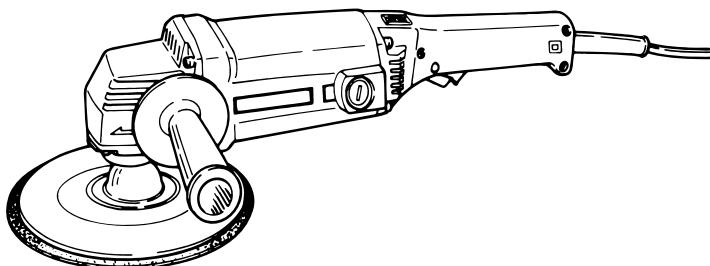


HiKOKI

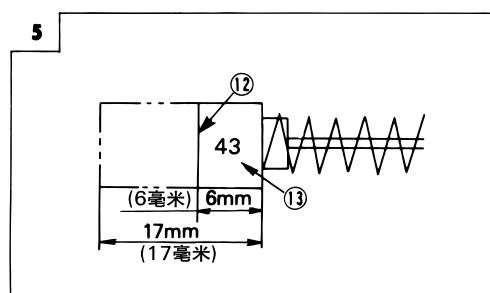
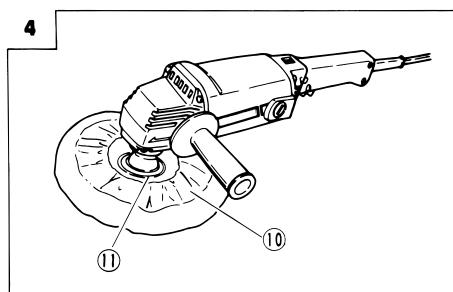
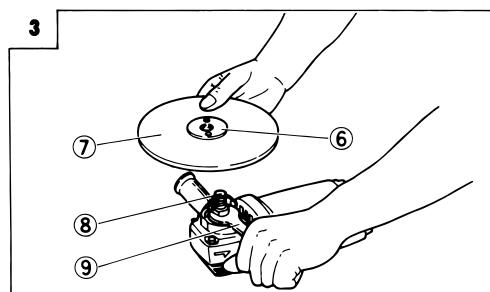
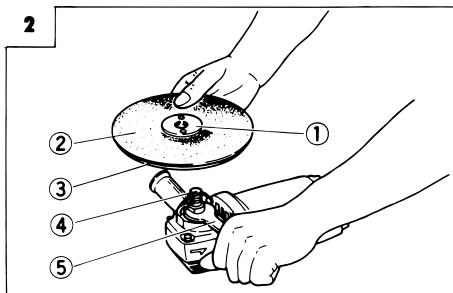
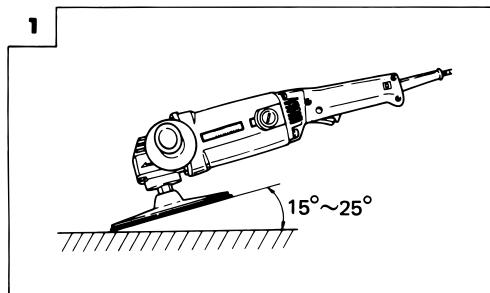
磨光抛光双用机
SANDER POLISHER
SAT-180

使用说明书
Handling instructions



使用前请详细阅读

Read through carefully and understand these instructions before use.



①	垫片螺帽	Washer nut
②	砂盘	Sanding disc
③	橡胶垫圈	Rubber pad
④	主轴	Spindle
⑤	扳手 (A)	Wrench(A)
⑥	垫片螺帽	Washer nut
⑦	橡胶垫圈	Rubber pad
⑧	主轴	Spindle
⑨	扳手 (A)	Wrench(A)
⑩	毛罩	Hood
⑪	缩进多余的线	Tuck the excess string into
⑫	磨损极限	Wear limit
⑬	碳刷号	No. of carbon brush

作业上的一般注意事项

1. 工作场所应打扫干净，清理妥当。杂乱无章将导致事故。
2. 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。不可在存放易燃液体或气体的地方使用电动工具。因为电动工具在作业时以及进行开关的通／断操作时会发出火花，所以严禁在存放：漆、涂料、轻质汽油、冲淡剂、汽油、煤气、胶粘剂以及其它爆炸性物质的地方使用。
3. 谨防触电事故。应注意避免身体同地面上的例如：管道、散热器、炉灶、冰箱等接触。
4. 不可让孩童靠近工作场所。与作业无关的访客也必需保持安全距离。
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，用电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。不要让松散的衣角或宝石类卷入转动部分。屋外作业时，最好手带橡胶手套，脚穿防滑胶鞋，同时要戴上能够笼罩长发的工作帽。
9. 绝大多数的电动工具作业时均需带安全眼镜。进行粉尘飞扬的切削作业时，需带防尘面罩。
10. 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。
11. 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。
12. 作业时脚步要站稳，身体姿势要保持平衡。
13. 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。
14. 不使用时、维修前以及更换附件（如：刀具、钻头、锯具等）之前，都必需拆卸电源插头才行。
15. 开动前务需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。
16. 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。
17. 屋外作业时，必需使用专用的延伸线缆。
18. 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。
19. 在继续使用电动工具之前，应过细检查各部零件以及防护装置有无损坏，以便据以决定能否正常工作，能否发挥正常效能。检查转动部分的对准、结合状态，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，应即委托服务中心或其它适当单位进行修理或更换。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。
20. 不得使用电动工具去进行规定外的其它作业。
21. 只能使用本说明书或HIKOKI牌商品目录中所推荐的附件，以避免人体受伤。

22. 只能请经授权的维修代理店来修理工具。对于因由非授权人的修理或工具操作错误而引起的工具破损或人体受伤，恕本公司概不免责。

23. 为了保证设计的完整性，电动工具的盖罩和螺钉类不可随便拆除。

24. 除非电线插头已从电源插座拆下，绝不可接触转动部分或附件。

25. 应以低于名牌上的额定输入功率进行作业。否则电动机将过载而影响工作精度，并降低效率。

26. 不可使用溶剂擦拭塑料零件。因为：汽油、冲淡剂、轻质汽油、四氯化碳、酒精、阿摩尼亚以及含氯油液等都会使塑料损伤或发生龟裂，所以应避免使用。擦拭塑料制品，可以使用稍微沾湿了肥皂水的柔布。

27. 只能使用HIKOKI指定的更换零件。

28. 本电动工具只在更换碳刷时才可拆解。

29. 进行授权维修时，只能使用本说明书中的组装分解图。

使用磨光抛光双用机时的注意事项

1. 千万不要装上砂轮，并象使用角磨机那样去试着使用磨光抛光双用机。

规 格

电压(按地区)*	(110伏, 115伏, 120伏, 127伏, 220伏, 230伏, 240伏)～
输入功率*	750瓦
无负荷速度	3400／1900／分
砂盘的尺寸，外径×内径	180×22毫米
重量(不含线缆、标准附件)	2.9公斤

*当须改变地区时应检查产品的铭牌。

标 准 附 件

(1) 180毫米的砂盘 5
(颗粒度：P24, P30, P50, P80, P120)

(2) 橡胶垫圈 1

(3) 180毫米的毛罩 1

(4) 扳手 (A) 1

(5) 扳手 (B) 1

(6) 边柄 1

标准附件如有改变将不另行通知。

2. 使用时，要抓紧磨光抛光双用机上的手柄和机边的边柄。

否则在操作过程中，电动机所产生的反作用力将可能引起危险或达不到操作的目的。

用 途

- 金属表面的打磨
- 油漆前的金属表面的初步磨光，金属表面上的铁锈或旧漆的清除。
- 木工件的最后加工，接合面或装配面上木料的突出部分。
- 油漆前的木材表面的初步磨光。
- 诸如汽车、火车、电梯、电冰箱、缝纫机、洗衣机、金属器械等涂有油漆的金属表面的抛光和打亮。
- 涂有清漆的木制家具表面的抛光等。
- 合成树脂和硬橡胶制品的打亮。

作业之前

1. 电源:

确认所使用的电源与工具名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。

2. 抛光机的操作法

将本工具作为抛光机使用时，请将速度为低速档(L)。

- (1) 用双用机抛光曲型表面和平坦表面效果极佳。不要把两用机强压在被打磨物体的表面上。只用双用机本身重量抛光就可以达到良好的效果。过重的压力将会磨损抛光面，并可能会引起马达超负荷。
- (2) 要根据材料和所需的抛光效果来选择砂盘、抛光油或打蜡油。为达到最大的抛光效果请遵循下列方法：
 - 使用双用机进行初步抛光时，请选择颗粒度较细的砂轮。
 - 使用毛罩抛光时，请使用抛光油或打蜡油。请先将少量的抛光油或打蜡油涂在物体表面上，然后用毛罩打磨。

磨光抛光双用机的实际应用

1. 磨光机的操作法

将本电动工具作为砂盘磨光机使用时，请将速度设定为高速档(H)。

- (1) 不要把磨光抛光双用机强压在被打磨物体的表面上。用双用机本身重量打磨就足以达到最佳效果。过重的压力将会降低砂盘旋转的速度，而导致被打磨物体产生凹凸不平的表面，并会引起马达的过重负荷。
- (2) 打磨时，不要用砂盘的整个表面接触被打磨物体的表面。请按图1所示方法，使砂盘与被打磨物体表面的夹角保持在15°~25°左右，只要利用砂盘周边的一部分打磨物体的表面即可。
- (3) 使用后的注意事项
在将开关置于OFF(关)之后，不要马上放下砂轮机，要等到砂轮完全停止转动后再将砂轮机放下。这样不仅可以避免意外事故，而且还可以减少大量的灰尘和细屑进入本电动工具内。

砂盘和毛罩的装卸

1. 用作磨光机时：

- (1) 将砂盘套在橡胶垫圈上后，再将垫片螺帽穿在主轴上。
- (2) 按图2所示方法，边用附件扳手(A)控制住主轴，边用附件扳手(B)朝顺时针方向旋转垫片螺帽以将其旋在主轴上。并请使用扳手(A)和(B)将垫片螺帽彻底地旋紧。
- (3) 砂盘的拆卸顺序与装配顺序相反。

2. 用作抛光机时：

- (1) 先将垫片螺帽插入橡胶垫圈，然后再将其穿在主轴上。
- (2) 按图3所示方法，边用附件扳手(A)控制住主轴，边用附件扳手(B)朝顺时针方向旋转垫片螺帽以将它旋在主轴上。并请使用扳手(A)和(B)将垫片螺帽彻底地旋紧。

(3) 按图 4 所示方法, 用毛罩包住橡胶垫圈, 然后将其绷紧后拉线打结。要将多余的线牢固地缩进毛罩内以防抛光时飞出来。

注意: 如果毛罩的尺寸不合适将会引起电机震动

(4) 毛罩的拆卸顺序和装配顺序相反。

维 护 和 检 查

1. 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。

2. 检查碳刷: (图 5)

电动机上的碳刷是一种消耗品, 其磨耗度一旦超出了“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。

3. 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。

4. 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告而经予更改。

GENERAL OPERATIONAL PRECAUTIONS

1. Keep work area clean. Cluttered areas and benches invite injuries.
2. Consider work area environment. Don't expose power tools to rain. Don't use power tools in damp or wet locations. Keep work area well lit. Don't use tool in presence of flammable liquids or gases.

Power tools produce sparks during operation. They also spark when switching ON/OFF. Never use power tools in dangerous sites containing lacquer, paint, benzine, thinner, gasoline, gases, adhesive agents, and other materials which are combustible or explosive.
3. Guard against electric shock. Prevent body contact with grounded surfaces. For example; pipes, radiators, ranges, refrigerator enclosures.
4. Keep children away. Do not let visitors contact 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 dry and high or locked-up place-out of reach of children.
6. Don't force tool. It will do the job better and safer at the rate for which it was intended.
7. Use right tool. Don't force small tool or attachment to do the job of a heavy-duty tool. Don't use tool for purpose not intended—for example—don't use circular saw for cutting tree limbs or logs.
8. Dress properly. Do not wear loose clothing or jewelry. They can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protective hair covering to contain long hair.
9. Use eye protection. Also use face or dust mask if cutting operation is dusty.
10. Don't abuse cord. Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil and sharp edges.
11. Secure work. Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.
12. Don't overreach. Keep proper footing and balance at all times.
13. Maintain tools with care. Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and if damaged, have repaired by authorized service facility. Inspect extension cords periodically and replace if damaged. Keep handles dry, clean, and free from oil and grease.
14. Disconnect tools. When not in use, before servicing, and when changing accessories, such as blades, bits, cutters.
15. Remove adjusting keys and wrenches. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
16. Avoid unintentional starting. Don't carry plugged-in tool with finger on switch. Be sure switch is off when plugging in.
17. Outdoor use extension cords. When tool is used outdoors, use only extension cords intended for use outdoors and so marked.
18. Stay alert. Watch what you are doing. Use common sense. Do not operate tool when you are tired.
19. 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, binding 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 elsewhere in this instruction manual. Have defective switches replaced by authorized service center. Do not use tool if switch does not turn it on and off.
20. Use the power tools only for applications specified in the Handling Instructions.
21. To avoid personal injury, use only the accessories or attachment recommended in these handling instructions or in the HIKOKI catalog.
22. Let only the authorized service facility do the repairing.

The manufacturer will not be responsible for any damages or injuries caused by repair by unauthorized persons or by mishandling of the tool.
23. To ensure the designed operational integrity of power tools, do not remove installed covers or screws.
24. Do not touch movable parts or accessories unless the power source has been disconnected.
25. Use your tool at lower input than specified on the nameplate; otherwise, the finish may be spoiled and working efficiency reduced by motor overload.
26. Do not wipe plastic parts with solvent. Solvents such as gasoline, thinner, benzine, carbon tetrachloride, alcohol, ammonia and oil containing chloric annex may damage and crack plastic parts. Do not wipe them with such solvent. Wipe plastic parts with a soft cloth lightly dampened with soapy water.
27. Use only original HIKOKI replacement parts.
28. Disassemble this tool only for replacement of carbon brushes.
29. Use the exploded assembly drawing on this handling instructions only for authorized servicing.

PRECAUTIONS ON USING SANDER POLISHER

1. Never mount a grinding wheel and attempt to use this tool as a disc grinder.
2. 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.

SPECIFICATIONS

Voltage (by areas)*	(110V, 115V, 120V, 127V, 220V, 230V, 240V) ~
Input *	750W
No load speed	3400/1900/min
Sanding Disc Size outer dia. × inner dia.	180 × 22mm
Weight (without cord, standard accessories)	2.9kg

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

STANDARD ACCESSORIES

(1) 180mm Sanding Disc 5
(Grain: P24, P30, P50, P80, P120 1 each)
(2) Rubber Pad 1
(3) 180mm Wool Bonnet 1
(4) Wrench (A) 1
(5) Wrench (B) 1
(6) Side Handle 1

Standard accessories are subject to change without notice.

APPLICATIONS

- Grinding metal surfaces.
- Preliminary sanding of metal surfaces before painting, rust removal, removing old paint before repainting.
- Finishing woodwork, correcting projections of timber from joints or assemblies.
- Preliminary sanding of wood surfaces before applying paint.
- Polishing or shining painted metal surfaces, such as those of automobiles, trains, elevators, refrigerators, sewing machines, washing machines, metal appliances, etc.
- Polishing varnished surfaces of wooden furniture, etc.
- Shining synthetic resin or ebonite products.

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 power 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.

PRACTICAL SANDER POLISHER APPLICATIONS

1. Sander operation:

When utilizing this tool as a disc sander, set the speed to high (H) for maximum efficiency.

- (1) Do not excessively push the sanding disc against the surface of the material. Optimum sanding can be achieved by the weight of the machine alone. Excessive pressure will reduce the revolving speed of the disc, creating an unevenly finished surface and causing overload to the motor.
- (2) Do not apply the entire disc surface to the surface of the material. As shown in **Fig. 1**, the sander should be held at an approximately 15° to 25° angle in relation to the material surface so that the peripheral portion of the sanding disc is offered to the material surface.
- (3) Precaution immediately after finishing an operation:

After turning the switch OFF, do not put the sander down until the sanding disc has come to a complete stop. This precaution will not only prevent a serious accident, but will also reduce the amount of dust and swarf sucked into the machine.

2. Polisher operation:

When utilizing this tool as a polisher, set the speed to low (L) for maximum efficiency.

- (1) Curved surfaces as well as flat surfaces can be efficiently finished. Do not excessively push the polisher against the surface of the material. The weight of the polisher alone is sufficient for effective polishing. Excessive pressure will result in a poor finish and cause possible overload to the motor.
- (2) Sanding disc, polishing compound or wax should be selected in accordance with the material and the desired surface finish. Maximum polishing effect will be attained by following the following method:
 - Preliminary polishing with sander using a fine-grain sanding disc.
 - Polishing with wool bonnet using polishing compound and/or wax. Apply a small quantity of compound and/or wax on material surface and polish with the wool bonnet.

MOUNTING AND DISMOUNTING THE SANDING DISC AND WOOL BONNET

1. For Sander operation:

- (1) After placing the sanding disc on the rubber pad, thread the washer nut onto the spindle.
- (2) While holding the spindle with the accessory wrench (A), as shown in **Fig. 2**, turn the washer nut clockwise with accessory wrench (B) to screw it onto the spindle. Ensure that the washer nut is thoroughly tightened by using both wrench (A) and (B).
- (3) To remove the sanding disc, follow the above procedures in reverse.

2. For Polisher operation:

- (1) Insert the washer nut through the rubber pad and thread it onto the spindle.
- (2) While holding the spindle with the accessory wrench (A), as shown in **Fig. 3**, turn the washer nut clockwise with accessory wrench (B) to screw it onto the spindle. Ensure that the washer nut is thoroughly tightened by using both wrench (A) and (B).
- (3) As shown in **Fig. 4**, wrap the rubber pad with the hood of the wool bonnet, and firmly secure it by tightening and tying its draw string. Be sure the excess string is firmly tucked inside the wool bonnet to prevent it from flying out while polishing.

CAUTION

Improper fitting of the wool bonnet may cause vibration.

- (4) To remove the wool bonnet, follow the above procedures in reverse.

NOTE

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

MAINTENANCE AND INSPECTION

1. 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.

2. Inspecting the carbon brushes (Fig. 5)

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.

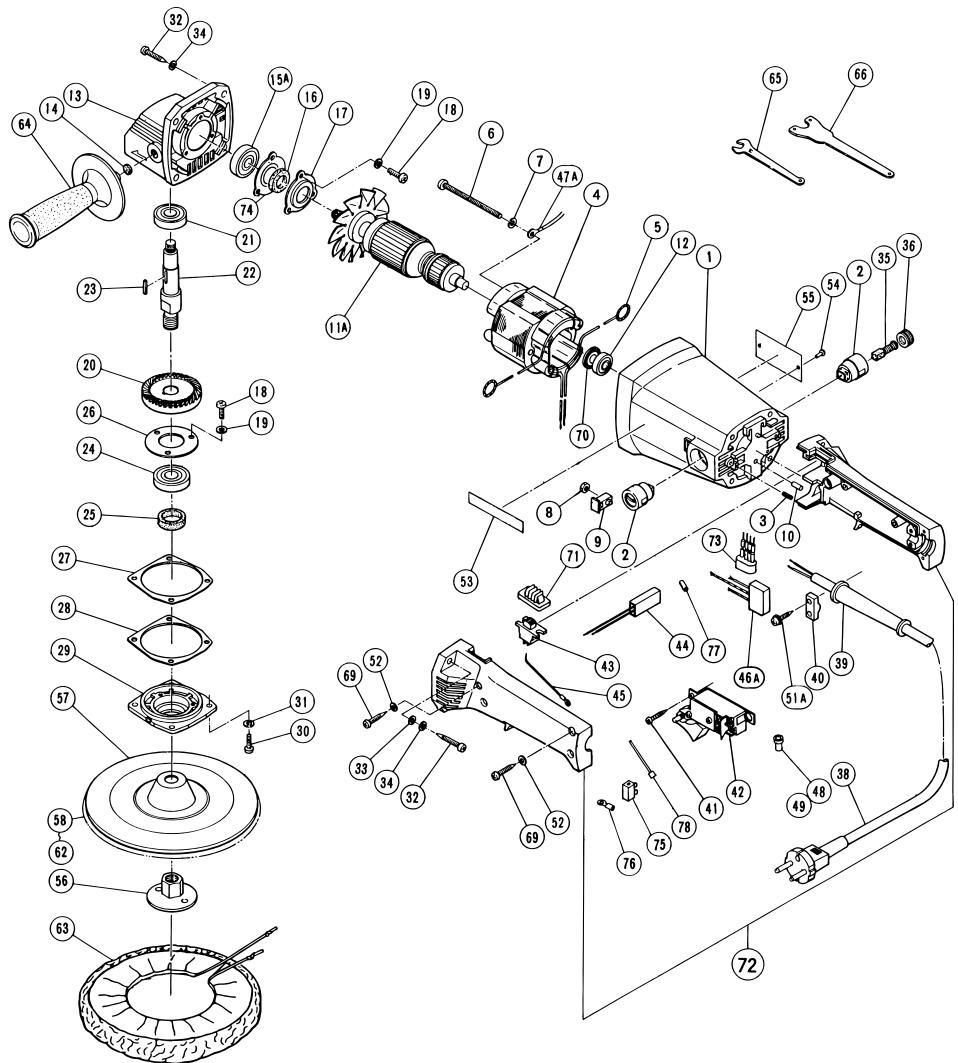
3. Replacing a carbon brush:

Disassemble the brush cap with a minus-head screwdriver. The carbon brush can then be easily removed.

4. 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.

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



Item No.	Part Name	
1	Housing Ass'y	
2	Brush Holder	
3	Slotted Hd. Set Screw	M4×5
4	Stator Ass'y	
5	Brush Terminal	
6	Machine Screw	M5×55
7	Spring Washer	M5
8	Nut	M5
9	Nut Cover	
10	Bearing Lock	
11A	Armature Ass'y	
12	Ball Bearing (608VVMC2EPS2L)	
13	Gear Cover Ass'y	
14	Felt Washer	
15A	Ball Bearing (6002VVCMP2S)	
16	Felt Packing (A)	
17	Bearing Cover	
18	Machine Screw	M4×12
19	Spring Washer	M4
20	Gear	
21	Ball Bearing (6200VVCMP2S)	
22	Spinlde	
23	Feather Key	3×3×10
24	Ball Bearing (6202VVCMP2S)	
25	Felt Packing	
26	Bearing Cover (A)	
27	Seal Packing (A)	
28	Thrust Washer (B)	
29	Packing Gland	
30	Machine Screw	M5×16
31	Spring Washer	M5
32	Tapping Screw	D5×25
33	Washer	M5
34	Spring Washer	M5
35	Carbon Brush	
36	Brush Cap	
38	Cord	

Item No.	Part Name	
39	Cord Armor	
40	Cord Clip	
41	Tapping Screw	D4×12
42	Switch	
43	Slide Switch	
44	Diode	
45	Internal Wire	
46A	Noise Suppressor	
47A	Internal Wire	
48	Connector	
49	Connector	
51A	Tapping Screw (W/Flange)	D4×16
52	Washer	M4
53	Brand Label	
54	Rivet	D2.5×3.2
55	Name Plate	
56	Washer Nut	M14
57	Rubber Pad	D14
58	Sanding Disc 180MM	A-P 24
59	Sanding Disc 180MM	A-P 30
60	Sanding Disc 180 MM	A-P 50
61	Sanding Disc 180MM	A-P 80
62	Sanding Disc 180MM	A-P 120
63	Wool Bonnet	180MM
64	Side Handle	
65	Wrench	17MM
66	Wrench	
69	Tapping Screw	D4×20
70	Dust Seal (A)	
71	Slide Switch Cover	
72	Handle Ass'y	
73	Choke Coil	
74	Distance Plate	
75	Pillar Terminal	
76	Terminal	
77	Tube (D)	
78	Wire Band	

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

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