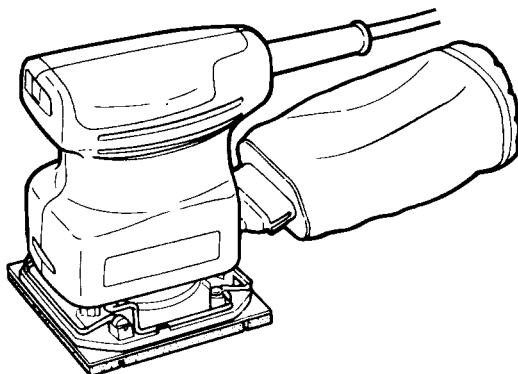


# HITACHI

## INSTRUCTION MANUAL AND SAFETY INSTRUCTIONS FOR ORBITAL SANDER

**MODEL SV 12SF**



**⚠ WARNING:**

Improper and unsafe use of this power tool can result in death or serious bodily injury!

This manual contains important information about product safety. Please read and understand this manual before operating the power tool. Please keep this manual available for others before they use the power tool.



**DOUBLE INSULATION**

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## **IMPORTANT INFORMATION**

Read and understand all of the operating instructions, safety precautions and warnings in the Instruction Manual before operating or maintaining this power tool.

Most accidents that result from power tool operation and maintenance are caused by the failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing a potentially hazardous situation before it occurs, and by observing appropriate safety procedures.

Basic safety precautions are outlined in the "SAFETY" section of this Instruction Manual and in the sections which contain the operation and maintenance instructions.

Hazards that must be avoided to prevent bodily injury or machine damage are identified by WARNINGS on the power tool and in this Instruction Manual.

Never use this power tool in a manner that has not been specifically recommended by HITACHI, unless you first confirm that the planned use will be safe for you and others.

## **MEANINGS OF SIGNAL WORDS**

**WARNING** indicates a potentially hazardous situations which, if ignored, could result in serious personal injury.

**CAUTION** indicates a hazardous situations which, if ignored, could result in moderate personal injury, or could cause machine damage.

**NOTE** emphasizes essential information.

# SAFETY

## **IMPORTANT SAFETY INSTRUCTIONS FOR USING ALL POWER TOOLS**

**⚠ WARNING:** Death or serious bodily injury could result from improper or unsafe use of power tools. To avoid these risks, follow these basic safety instructions:

### **READ ALL INSTRUCTIONS**

#### **1. NEVER TOUCH MOVING PARTS.**

Never place your hands, fingers or other body parts near the tool's moving parts.

#### **2. NEVER OPERATE WITHOUT ALL GUARDS IN PLACE.**

Never operate this tool without all guards or safety features in place and in proper working order. If maintenance or servicing requires the removal of a guard or safety feature, be sure to replace the guard or safety feature before resuming operation of the tool.

#### **3. ALWAYS WEAR EYE AND EAR PROTECTION.**

Protect yourself from flying or expelled wood chips, metal particles or other debris by using safety goggles or equivalent eye protection. Wear ear protection to protect yourself from excessive noise.

#### **4. PROTECT YOURSELF AGAINST ELECTRIC SHOCK.**

Prevent body contact with grounded surfaces such as pipes, radiators, ranges and refrigeration enclosures. Never operate the tool in damp or wet locations.

#### **5. DISCONNECT TOOLS.**

Never leave the tool connected to a power source. Always disconnect the tool from its power source before servicing, inspecting, maintaining, cleaning and before changing or checking any parts.

#### **6. AVOID UNINTENTIONAL STARTING.**

Don't carry the tool while it is connected to its power source. Don't carry the tool with your finger near the power switch. Be sure the power switch is in the "off" position before connecting the tool to its power source.

#### **7. STORE TOOL PROPERLY.**

When not in use, the tool should be stored in a dry place. Keep out of reach of children. Lock-out the storage area.

#### **8. KEEP WORK AREA CLEAN.**

Cluttered areas and benches invite injuries. Clear all work areas and work benches of unnecessary tools, debris, furniture, etc.

## **9. 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 and well ventilated.

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 sites containing lacquer, paint, benzene, thinner, gasoline, gases, adhesive agents, and other materials which are combustible or explosive.

## **10. KEEP CHILDREN AWAY.**

Do not let visitors contact tool or extension cord.

All visitors should be kept safely away from work area.

## **11. DON'T FORCE TOOL.**

It will do the job better and safer at the rate for which it was intended.

## **12. 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.

## **13. 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.

## **14. USE FACE, DUST MASK OR RESPIRATOR IF OPERATION IS DUSTY.**

All persons in the area where power tools are being operated should also wear face, dust masks or respirator.

## **15. DON'T ABUSE CORD.**

Never carry tool by cord or yank it to disconnect from receptacle.

Keep cord from heat, oil and sharp edges.

## **16. 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.

## **17. DON'T OVERREACH.**

Keep proper footing and balance at all times.

## **18. 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.

**19. REMOVE ADJUSTING KEYS AND WRENCHES.**

Keys and adjusting wrenches remove from tool before turning it on.

**20. OUTDOOR USE EXTENSION CORDS.**

When tool is used outdoors, use only extension cords intended for use outdoors and so marked.

**21. STAY ALERT.**

Watch what you are doing. Use common sense. Do not operate tool when you are tired.

Tools should never be used by you if you are under the influence of alcohol, drugs or medication that makes you drowsy.

**22. 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.

**23. NEVER USE A POWER TOOL FOR APPLICATIONS OTHER THAN THOSE SPECIFIED.**

Never use a power tool for applications other than those specified in the Instruction Manual.

**24. HANDLE TOOL CORRECTLY.**

Operate the tool according to the instructions provided herein. Do not drop or throw the tool. Never allow the tool to be operated by children, individuals unfamiliar with its operation or unauthorized personnel.

**25. CHECK FOR LIVE WIRES.**

Avoid the risk of severe electrical shock by checking for live electrical wires that may be hidden by walls, floors or ceilings. The wires should be de-energized before work begins.

**26. KEEP ALL SCREWS, BOLTS AND COVERS TIGHTLY IN PLACE.**

Keep all screws, bolts, and plates tightly mounted. Check their condition periodically.

**27. DO NOT USE POWER TOOLS IF THE PLASTIC HOUSING OR HANDLE ARE CRACKED.**

Cracks in the tool's housing or handle can lead to electric shock. Such tools should not be used until repaired.

**28. BLADES AND ACCESSORIES MUST BE SECURELY MOUNTED TO THE TOOL.**

Prevent potential injuries to yourself or others. Blades, cutting implements and accessories which have been mounted to the tool should be secure and tight.

**29. KEEP MOTOR AIR VENT CLEAN.**

The tool's motor air vent must be kept clean so that air can freely flow at all times. Check for dust build - up frequently.

**30. OPERATE POWER TOOLS AT THE RATED VOLTAGE.**

Operate the power tool at voltages specified on their nameplates.

If using the power tool at a higher voltage than the rated voltage, it will result in abnormally fast motor revolution and may damage the unit and burn up the motor.

**31. NEVER USE A TOOL WHICH IS DEFECTIVE OR OPERATING ABNORMALLY**

If the tool appears to be operating unusually, making strange noises, or otherwise appears defective, stop using it immediately and arrange for repairs by a Hitachi authorized service center.

**32. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.**

Don't leave tool until it comes to a complete stop.

**33. CAREFULLY HANDLE POWER TOOLS.**

Should a power tool be dropped or struck against hard materials inadvertently it may be deformed, cracked, or damaged.

**34. DO NOT WIPE PLASTIC PARTS WITH SOLVENT.**

Solvents such as gasoline, thinner, benzine, carbon tetrachloride, and alcohol may damage and crack plastic parts. Do not wipe them with such solvents. Wipe plastic parts with a soft cloth lightly dampened with soapy water and dry thoroughly.

**35. USE ONLY AUTHENTIC HITACHI REPLACEMENT PARTS.**

Replacement parts not manufactured by Hitachi may void your warranty and can lead to malfunction and resulting injuries. Authentic Hitachi parts are available from your dealer.

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## IMPORTANT SAFETY INSTRUCTIONS FOR USE OF THE ORBITAL SANDER

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**⚠ WARNING:** Death or serious bodily injury could result from improper or unsafe use of orbital sander. To avoid these risks, follow these basic safety instructions:

1. **NEVER** leave the orbital sander on floor and so on while spinning.
2. **NEVER** apply water or lubricating oil, otherwise hazards from electrical shocks may result.
3. **NEVER** push the orbital sander too strongly onto a surface.  
Pushing the orbital sander too strongly may cause the sanding paper to tear or shorten the life of the sander itself.
4. **ALWAYS** operate the orbital sander safely for correct use.  
This orbital sander is a portable dry plane surface sander that was designed for finishing wood and metal surfaces and ground coats.
5. **ALWAYS** securely installing the sanding paper.
6. **ALWAYS** wear a protective mask when operating the orbital sander in confined spaces.

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## REPLACEMENT PARTS

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When servicing use only identical replacement parts.

Repairs should be conducted only by a Hitachi authorized service center.

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## POLARIZED PLUGS

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To reduce the risk of electric shock, this equipment has a polarized plug (one blade is wider than the other).

This plug will fit in a polarized outlet only one way.

If the plug does not fit fully in the outlet, reverse the plug.

If it still does not fit, contact a qualified electrician to install the proper outlet.

Do not change the plug in any way.



## USE OF EXTENSION CORD

Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.

MINIMUM GAGE FOR CORD SETS

		Total Length of Cord in Feet (Meter)			
		0 – 25 (0 – 7.6)	26 – 50 (7.9 – 15.2)	51 – 100 (15.5 – 30.5)	101 – 150 (30.8 – 45.7)
Ampere Rating		AWG			
More Than	Not More Than				
0 – 6		18	16	16	14
6 – 10		18	16	14	12
10 – 12		16	16	14	12
12 – 16		14	12	Not Recommended	

**⚠ WARNING:** Avoid electrical shock hazard. Never use this tool with a damaged or frayed electrical cord or extension cord. Inspect all electrical cords regularly. Never use in or near water or in any environment where electric shock is possible.

## **DOUBLE INSULATION FOR SAFER OPERATION**

To ensure safer operation of this power tool, HITACHI has adopted a double insulation design. "Double insulation" means that two physically separated insulation systems have been used to insulate the electrically conductive materials connected to the power supply from the outer frame handled by the operator. Therefore, either the symbol "⊞" or the words and "Double insulation" appear on the power tool or on the nameplate.

Although this system has no external grounding, you must still follow the normal electrical safety precautions given in this Instruction Manual, including not using the power tool in wet environments.

To keep the double insulation system effective, follow these precautions:

- Only HITACHI AUTHORIZED SERVICE CENTER should disassemble or assemble this power tool, and only genuine HITACHI replacement parts should be installed.
- Clean the exterior of the power tool only with a soft cloth moistened with soapy water, and dry thoroughly.  
Never use solvents, gasoline or thinners on plastic components; otherwise the plastic may dissolve.

**SAVE THESE INSTRUCTIONS  
AND  
MAKE THEM AVAILABLE TO  
OTHER USERS OF THIS TOOL!**

# OPERATION AND MAINTENANCE

## NOTE:

The information contained in this Instruction Manual is designed to assist you in the safe operation and maintenance of the power tool.

Some illustrations in this Instruction Manual may show details or attachments that differ from those on your own power tool.

## NAME OF PARTS

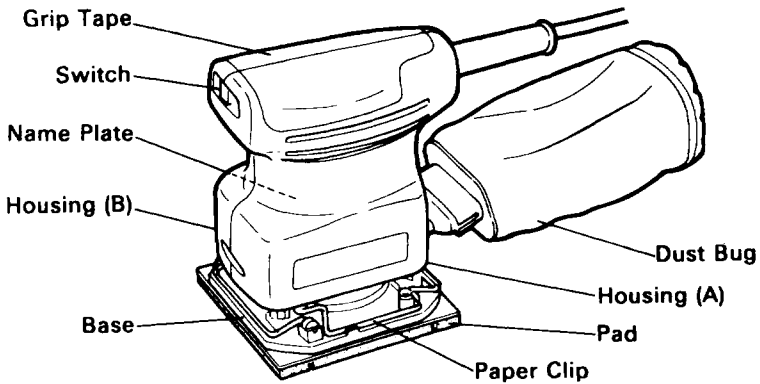


Fig. 1

## SPECIFICATION

Motor	Single-Phase Series Commutator Motor
Power Source	Single-Phase 115V AC 60Hz
Current	1.41 A
No-Load Speed	14000 rpm
Sanding Pad Size	4-3/8" × 4" (110 mm x 100 mm)
Sanding Paper Size	4-1/2" × 5-1/2" (114 mm x 140 mm)
Weight	2.42 lbs (1.1 kg)

## ACCESSORIES

**⚠ WARNING:** Accessories for this power tool are mentioned in this Instruction Manual.

The use of any other attachment or accessory can be dangerous and could cause injury or mechanical damage.

### STANDARD ACCESSORIES

- Sanding paper (quick stick type) (Grain: #100) (Code No. 310349)..... 1  
(4-3/8" × 4" (110 mm × 100 mm))
- Dust bag (Code No. 310339)..... 1

### OPTIONAL ACCESSORIES.....sold separately

- Sanding Paper

Size	Type	Grit No.	Code No.
4-1/2" × 5-1/2" (114mm × 140mm)	Paper clip type	AA60	310341
		AA100	310342
		AA150	310343
4-3/8" × 4" (110mm × 100mm)	Velcro type	AA60	310344
		AA100	310345
		AA150	310346
4-3/8" × 4" (110mm × 100mm)	Quick stick type	AA60	310347
		AA80	310348
		AA100	310349
		AA120	310350
		AA150	310351
5" (125 mm)	Velcro type	AA180	310352
		AA60	310353

- Felt Pad 4-3/8" × 4" (110mm × 100mm) (Code No. 310354)
- Sponge Pad (Velcro type) 4-3/8" × 4" (110mm × 100mm)  
(Code No. 310355)
- Round Rubber Pad 5" (125mm) (Code No. 310356)
- Dust Collector (Model RP30SA)
- Punch Plate (Code No. 310340)

### NOTE:

Accessories are subject to change without any obligation on the part of the HITACHI.

## **APPLICATIONS**

- Finish polishing of woodwork surfaces.
- Sanding surfaces of woodwork or sheet metal prior to painting, etc.

## **PRIOR TO OPERATION**

1. **Power source**  
Ensure that the power source to be utilized conforms to the power source requirements specified on the product nameplate.
2. **Power switch**  
Ensure that the switch is in the OFF position. If the plug is connected to a receptacle while the switch is in the ON position, the power tool will start operating immediately and can cause serious injury.
3. **Extension cord**  
When the work area is far away from the power source, use an extension cord of sufficient thickness and rated capacity (refer to page 9). 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. **Check your working environment**  
Ensure the following before operation;
  - No flammable gas, liquid, or object at worksite.
  - Sanding thin steel sheet may cause a high booming sound.  
In this case, place a rubber mat under the workpiece.
  - Take appropriate noise preventive measures to prevent adverse affects on the environment by electrical noise.
  - Clear the area of children or unauthorized personnel.
6. **Installing the sanding paper**
  - (1) Peel off the paper on the backside of the quick stick sanding paper. Since adhesive agent is applied on the paper on the backside of the quick stick sanding paper, make sure that it is not exposed to dust or other particles. Fig. 2.

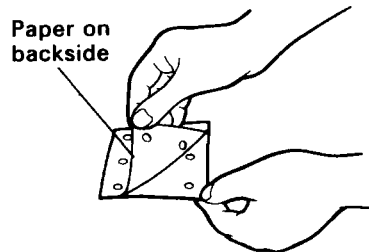


Fig. 2

- (2) To attach the quick stick sanding paper, match its holes to the holes in the quick stick rubber pad.

**NOTE:** Wipe off any dust or oil on the pad before attaching the sanding paper to it.

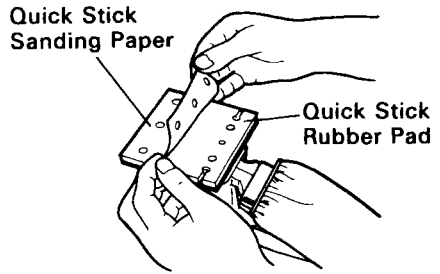


Fig. 3

- (3) Surely attach the quick stick sanding paper by strongly and evenly pressing with your palm.

**NOTE:** If you reattach the quick stick sanding paper several times, its adhesive strength will become lowered. Please try to attach it only once.



Fig. 3

## 7. Installing and removing the dust bag.

- (1) Installing the dust bag  
As shown in Fig. 5, hold the dust gate and push it in the direction of arrow A to attach it to the dust outlet.
- (2) Removing the dust bag  
As shown in Fig. 5, hold the dust gate and pull it in the direction of arrow B to remove it from the dust outlet.

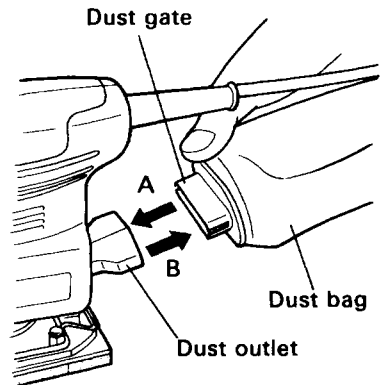


Fig. 5

## **PRACTICAL OPERATING PROCEDURES**

**⚠ WARNING:** Never apply water or grinding fluid when sanding. This could result in electrical shock.

1. How to hold the orbital sander  
While gripping the housing, lightly press the sander against the surface to be sanded so that the sanding paper uniformly contacts the surface, as shown in Fig. 6. DO NOT apply excessive pressure to the sander while sanding. Excessive pressure may cause overload of the motor, reduced service life of the sanding paper, and lowered sanding or polishing efficiency.

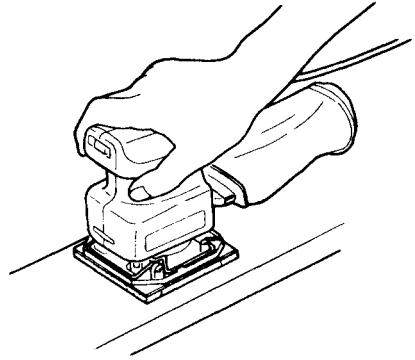


Fig. 6

2. How to move the orbital sander  
For optimum operating efficiency, alternately move the sander forward and backward at constant speed and balance.
3. Switching the sander ON and Off  
The power can be turned on by setting the lever to ON(1) and turned off by setting the lever to OFF(0).

### **NOTE:**

Never turn the power switch ON when the sander is contacting the surface to be sanded.

This is necessary to preclude damage to the workpiece.

The same applies when switching the power OFF.

### **⚠ CAUTION:**

- Immediately after use, always turn the sander off and unplug it.
- Since the sander may suck in dust and debris, be careful not to place it where there is much dust and debris when it is still spinning right after use.

# HOW TO INSTALL THE OPTIONAL ACCESSORIES

**⚠ WARNING:** Be sure to switch power OFF and disconnect the plug to avoid accidents.

1. Installing the Sponge pad (velcro type), the Felt pad and the Round rubber pad.

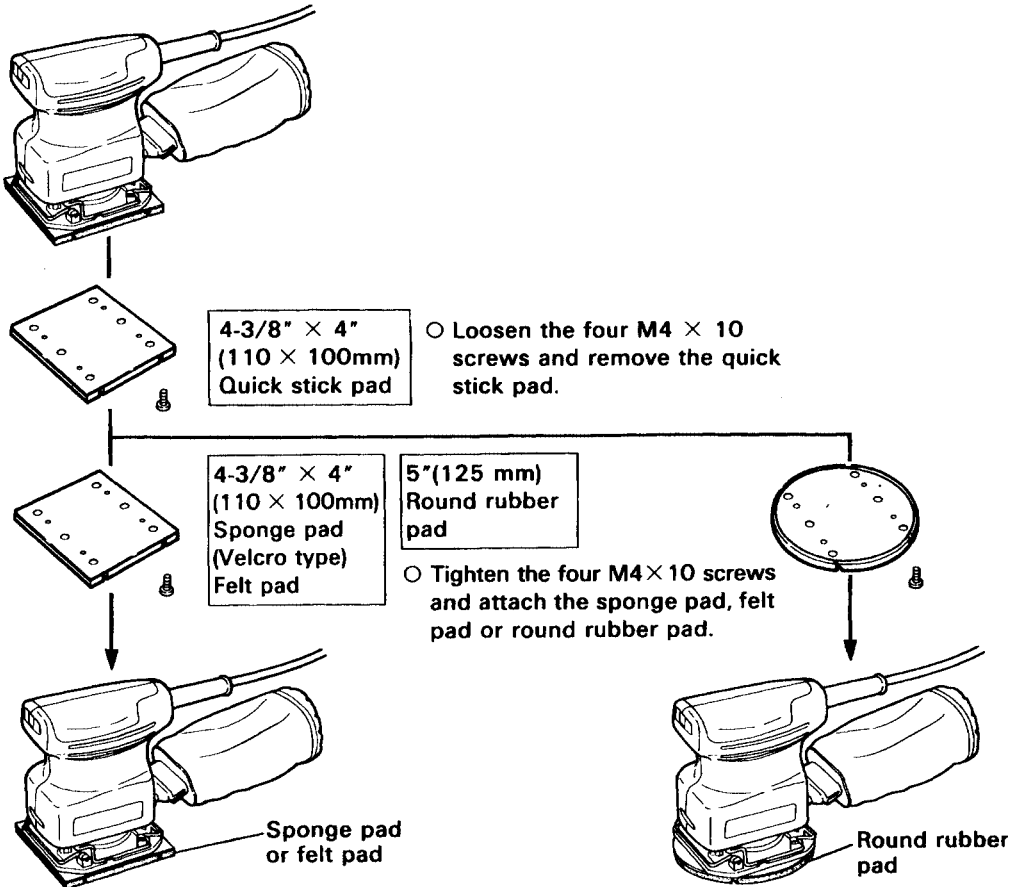


Fig. 7

**⚠ CAUTION:** Replace only the pad and use the other parts just as they are. The sander will vibrate greatly if parts other than the pad are removed or exchanged.



## 2. Installing the sanding paper

[4-1/2" × 5-1/2" (114 × 140 mm) Sanding paper (Clip Type)]

### (1) Bending the sanding paper:

- Position the sander with its pad side facing upward as shown in Fig. 8. Place the sanding paper on the pad so that the center of the sanding paper is aligned with the center of the pad, and bend both ends of the sanding paper at a 90° angle.
- Then, bend both ends again in the manner shown in Fig. 9. The sanding paper is now ready to be installed on the sander.

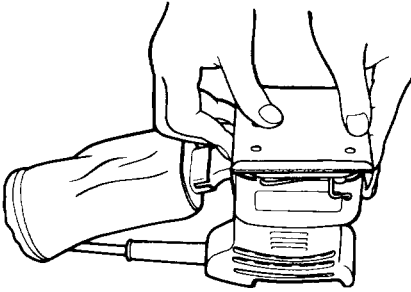


Fig. 8

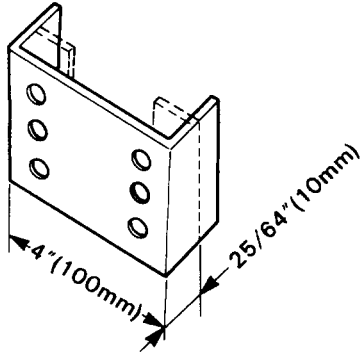


Fig. 9

### (2) Installing the sanding paper:

While ensuring that the cord is not bent, place the sander on a workbench as shown in Fig. 3, and insert one end of the sanding paper (bent section) into the sander. Next, insert the remaining bent section in the same manner.

### **⚠ CAUTION**

The sanding paper must be precisely installed on the pad, ensuring that there is ample tension (leaving no slack). Loosely installed sanding paper could result in unevenly sanded surfaces and/or damage to the sanding paper itself.

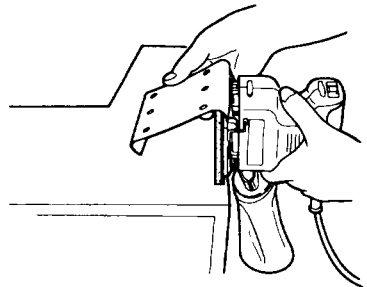


Fig. 10

[4-3/8" × 4" (110 × 100 mm) Sanding paper (Velcro type)]

- (1) Match the holes in the sanding-paper (Velcro type) to the holes in the **Sanding Paper (Velcro Type)** sponge pad (Velcro type).

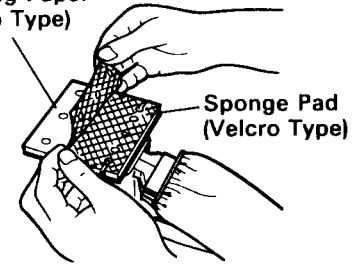


Fig. 11

- (2) Surely attach the sanding paper (Velcro type) by strongly and evenly pressing with your palm. (Fig. 12)

Press strongly

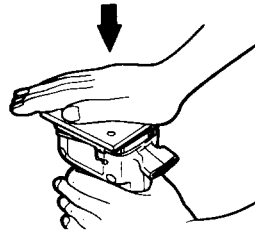


Fig. 12

[5" (125mm) Quick stick sanding paper]

Attach the quick stick sanding paper to the 5" (125mm) Round rubber pad in the same way as shown in "6. Installing the sanding paper" on page 13.

### 3. When collecting dust with Dust collector RP30SA

By connecting Dust collector RP30SA, it is possible to carry out clean sanding.

As shown in Fig. 13, connect the adaptor, hose, and dust collector in that order.

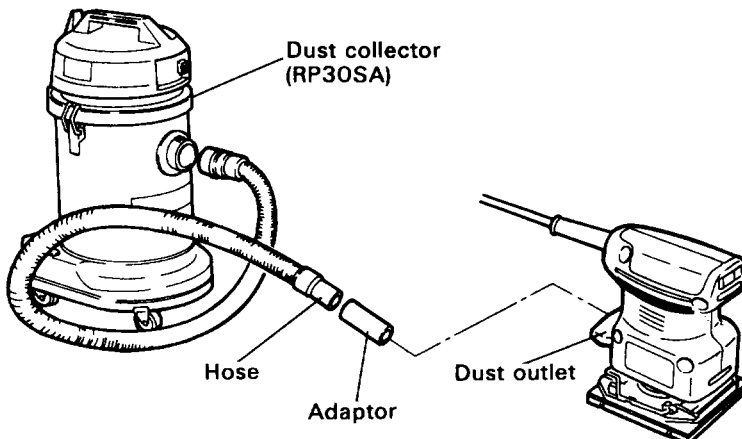


Fig. 13

4. Opening holes in the sanding paper with the punch plate  
Dust collecting capacity will improve if the punch plate is used to open holes in sanding paper without holes.

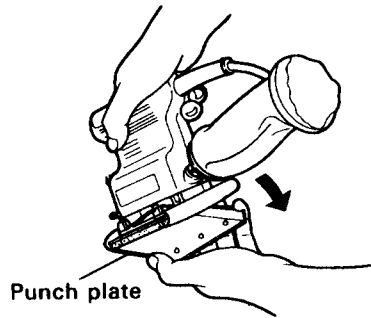


Fig. 14

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## MAINTENANCE AND INSPECTION

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**⚠ WARNING:** Be sure to switch power OFF and disconnect the plug during maintenance and inspection.

1. Emptying and cleaning the Dust Bag  
If the dust bag contains too much saw dust, dust collection will be affected. Empty the dust bag when it gets full. Remove the dust bag, open the fastener, and dispose of the contents.
2. Inspecting the sanding paper  
Since use of worn-out sanding paper will degrade efficiency and cause possible damage to the pad, replace the sanding paper as soon as excessive abrasion is noted.
3. 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.

**⚠ WARNING:** Using this orbital sander with loosen screws is extremely dangerous.

4. Inspecting the carbon brushes  
For your continued safety and electrical protection, carbon brush inspection and replacement on this tool should ONLY be performed by a HITACHI AUTHORIZED SERVICE CENTER.
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 oil or water.

## 6. Keeping after use

When not in use, the sander should be kept in a dry place out of the reach of children.

## **SERVICE AND REPAIRS**

All quality power tools will eventually require servicing or replacement of parts because of wear from normal use. To assure that only authorized replacement parts will be used, all service and repairs must be performed by a HITACHI AUTHORIZED SERVICE CENTER, ONLY.

### **NOTE:**

Specifications are subject to change without any obligation on the part of the HITACHI.