

HiKOKI

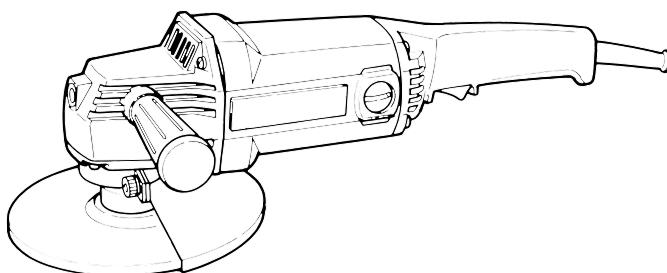
DISC GRINDER

手提圓盤電磨機

PDH-180C

HANDLING INSTRUCTIONS

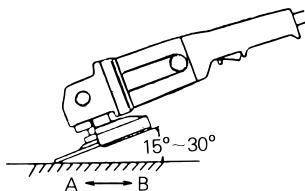
使用說明書



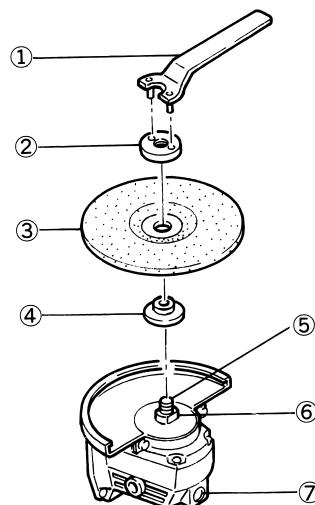
Read through carefully and understand these instructions before use.

使用前務請詳加閱讀

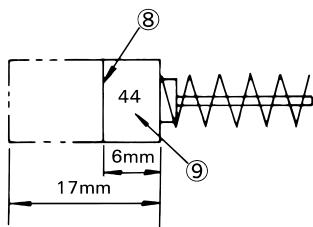
1



2



3



①	Wrench	扳手
②	Wheel nut	砂輪螺帽
③	Grinding wheel	砂輪
④	Wheel washer	輪墊圈
⑤	Spindle	主軸
⑥	Notched part	槽口部分
⑦	Lock pin	鎖定銷
⑧	Wear limit	磨損極限
⑨	No. of carbon brush	碳刷號

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, refrigertor 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 safety glasses. 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. From 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. Do not use power tools for applications other than those specified in the Handling Instructions.
21. To ensure the designed operational integrity of power tools, do not remove installed covers or screws.
22. Do not touch movable parts or accessories unless the power source has been disconnected.
23. Use your tool at lower input than specified on the nameplate; otherwise, the finish may be spoiled and working efficiency reduced due to motor overload.
24. 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 damped with soapy water.
25. Consult an authorized Service Agent in the event of power tool failure.
26. Use only original HiKOKI replacement parts.
27. This tool should only be disassembled for replacement of carbon brushes.

PRECAUTIONS ON USING DISC 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.
3. Correct use for safe operation.
4. Mounting the standard grinding wheel.
5. Have a trial run before grinding commence.
6. Keep away from a revolving grinding wheel.
7. Pay strict attention to sparks.
8. Use the side handle to securely grip the Grinder.
9. Do not leave the revolving Grinder unattended on the floor.
10. Follow the procedures of these Handling Instructions on grinding wheel replacement.
11. Avoid overload operation.
12. Do not push in the lock pin while the spindle is running.
13. Be careful those around one while operating.

SPECIFICATIONS

Voltage (by areas)	(110V, 115V, 120V, 127V, 220V, 230V, 240V) ~
No-Load Speed	7000/min
Wheel Size external diam. internal diam.	180mm 22mm
Weight (without cord)	6.3kg

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

STANDARD ACCESSORIES

(1) Grinding Wheel (Resinoid Wheel)	1
(2) Wrench	1
(3) Hexagon Bar Wrench	1
(4) Side Handle	1

Standard accessories are subject to change without notice.

APPLICATIONS

- Removal of casting fin and finishing of various type of steel, bronze and aluminum materials and castings.
- Grinding of welded sections or sections cut by means of welding.
- Grinding of synthetic resins, brick, marble, etc.
- Cutting and scribing of concrete, stone, tile, (use the diamond wheel)

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. Grounding

This tool should be grounded while in use to protect the operator from electric shock. The tool is equipped with a three conductor cord and grounding type plug to fit the proper grounding type receptacle. The green (or green and yellow) conductor in the cords is the grounding wire. Never connect the green (or green and yellow) wire to a live terminal.

3. 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.

4. 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.

5. 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 resounding noise from the steel plate being ground. To eliminate unwanted noise in this instance, place a rubber mat beneath the material to be ground.

6. Mounting the wheel guard

Be sure to mount the wheel guard at an angle that will protect the operator's body from injury by a broken wheel piece.

7. Confirm the lock pin

Confirm that the lock pin is disengaged by pushing lock pin two or two or tree times before switching the power tool on.

8. Confirming and mounting the grinding wheel.

Thoroughly check that a specified grinding wheel free of cracks and splits is mounted. Confirm that the grinding wheel is mounted under the specified condition and is firmly clamped.

For details, refer to the item "Assembling and Disassembling the Grinding Wheel."

9. Confirm the power receptacle

If the power receptacle only loosely accepts the plug, the receptacle must be repaired. Contact the nearest electric store for repair service.

If such a faulty receptacle is used, it may cause overheating, resulting in a serious hazard.

10. Apply a trial run

To start grinding work without checking for possible cracks and splits in the grinding wheel is very dangerous. Prior to start of grinding, direct the grinder in a direction where no one is present, and apply a trial run without fail to confirm that the grinder displays no abnormalities.

Duration of the trial run is as follows:

When grinding wheel is replaced

..... 3 minutes or more

When starting daily work .. 1 minute or more

11. Confirm the grinding wheels

Use the grinding wheels for peripheral speed 4300m/min or more.

PRACTICAL GRINDER APPLICATIONS

1. Since grinding by utilizing only the grinder's own weight is feasible, the grinder should never be pressed forcibly against the plane to be ground. Hold the grinder lightly so that it only slightly contacts the plane to be ground. Heavy pressure will reduce the revolving speed and such deteriorate the finished surface, and phenomena as overload will lead to burning loss of the motor.
2. Do not utilize the grinder entire surface when grinding. Use only its peripheral surface by tilting the wheel at an angle of 15~30°, as shown in **Fig. 1**.
3. When a grinder equipped with a new grinding wheel is pushed forward (direction A), the wheel edge may occasionally cut into the material to be ground. Always pull it backward (direction B) in this instance. However, once the wheel angle has been adequately abraded, both forward and backward operations are permissible.
4. **Switching on the grinder**
Pull the trigger and push the stopper. The switch remains ON even when the trigger is released, promoting efficient, continual operation. By pulling the trigger again, the stopper turns the switch OFF.
5. The provided grinding wheel (resinoid wheel) is rated as Class A grain and # 36 grain size. Accordingly, its range of applications cover a wide variety, proving to be most suitable for heavy grinding of general steel materials. Since the wheel grain size is rather coarse, creating a fine-surfaced finish is very difficult. In this instance, hold the grinder lightly as through trying to lift it, and apply grinding slowly at a constant low speed. Whereby a fine finish similar to that accomplished with a fine-grain grinding wheel is obtainable.
6. **Precaution after use**
Do not lay the grinder down immediately after use in a place where there are many shavings and mush dirt and dust until it has completely stopped revolving.

ASSEMBLING AND DISASSEMBLING THE GRINDING WHEEL (Fig. 2)

Caution: Be sure to switch power OFF and disconnect the attachment plug from the power receptacle to avoid serious trouble.

- (1) Turn the equipment upsidown so that the spindle will be facing up.
- (2) Mount the wheel washer onto the spindle.
- (3) Fit the protuberance of the grinding 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 grinding wheel by tightening the wheel nut with the wrench.

Cautions: Confirm that the grinding 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. **Replacing the grinding wheel**
Replace the grinding wheel when it has been worn out to about 90mm in external diameter.
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 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 the carbon brush with a new one which has 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.
5. **Replacing a carbon brush**
Disassemble the brush cap with a minus-head screwdriver. The carbon brush can then be easily removed.
6. **Cleaning lock pin section**
If the lock pin section becomes dirty, clean it at once.

Note

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

作業上的一般注意事項

1. 工作場所應打掃乾淨，清理妥當。雜亂無章將導致事故。
2. 確保妥適的作業環境。電動工具不可任其風吹雨打。不得在潮濕的地方作業。工作場所需保持充分的亮度。不可在存放易燃液體或氣體的地方使用電動工具。因為電動工具在作業時以及進行開關的通／斷操作時會發出火花，所以嚴禁在存放：漆，塗料，輕質汽油，沖淡劑，汽油，煤氣，膠黏劑以及其他爆炸性物質的地方使用。
3. 謹防觸電事故。應避免身體同地面上的例如：管道，散熱器，爐灶，冰箱等接觸。
4. 不可讓孩童靠近工作場所。與作業無關的訪客也必須保持安全距離。
5. 不使用的電動工具應存放到乾燥而孩童伸手不及的高處，並加鎖保管。
6. 不得使勁用力推壓。電動工具需按設計條件才能有效而安全地工作，絕不可勉強。
7. 妥選使用工具。不可用小型工具或附件去幹重活。不可用於規定外的作業。舉例說，用圓鋸進行伐木打枝或原木鋸切作業。
8. 工作時衣服穿戴要合適。不要讓松散的衣角或寶石類卷入轉動部份。屋外作業時，最好手帶橡膠手套，腳穿防滑膠鞋，同時要戴上能够籠罩長發的工作帽。
9. 純大數的電動工具作業時，均需帶安全眼鏡。進行粉塵飛揚的切削作業時，需帶防塵面罩。
10. 不要拿電線提起電動工具，也不得拉扯電線從電源插座拆除插頭。電線需從熱源和油液隔開，並避免與銳利的邊緣接觸。
11. 作業以安全第一為原則。工件要用夾具或壹鉗卡緊。這樣做，比用手按壓更為可靠，也能够讓雙手專心操作。
12. 作業時脚步要站穩，身體姿勢要保持平衡。
13. 工具應維護妥善，經常保持鋒利、清潔才能充分發揮性能，落實作業安全的要求。應按規定加注潤滑脂，更換附件。線纜應定期檢查，如發現損傷應即委托專業性的

服務單位加以修復。延伸電纜如有損傷應予更換。手柄要保持乾燥，並防止沾附油脂類。

14. 不使用時，維修前以及更換附件（如：刀具，鑽頭，鋸具等）之前，都必須拆卸電源插頭才行。
15. 開動前務必把調整用鍵和扳手類拆除下來。這一點與安全有關，應養成習慣，嚴格遵守。
16. 謹防誤開動。插頭一插上電源插座，指頭就不可隨便接觸電源開關。插頭電源之前，應先確認：開關是否切斷。
17. 屋外作業時，必須使用專用的延伸線纜。
18. 保持高度警覺，充分掌握情況，以正常的判斷力從事作業。疲憊時切不可開動電動工具。
19. 在繼續使用電動工具之前，應詳細檢查各部零件以及防護裝置有無損壞，以便決定能否正常工作，能否發揮正常效能。檢查轉動部份的對準，結合狀態，各零件有無異常，安裝是否妥善以及其他足以給工作帶來不良影響的情況。如防護以及其他零件損傷了。應即委託服務中心或其它適當單位進行修理或更換。開關一發現缺陷，應即委託服務中心加以更換。如開關不能正常地接通或切斷，絕不可使用該電動工具。
20. 不得使用電動工具去進行規定以外的其它作業。
21. 為了保証設計的完整性，電動工具的蓋罩和螺釘類不可隨便拆除。
22. 除非電線插頭已從電源插座拆下，絕不可接觸轉動部份或附件。
23. 應以低於名牌上的額定輸入功率進行作業。否則電動機將過載而影響工作精度，並降低效率。
24. 不可使用溶劑擦拭塑料零件。因為：汽油，沖淡劑，輕質汽油，四氯化碳，酒精，阿摩尼亞以及含氯油液等都會使塑料損傷或發生龜裂，所以應避免使用。擦拭塑料製品，可以使用稍微沾濕了肥皂水的柔布。
25. 電動工具一旦發生任何異常，應毫不遲疑

地商諮詢服務中心。

26. 只能使用HIKOKI指定的更換零件。

27. 本電動工具只在更換碳刷時才可拆解。

使用手提圓盤電磨機時應注意事項

1. 沒有砂輪防護裝置千萬不要使用手提圓盤電磨機這種動力工具。
2. 僅使用與動力工具銘牌上標註的“無負荷 RPM”相同大小的速度作為安全速度下限的砂輪。
3. 正確使用確保操作安全。
4. 安上標準磨輪。
5. 研磨開始之前應試車。

6. 應遠離旋轉的磨輪。
7. 嚴密注意打火花。
8. 使用側柄安全地握緊盤磨機。
9. 不要將旋轉的手提圓盤電磨機放在地板上在無人照管的情況下離去。
10. 遵守使用說明書規定的磨輪更換步驟。
11. 防止過載操作。
12. 當主軸轉動時不要撤下鎖定銷。
13. 操作時當心周圍的人。

規 格

電壓 (按地區)*	(110V, 115V, 120V, 127V, 220V, 230V, 240V) ~
額定輸出功率	900W
無負荷速度	7,000轉/分
砂輪尺寸	
外 徑	180mm
內 徑	22mm
重量(不含線纜)	6.3kg

* 當須改變地區時應檢查產品上的銘牌

標 準 附 件

- (1) 砂輪 (人造的樹脂黏結的砂輪) 1
- (2) 扳 手 1
- (3) 六角頭棒形板手 1
- (4) 側 柄 1

標準附件可能不預先通告而徑予更改。

用 途

○用於去除鑄品毛刺，飛邊等物及拋光各種型號的鋼，青銅，鋁及鑄造品。

- 研磨焊接部分或研磨用鋸接切割的部分。
- 研磨人造樹脂膠，磚塊，大理石等等。
- 研磨和切割混凝土，石頭，瓦片(用金剛輪)。

作 業 之 前

1. 電 源
確認所使用的電源與工具名牌上標示的規格是否相符。
2. 接 地
這個工具在使用時一定要接地以防操作者受到電擊。工具是配備有三導線和接地式

插銷以適應正常接地插座。在電纜中的綠色（或綠和黃）導線是接地線。千萬不要把綠地（綠和黃）線接到火線上。

3. 電源開關

確認電源開關是否切斷。若電源開關接通，則插頭插入電源插座時電動工具將出其不意地立刻轉動，從而招致嚴重事故。

4. 延伸線纜

若作業場所移到離開電源的地點，應使用容量足夠，鎧裝合適的延伸線纜，並且要盡可能地短些。

5. 確認環境條件

確認工作場地安排在符合規定措施的條件下。當研磨薄鋼板時，因工作臺的狀態會產生很大的噪聲，它是因為研磨鋼板引起的。為了消除這種有害的噪聲可在被研磨的材料下放一塊橡皮墊。

6. 砂輪保護的安裝

務請以一個角度安裝輪保護裝置，它將保護操作者的身體免受碎輪片的損傷。

7. 檢查鎖定銷

在打開電源開關之前拔兩、三下鎖定銷，檢查鎖定銷是否被釋放。

8. 砂輪的檢查和安裝

仔細檢查所安裝的砂輪確無破損和裂縫，確認所安裝的砂輪在規定的條件下牢固地被夾持。

細節請參考“砂輪的組裝和拆卸”這一項目。

9. 檢查電源插座

如果電源插座對插頭很鬆，則必需修理插座。修理時可與附近的電氣店聯繫。如果使用了一個不合格的插座，可能引起過熱，產生各種危險。

10. 試行運轉

不檢查砂輪上是否存在著破損和裂縫就開始研磨，將非常危險。所以在開始正式研磨之前使該手提圓盤電磨機在無人的情況下試行運轉，如果沒有問題，就表明此手提圓盤電磨機沒有異常。

試運轉的持續時間如下：

當更換砂輪時…………… 3分鐘以上

當開始日常工作前…………… 1分鐘以上

11. 檢查磨輪

磨輪圓周轉速為4300米／分或更高。

實用手提圓盤電磨機的應用

1. 因為只用手提圓盤電磨機本身的重量研磨是切實可行的，千萬不要把手提圓盤電磨機強壓在被研磨的表面上，輕輕地握住手提圓盤電磨機以使它輕輕地和磨削面接觸。重的壓力將降低旋轉速度並會磨損拋光表面，所引起的過負荷現象將導致馬達燒毀。

2. 研磨時不要利用手提圓盤電磨機的整個表面，如圖1所示使砂輪傾斜15°～30°，只利用它的周邊表面。

3. 當用新砂輪裝備的手提圓盤電磨機向前推行時（方向A），可能偶爾地切進所研磨的材料，這時要立即拉它後退（方向B），然而，一旦輪子的棱角被磨損，前進和後退都可以。

4. 打開盤磨機

拉出起動器並撤下停止器。開關保持開的狀態 恰當起動器被釋放時，提高效能繼續工作。再拉一次起動器就關掉停止器開關。

5. 若提供的砂輪（人造樹脂黏結的砂輪）的額定粒度級是A，粒度尺寸是#36，因此，它的應用範圍涉及面很廣，事實證明它最適合於普通鋼材的重研磨。因為這類鋼材的粒度大小相當粗糙要產生一個細的表面拋光是很困難的，在本例中輕輕地握住手提圓盤電磨機，提起它，慢慢地用一恆定的低速進行研磨，借此，可以得到與用細粒度砂輪時得到的細研磨相類似。

6. 使用後的注意事項

使用後但在完全停止轉動前，不要把手提圓盤電磨機立刻放在有許多細屑和污物和灰塵的地方。

砂輪的裝卸（圖2）

注意：確認開關已斷開並且從電源插座中拔去電源插頭以避免嚴重事故。

- (1) 把裝置倒置使主軸朝上。
- (2) 把墊片裝到主軸上。
- (3) 給砂輪的隆起部配裝砂輪墊圈。

- (4) 把磨輪上部的螺帽擰緊到主軸上。
- (5) 如圖 2 所示，拔下鎖定銷防止主軸轉動。用扳手擰緊磨輪螺帽卡緊磨輪。

注意：確認磨輪安裝是否牢固。

確認鎖定銷被解除鎖定；可在打開電源開關之前通過拔二、三次鎖定銷進行檢查。

3. 電動機的維護

電動機繞線是電動工具的心臟部。應仔細檢查有無損傷，是否被油液或水沾濕。

4. 檢查碳刷（圖 3）

馬達使用碳刷，它是消耗部品，因為使用過久的碳刷將會導致馬達故障，用具有相同碳刷號的新碳刷去更換舊的，碳刷編號用數字表示碳刷何時用舊或接近於磨損極限此外，要經常保持碳刷清潔以及保證它在刷握裡能自由滑動。

5. 更換碳刷

用無頭螺絲刀卸下碳刷蓋，然後可以很容易地取下碳刷。

6. 清洗鎖定銷部分

如鎖定銷部分不清潔，應立即清洗。

注：為求改進，本手冊所載規格可能不預先通告而徑予更改。

維護和檢查

1. 更換磨輪

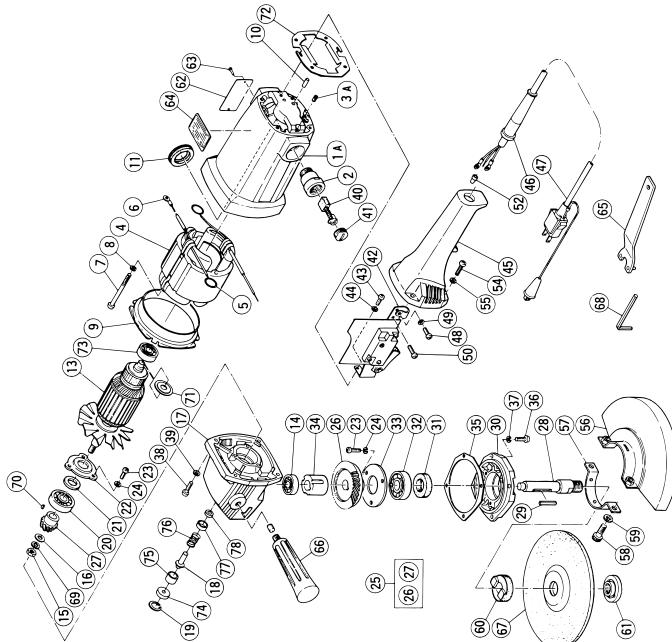
當磨輪磨損其外徑變到90mm左右時應更換磨輪。

2. 檢查安裝螺釘

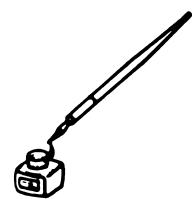
要經常檢查安裝螺釘是否緊固妥善。若發現螺釘鬆了，應立即重新扭緊，否則會導致嚴重的事故。

Item No.	Part Name	Part Name
1A	Housing Ass'y	48 Machine Screw
2	Brush Holder	49 Spring Lock Washer
3A	Hexagon Socket Hd. Set Screw	50 Machine Screw
4	Stator Ass'y	52 Connector
5	Brush Terminal	54 Machine Screw
6	Terminal	55 Spring Lock Washer
7	Machine Screw	56 Wheel Guard Ass'y
8	Spring Lock Washer	57 Set Ring (A)
9	Fan Guide	58 Hexagon Socket Hd. Bolt
10	Bearing Lock	59 Spring Lock Washer
11	Stop Plate	60 Wheel Washer (A)
13	Armature	61 Wheel Nut
14	Ball Bearing (6200ZZCM)	62 Name Plate
15	Lock Nut	63 Rivet
16	Washer	64 Caution Plate
17	Gear Cover Ass'y	65 Wrench Ass'y
18	Lock Pin	66 Side Handle
19	C-Type Retaining Ring	67 Resinoid Wheel
20	Ball Bearing (6301VV/CM)	180mm
21	Felt Packing (A)	68 Hexagon Bar Wrench
22	Bearing Cover (A)	69 Spring Lock Washer
23	Machine Screw	70 Feather Key
24	Spring Lock Washer	3×3×10
25	Gear Ass'y	71 Bearing Washer
26	Gear	72 Fan Guide (B)
27	Pinion	73 Ball Bearing (6200VV)
28	Spindle	74 Dust Seal
29	Feather Key	75 Ring
30	Packing Gland	76 Spring
31	Felt Packing (B)	77 Bush
32	Ball Bearing (6302VV/CM)	78 Felt Packing (C)
33	Bearing Cover (B)	
34	Sleeve	
35	Seal Packing (B)	
36	Machine Screw	
37	Spring Lock Washer	
38	Machine Screw	
39	Spring Lock Washer	
40	Carbon Brush	
41	Brush Cap	
42	Switch	
43	Machine Screw	
44	Spring Lock Washer	
45	Handle	
46	Cord Armor	
47	Cord	

1A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
1A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
1A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
1A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47



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



Koki Holdings Co.,Ltd.

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Code No. C99016334 N
Printed in Japan