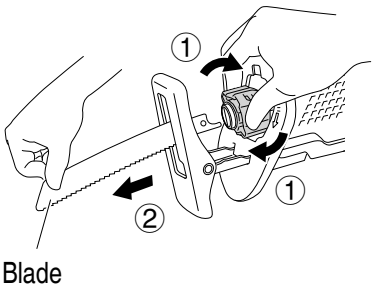


Fig. 5

CAUTION

Never touch the saw blade immediately after use. The metal is hot and can easily burn your skin.

WHEN THE BLADE IS BROKEN

Even when the saw blade is broken and remains inside the small slit of the blade holder, it should fall out when the lever is pivoted and the blade is pointed downward. If the blade fails to fall out on its own, take it out by using the procedures described below.

(1) If a part of the broken saw blade is sticking out of the small slit of the blade holder, pull out the protruding part and take the blade out.

(2) If the broken saw blade is hidden inside the small slit, hook the broken blade using a tip of another saw blade and take it out. (**Fig. 6**)

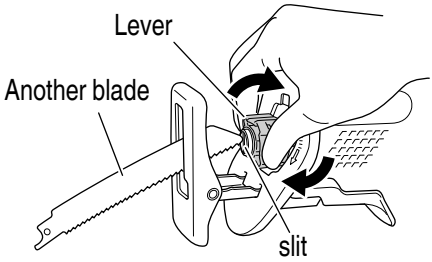


Fig. 6

MAINTENANCE AND INSPECTION OF SAW BLADE MOUNT

(1) After use, blow away sawdust, earth, sand, moisture, etc., with air or brush them away with a brush, etc., to ensure that the blade mount can function smoothly. (**Fig. 7**)

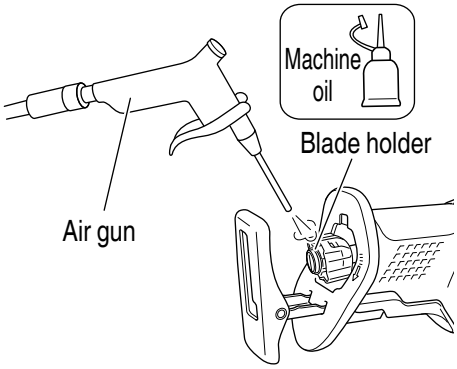


Fig. 7

NOTE

Continued use of the tool without cleaning the area where the saw blade is attached can result in sawdust and chip buildup which may adversely affect the movement of the lever. Should this be the case, pivot the lever and clean around the blade holder and lever by wiping or blowing away the buildup.

CAUTION

Do not use any saw blade with a worn-out blade hole. Otherwise, the saw blade can come off, resulting in personal injury. (Fig. 8)

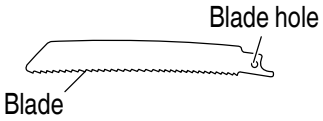


Fig. 8

9. Adjusting the base
To maximize blade life, the base slides in or out to allow the stroke length to be adjusted for better efficiency.

(1) Pivot the base lever clockwise; and slide the base to the desired position. There are five positions that the base can be adjusted to.

(2) Pivot the base lever counterclockwise to secure the base. (**Fig. 9**)

(3) Make sure that the base is not interfering with the blade.

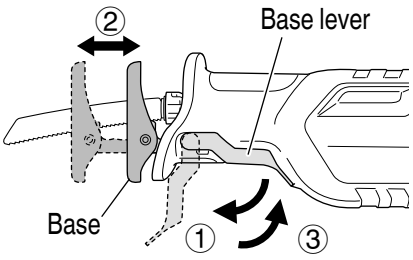


Fig. 9

WARNING

To avoid injury and damage, do not operate the saw without the base in place. The blade holder may strike against the workpiece and damage the reciprocating mechanism.

HOW TO USE

WARNING

Never touch the moving parts.

CAUTION

- **Avoid carrying it plugged to the outlet with your finger on the switch. A sudden startup can result in an unexpected injury.**
- **Be careful not to let sawdust, earth, moisture, etc., enter the inside of the machine through the plunger section during operation. If sawdust and the like accumulate in the plunger section, always clean it before use.**
- **Do not remove the front cover.**
  Be sure to hold the body from the top of the front cover (Fig. 10).
- **During use, press the base against the material while cutting.**
  Vibration can damage the saw blade if the base is not pressed firmly against the workpiece.
  Furthermore, a tip of the saw blade can sometimes contact the inner wall of the pipe, damaging the saw blade.

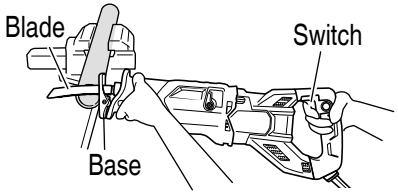


Fig. 10

○ **Select a saw blade of the most appropriate length. Ideally, the length protruding from the base of the saw blade after subtracting the stroke quantity should be larger than the material (see Fig. 11 and Fig. 13).**
If you cut a large pipe, large block of wood, etc., that exceeds the cutting capacity of a blade; there is a risk that the blade may contact with the inner wall of the pipe, wood, etc., resulting in damage. (Fig. 12, Fig. 14)

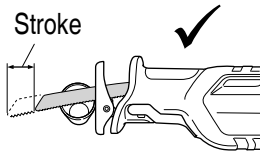


Fig. 11

○ **Don't remove the tool from workpiece during a cut while the saw blade is moving.**

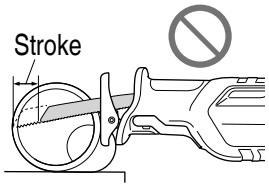


Fig. 12

NOTE

Take care not to lock the motor. If the motor is locked, immediately turn the power off. If the motor is locked for a while, the motor or battery may be burnt.

1. Switch operation

(1) Switch stopper

The switch will activate when pulled and will deactivate when released.

For continuous operation, pull the switch in all the way and press the switch stopper.

To cancel continuous operation, once again pull the switch in all the way until the stopper is freed, and then release the switch. (**Fig. 15**)

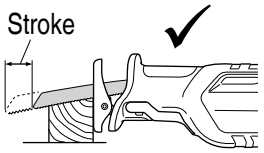


Fig. 13

(2) Switch trigger

This tool is equipped with a variable speed controlled switch trigger. The tool can be turned "ON" or "OFF" by squeezing or releasing the switch trigger. The blade plunger stroke rate can be adjusted from the minimum to maximum nameplate stroke rate by the pressure you apply to the trigger. Apply more pressure to increase the speed and release pressure to decrease speed. (**Fig. 15**)

Begin cutting at a minimum speed to ensure the accuracy of your target cut position. Once you've obtained a sufficient cutting depth, increase the cutting speed.

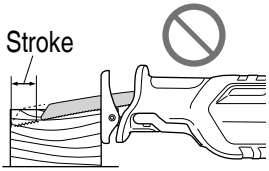


Fig. 14

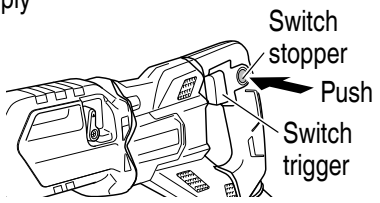


Fig. 15

CAUTION

Although this unit employs a powerful motor, prolonged use at a low speed will increase the load unduly and may lead to overheating. Properly adjust the saw blade to allow steady, smooth cutting operation, avoiding any unreasonable use such as sudden stops during cutting operation.

2. Adjusting operating speed

CAUTION

- ○ **Do not subject the switch panel to shock or damage.**
- ○ **Select mode while the switch trigger is released. Failure to do so could result in malfunction.**

The blade's stroke volume can be adjusted to any level depending on how much the unit's switch is pulled in.
Also, the maximum number of strokes can be selected with the mode selector switch. The more the unit's switch is pulled, the higher the number of strokes. (**Fig. 16**)
When starting a cut, begin cutting with low strokes (slow speed) to accurately cut the desired position. Once you have the desired cut, raise the number of strokes (high speed) and finish cutting.

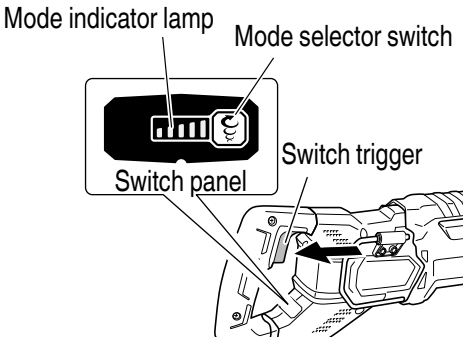


Fig. 16

Once you insert the power plug into an outlet and switch on the power, you can change modes with each press of the mode selector switch. (**Fig. 17**)

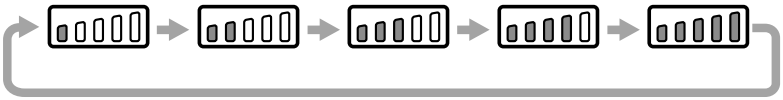


Fig. 17

- ○ Speed change mode allows the number of maximum strokes to be switched between 5 levels: minimum speed, low speed, middle speed, high speed and Max. speed.
With speed change mode, the set number of maximum strokes will be maintained even if there is a change in load.
Table 1 shows the lamp status and speed.

Table 1

Mode		State of lamp	Operating speed	Uses
Transmisson Mode	Min.		0 – 1200 /min	Stainless steel Plastic Fiber board
	Low		0 – 1700 /min	Mild steel pipes Cast-iron tubes L-shaped angle steel Aluminum / brass / copper
	Middle		0 – 2000 /min	
	High		0 – 2500 /min	Plaster board Wood
	Max.		0 – 3000 /min	

NOTE

The mode selector switch can only be set after the power plug is inserted into an outlet and the switch trigger has been pulled once.

3. Adjusting stroke

This power tool features a straight mode in which the blade moves back and forth, and an orbital mode in which the blade moves back and forth while moving up and down.
For soft materials such as wood, orbital mode ensures smooth cutting operation while improving the discharge of sawdust and the interlock with materials.
Use the change lever to select the ideal mode for the task at hand. (**Fig. 18** and **Fig. 19**)
The ideal mode depends on factors such as the hardness of the material to be cut and the level of finish required. Use **Table 2** as a guideline when making your choice.

Table 2

Stroke Mode	Straight mode		Orbital mode
Trajectory of Motion	Back and forth action		Back and forth action + up and down action
Hardness of Material	Hard material	⟷	Soft material
Cutting Speed	Slow	⟷	Fast
Level of Finish	Smooth	⟷	Rough

NOTE

- ○ Select Straight Mode if you wish to cut soft materials neatly.
- ○ Occasionally clean the change lever as its movement may be adversely affected if dirt or dust collects on the change lever.

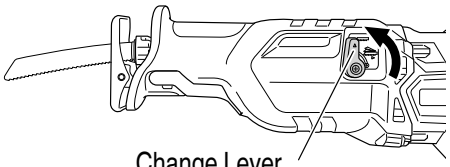


Fig. 18

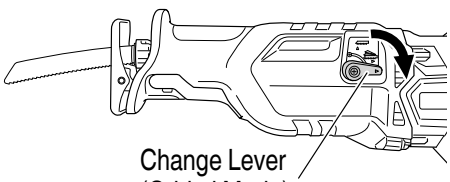


Fig. 19

4. How to use the Hook
   The hook can be used to hang up the unit temporarilyduring operations (**Fig. 20**, **Fig. 21**).

CAUTION

The hook should never be used to hang the uniton your person.
When using the hook, check to make sure that the main unit will not slip and fall, or become unstable by the wind, etc.
Never hang the unit from your belt or trousers as this could cause accidents.

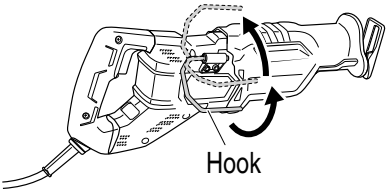


Fig. 20

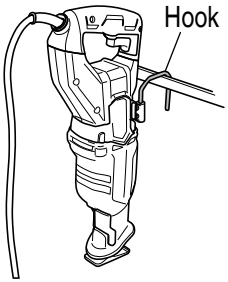


Fig. 21

1. Cutting metallic materials

CAUTION

- **Press the base firmly against the workpiece.**
- **Never apply any unreasonable force to the saw blade when cutting. Doing so can easily break the blade.**
- **The motor can be locked sometimes, depending on the combination of the material to be cut and the blade. Whenever the motor gets locked, switch it off immediately.**
- **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Reciprocating saw create sparks which may ignite the dust or fumes.**

(1) Fasten a workpiece firmly before operation. (**Fig. 22**)
(2) When cutting metallic materials, use proper machine oil (turbine oil, etc.). When not using liquid machine oil, apply grease over the workpiece.

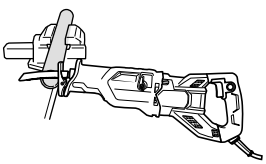


Fig. 22

CAUTION

The service life of the saw blade will be drastically shortened if you don't use machine oil.

2. Cutting lumber
When cutting lumber, make sure that the workpiece is fastened firmly before beginning. (**Fig. 23**)

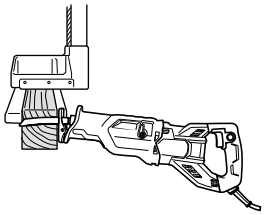


Fig. 23

CAUTION

Never apply any unreasonable force to the saw blade when cutting. Also remember to press the base against the lumber firmly.

3. Sawing curved lines
We recommend that you use the BI-METAL blade mentioned in **Table 4 on page 34** for the saw blade since it is tough and hardly breaks.

CAUTION

Delay the feed speed when cutting the material into small circular arcs. An unreasonably fast feed may break the blade.

4. Plunge cutting
With this tool, you can perform plunge cutting on plywood panels and thin board materials. You can carry out plunge cutting quite easily with the saw blade installed in reverse as illustrated in **Fig. 27**, **Fig. 28**, **Fig. 29 on page 33.**
Use the saw blade that is as short and thick as possible. We recommend for this purpose that you use BI-METAL Blade No. 132 mentioned in **Table 4 on page 34**. Be sure to use caution during the cutting operation and observe the following procedures.
When plunge cutting, select Straight Mode for the Stroke Mode.

(1) Press the lower part (or the upper part) of the base against the material. Pull the switch trigger while keeping the tip of the saw blade apart from the material (**Fig. 24**, **Fig. 27**).
(2) Raise the handle slowly and cut in with the saw blade little by little (**Fig. 25**, **Fig. 28**).
(3) Hold the body firmly until the saw blade completely cuts into the material (**Fig. 26**, **Fig. 29**).

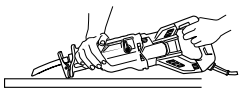


Fig. 24

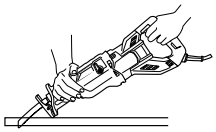


Fig. 25

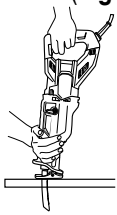


Fig. 26

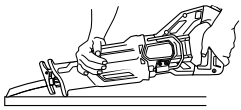


Fig. 27

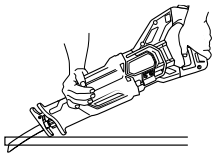


Fig. 28

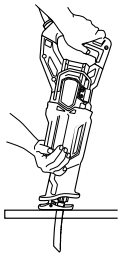


Fig. 29

CAUTION

- **Avoid plunge cutting for metallic materials. This can easily damage the blade.**
- **Never pull the Switch trigger while the tip of the saw blade is pressed against the material. If you do so, the blade can easily be damaged when it collides with the material.**
- **Make absolutely sure that you cut slowly while holding the body firmly. If you apply any unreasonable force to the saw blade during the cutting operation, the blade can easily be damaged.**

OPERATIONAL CAUTIONS

Resting the unit after continuous work

(1) The power tool is equipped with a temperature protection circuit to protect the motor. Continuous work may cause the temperature of the unit to rise, activating the temperature protection circuit and automatically stopping operation.
If this happens, allow the power tool to cool before resuming use.

(2) When using this unit continuously, the unit may overheat, leading to damage in the motor and switch. Please leave it without using it for approximately 15 minutes.

SELECTION OF BLADES

To ensure maximum operating efficiency and results, it is very important to select the appropriate blade best suited to the type and thickness of the material to be cut.

NOTE

Dimensions of the workpiece mentioned in the table represent the dimensions when the mounting position of the base is set nearest to the body of the reciprocating saw. Caution must be exercised since dimensions of the workpiece will become smaller if the base is mounted far away from the body of the reciprocating saw.

1. Selection of HCS blades
The blade number of HCS blades in **Table 3** is engraved in the vicinity of the mounting position of each blade. Select appropriate blades by referring to **Tables 3** and **5** below.

Table 3: HCS blades

Blade No.	Uses	Thickness (mm)
No. 4	For cutting and roughing lumber	50 – 70
No. 5	For cutting and roughing lumber	Below 30

NOTE

No. 4 – No. 5 HCS blades are sold separately as optional accessories.

2. Selection of BI-METAL blades

The BI-METAL blade numbers in **Table 4** are described on the packages of special accessories. Select appropriate blades by referring to **Table 4** and **5** below.

Table 4: BI-METAL blades

Blade No.	Uses	Thickness (mm)
No. 101 No. 103 No. 109 No. 141(S)	For cutting steel and stainless pipes less than 60 mm in outer diameter	2.5 – 6
No. 102 No. 104 No. 110 No. 142(S) No. 143(S)	For cutting steel and stainless pipes less than 100 mm in outer diameter	2.5 – 6
No. 107	For cutting steel and stainless pipes less than 60 mm in outer diameter	Below 3.5
No. 108	For cutting steel and stainless pipes less than 100 mm in outer diameter	Below 3.5
No. 121	For cutting and roughing lumber	100
No. 131	All purpose	100
No. 132	All purpose	100

NOTE

No. 101 – No. 132 BI-METAL blades are sold separately as optional accessories.

3. Selection of blades for other materials

Table 5

Material to be cut	Material quality	Thickness (mm)	Blade No.
Iron plate	Mild steel plate	2.5 – 10	No. 101, 102, 103, 104, 109, 110, 131, 141(S), 142(S), 143(S)
		Below 3.5	No. 107, 108
Nonferrous metal	Aluminium, Copper and Brass	5 – 20	No. 101, 102, 103, 104, 109, 110, 131, 132, 141(S), 142(S), 143(S)
		Below 5	No. 107, 108
Systhetic resin	Phenol resin, Melamine resin, etc.	10 – 50	No. 101, 102, 103, 104, 131, 132, 141(S), 142(S), 143(S)
		5 – 30	No. 107, 108, 109, 110
	Vinyl chloride, Acrylic resin, etc.	10 – 60	No. 101, 102, 103, 104, 131, 132, 141(S), 142(S), 143(S)
		5 – 30	No. 107, 108, 109, 110

MAINTENANCE AND INSPECTION

WARNING

Be sure to switch power OFF and disconnect the plug from the receptacle during maintenance and inspection.

1. Inspecting the blade
   Continued use of a dull or damaged blade will result in reduced cutting efficiency and may cause overloading of the motor. Replace the blade with a new one as soon as excessive abrasion is noted.

CAUTION

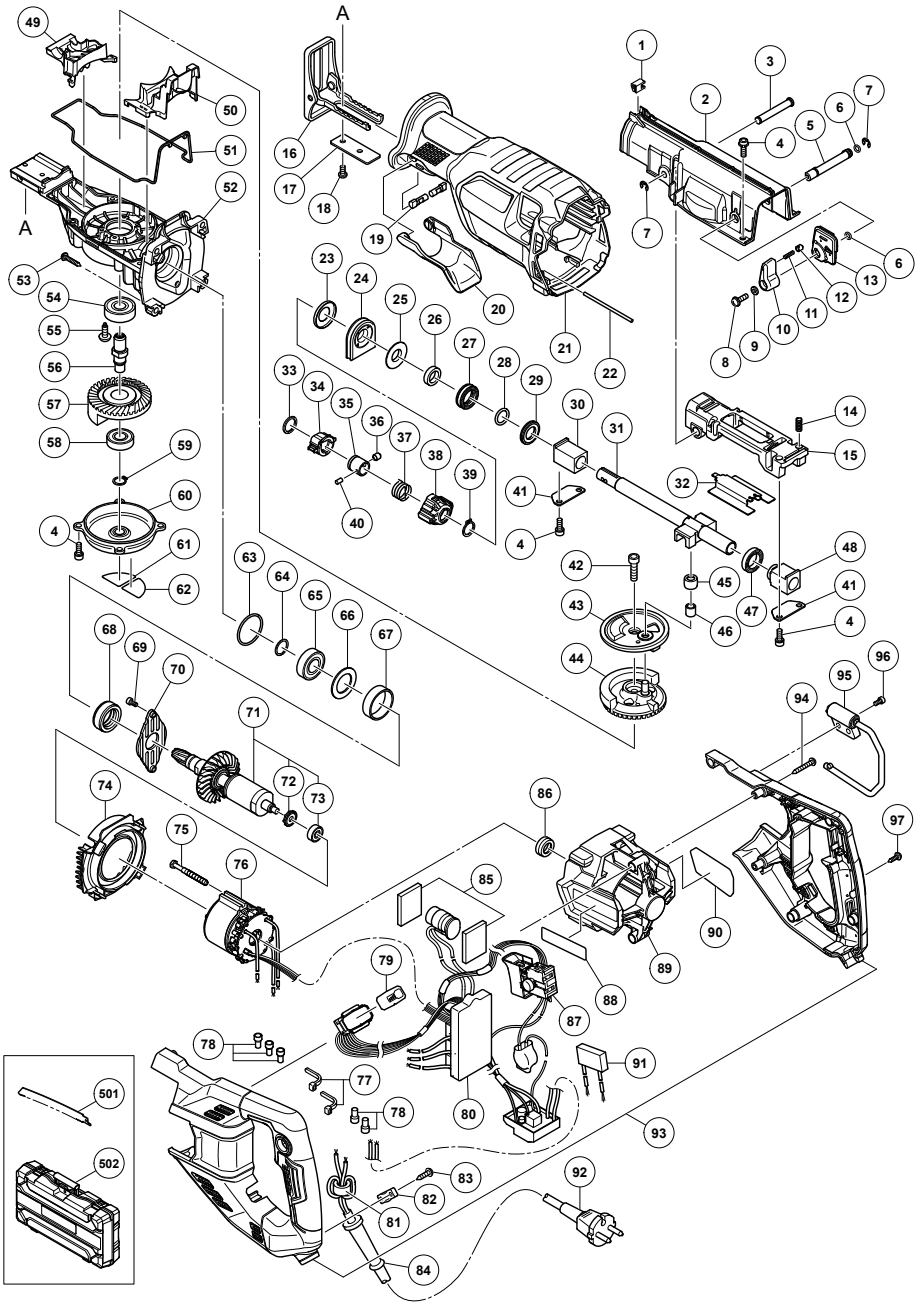
If a dull saw blade is used, reactive force is increased during cutting operation. Avoid the use of the dull saw blade without repair.

2. Inspecting the mounting screws
   Regularly inspect all mounting screws and ensure that they are properly tightened. Should any of the screws be loose, retighten them immediately. Failure to do so could result in serious hazard.
3. Maintenance of the motor
   The motor unit winding is the very “heart” of the power tool. Exercise due care to ensure the winding does not become damaged and/or wet with oil or water.
4. Replacing supply cord
   If the replacement of the supply cord is necessary, this has to be done by the manufacturer of this agent in order to avoid a safety hazard.
5. Service parts list

CAUTION

Repair, modification and inspection of HiKOKI Power Tools must be carried out by a 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.

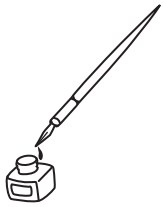
SERVICE PARTS LIST



Item No.	Part Name	Q'TY
1	LED HOLDER	1
2	UPPER COVER	1
3	SHAFT (A)	1
4	HEX. SOCKET HD. BOLT (W/SP.WASHER) M5X16	12
5	CHANGE SHAFT	1
6	O-RING (S-5)	2
7	RETAINING RING (E-TYPE) FOR D6 SHAFT	2
8	SEAL LOCK SCREW (W/SP. WASHER) M4X12	1
9	BOLT WASHER M4	1
10	CHANGE KNOB	1
11	SPRING (B)	1
12	SPRING CAP	1
13	LEVER PLATE	1
14	SPRING (A)	2
15	PLUNGER HOLDER	1
16	BASE	1
17	BASE PLATE	1
18	HEX. SOCKET BOLT M5X12	2
19	BASE LEVER SHAFT	2
20	BASE LEVER	1
21	FRONT COVER	1
22	ADJUSTING PIN	1
23	SEAL WASHER	1
24	DUST SEAL	1
25	SLEEVE PLATE	1
26	FELT WASHER	1
27	SEAL SLEEVE (A)	1
28	O-RING	1
29	SEAL SLEEVE (B)	1
30	METAL (A)	1
31	PLUNGER	1
32	PLATE (A)	1
33	SPIRAL RETAINING RING D16	1
34	BLADE HOLDER	1
35	SLEEVE	1

Item No.	Part Name	Q'TY
36	HOLDER PIN (A)	1
37	BLADE SPRING	1
38	BLADE HOLDER COVER	1
39	RETAINING RING FOR D13 SHAFT	1
40	PIN	1
41	METAL PLATE	2
42	SEAL LOCK HEX. SOCKET HD. BOLT M6X20	1
43	ORBITAL GUIDE	1
44	GEAR	1
45	CONNECTING PIECE	1
46	NEEDLE BEARING	1
47	BALL BEARING 6803	1
48	METAL (A)	1
49	LUBRICATOR (F)	1
50	LUBRICATOR (R)	1
51	PACKING	1
52	GEAR COVER	1
53	TAPPING SCREW (W/FLANGE) D5X30	4
54	BALL BEARING 6201VV	1
55	SLOTTED HD. SCREW (SEAL LOCK) M4X10	2
56	SPINDLE	1
57	COUNTER GEAR	1
58	BALL BEARING 6001VV	1
59	RETAINING RING FOR D12 SHAFT	1
60	UNDER COVER	1
61	CAUTION SEAL (B)	1
62	CAUTION SEAL (A)	1
63	O-RING (I.D 31.5)	1
64	COAXIAL RETAINER D15	1
65	BALL BEARING 6002VVCMPS2L	1
66	WASHER D34.8	1
67	BUSHING	1
68	DAMPER	1

Item No.	Part Name	Q'TY
69	HEX. SOCKET HD. BOLT M5X8	2
70	BEARING COVER	1
71	ROTOR ASS'Y	1
72	DUST SEAL (606)	1
73	BALL BEARING 606VV	1
74	FAN GUIDE	1
75	HEX. HD. TAPPING SCREW D4X45	2
76	STATOR SENSOR PCB	1
78	CONNECTOR 50092	5
79	PANEL SHEET	1
80	CONTROLER SWITCH ASS'Y 220V-240V	1
81	FERRITE CORE	1
82	CORD CLIP	1
83	TAPPING SCREW (W/FLANGE) D4X16	2
84	CORD ARMOR D8.8	1
85	SUPPORT (B)	2
86	RUBBER BUSH	1
87	SWITCH	1
88	BRAND LABEL	1
89	HOUSING	1
90	NAME PLATE	1
91	NOISE SUPPESSOR	1
92	CORD	1
93	HANDLE (A).(B) SET	1
94	TAPPING SCREW (W/FLANGE) D4X30	2
95	HOOK	1
96	SEAL LOCK HEX. SOCKET HD. BOLT M5X10	2
97	TAPPING SCREW (W/FLANGE) D4X20	4
501	CURVED BLADES NO.141(S)150L P.14	1
502	CASE	1



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