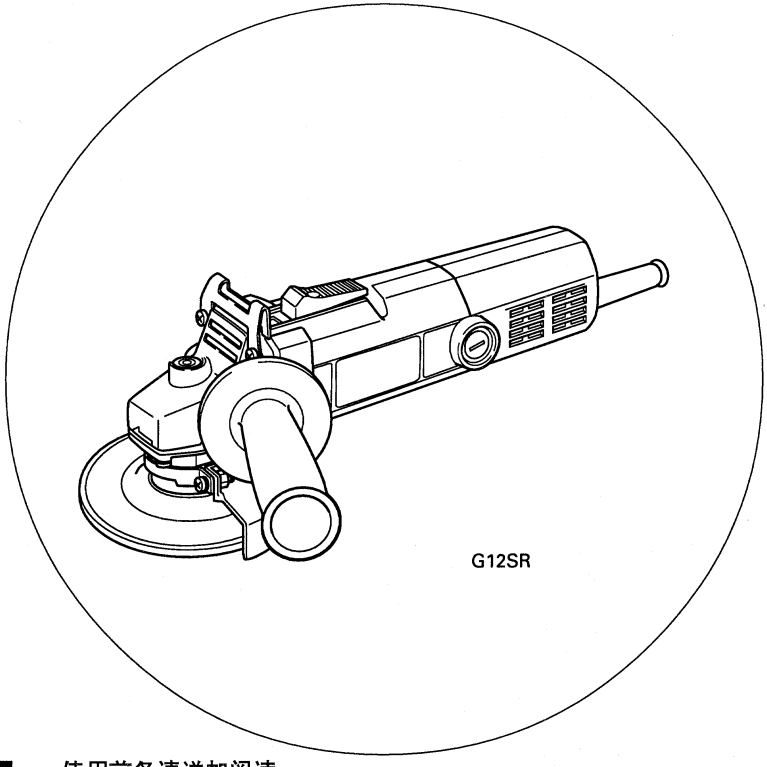
HITACHI

日立牌角磨机
DISC GRINDER

G 10SR • G 12SR

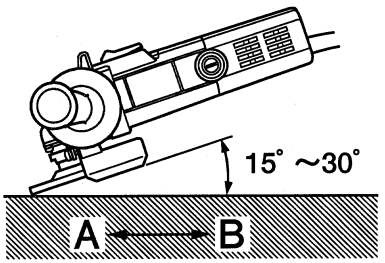
使用说明书
HANDLING INSTRUCTIONS



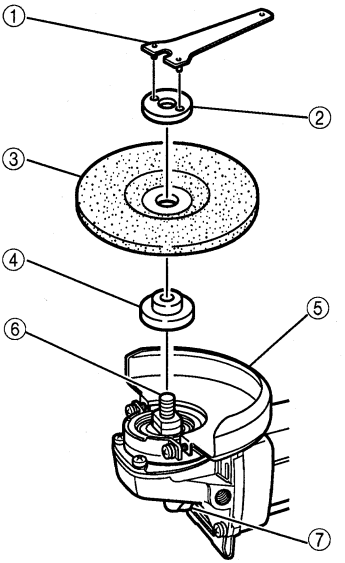
使用前务请详加阅读

Read through carefully and understand these instructions before use.

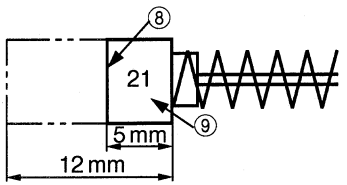
1



2



3



①	扳手	Wernch
②	砂轮螺帽	Wheel nut
③	砂轮	Depressed center wheel
④	砂轮垫圈	Wheel washer
⑤	砂轮保护装置	Wheel guard
⑥	主轴	Spindle
⑦	锁定销	Lock pin
⑧	磨损极限	Wear limit
⑨	碳刷号	No. of carbon brush

作业上的一般注意事项

警告！当使用电动工具时，为了减少造成火灾、电击和人身伤害，必须时刻遵守基本注意事项，以及下述操作注意事项。

在操作本机之前，请通读本说明书，并予以妥善保管。

安全操作注意事项：

1. 工作场所应打扫干净，清理妥当，杂乱无章将导致事故。
2. 确保妥适的作业环境。电动工具不可任其风吹雨打。不得在潮湿的地方作业。工作场所需保持充分的亮度。请勿在有可能造成火灾或爆炸的地方使用电动工具。
3. 谨防触电事故。应避免身体同大地或接地表面不可让访客触摸电动工具或延伸线缆接触（例如：管道、散热器、炉灶、冰箱等）
4. 不可让孩童靠近工作场所。与作业无关的访客也必须保持安全距离。
5. 不使用的电动工具应存放到干燥而孩童伸手不及的高处，并加锁保管。
6. 不得使劲用力推压。电动工具需按设计条件才能有效而安全地工作，绝不可勉强。
7. 妥选使用工具。不可用小型工具或附件去干重活。不可用于规定外的作业。举例说，用圆锯进行伐木打枝或原木锯切作业。
8. 工作时衣服穿戴要合适。不要让松散的衣角和宝石类卷入转动部份。屋外作业时，最好手戴橡胶手套，脚穿防滑胶鞋。同时要戴上能够罩笼长发的工作帽。
9. 绝大多数的电动工具作业时，均需戴安全眼镜。进行粉尘飞扬的切削作业时，需戴防尘面罩。
10. 连接除尘设备

    如果提供连击除尘和集尘的设备，请确认是否已经连接好并且使用正常。
11. 不要拿电线提起电动工具，也不得拉扯电线从电源插座拆除插头。电线需从热源和油液隔开，并避免与锐利的边缘接触。
12. 作业以安全第一为原则。工件要用夹具或台钳卡紧。这样做，比用手按压更为可靠，也能够让双手专心操作。
13. 作业时脚步要站稳，身体姿势要保持平衡。
14. 工具应维护妥善，经常保持锋利、清洁才能充分发挥性能，落实作业安全的要求。应按规定加注润滑脂、更换附件。线缆应定期检查，如发现损伤应即委托专业性的服务单位加以修复。延伸电缆如有损伤应予更换。手柄要保持干燥，并防止沾附油脂类。
15. 不使用时，维修前以及更换附件（如：刀具、钻头、锯具等）之前，都必须拆卸电源插头才行。
16. 开动前务必把调整用键和扳手类拆除下来。这一点与安全有关。应养成习惯，严格遵守。
17. 谨防误开动。插头一插上电源插座，指头就不可随便接触电源开关。插接电源之前，应先确认：开关是否切断。
18. 屋外延伸线缆的使用。屋外作业时，必须使用专用的延伸线缆。
19. 保持高度警觉，充分掌握情况，以正常的判断力从事作业。疲惫时切不可开动电动工具。
20. 检查损坏部件。在继续使用电动工具之前，应详细检查各部零件以及防护装置有无损坏，以便判断具能否正常工作，能否发挥正常效能。检查转动部份的对准、空转、各零件有无异常，安装是否妥善以及其它足以给工作带来不良影响的情况。

    如防护以及其它零件损伤了。除非本说明书中已有记载否则应即委托服务中心进行妥善修理或更换。开关一发现缺陷，应即委托服务中心加以更换。如开关不能正常地接通或切断，绝不可使用该电动工具。
21. 警告

    使用非本说明书中的推荐的附件可能有发生人身损害的危险。
22. 本工具必须委托有资格的维修人员进行维修。

    本电动工具满足相关的安全要求。维修必须由专业人员使用纯正配件来进行。否则有可能会给用户造成人身损害。

使用角磨机时的注意事项

1. 没有砂轮防护装置时千万不要使用本角磨机。
2. 只能使用“安全速度”至少与电动工具铭牌上标注的“无负荷 RPM”同样高的砂轮。
3. 使用角磨机时，应牢牢握住工具的操作柄和侧柄。否则，所产生的反作用力会将孔钻歪，甚至会造成危险。
4. 请勿在焊接设备附近使用本工具。
   如在焊接设备附近使用本工具，本电动工具的旋转状态会变得不稳定。

规　格

型式		G10SR	G12SR
电压（按地区）*		（110V, 115V, 220V, 230V, 240V）∿	
输入功率*		550 W	
空载转速*		11000 ／分	
砂轮	外径×内径	100×16 mm	115×22 mm
	圆周速度	4300 m／分	4800 m／分
重量（仅为主机的重量）		1.6 kg	

* 当须改变地区时应检查产品上的铭牌 。

标　准　附　件

(1) 扳手 1
(2) 侧柄 1
标准附件可能不预先通告而径予更改。

用　途

○ 用于去除铸品毛刺，飞边等物及抛光各种型号的钢、青铜、铝及铸造品。
○ 研磨焊接部分或研磨用焊开的部分。
○ 合成树脂、石板、砖、大理石等的研磨。

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. **确认环境条件：**
   确认工作场地安排在符合规定措施的条件下。当研磨薄钢板时，因工作台的状态会产生很大的噪音，它是因为研磨钢板引起的。为了消除这种有害的噪音可在被研磨的材料下放一块橡皮垫。
5. **安装并调整轮罩**
   轮罩是一种保护装置用来防止作业中因砂轮破裂而受伤。开始研磨作业之前，请确认轮罩是否安装得紧固妥善。稍微拧松固定螺丝后，即可转动轮罩并将其固定在所需角度，以得到最大工作效率。调整好轮罩后，必须确认固定螺丝是否完全拧紧。
6. 请确认要使用的砂轮的类型是否正确，是否没有裂痕或表面缺陷。同时也要确认砂轮是否装好，砂轮螺母紧固。请参照“砂轮的安装与分解”一节。

7. **进行试运转**

开始研磨作业之前，机器应在安全地区进行试运转，以确认装配是否正确无误以及砂轮是否无显著缺陷。

推荐的运转的时间如下：

更换砂轮后 ..... 3 分钟以上

开始日常作业前 ..... 1 分钟以上

8. **检查锁定销**

在打开电源开关之前按两三下锁定销，检查它是否已被释放。（**图 2**）

9. **固定侧柄**

把侧柄旋进齿轮罩。

实用角磨机的应用

1. **压力**

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。

2. **研磨角度**

切勿将砂轮的全表面施加于要研磨的材料上。如**图 1** 所示，机器应保持 15-30°，使砂轮的外缘以最佳角度与工件相接触。

3. 用新砂轮首次进行研磨时，应将角磨机由对面横过工件往操作人员这边拉，以免挖入工件（**图 1** 的 B 方向）。等砂轮的前缘适当磨损后，就可往任何方向进行研磨。

4. **收工后的注意事项**

关掉机器之后，需等角磨机完全停止才能将其放下，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。

注意：机器不用时，应将电源关掉。

砂轮的组装与分解（图 2）

注意：为了防备发生严重事故，必须关掉电源并将电源插头从插座中拔出。

1. **组装（图 2）**

(1) 将机器的上部朝下，以使主轴面朝上。

(2) 将砂轮垫圈安装在主轴上。

(3) 砂轮的突起部装入砂轮垫圈上。

(4) 把砂轮螺帽的凸面装在砂轮上并且把螺帽拧在主轴上。

(5) 如**图 2** 所示，按下锁定销防止主轴转动。用扳手拧紧砂轮螺帽以卡紧砂轮。

2. **分解**

分解顺序与安装顺序相反。

注意：○请确认砂轮是否安装紧固。
○请在打开电源开关之前，按两三下锁定销，以确认锁定销是否已被释放。

维 护 和 检 查

1. **检查砂轮**

检查砂轮确无破裂和表面缺陷。

2. **检查安装螺钉：**

要经常检查安装螺钉是否紧固妥善。若发现螺钉松了，应立即重新扭紧，否则会导致严重的事故。

3. **检查碳刷：（图 3）**

电动机上的碳刷是一种消耗品，其磨耗程度一旦超出了“磨耗极限”，电动机将发生障碍。因此，磨耗了的碳刷应即更换新件。此外，碳刷必需常保干净状态，这样才能在刷握里自由滑动。

4. **碳刷的更换：**

用一字形头螺丝刀拆卸刷盖、碳刷就可简单地取下。

5. **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。

注：为求改进，本手册所载规格可能不预先通知而径予更改。

GENERAL OPERATIONAL PRECAUTIONS

WARNING! When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury, including the following.
Read all these instructions before operating this product and save these instructions.
For safe operations:

1. Keep work area clean. Cluttered areas and benches invite injuries.
2. Consider work area environment. Do not expose power tools to rain. Do not use power tools in damp or wet locations. Keep work area well lit. Do not use power tools where there is risk to cause fire or explosion.
3. Guard against electric shock. Avoid body contact with earthed or grounded surfaces. (e.g. pipes, radiators, ranges, refrigerators).
4. Keep children away. Do not let visitors touch the tool or extension cord. All visitors should be kept away from work area.
5. Store idle tools. When not in use, tools should be stored in a dry, high or locked up place, out of reach of children.
6. Do not force the tool. It will do the job better and safer at the rate for which it was intended.
7. Use the right tool. Do not force small tools or attachments to do the job of a heavy duty tool. Do not use tools for purposes not intended; for example, do not use circular saw to cut tree limbs or logs.
8. Dress properly. Do not wear loose clothing or jewellery, they can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protecting hair covering to contain long hair.
9. Use eye protection. Also use face or dust mask if the cutting operation is dusty.
10. Connect dust extraction equipment.
    If devices are provided for the connection of dust extraction and collection facilities ensure these are connected and properly used.
11. Do not abuse the cord. Never carry the tool by the cord or yank it to disconnect it from the receptacle. Keep the cord away from heat, oil and sharp edges.
12. Secure work. Use clamps or a vice to hold the work. It is safer than using your hand and it frees both hands to operate tool.
13. Do not overreach. Keep proper footing and balance at all times.
14. Maintain tools with care. Keep cutting tools sharp and clean for better and safer performance. Follow instructions for lubrication and changing accessories. Inspect tool cords periodically and if damaged, have it repaired by authorized service center. Inspect extension cords periodically and replace, if damaged. Keep handles dry, clean, and free from oil and grease.
15. Disconnect tools. When not in use, before servicing, and when changing accessories such as blades, bits and cutters.
16. Remove adjusting keys and wrenches. Form the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on.
17. Avoid unintentional starting. Do not carry a plugged-in tool with a finger on the switch. Ensure switch is off when plugging in.
18. Use outdoor extension leads. When tool is used outdoors, use only extension cords intended for outdoor use.
19. Stay alert. Watch what you are doing. Use common sense. Do not operate tool when you are tired.
20. Check damaged parts. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, free running of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated in this handling instructions. Have defective switches replaced by an authorized service center. Do not use the tool if the switch does not turn it on and off.
21. Warning
    The use of any accessory or attachment, other than those recommended in this instruction manual, may present a risk of personal injury.
22. Have your tool repaired by a qualified person. This electric tool is in accordance with the relevant safety requirements. Repairs should only be carried out by qualified persons using original spare parts. Otherwise this may result in considerable danger to the user.

PRECAUTIONS ON USING DISC GRINDER

1. Never operate these power tools without Wheel Guards.
2. Use only a depressed center wheel with a "Safe Speed" of at least as high as the "No-Load RPM" indicated on the power tool nameplate.
3. Always hold the body handle and side handle of the power tool firmly. Otherwise the counterforce produced may result in inaccurate and even dangerous operation.
4. Do not work near welding equipment.
   If you work near welding equipment, rotation may become unstable.

SPECIFICATIONS

Model		G10SR	G12SR
Voltage (by areas)*		(110V, 115V, 220V, 230V, 240V) ∿	
Power Input*		550 W	
No-load speed*		11000/min	
Wheel	outer dia x inner dia	100×16 mm	115×22 mm
	peripheral speed	4300 m/min	4800 m/min
Weight (only main body)		1.6kg	

*Be sure to check the nameplate on product as it is subject to change by areas.

STANDARD ACCESSORIES

(1) Wrench 1
(2) Side handle 1
Standard accessories are subject to change without notice.

APPLICATIONS

- ○ Removal of casting fin and finishing of various types of steel, bronze and aluminum materials and castings.
- ○ Grinding of welded sections or sections cut by means of a cutting torch.
- ○ Grinding of synthetic resins, slate, brick, marble, etc.

PRIOR TO OPERATION

1. **Power source**
   Ensure that the power source to be utilized conforms to the power requirements 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. **Confirming condition of the environment**
   Confirm that the work site is placed under appropriate conditions conforming to prescribed precautions.
   When grinding a thin steel plate, depending upon the state of the workbench, a loud noise will be created due to resounking noise from the steel plate being ground. To eliminate nuwanted noise in this instance, place a rubber mat beneath the material to be ground.
5. **Fitting and adjusting the wheel guard**
   The wheel guard is a protective device to prevent injury should the depressed center wheel shatter during operation. Ensure that the guard is properly fitted and fastened before commencing grinding operation. By slightly loosening the setting screw, the wheel guard can be turned and set at any desired angle for maximum operational effectiveness. Ensure that the setting screw is thoroughly tightened after adjusting the wheel guard.
6. Ensure that the depressed center wheel to be utilized is the correct type and free of cracks or surface defects. Also ensure that the depressed center wheel is properly mounted and the wheel nut is securely tightened, Refer to the section on “Depressed Center Wheel Assembly”
7. **Conducting a trial run**
   Before commencing grinding operation, the machine should be given a trial run in a safe area to ensure that it is properly assembled and that the depressed center wheel is free from obvious defects.
   Recommended trial runs duration are as follows:
   After replacing depressed center wheel
   ..... 3 minutes or more
   Prior to starting routine work
   ..... 1 minute or more
8. **Confirm the lock pin.**
   Confirm that the lock pin is disengaged by pushing lock pin two or three times before switching the power tool on (See **Fig. 2**).
9. **Fixing the side handle.**
   Screw the side handle into the gear cover.

PRACTICAL GRINDER APPLICATION

1. **Pressure**
   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.
2. **Grinding angle**
   Do not apply the entire surface of the depressed center wheel to the material to be ground. As shown in **Fig. 1**, the machine should be held at an angle of 15°-30° so that the external edge of the depressed center wheel contacts the material at an optimum angle.
3. To prevent a new depressed center wheel from digging into the workpiece, initial grinding should

be performed by drawing the grinder across the workpiece toward the operator (**Fig. 1 direction B**). Once the leading edge of the depressed center wheel is properly abraded, grinding may be conducted in either direction.

4. **Precautions immediately after finishing operation**
   After switching off the machine, do not put it down until the depressed center 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.
   CAUTION
   When the machine is not in use, the power source should be disconnected.

ASSEMBLING AND DISASSEMBLING THE DEPRESSED CENTER WHEEL (Fig. 2)

CAUTION: Be sure to switch OFF and disconnect the attachment plug from the receptacle to avoid a serious accident.

1. **Assembling (Fig. 2)**
   (1) Turn the equipment upsidedown so that the spindle will be facing up.
   (2) Mount the wheel washer onto the spindle.
   (3) Fit the protuberance of the depressed center wheel onto the wheel washer.
   (4) Screw from above the wheel nut onto the spindle.
   (5) As shown in **Fig. 2**, push in the lock pin to prevent rotation of the spindle. Then, secure the depressed center wheel by tightening the wheel nut with the wrench.
2. **Disassembling**
   Follow the above procedures in reverse.

CAUTIONS:

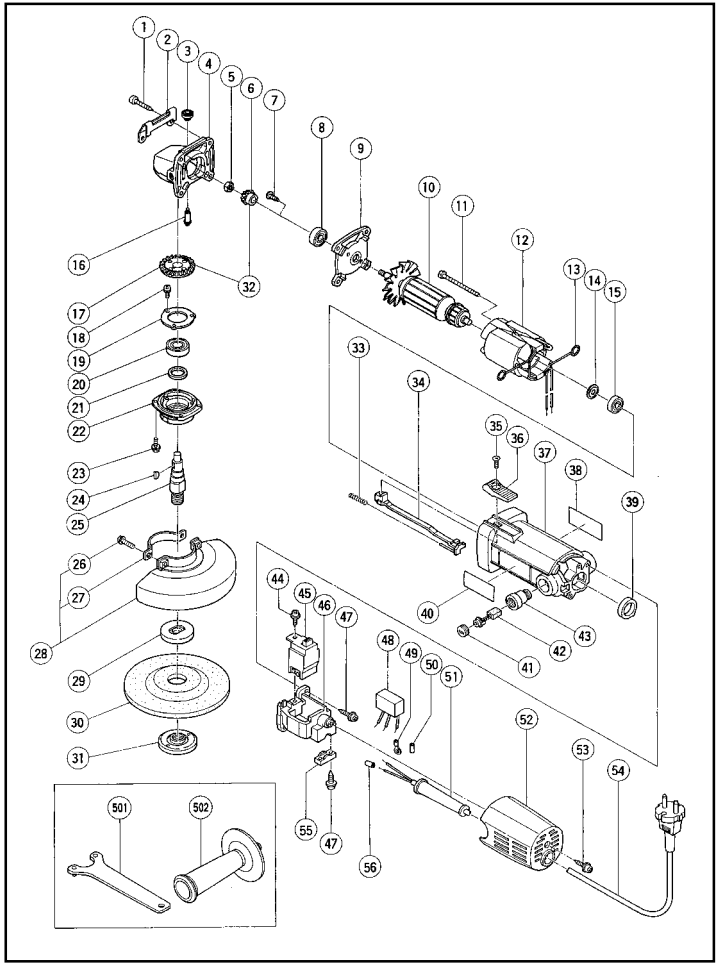
○ Comfirm that the depressed center wheel is mounted firmly.
○ Confirm that the lock pin is disengaged by pushing lock pin two or three times before switching the power tool on.

MAINTENANCE AND INSPECTION

1. **Inspecting the depressed center wheel**
   Ensure that the depressed center 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.
3. **Inspecting the carbon brushes (Fig. 3)**
   The motor employs carbon brushes which are consumable parts. Since an excessively worn carbon brush can result in motor trouble, replace the carbon brush with a new one having the same carbon brush No. shown in the figure when it becomes worn to or near the "wear limit". In addition, always keep carbon brushes clean and ensure that they slide freely within the brush holders.
4. **Replacing carbon brushes:**
   Disassemble the brush caps with a slotted-head screwdriver. The carbon brushes can then be easily removed.
5. **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.

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

G13SR The exploded assembly drawing should be used only for authorized service center.



Item No.	Part Name	
1	Tappins Screw	D5×25
2	Guard Plate	
3	Pushing Button	
4	Gear Cover Ass'y	
5	Special Nut	M7
6	Pinion	
7	Slotted Hd. Screw	M4×10
8	Ball Bearing (608VVMC2EPS2L)	
9	Inner Cover	
10	Armature	
11	Hex. Hd. Tapping Screw	D4×70
12	Stator Ass'y	
13	Brush Terminal	
14	Washer (A)	
15	Ball Bearing (626VVMC2ERPS2S)	
16	Lock Pin	
17	Gear	
18	Seal Lock Screw (W/Sp. Washer)	M4×10
19	Bearing Cover (B)	
20	Ball Bearing (6001VVCMPS2L)	
21	Felt Packing	
22	Packing Gland	
23	Seal Lock Screw (W/Sp. Washer)	M4×12
24	Woodruff Key	2.5×8
25	Spindle	
26	Machine Screw (W/Sp. Washer)	M5×16
27	Set Plate	
28	Wheel Guard Ass'y	
29	Wheel Washer	
30	D. C. Wheels 125MM A36Q	

Item No.	Part Name	
31	Wheel Nut	M14
32	Gear Pinion Ass'y	
33	Spring	
34	Slide Bar	
35	Flat Hd. Screw	M4×10
36	Slide Knob (C)	
37	Housing Ass'y	
38	Name Plate	
39	Bearing Bushing	
40	HITACHI Label	
41	Brush Cap	
42	Carbon Brush	
43	Brush Holder	
44	Tapping Screw (W/Flange)	D4 ×12
45	Slide Switch	
46	Switch Holder	
47	Tapping Screw (W/Flange)	
48	Noise Suppressor	
49	Terminal (50051)	
50	Tube (D)	
51	Cord Armor	
52	Tail Cover	
53	Tapping Screw (W/Flange)	D4×16
54	Cord	
55	Cord Clip	
56	Tube (D)	
501	Wrench	
502	Side Handle	

Parts are subject to possible modification without notice due to improvements.

Hitachi Koki Co., Ltd.

709
Code No. C99084021