

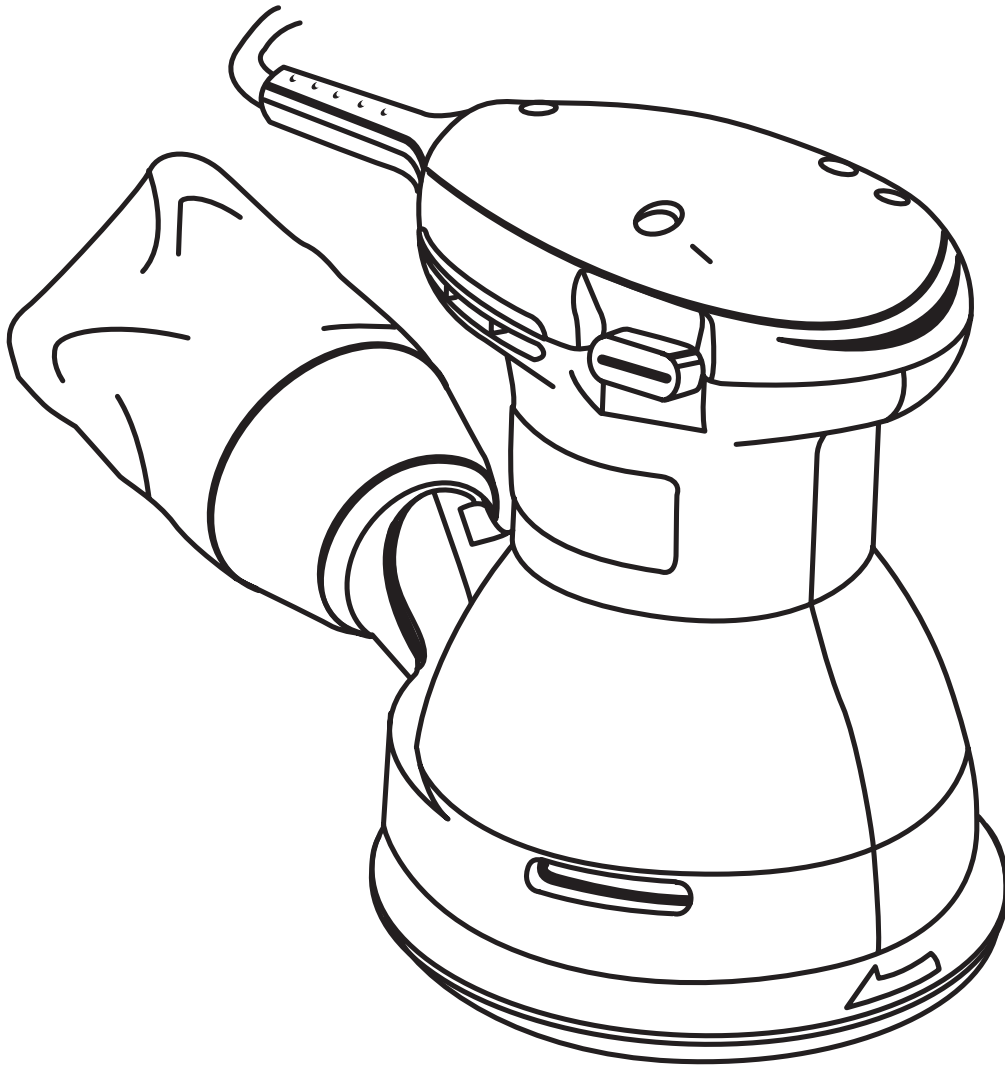
RYOBI®

OPERATOR'S MANUAL

RANDOM ORBIT SANDER

RS280VS

VARIABLE SPEED – DOUBLE INSULATED



Your new sander has been engineered and manufactured to Ryobi's high standard for dependability, ease of operation, and operator safety. Properly cared for, it will give you years of rugged, trouble-free performance.



WARNING: To reduce the risk of injury, the user must read and understand the operator's manual.

Thank you for buying a Ryobi random orbit sander.

SAVE THIS MANUAL FOR FUTURE REFERENCE

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INTRODUCTION

Your sander has many features for making the use of this tool more pleasant and enjoyable. Safety, performance, and dependability have been given top priority in the design of this sander making it easy to maintain and operate.

WARNING:

Do not attempt to use this tool until you have read thoroughly and understand completely the operator's manual. Pay close attention to the safety rules, including Dangers, Warnings, and Cautions. If you use your tool properly and only for what it is intended, you will enjoy years of safe, reliable service.



The operation of any power tool can result in foreign objects being thrown into your eyes, which can result in severe eye damage. Before beginning tool operation, always wear safety goggles or safety glasses with side shields and a full face shield when needed. We recommend Wide Vision Safety Mask for use over eyeglasses or standard safety glasses with side shields. Always wear eye protection which is marked to comply with ANSI Z87.1.



Look for this symbol to point out important safety precautions. It means attention!!! Your safety is involved.

GENERAL SAFETY RULES

SAVE THESE INSTRUCTIONS


WARNING:

Read and understand all instructions. Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury.

WORK AREA

- **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
- **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Power tools may create sparks which may ignite the dust or fumes.
- **Keep bystanders, children, and visitors away while operating a power tool.** Distractions can cause you to lose control.

ELECTRICAL SAFETY

- **Double insulated tools are equipped with 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 a polarized outlet. **Do not change the plug in any way.** Double insulation  eliminates the need for the three-wire grounded power cord and grounded power supply system.
- **Avoid body contact with grounded surfaces, such as pipes, radiators, ranges, and refrigerators.** There is an increased risk of electric shock if your body is grounded.
- **Don't expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- **Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges, or moving parts. Replace damaged cords immediately.** Damaged cords increase the risk of electric shock.
- **When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W".** These cords are rated for outdoor use and reduce the risk of electric shock.

PERSONAL SAFETY

- **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating power tools may result in serious personal injury.

- **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts or drawn into air vents.
- **Avoid accidental starting. Be sure switch is off before plugging in.** Carrying tools with your finger on the switch or plugging in tools that have the switch on, invites accidents.
- **Remove adjusting keys or wrenches before turning the tool on.** A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
- **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the tool in unexpected situations. Do not use on a ladder or unstable support.
- **Use safety equipment. Always wear eye protection.** Dust mask, nonskid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

TOOL USE AND CARE

- **Use clamps or other practical way to secure and support the workpiece to a stable platform.** Holding the work by hand or against your body is unstable and may lead to loss of control.
- **Do not force tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
- **Do not use tool if switch does not turn it on or off.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
- **Disconnect the plug from power source before making any adjustments, changing accessories, or storing the tool.** Such preventive safety measures reduce the risk of starting the tool accidentally.
- **Store idle tools out of the reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
- **Maintain tools with care. Keep cutting tools sharp and clean.** Properly maintained tools with sharp cutting edges are less likely to bind and are easier to control.
- **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
- **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool, may become hazardous when used on another tool.

GENERAL SAFETY RULES

SERVICE

- **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
- **When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual.** Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk of electric shock or injury.

SPECIFIC SAFETY RULES

Hold tool by insulated gripping surfaces when performing an operation where the tool may contact hidden wiring or its cord. Contact with a “live” wire will make exposed metal parts of the tool “live” and shock the operator.

ADDITIONAL SAFETY RULES

- **Know your power tool. Read operator’s manual carefully. Learn its applications and limitations, as well as the specific potential hazards related to this tool.** Following this rule will reduce the risk of electric shock, fire, or serious injury.
- **Always wear safety glasses. Everyday eyeglasses have only impact-resistant lenses; they are NOT safety glasses.** Following this rule will reduce the risk of serious personal injury.
- **Protect your lungs. Wear a face or dust mask if the operation is dusty.** Following this rule will reduce the risk of serious personal injury.
- **Protect your hearing. Wear hearing protection during extended periods of operation.** Following this rule will reduce the risk of serious personal injury.
- **Inspect tool cords periodically and, if damaged, have repaired at your nearest Factory Service Center or other Authorized Service Organization. Constantly stay aware of cord location.** Following this rule will reduce the risk of electric shock or fire.
- **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.** Following this rule will reduce the risk of shock, fire, or serious injury.
- **Do not abuse cord. Never carry the tool by the cord or yank it to disconnect it from the receptacle. Keep cord away from heat, oil, and sharp edges.** Following this rule will reduce the risk of electric shock or fire.
- **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. A wire gage size (A.W.G.) of at least 16 is recommended for an extension cord 100 feet or less in length. A cord exceeding 100 feet is not recommended. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.** An undersized cord will cause a drop in line voltage resulting in loss of power and overheating.
- **Inspect for and remove all nails from lumber before sanding.** Following this rule will reduce the risk of serious personal injury.
- **Drugs, alcohol, medication. Do not operate tool while under the influence of drugs, alcohol, or any medication.** Following this rule will reduce the risk of electric shock, fire, or serious personal injury.
- **Save these instructions. Refer to them frequently and use them to instruct others who may use this tool. If you loan someone this tool, loan them these instructions also.**

WARNING:




Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints,
- crystalline silica from bricks and cement and other masonry products, and
- arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

SYMBOLS

Important: Some of the following symbols may be used on your tool. Please study them and learn their meaning. Proper interpretation of these symbols will allow you to operate the tool better and safer.

SYMBOL	NAME	DESIGNATION/EXPLANATION
V	Volts	Voltage
A	Amperes	Current
Hz	Hertz	Frequency (cycles per second)
W	Watt	Power
min	Minutes	Time
~	Alternating Current	Type or a characteristic of current
n_0	No Load Speed	Rotational speed, at no load
	Class II Construction	Designates double-insulated construction tools
.../min	Revolutions or Reciprocation Per Minute	Revolutions, strokes, surface speed, orbits etc. per minute
	Safety Alert	Indicates danger, warning or caution. It means attention!!! Your safety is involved.
	Wet Conditions Alert	Do not expose to rain or use in damp locations.

The purpose of safety symbols is to attract your attention to possible dangers. The safety symbols, and the explanations with them, deserve your careful attention and understanding. The safety warnings do not by themselves eliminate any danger. The instructions or warnings they give are not substitutes for proper accident prevention measures.

SYMBOL MEANING



DANGER: Failure to obey a safety warning will result in serious injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock and personal injury.



WARNING: Failure to obey a safety warning can result in serious injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock and personal injury.



CAUTION: Failure to obey a safety warning may result in property damage or personal injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock and personal injury.

NOTE: Advises you of information or instructions vital to the operation or maintenance of the equipment.

SAVE THESE INSTRUCTIONS

SPECIFICATIONS

Sanding Disc Diameter	5 in. (12.7 cm)
Motion	Random Orbit
Orbit Diameter	3/32 in. (2.4 mm)
No Load Speed	7,000 - 12,000 Orbits/Min.
Input	120 Volts, 60 Hz, AC only, 2.8 amps
Net Weight	3-1/2 lbs. (1.6 kg.)

UNPACKING

INSTRUCTIONS

Your sander has been shipped completely assembled.

- Carefully remove the tool and accessories from the box. Make sure that all items listed in the packing list are included.
- Inspect the tool carefully to make sure no breakage or damage occurred during shipping.
- Do not discard the packing material until you have carefully inspected and satisfactorily operated the tool.
- If any parts are damaged or missing, please call 1-800-525-2579 for assistance.

PACKING LIST

Random Orbit Sander
Sandpaper (3 sheets)
Conversion Pad
Operator's Manual

WARNING:

If any parts are missing do not operate your tool until the missing parts are replaced. Failure to do so could result in possible serious personal injury.

APPLICATIONS

You may use your sander for the purposes listed below:

- Sanding wood surfaces.
- Sanding steel surfaces.
- Removing rust from steel surfaces.

FEATURES

DOUBLE INSULATION

Double insulation is a concept in safety in electric power tools, which eliminates the need for the usual three-wire grounded power cord. All exposed metal parts are isolated from the internal metal motor components with protecting insulation. Double insulated tools do not need to be grounded.



WARNING:

The double insulated system is intended to protect the user from shock resulting from a break in the tool's internal wiring. Observe all normal safety precautions to avoid electrical shock.

Important: Servicing of a tool with double insulation requires extreme care and knowledge of the system and should be performed only by a qualified service technician. For service, we suggest you return the tool to your nearest authorized service center for repair. Always use original factory replacement parts when servicing.

ELECTRIC MOTOR

Your sander has a precision built electric motor. **It should be connected to a power supply that is 120 volts, 60 Hz, AC only (normal household current).** Do not operate this tool on direct current (DC). A substantial voltage drop will cause a loss of power and the motor will overheat. If your tool does not operate when plugged into an outlet, double-check the power supply.

SWITCH

Your sander has a conveniently located slide switch.

VARIABLE SPEED

The variable speed feature allows you to operate the sander at different speeds.

BACKING PAD

The backing pad on the sander provides the capability to use sanding discs with pressure sensitive adhesive backing material.

CONVERSION PAD

The conversion pad supplied with the sander converts the backing pad and allows you to use Velcro® type sanding discs.

RANDOM ORBIT

The random orbit motion provides overlapping sanding movements by combining orbital and turning motion. These overlapping sanding movements provide fast cutting action with excellent sanding results.

ERGONOMIC DESIGN

The design of the sander provides for easy handling. It is designed for comfort and ease of grasp when operating in different positions and at different angles.

FEATURES

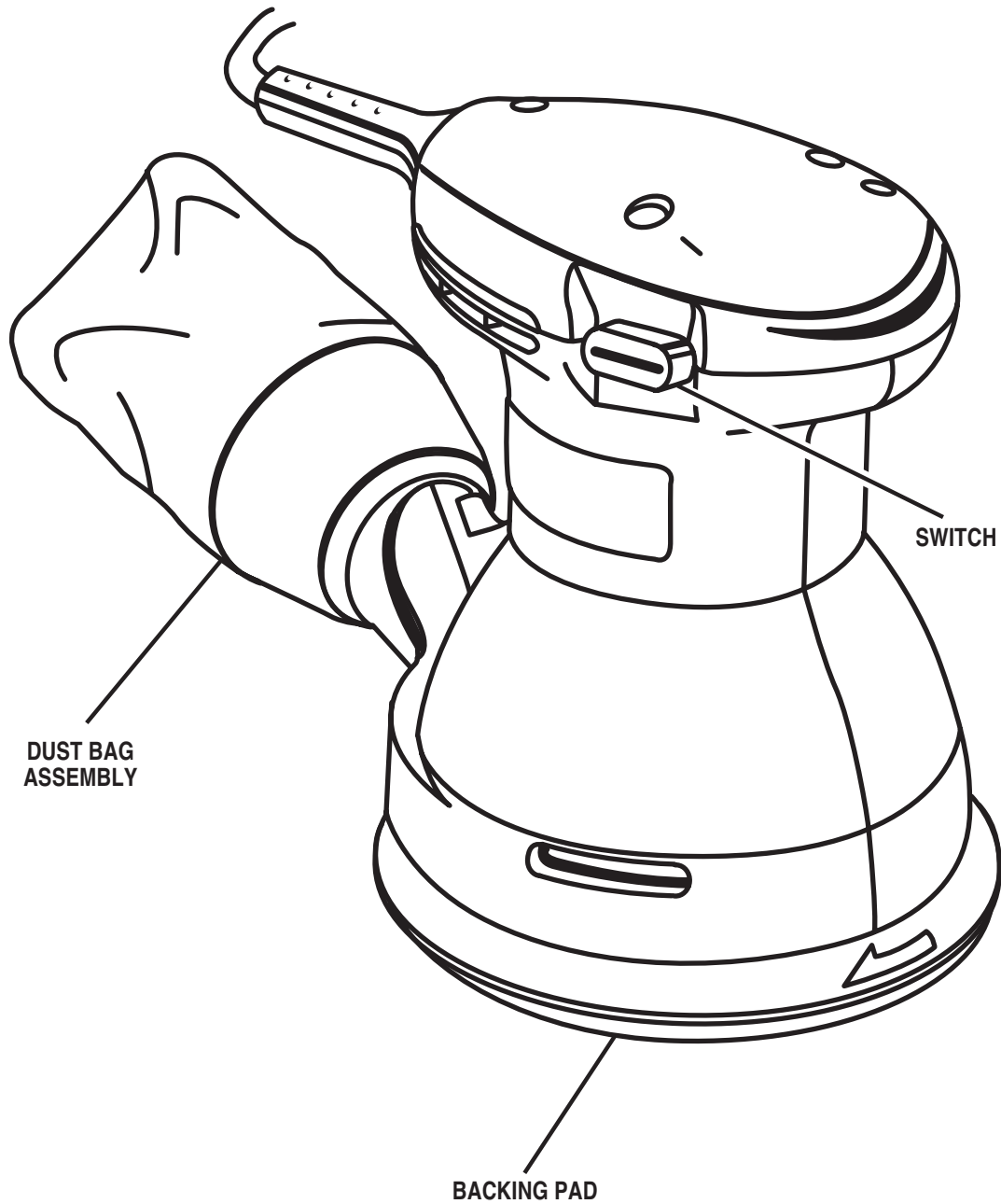


Fig. 1

⚠ WARNING:

Do not attempt to modify this tool or create accessories not recommended for use with this tool. Any such alteration or modification is misuse and could result in a hazardous condition leading to possible serious personal injury.

OPERATION

⚠ WARNING:

Always wear safety goggles or safety glasses with side shields when operating this tool. Failure to do so could result in dust, shavings, or loose particles being thrown into your eyes, resulting in possible serious injury.

TURNING THE SANDER ON/OFF

See Figure 2.

Follow these directions to turn the sander on and off.

- *To turn the sander on:* Slide the switch to the left (I).
- *To turn the sander off:* Slide the switch to the right (O).

ADJUSTING THE SPEED

See Figure 3.

The variable speed feature allows the sander to operate at speeds that can be adjusted by rotating the dial from A to F. The dial is conveniently located on the motor housing, allowing operator control of disc speed.

Follow these directions to adjust the speed.

- *To increase the speed:* Turn the dial to a higher setting (towards F).
- *To decrease the speed:* Turn the dial to a lower setting (towards A).

SELECTING SANDING DISCS

Selecting the correct size grit and type of sanding disc is an extremely important step in achieving a high quality sanded finish. Aluminum oxide, silicon carbide, and other synthetic abrasives are best for power sanding. Natural abrasives, such as flint and garnet are too soft for power sanding.

In general, when sanding, coarse grit removes the most material and fine grit produces the best finish. The condition of the surface to be sanded determines which grit will do the best job. If the surface is rough, start with a coarse grit and sand until the surface is uniform. Then use medium grit to remove scratches left by the coarser grit. Finally, use finer grit for finishing the surface. Always continue sanding with each grit until the surface is uniform.

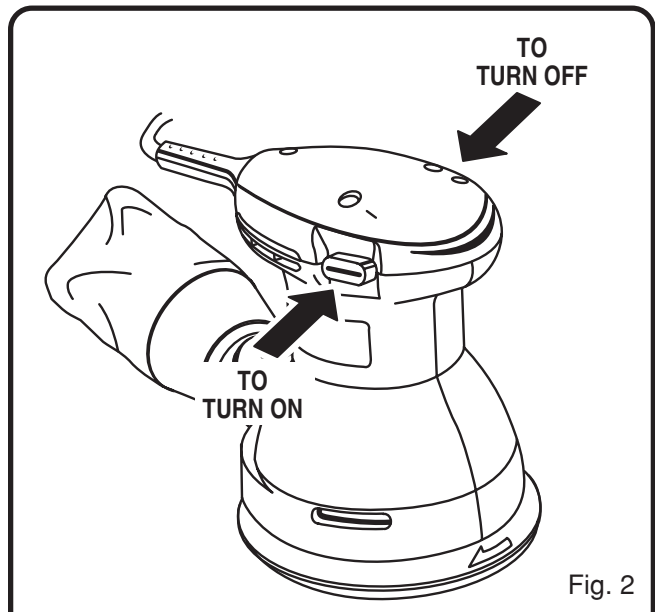


Fig. 2

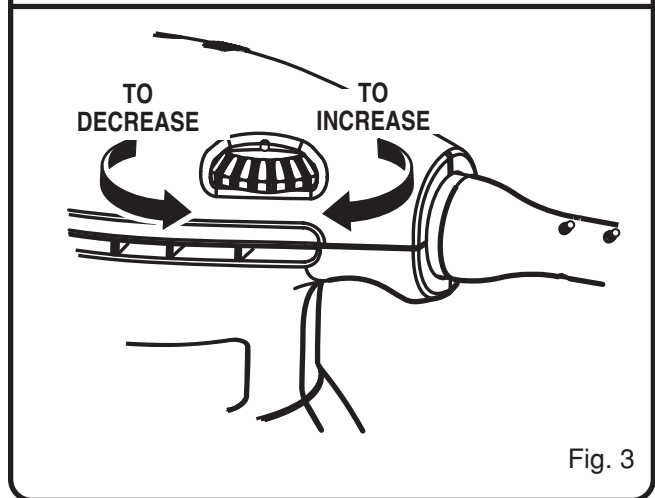


Fig. 3

OPERATION

ATTACHING ADHESIVE SANDING DISCS

See Figure 4.

Follow these directions to attach adhesive sanding discs.

- Unplug the sander.

⚠ WARNING:

Failure to unplug the tool could result in accidental starting causing possible serious injury.

- Peel the paper backing from the sanding disc.
- Align the holes in the sanding disc with the holes in the backing pad.

NOTE: You must line up the holes in the sanding disc with the holes in the backing pad in order for the dustless feature to function properly.

- Press the sticky side of the sanding disc against the backing pad as firmly as possible.

NOTE: We recommend that you clean the backing pad occasionally by brushing it lightly with a small brush. Dust buildup on the backing pad could cause the sanding disc to not stick properly.

ATTACHING VELCRO® SANDING DISCS

See Figure 5.

Follow these directions to attach Velcro sanding discs.

- Unplug the sander.

⚠ WARNING:

Failure to unplug the tool could result in accidental starting causing possible serious injury.

- Peel the paper backing from the conversion pad.
- Align the holes in the conversion pad with the holes in the backing pad.

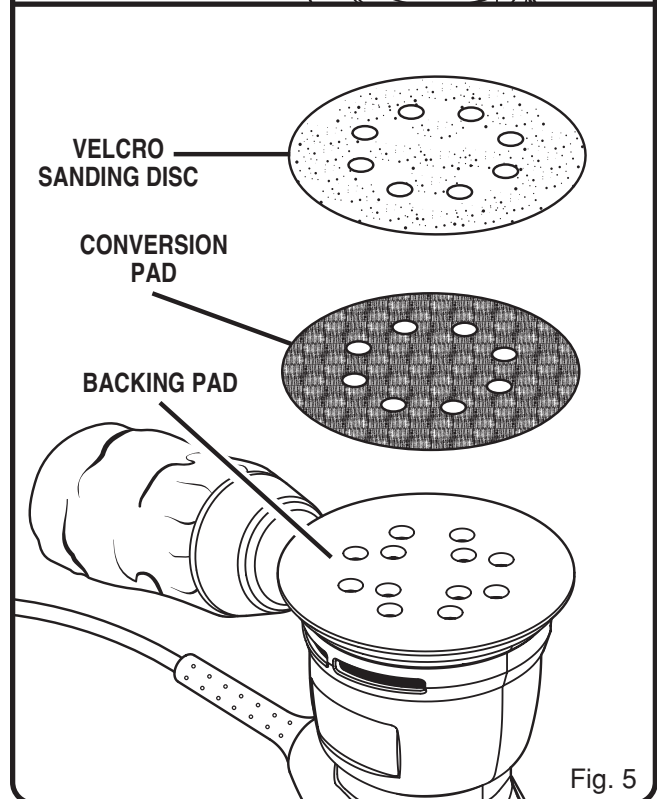
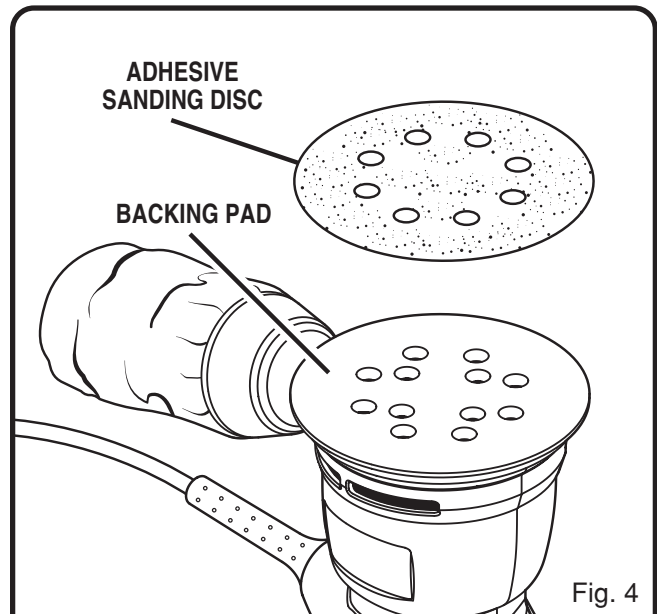
NOTE: You must line up the holes in the conversion pad with the holes in the backing pad in order for the dustless feature to function properly.

- Press the sticky side of the conversion pad against the backing pad as firmly as possible.
- Align the holes in the Velcro sanding disc with the holes in the conversion pad.

NOTE: You must line up the holes in the sanding disc with the holes in the conversion pad in order for the dustless feature to function properly.

- Press the fuzzy side of the sanding disc against the conversion pad as firmly as possible.

NOTE: You can reuse Velcro type sanding discs for the life of the sanding abrasive. We recommend that you clean the sanding disc backing and the conversion pad occasionally by brushing them lightly with a small brush to provide for their best adhesion.



OPERATION

USING THE DUST BAG ASSEMBLY

The dust bag assembly provides a dust collection system for the sander. Sanding dust is drawn up through the holes of the sanding disc and collected in the dust bag during sanding.

TO ATTACH THE DUST BAG ASSEMBLY

See Figure 6.

Follow these directions to attach the dust bag assembly.

- Unplug the sander.

⚠ WARNING:

Failure to unplug the tool could result in accidental starting causing possible serious injury.

- Slide the dust bag assembly onto the blower exhaust on the sander using a slight twisting motion.

TO EMPTY THE DUST BAG ASSEMBLY

See Figure 6 and 7.

For more efficient operation, empty the dust bag when it is no more than half full. This will permit the air to flow through the bag better. Always empty and clean the dust bag thoroughly upon completion of a sanding operation and before placing the sander in storage.

⚠ WARNING:

Collected sanding dust from sanding surface coatings such as polyurethanes, linseed oil, etc. can self-ignite in your sander dust bag or elsewhere and cause fire. To reduce the risk of fire always empty your dust bag frequently (10-15 minutes) while sanding and never store or leave a sander without totally emptying its dust bag. Also follow the recommendations of the coatings manufacturers.

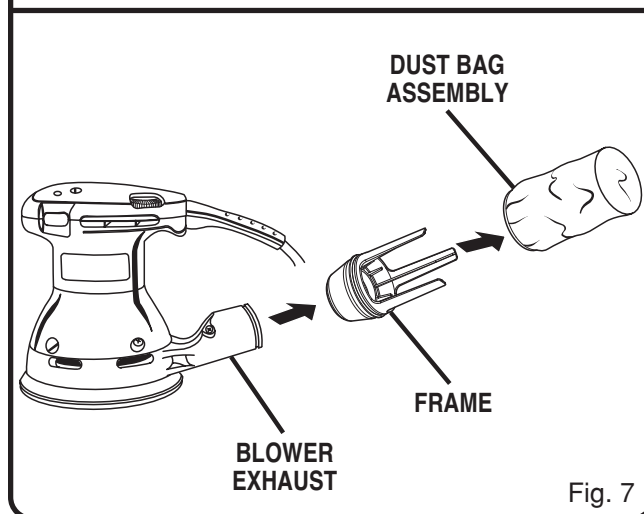
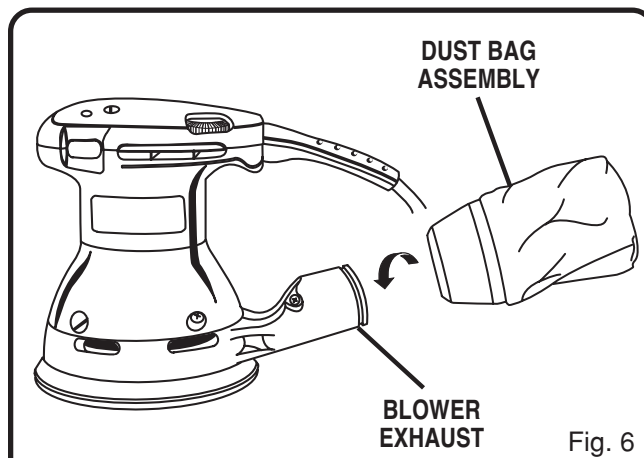
Follow these directions to empty the dust bag assembly.

- Unplug the sander.

⚠ WARNING:

Failure to unplug the tool could result in accidental starting causing possible serious injury.

- Remove the dust bag assembly from the sander.
- Remove the dust bag from the frame.
- Shake out the dust.
- Replace the dust bag on the frame.
- Replace the dust bag assembly on the sander.



OPERATION

ATTACHING THE SANDER TO A VACUUM

See Figure 8.

When sanding for an extended period of time, you can easily attach the dust collection system of the sander to a vacuum.

Follow these steps to attach the sander to a vacuum.

- Unplug the sander.

⚠ WARNING:

Failure to unplug the tool could result in accidental starting causing possible serious injury.

- Remove the dust bag assembly from the sander.
- Attach the vacuum hose to the blower exhaust on the sander.

NOTE: The vacuum hose fits inside the blower exhaust. The figure illustrates a standard 1-1/4 in. (3.2 cm) vacuum connection.

- Connect the sander and vacuum to a power supply.

OPERATING THE SANDER

See Figures 9 and 10.

Follow these steps to operate the sander.

- Secure the work to prevent it from moving under the sander.

⚠ WARNING:

Unsecured work could be thrown towards the operator causing injury.

⚠ WARNING:

Keep your head away from the sander and the sanding area. Your hair could be drawn into the sander causing serious injury.

- Place the sander on the workpiece so that all of the sanding disc surface is in contact with the workpiece.

⚠ CAUTION:

Be careful not to let your hand cover the air vents.

- Start the sander and move it slowly over the workpiece.
- Make successive passes in parallel lines, circles, or crosswise movements.

NOTE: The front edge of the sander allows for flush sanding. See Figure 10.

- Turn the sander off and wait until the sanding disc comes to a complete stop before removing it from the workpiece.

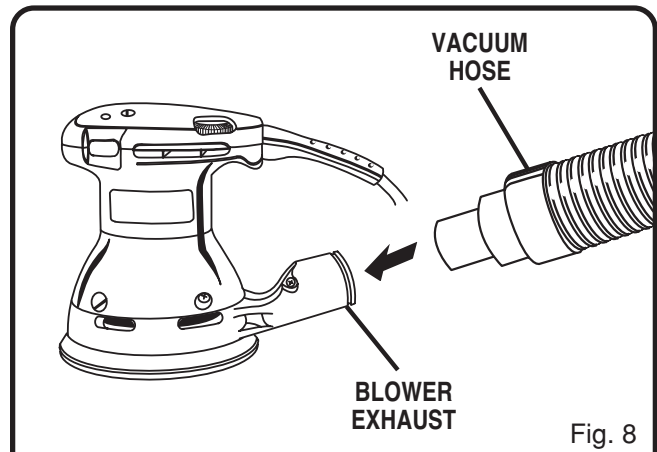


Fig. 8

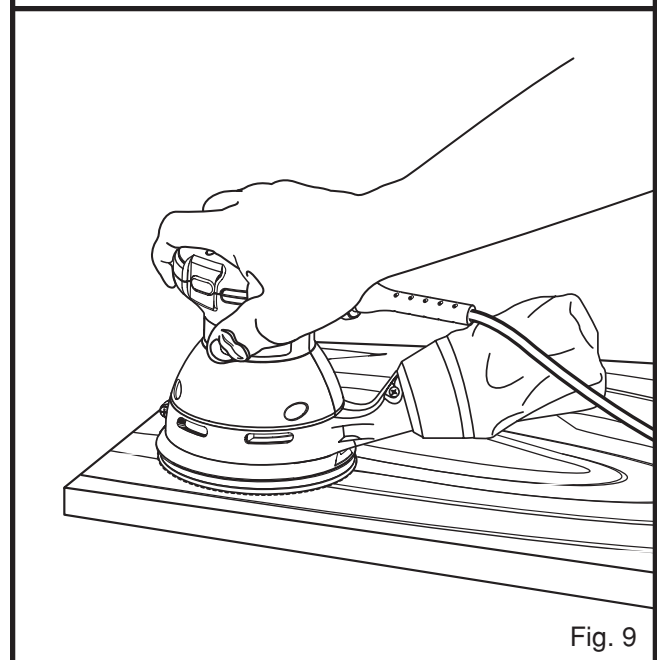


Fig. 9

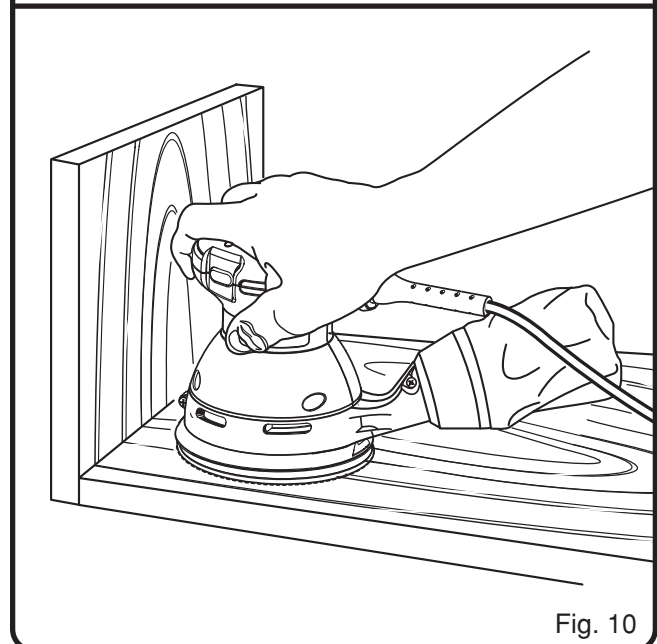


Fig. 10

OPERATION

HELPFUL TIPS

■ **Do not force the sander.** The weight of the unit supplies adequate pressure; therefore, let the sanding disc and sander do the work. Applying additional pressure only slows the motor, rapidly wears the sanding disc, and greatly reduces the sander speed. Excessive pressure will overload the motor causing possible damage from motor overheating and can result in inferior work. Any finish or resin on the wood may soften from the frictional heat.

■ **Do not sand on one spot too long.** The sander's rapid action may remove too much material, making the surface uneven. Extended periods of sanding may tend to overheat the motor. If this occurs, turn off the sander and wait until the sanding disc comes to a complete stop. Then remove the sander from the workpiece. Remove your hand from the vent area, remove the sanding disc, then (with your hand removed from the vent area) turn on the sander and run it free, without a load, to cool the motor.

MAINTENANCE

WARNING:

When servicing use only identical Ryobi replacement parts. Use of any other parts may create a hazard or cause product damage.

GENERAL

Avoid using solvents when cleaning plastic parts. Most plastics are susceptible to damage from various types of commercial solvents and may be damaged by their use. Use clean cloths to remove dirt, carbon dust, etc.

WARNING:

Do not at any time let brake fluids, gasoline, petroleum-based products, penetrating oils, etc. come in contact with plastic parts. They contain chemicals that can damage, weaken, or destroy plastic.

When electric tools are used on fiberglass boats, sports cars, wallboard, spackling compounds, or plaster, it has been found that they are subject to accelerated wear and possible premature failure, as the fiberglass chips and grindings are highly abrasive to bearings, brushes, commutators, etc. Consequently, it is not recommended that this tool be used for extended work on any fiberglass material, wallboard, spackling compounds, or plaster. If, however, you do work with any of these materials, it is extremely important that the tool is cleaned frequently by blowing with an air jet.

WARNING:

Always wear safety goggles or safety glasses with side shields during power tool operation or when blowing dust. If operation is dusty, also wear a dust mask.



OPERATOR'S MANUAL

RANDOM ORBIT SANDER

RS280VS

VARIABLE SPEED – DOUBLE INSULATED

EXTENSION CORD CAUTION

When using a power tool at a considerable distance from a power source, be sure to use an extension cord that has the capacity to handle the current the tool will draw. An undersized cord will cause a drop in line voltage, resulting in overheating and loss of power. Use the chart to determine the minimum wire size required in an extension cord. Only round jacketed cords should be used.

When working with a tool outdoors, use an extension cord that is designed for outside use. This is indicated by the letters "WA" on the cord's jacket.

Before using any extension cord, inspect it for loose or exposed wires and cut or worn insulation.

Cord Length	Wire Size (A.W.G.)					
	0-2.0	2.1-3.4	3.5-5.0	5.1-7.0	7.1-12.0	12.1-16.0
25'	16	16	16	16	14	14
50'	16	16	16	14	14	12
100'	16	16	14	12	10	—

CAUTION: Keep the extension cord clear of the working area. Position the cord so that it will not get caught on lumber, tools or other obstructions while you are working with a power tool.

***Used on 12 gauge - 20 amp circuit.*

• SERVICE

Now that you have purchased your tool, should a need ever exist for repair parts or service, simply contact your nearest Ryobi Authorized Service Center. Be sure to provide all pertinent facts when you call or visit. Please call 1-800-525-2579 for your nearest Ryobi Authorized Service Center. You can also check our Web site at www.ryobitools.com for a complete list of Authorized Service Centers.

• MODEL NO. AND SERIAL NO.

The model number of this tool will be found on a plate attached to the motor housing. Please record the model number and serial number in the space provided below.

• HOW TO ORDER REPAIR PARTS

WHEN ORDERING REPAIR PARTS,
ALWAYS GIVE THE FOLLOWING INFORMATION:

- MODEL NUMBER RS280VS
- SERIAL NUMBER _____

RYOBI TECHNOLOGIES INC.

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