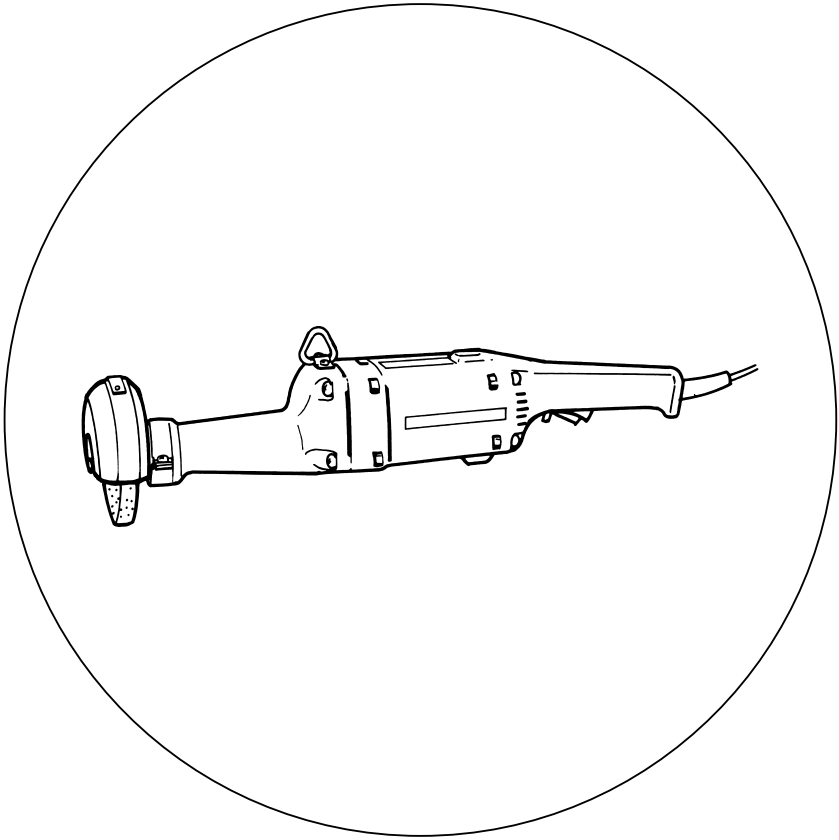
HiKOKI

手提砂轮机
GRINDER

GP 13

使用说明书
Handling instructions



使用前条请详加阅读

Read through carefully and understand these instructions before use.

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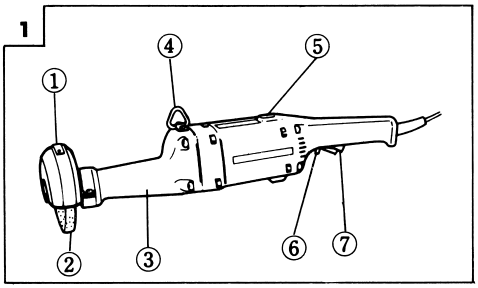

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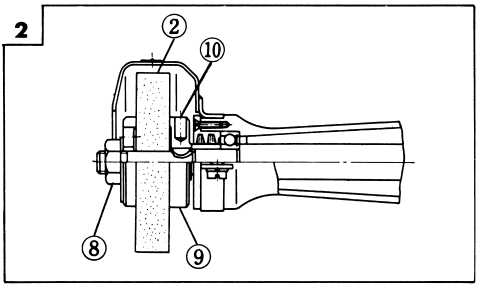

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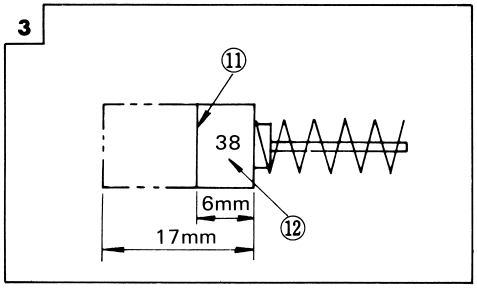


①	砂轮保护罩	Wheel guard
②	砂轮	Grinding wheel
③	鼻形支撑架	Nose bracket
④	挂钩器	Hanger
⑤	刷子盖	Brush cap
⑥	停止销	Stopper
⑦	扳机	Switch trigger
⑧	M12螺帽	Nut M12
⑨	轮垫圈	Wheel washer
⑩	主轴销键孔	Spindle detent hole
⑪	磨损极限	Wear limit
⑫	碳刷号	No. of carbon brush

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。

使用手提砂轮机时的注意事项

1．没有砂轮保护罩时千万不要使用本手提砂轮机。
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。

规　　格

电压(按地区)*	(110V,115V,120V,127V, 220V,230V,240V) ∿
输入功率*	570W
空载转速	4800次／分
砂轮尺寸 外径 厚度 孔径	 125mm 19mm 12.7mm
重量(不含线缆)	5.5kg

*当须改变地区时应检查产品上的铭牌

标　准　附　件

(1)　扶手……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焊割部分。
○研磨人造树脂胶、砖块、大理石等。

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。

注意：受伤的线缆应予更换或修改。

4．确认环境条件

请确认工作场地是否符合规定。当研磨薄钢板时，因工作台的状态可能会产生很大的噪音，这种噪音是因研磨钢板而引起的。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．安装砂轮防护罩：

砂轮防护罩是防止因砂轮破损而引起伤害的防护部件。在开始使用之前一定要将防护罩安装固定好。

6．砂轮：

要保证所使用的砂轮型号正确无误而且要没有裂纹和表面缺陷。同时还要保证砂轮安装得合适，砂轮的螺帽要拧紧。请参照“安装和拆卸砂轮”一节。

7．试行运转

没检查砂轮上是否存在破损和裂缝就开始研磨是非常危险的。所以在开始正式研磨之前，务必让该手提砂轮机在无人的情况下试行运转，如果没有问题，就表明此手提砂轮机没有异常。

试运转的持续时间如下：

更换上砂轮时…… 3 分钟以上

开始日常工作时…… 1 分钟以上

使 用 方 法

1．为了延长机器寿命并进行第一流加工，请不要用力过大以防使机器超负荷运行。在一般情况下，光靠机器的重量就能进行有效的研磨。压力过大将导致转速的降低及加工表面质量的降低，并可能导致机器寿命的缩短。

2．开关操作

扣动扳机，开关被接通(ON)。松开扳机，开关则被断开。当扣动扳机后再按下停止销时，即使把手松开，开关仍保持接通装态。需要长时间用砂轮机连续进行研磨时，可使用停止销。只需再扣动一下扳机，停止销就被弹会原来的状态。

3．方便的挂钩器

长时间使用手提砂轮机时，请利用附备的挂钩器来降低操作员的疲劳。

注意：

○当手提砂轮机开始运转时，请暂且离开被研磨材料一段距离。

○当切断机器的开关后，在砂轮完全停止运转之前，请勿将其放下。这样不但能避免发生事故，而且能减少灰尘及碎屑进入机器。

○切勿使用超过标准尺寸的砂轮。如果使用太大的砂轮，砂轮的外缘速度将超过安全极限，并可能会受损。

砂轮的型号及其用途

○在研磨操作中，请选择和被研磨材料相符的砂轮是保证研磨有效进行的重要条件。HiKOKI牌手提砂轮机适用于钢材研磨、钢材电火花的辨别分析及焊接部分的抛光等。

○将手提砂轮机用于研磨有色金属材料、铸铁、石料等材料时，很多适合于这些被研磨材料的砂轮在市场上都有销售，顾客可购买适合其用途的砂轮。

被研磨的材料	砂粒	粒度	连接(硬度)	耦合材料	备注
普通钢材的焊接部分	A	36	P	V	标准附件
铸 铁	C	16	P	B	
青铜和黄铜	C	24	P	V	
铝	C	30	Q	B	
大理石	C	36	M	V	
花岗石	C	16	K	V	

安装和拆卸砂轮

注意：
为了避免发生事故，必须确认开关是否在断开位置，并且不要接着电源。

○安装和拆卸砂轮的过程如**图 2** 所示。在轮轴上有一个将轴锁定的孔。有一根棒插进此孔里，以防止此砂轮轴旋转。然后，拧紧螺帽将砂轮固定住。

注意：
固定砂轮时，不能将螺帽拧得太紧。如果太紧，砂轮可能会破裂。此螺帽的螺栓的攻丝是有方向性的，转动时它会在此方向上旋紧，因此在工作时不可能松动。

维　护　和　检　查

1．检查砂轮
请检查砂轮上是否确实无裂缝、无表面缺陷。

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．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．检查碳刷：（图 3）
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。

5．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。

注：为求改进，本手册所载规格可能不预先通告而径予更改。

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 center. 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 wrench es 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 genuine HiKOKI replace ment 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 GRINDER

1. Never operate these power tools without wheel guards.
2. Use only grinding wheels with a "Safe Speed" at least as high as the "No-Load RPM" indicated on the power tool nameplate.

SPECIFICATIONS

Voltage (by areas)*	(110V, 115V, 120V, 127V, 220V, 230V, 240V) ~
Input*	570W
No-Load Speed	4800/min
Wheel Size Outer diam. thickness hole diam.	 125mm 19mm 12.7mm
Weight (without cord)	5.5 kg

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

STANDARD ACCESSORIES

(1) Wrench 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 casting.
- ○ Grinding of welded sections or sections cut by means of welding.
- ○ 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 power receptacle while the power switch is in the ON position, the power tool will start operating immediately, inviting 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 procautions.
   When grinding a thin steel plate, depending upon the state of the workbench, a loud noise will be created due to resounding 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 the wheel guard**
   The wheel guard is a protective device to prevent injury should the grinding wheel shatter during operation. Ensure that the guard is properly fitted and fastened before commencing grinding operation.
6. **Grinding wheel**
   Ensure that the grinding wheel to be utilized is the correct type and free of cracks or surface defects. Also ensure that the grinding wheel is properly mounted and the wheel nut is securely tightened. Refer to the section on "MOUNTING AND DISMOUNTING THE GRINDING WHEEL."
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 grinding wheel is free from obvious defects. Recommended trial run durations are as follows:
   After replacing grinding wheel
   .....3 minutes or more
   Prior to starting routine work
   .....1 minute or more

HOW TO USE

1. 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. **Operating the switch**
   When the trigger is pulled, the switch is turned ON; when the trigger is released, the switch is turned OFF. After pulling the trigger, when the stopper is pushed, the switch remains in the ON position even when releasing the finger from the trigger, rendering the stopper very convenient when using the grinder continuously over an extended period. When the trigger is pulled again, the stopper is released.
3. **Convenient hanger**
   When using the grinder over a long period, utilize the provided hanger to reduce operator fatigue.

CAUTION

- ○ When the grinder starts up, be sure to step away for a moment from the grinding wheel's plane of revolution.
- ○ After switching off the machine, do not put it down until the grinding 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.

○ By all means avoid using grinding wheels with overstandard dimensions. If grinding wheels which are too large are used, the peripheral velocity of the grinding wheel will exceed the safety limits, and breakage may result.

KINDS OF GRINDING WHEELS AND THEIR APPLICATIONS

○ In grinding operation, the most important matter to ensure effective operation is to select a grinding wheel which conforms to the material to be ground. Provided for the HiKOKI Electric Grinder are grinding wheels appropriate for steel material grinding, material discrimination testing by sparks of steel material, finishing of welded portions, and so on.

○ When using the Grinder on nonferrous metals, cast iron, stone and so on, select a grinding wheel according to the following standards. Many grinding wheels conforming to these materials to be ground are sold on the market, allowing customers to purchase the grinding wheel fitted to the application.

Material to be ground	Grain	Grading	Bonding (Hardness)	Binding material	Remarks
Welded portion of general steel materials	A	36	P	V	Standard accessory
Cast iron	C	16	P	B	
Bronze and brass	C	24	P	V	
Aluminum	C	30	Q	B	
Marble	C	36	M	V	
Granite	C	16	K	V	

MOUNTING AND DISMOUNTING THE GRINDING WHEEL

Caution: To avoid serious accedent, ensure the switch is in the OFF position, and the power source is disconnected.

○ When attaching or removing the grinding wheel, proceed as shown in **Fig. 2**. On the wheel shaft there is a hole for locking the shaft in position. A rod is inserted into this hole to keep the shaft from rotating. Then turn the nut holding the grinding wheel in place.

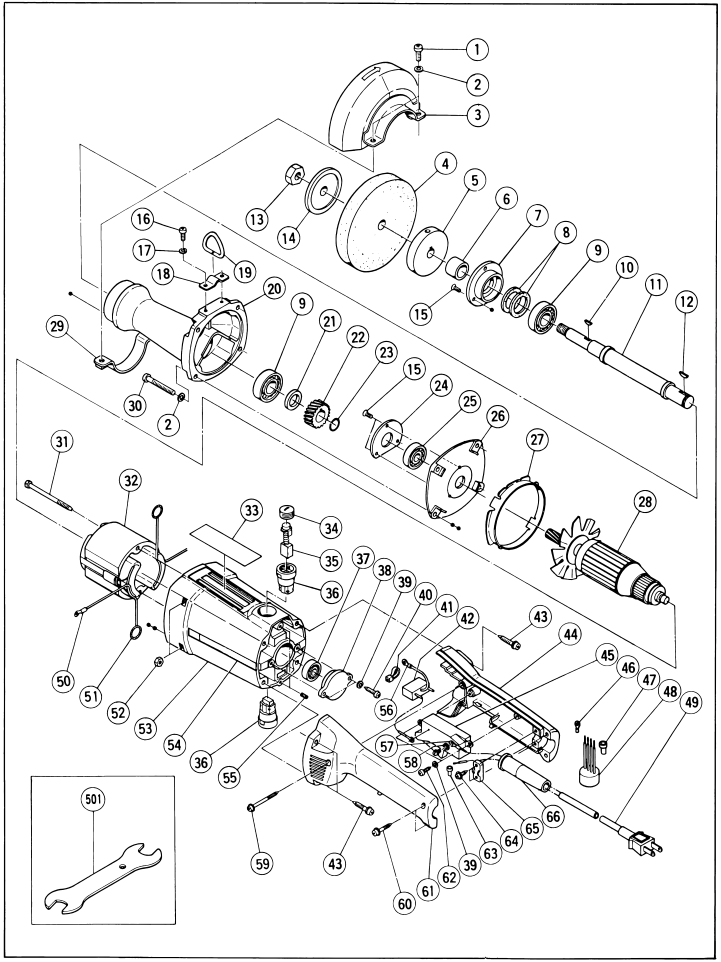
Caution: Do not fasten too tightly the nut holding the grinding wheel in place. If this nut is excessively tightened, the grinding wheel may split. The nut's screws are threaded in the directions in which they will be tightened by rotation: therefore, there is no possibility of their loosening during operation.

MAINTENANCE AND INSPECTION

1. **Inspecting the grinding wheel:**
Ensure that the grinding 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. **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. **Inspecting the carbon brushes: (Fig. 3)**
The motor employs carbon brushes which are consumable parts. Since an excessively worn carbon brush could result in motor trouble, replace a carbon brush with a new one which has the same 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.
5. **Replacing a carbon brush:**
Disassemble the brush cap with a minus-head screwdriver. The carbon brush can then be easily removed.

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

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

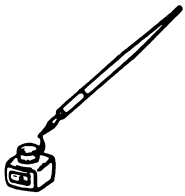


GP13

Item No.	Part Name	
1	Machine Screw	M6×16
2	Spring Washer	M6
3	Wheel Guard	
4	Grinding Wheel	125×19×12.7 A36P7V
5	Wheel Washer (B)	
6	Sleeve	
7	Packing Gland	
8	Packing	D22
9	Ball Bearing (6203VVCMPS2S)	
10	Woodruff Key	3×10
11	Spindle	
12	Woodruff Key	3×13
13	Nut	M12
14	Wheel Washer (A)	
15	Flat Hd. Screw	M4×10
16	Machine Screw	M5×12
17	Spring Washer	M5
18	Hanger (A)	
19	Hanger (B)	
20	Nose Bracket	
21	Distance Piece	
22	Gear	
23	Ring	
24	Bearing Cover	
25	Ball Bearing (6201VVCMPS2S)	
26	Inner Cover	
27	Fan Guide	
28	Armature	
29	Guard Cap	
30	Machine Screw	M6×45
31	Hex. Hd. Tapping Screw	D5×75
32	Stator Ass'y	
33	Name Plate	
34	Brush Cap	
35	Carbon Brush	
36	Brush Holder	
37	Ball Bearing (629VVMC2EPS2L)	
38	Bearing Bushing	

Item No.	Part Name	
39	Spring Washer	M4
40	Tapping Screw	D4×16
41	Wire Band	
42	Noise Suppressor	
43	Tapping Screw (W/Washer)	D5×25
44	Handle (A) Ass'y	
45	Switch	
46	Terminal	
47	Connector (50092)	
48	Choke Coil	
49	Cord	
50	Terminal	M4.0
51	Brush Terminal	
52	Nut	M6
53	Housing Ass'y	
54	Brand Label	
55	Hex. Socket Set Screw	M5×8
56	Terminal	
57	Terminal	
58	Washer	M4
59	Tapping Screw (W/Washer)	D4×30
60	Tapping Screw (W/Washer)	D4×20
61	Handle (B)	
62	Tapping Screw	D4×12
63	Connector (50091)	
64	Tapping Screw (W/Flange)	D4×16
65	Cord Clip	
66	Cord Armor	
501	Wrench	17/19MM

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



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