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1-800-4-DEWALT • www.dewalt.com

**INSTRUCTION MANUAL
GUIDE D'UTILISATION
MANUAL DE INSTRUCCIONES**

INSTRUCTIVO DE OPERACIÓN. CENTROS DE SERVICIO Y PÓLIZA DE GARANTÍA. **ADVERTENCIA:** LEÁSE ESTE INSTRUCTIVO ANTES DE USAR EL PRODUCTO.

DEWALT®

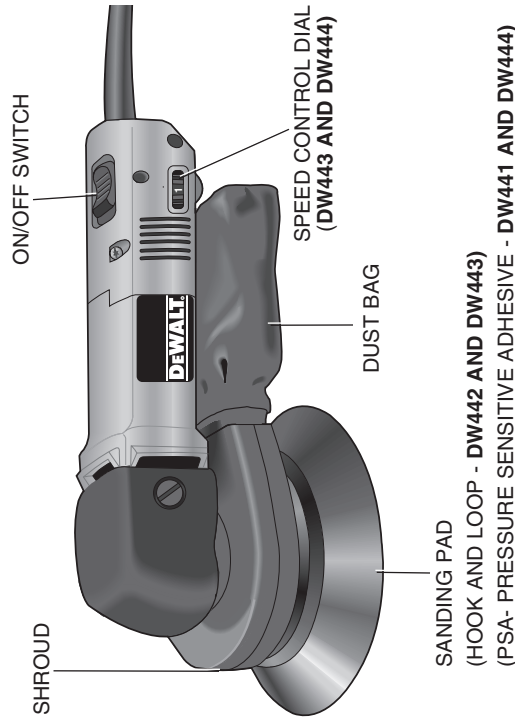
DW441, DW442, DW443, DW444

Right Angle Random Orbit Sanders

Ponceuses orbitales excentriques à angle droit

Lijadoras orbitales de movimiento múltiple de ángulo recto

IF YOU HAVE ANY QUESTIONS OR COMMENTS ABOUT THIS OR ANY DEWALT TOOL, CALL US TOLL FREE AT:
1-800-4-DEWALT (1-800-433-9258)



⚠ WARNING! Read all instructions. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury. The term “power tool” in all of the warnings listed below refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

SAVE THESE INSTRUCTIONS

1) WORK AREA SAFETY

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

2) ELECTRICAL SAFETY

- a) **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.
- b) **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
- c) **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- d) **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock. Replace or repair damaged cords. Make sure your extension cord is in good condition. Use only 3-wire extension cords that have 3-prong grounding-type plugs and 3-pole receptacles that accept the tool's plug.

English

- e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock. 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. The following table shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

		Minimum Gauge for Cord Sets			
Volts	Total Length of Cord in Feet	0-25	26-50	51-100	101-150
120V	0-25			51-100	101-150
240V	0-50		51-100	101-200	201-300
Ampere Rating		AWG			
More Than	Not more Than				
0 - 6	18	16	16	16	14
6 - 10	18	16	14	14	12
10 - 12	16	16	14	14	12
12 - 16	14	12	Not Recommended		

3) PERSONAL SAFETY

- a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
- b) **Use safety equipment. Always wear eye protection.** Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- c) **Avoid accidental starting. Ensure the switch is in the off-position before plugging in.** Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.

- d) **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- e) **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
- f) **Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts. Air vents often cover moving parts and should also be avoided.
- g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of these devices can reduce dust-related hazards.

4) POWER TOOL USE AND CARE

- a) **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
- b) **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- c) **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
- d) **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
- e) **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condi-**

tion that may affect the power tools operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.

- f) *Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.*
- g) *Use the power tool, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.*

5) SERVICE

- a) *Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.*

Special Safety Instructions For Sanders

- *Hold power tools by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord. Contact with a "live" wire will make exposed metal parts of the tool "live" and shock the operator.*
- *Always wear eye protection and a respirator when sanding.*
- *Sanding of lead based paint is not recommended. See page 5 for additional precautions when sanding paint.*
- *Do not operate the unit without the dust shroud.*
- *Do not operate this tool for long periods of time. Vibration caused by the operating action of this tool may cause permanent injury to fingers, hands, and arms. Use gloves to provide extra cushion, take frequent rest periods, and limit daily time of use.*
- *Clean out your tool often, especially after heavy use. Dust and grit containing metal particles often accumulate on interior surfaces and could create a risk of serious injury, electric shock or electrocution.*

⚠ WARNING: Always use eye protection. All users and bystanders must wear eye protection that conforms to ANSI Z87.1.

⚠ WARNING: ALWAYS use safety glasses. Everyday eyeglasses are NOT safety glasses. Also use face or dust mask if cutting operation is dusty. **ALWAYS WEAR CERTIFIED SAFETY EQUIPMENT:**

- ANSI Z87.1 eye protection (CAN/CSA Z94.3),
- ANSI S12.6 (S3.19) hearing protection,
- NIOSH/OSHA/MSHA respiratory protection.

⚠ 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:

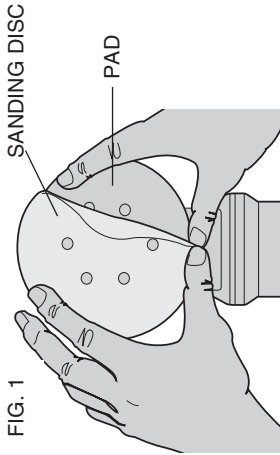
- lead from lead-based paints,
- crystalline silica from bricks and cement and other masonry products, and
- arsenic and chromium from chemically-treated lumber (CCA).

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.

- **Avoid prolonged contact with dust from power sanding, sawing, grinding, drilling, and other construction activities. Wear protective clothing and wash exposed areas with soap and water.** Allowing dust to get into your mouth, eyes, or lay on the skin may promote absorption of harmful chemicals.

⚠ WARNING: Use of this tool can generate and/or disburse dust, which may cause serious and permanent respiratory or other injury. Always use NIOSH/OSHA approved respiratory protection appropriate for the dust exposure. Direct particles away from face and body.

⚠ WARNING: Always wear proper personal hearing protection that conforms to ANSI S12.6 (S3.19) during use. Under some conditions and duration of use, noise from this product may contribute to hearing loss.



- The label on your tool may include the following symbols. The symbols and their definitions are as follows:

V..... volts	A..... amperes
Hz..... hertz	W..... watts
min minutes	~ alternating current
⎓ direct current	n ₀ no load speed
Ⓜ Class I Construction (grounded)	⊕ earthing terminal
Ⓜ Class II Construction (double insulated)	⚠ safety alert symbol
BPM beats per minute/min..... revolutions or reciprocation per minute

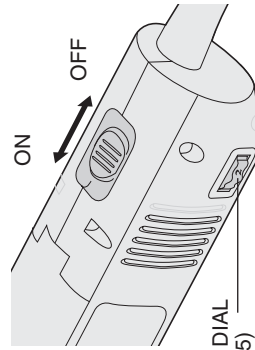


FIG. 2

SPEED CONTROL DIAL (SETTINGS 1 - 5)

SAVE THESE INSTRUCTIONS FOR FUTURE USE

Motor

Be sure your power supply agrees with nameplate marking. 120 AC means your tool may be operated only with alternating current and never with direct current. Voltage decrease of more than 10% will cause loss of power and overheating. All tools are factory tested; if this tool does not operate, check the power supply.

Attaching Sanding Discs

Your sander is designed to use 6" sanding discs with the 6 hole dust extraction pattern.

Hook and Loop (DW442 and DW443)

PSA - Pressure Sensitive Adhesive (DW441 and DW444)

To attach paper to the sanding pad:

1. Turn off and unplug tool.
2. Turn the sander over so that the sanding pad is facing upward.
3. (DW441 and DW444 only) Clean dust from vinyl pad face.
4. Hold the pad with one hand to keep it from rotating.

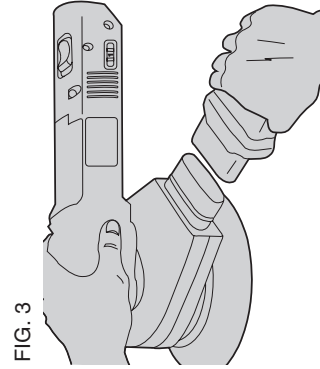


FIG. 3

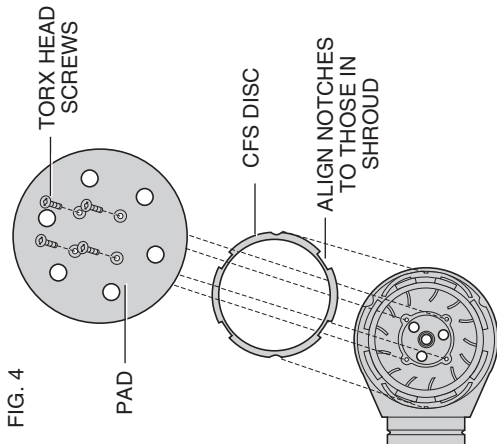


FIG. 4

5. With the other hand, align the holes and place the disc directly on top of the pad (see Fig. 1).

Switch (Fig. 2)

To turn the unit on, slide the switch forward (the symbol "I" will be visible.) To turn the unit off, slide the switch back (the symbol "O" will be visible). Before plugging in the unit, make sure the switch is in the off position.

Speed Control Dial (DW443 & DW444 Only)

The speed control dial (5 incremental settings) allows you to increase or decrease speed from 4000 - 6800 orbits per minute. The optimal speed setting for each application is very much dependent on personal preference. You may want to experiment on a piece of scrap to determine what gives you the best combination of finish quality and material removal rate for your application. Generally, you will want to use a higher setting on harder materials and a lower setting on softer materials. Material removal rate increases as speed increases.

Dust Collection

Your sander comes equipped with a cloth filter bag to collect the dust generated during sanding. To empty the dust bag, first turn off and unplug tool. Firmly pull the bag off while holding the rubber boot (Fig. 3). Empty the bag (you may want to turn it inside out.)

NOTE: Never operate this tool unless the dust collection bag is in place.

Replacing Sanding Pad (Fig. 4)

When the pad becomes worn out, use the following procedure to replace pad.

1. Turn off and unplug tool.
2. Remove 4 torx head screws from the bottom of the tool and remove the pad.
3. Replace the pad and screws, making sure the CFS disc is aligned properly.

FIG. 5

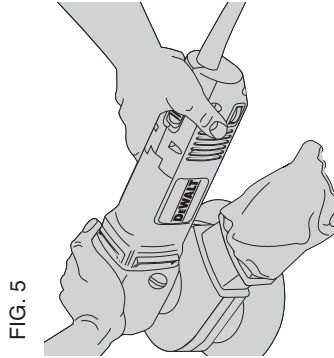
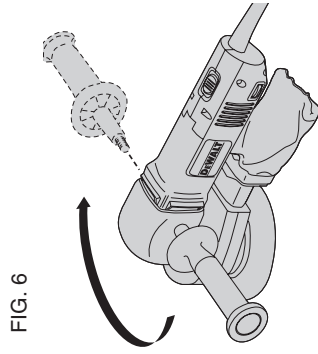


FIG. 6



Operation

To operate your sander, grasp it as shown in Figure 5 and turn it on. Move the unit in long, sweeping strokes along the surface being sanded, letting the sander do the work.

NOTE: Excessive downward pressure on the tool while sanding actually slows the removal rate and produces an inferior quality surface.

A side handle has been provided with your unit and can be used if desired. The side handle can be screwed into either side of tool by first removing the plastic screw, as shown in Figure 6.

NOTE: Be sure to check your work often, this sander is capable of removing material rapidly, especially with coarse paper.

The random orbital action of your sander allows you to sand with the grain or at any angle across it for most sanding jobs. To produce the best finish possible, start with coarse grit sandpaper and change gradually to finer and finer paper. Vacuum and wipe surface with a tack cloth between grit steps.

The rate at which the dust bag fills up will vary with the type of material being sanded and the coarseness of the sandpaper. For best results, empty the bag frequently.

When sanding painted surfaces, (see additional precautions when sanding paint) you may find that the sandpaper loads up and clogs with paint. A heat gun will work much better to remove paint before sanding. FOLLOW ALL SAFETY INSTRUCTIONS IN HEAT GUN INSTRUCTION MANUAL.

NOTE: (DW441 and DW444 only): When using PSA sanding discs, it is necessary to remove the disc soon after operation. PSA papers, if left on during tool storage, sometimes become difficult to remove. To aid in the removal of old PSA paper, sand for a few minutes to soften adhesive backing prior to changing disc.

Precautions To Take When Sanding Paint

1. Sanding of lead based paint is NOT RECOMMENDED due to the difficulty of controlling the contaminated dust. The greatest danger of lead poisoning is to children and pregnant women.

English

2. Since it is difficult to identify whether or not a paint contains lead without a chemical analysis, we recommend the following precautions when sanding any paint:

PERSONAL SAFETY

- a. No children or pregnant women should enter the work area where the paint sanding is being done until all clean up is completed.
- b. A dust mask or respirator should be worn by all persons entering the work area. The filter should be replaced daily or whenever the wearer has difficulty breathing.

NOTE: Only those dust masks suitable for working with lead paint dust and fumes should be used. Ordinary painting masks do not offer this protection. See your local hardware dealer for the proper N.I.O.S.H. approved mask.

- c. NO EATING, DRINKING or SMOKING should be done in the work area to prevent ingesting contaminated paint particles. Workers should wash and clean up BEFORE eating, drinking or smoking. Articles of food, drink, or smoking should not be left in the work area where dust would settle on them.

ENVIRONMENTAL SAFETY

- a. Paint should be removed in such a manner as to minimize the amount of dust generated.
- b. Areas where paint removal is occurring should be sealed with plastic sheeting of 4 mils thickness.
- c. Sanding should be done in a manner to reduce tracking of paint dust outside the work area.

CLEANING AND DISPOSAL

- a. All surfaces in the work area should be vacuumed and thoroughly cleaned daily for the duration of the sanding project. Vacuum filter bags should be changed frequently.
- b. Plastic drop cloths should be gathered up and disposed of along with any dust particles or other removal debris. They should be placed in sealed refuse receptacles and disposed of through regular trash pick-up procedures.

During clean up, children and pregnant women should be kept away from the immediate work area.

- c. All toys, washable furniture and utensils used by children should be washed thoroughly before being used again.

Application Notes

SANDPAPER - GRIT TYPES

Natural Abrasives

Flint is the softest (Mohs' Scale* 7) of the common natural abrasives. It has a tan color and is very inexpensive.

Garnet paper is harder than flint (Mohs' Scale 7.5) and is easily identified by its bright orange color. Even though it is not the hardest, the way the abrasive fractures gives you a good cutting edge for woodworking.

Emery, even though harder than garnet (Mohs' Scale 9), has blunt edges making it a poor sanding abrasive. Its primary use is for polishing metal.

* Mohs' Scale is the mineral hardness scale. It rates diamond at 15, the hardest, and talc at 1.

Manufactured Abrasives

White Aluminum Oxide (AIO) is extremely hard (Mohs' Scale 12) and durable which makes it a great abrasive for use with the Random Orbit Sander. "White" describes the particular way the abrasive is manufactured, not its color. This abrasive is widely available and comes in a variety of colors due to the increasing use of dyes. Stearate lubricants on the paper also enhance performance by reducing heat and the rate at which the paper clogs.

Silicon Carbide (SiC) is the hardest abrasive (Mohs' Scale 13) commonly available next to industrial diamond but is not as tough as Aluminum Oxide abrasives. This abrasive easily fractures and provides sharp faces to the work throughout the life of the sanding paper. This "self-sharpening" feature makes SiC an outstanding abrasive for material removal but limits its life.

OPEN COAT VERSUS CLOSED COAT

Abrasives are applied to the paper with glue. When the grit is large (say 60 or 80 grit) the percent of coverage is usually reduced to 60% to 70% of the backing paper surface. This increases the life of the paper by reducing the rate at which the paper clogs. This is called an open coat and almost the only way you can buy sandpaper in heavier grits. With finer grits the grit is applied at rates of 90% or more and are labeled closed coat. Since the dust particle is much smaller the tendency of the paper to load up and clog is greatly reduced.

GRIT SIZES

There are several grading systems used. The system most popular today is sieve size. The number on the back of your sandpaper disc refers to the screen size the particle can pass through. 120 grit paper for example will sift through a screen with 120 holes per linear inch. Every square inch of screen has 14,400 holes (120 x 120). The higher the number the finer the particle size. Common sizes are from 36 to 600 with the recent introduction of grit sizes up to 1200.

PAPER AND FILM: THE BACKING

Paper: The material most commonly used to carry the abrasive is paper. Paper is graded by weight. "A" weight paper which is the most prevalent is the lightest paper used and gives good durability and flexibility in most sanding applications. Other paper weights that are available are C, D, E, and F weight. The disadvantage of paper is its low mechanical stiffness. Since the paper fiber gives during sanding, the abrasive doesn't stand up and some of the cutting edges do not engage the work. The advantage is cost.

Film: Film backed sanding discs address the disadvantage of paper. The film is mechanically stiffer than paper. Film is also more expensive but when all other things are held constant improves the cutting performance of the abrasive.

Cloth and Vulcanized Fiber: These backings are typically hard to find and are used in specialty applications. Most sandpaper you will use will have the paper or film backing.

HOOK AND LOOP AND PSA: WHAT HOLDS THE SANDING DISK TO THE PAD.

Hook & Loop: The sanding disk as backed with a fabric nap (loops) that interlocks with a grid of posts (hooks) on the sander's pad. The advantages are paper reusability and cooler interface between paper and work.

PSA: Pressure Sensitive Adhesive is applied to the back of the sanding disc and adheres to the sanding pad (Not the same pad that carries Hook & Loop paper). The advantage is cost. The major disadvantage is the tendency of PSA backed papers to adhere permanently to the pad if left on after sanding. Why does this happen? The main culprit is heat. During sanding the pad and paper heat up. This causes the adhesive to flow into all the ridges on the vinyl pad and form a tight bond. If you remove the paper soon after you are finished sanding you don't allow the adhesive to set. If you leave it on for a couple of days the adhesive sets and has more strength than the paper carrier, causing the paper to tear and leaving you with a difficult clean up job. One more disadvantage: If you do small sanding jobs and don't wear out the paper you cannot reuse it and tend to waste more paper.

SANDING

THE BASIC RULES:

Always start with the coarsest grit first. Don't break this rule. The scratches get smaller as the grit number gets larger and the quality of the finish generally improves. When you change grits be particular about cleaning the surface that you are finishing. An 80 grit particle floating on your work under your 220 grit paper will leave 80 grit scratches. The best way to avoid this is to vacuum the work and then carefully wipe down the work with a tack rag.

The random orbit sander action is equally applied across the grain and with the grain. Since the scratch mark is small and random in all directions, the ability of the eye to see a scratch is greatly reduced.

Always wear a mask to avoid breathing the dust. **NEVER BREAK THIS RULE.** We have engineered the tool to collect a majority of the dust created in the sanding process but the tool does not capture it

English

all. To improve the capture rate use a vacuum but ALWAYS wear a dust mask.

SOME OTHER HINTS FOR A BETTER FINISH

A random orbit sander is much more aggressive than other similarly sized orbital tools so you may want to consider the next finer grit when you start to sand your project.

Since the random orbit action makes a short scratch, you may find that a project doesn't require as many grit steps. A lot of professional cabinet makers only use 80, 120, and 150 grit on their work with satisfactory results. If in doubt about how the finish will take to your sanded surface, wipe the surface with some paint thinner. Defects will show up darker than the surrounding wood.

Careful inspection of the work prior to the finishing operation may reveal dents. Try to correct these problems by raising the dent (a hot iron and wet rag will do this) or carefully sand a large area around the dent. If you vigorously sand the dent, you may create a cupped surface.

When you are satisfied with the sanding job and you have finished sanding with your finest grit, raise the grain by dampening the wood with a wet rag. When the wood has dried and you are ready to apply the finish, resand lightly to take off the wood fibers raised by the water. Vac and tack the surfaces and immediately apply the first coat of finish before the wood gets dirty.

WOOD: Some important characteristics of wood

Hard grain and soft grain

Wood has hard grain and soft grain. Hard grain is typically the product of summer growth and soft grain the product of spring. All sanders will remove more soft grain than hard grain and since the random orbit sander is more aggressive, it will remove it that much more quickly. Extended sanding on a piece of fir for example, will produce a noticeably uneven finish. This is a good reason to correct flaws before sanding.

MAINTENANCE

⚠WARNING: To reduce the risk of injury, turn unit off and disconnect machine from power source before installing and removing accessories, before adjusting or changing set-ups or when making repairs. An accidental start-up can cause injury.

Lubrication

Self lubricating bearings are used in the tool and periodic relubrication is not required. However, it is recommended that, once a year, you take or send the tool to a service center for a thorough cleaning and inspection.

Cleaning

⚠WARNING: Never use solvents or other harsh chemicals for cleaning the non-metallic parts of the tool. These chemicals may weaken the plastic materials used in these parts. Use a cloth dampened only with water and mild soap. Never let any liquid get inside the tool; never immerse any part of the tool into a liquid.

⚠WARNING: Always use eye protection. All users and bystanders must wear eye protection that conforms to ANSI Z87.1.

Keep your machine as clean as possible by wiping with a clean cloth and blowing through it with air after every 5 hours of use. If you typically wrap the cord around the tool when you store it, leave a generous loop of cord such that the strain relief does not bend. This helps prevent premature cord failure.

Accessories

⚠WARNING: Since accessories, other than those offered by DEWALT, have not been tested with this product, use of such accessories with this tool could be hazardous. To reduce the risk of injury, only DEWALT recommended accessories should be used with this product.

Recommended accessories for use with your tool are available at extra cost from your local dealer or authorized service center. If you need assistance in locating any accessory for your tool, please con-

tact DEWALT Industrial Tool Co., 701 East Joppa Road, Baltimore, MD 21286, call 1-800-4-DEWALT (1-800-433-9258) or visit our website www.dewalt.com.

Repairs

To assure product SAFETY and RELIABILITY, repairs, maintenance and adjustment (including brush inspection and replacement) should be performed by a DEWALT factory service center, a DEWALT authorized service center or other qualified service personnel. Always use identical replacement parts.

Three Year Limited Warranty

DEWALT will repair, without charge, any defects due to faulty materials or workmanship for three years from the date of purchase. This warranty does not cover part failure due to normal wear or tool abuse. For further detail of warranty coverage and warranty repair information, visit www.dewalt.com or call 1-800-4-DEWALT (1-800-433-9258). This warranty does not apply to accessories or damage caused where repairs have been made or attempted by others. This warranty gives you specific legal rights and you may have other rights which vary in certain states or provinces.

In addition to the warranty, DEWALT tools are covered by our:

1 YEAR FREE SERVICE

DEWALT will maintain the tool and replace worn parts caused by normal use, for free, any time during the first year after purchase.

90 DAY MONEY BACK GUARANTEE

If you are not completely satisfied with the performance of your DEWALT Power Tool, Laser, or Nailer for any reason, you can return it within 90 days from the date of purchase with a receipt for a full refund – no questions asked.

LATIN AMERICA: This warranty does not apply to products sold in Latin America. For products sold in Latin America, see country specific warranty information contained either in the packaging, call the local company or see website for warranty information.

FREE WARNING LABEL REPLACEMENT: If your warning labels become illegible or are missing, call 1-800-4-DEWALT for a free replacement.

English

DWXXX ELECTRONIC V.S. RANDOM ORBIT SANDER	
SER. [REDACTED]	
WARNING TO REDUCE THE RISK OF INJURY, USER MUST READ INSTRUCTION MANUAL. ALWAYS USE PROPER EYE AND RESPIRATORY PROTECTION. A. ADVERTENCIA: PARA EL MANEJO SEGURO LEA EL MANUAL DE INSTRUCCIONES. SIEMPRE USE PROTECCIÓN OCULAR Y PARA LA SALUD Y PARA LAS VÍAS RESPIRATORIAS. AVERTISSEMENT: LIRE LE GUIDE. TOUJOURS PORTER DE L'ÉQUIPEMENT DE PROTECTION OCULAIRE ET RESPIRATOIRE APPROPRIÉ.	
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