

DEWALT®



Instruction Manual

**DWE402, DWE402N, DWE402G, DWE4222N,
DWE43114, DWE43114N, DWE43144, DWE43144N
Heavy-Duty Small Angle Paddle Grinder**

Definitions: Safety Alert Symbols and Words

This instruction manual uses the following safety alert symbols and words to alert you to hazardous situations and your risk of personal injury or property damage.



DANGER: Indicates an imminently hazardous situation which, if not avoided, **will** result in **death or serious injury**.



WARNING: Indicates a potentially hazardous situation which, if not avoided, **could** result in **death or serious injury**.



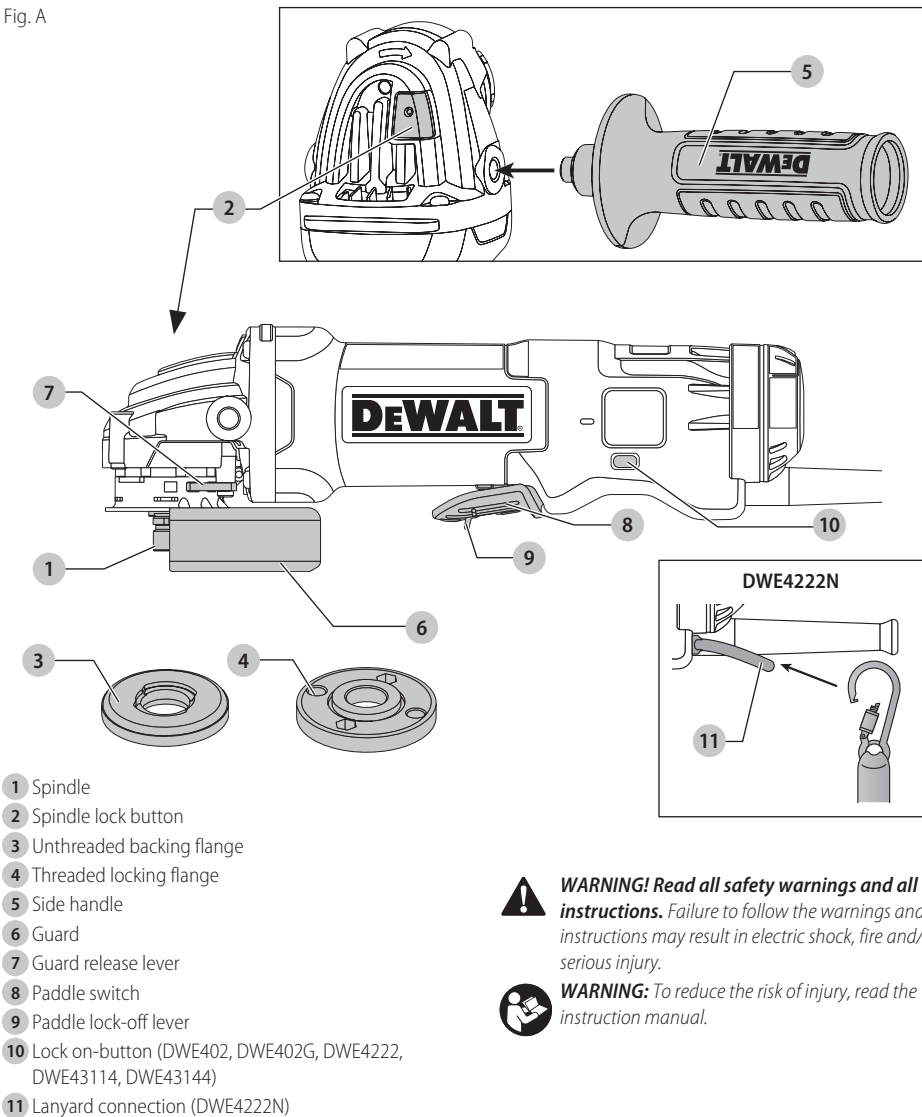
CAUTION: Indicates a potentially hazardous situation which, if not avoided, **may** result in **minor or moderate injury**.



(Used without word) Indicates a safety related message.

NOTICE: Indicates a practice **not related to personal injury** which, if not avoided, **may** result in **property damage**.

Fig. A



GENERAL POWER TOOL SAFETY WARNINGS



WARNING: Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

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.
- 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.
- f) **If operating a power tool in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) protected supply.** Use of a GFCI reduces the risk of electric shock.

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 personal protective equipment. Always wear eye protection.** Protective equipment such as dust

mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

- c) **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energizing 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 jewelry. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewelry or long hair can be caught in moving parts.
- g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.
- h) **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.** A careless action can cause severe injury within a fraction of a second.

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 remove the battery pack, if detachable, 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 and accessories. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's 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, 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.

- h) **Keep handles and grasping surfaces dry, clean and free from oil and grease.** Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.*

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.*

SAFETY INSTRUCTIONS FOR ALL OPERATIONS

Safety Warnings Common for Grinding, Sanding, Wire Brushing, Polishing or Abrasive, Cutting-Off Operations

- a) **This power tool is intended to function as a grinder, sander, wire brush, polisher or cut-off tool. Read all safety warnings, instructions, illustrations and specifications provided with this power tool.** Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.*
- b) **Do not use accessories which are not specifically designed and recommended by the tool manufacturer.** Just because the accessory can be attached to your power tool, it does not assure safe operation.*
- c) **The rated speed of the accessory must be at least equal to the maximum speed marked on the power tool.** Accessories running faster than their rated speed can break and fly apart.*
- d) **The outside diameter and the thickness of your accessory must be within the capacity rating of your power tool.** Incorrectly sized accessories cannot be adequately guarded or controlled.*
- e) **Threaded mounting of accessories must match the grinder spindle thread. For accessories mounted by flanges, the arbor hole of the accessory must fit the locating diameter of the flange.** Accessories that do not match the mounting hardware of the power tool will run out of balance, vibrate excessively and may cause loss of control.*
- f) **Do not use a damaged accessory. Before each use inspect the accessory such as abrasive wheels for chips and cracks, backing pad for cracks, tear or excess wear, wire brush for loose or cracked wires. If power tool or accessory is dropped, inspect for damage or install an undamaged accessory. After inspecting and installing an accessory, position yourself and bystanders away from the plane of the rotating accessory and run the power tool at maximum***
- no-load speed for one minute. Damaged accessories will normally break apart during this test time.*
- g) **Wear personal protective equipment. Depending on application, use face shield, safety goggles or safety glasses. As appropriate, wear dust mask, hearing protectors, gloves and workshop apron capable of stopping small abrasive or workpiece fragments. The eye protection must be capable of stopping flying debris generated by various operations. The dust mask or respirator must be capable of filtering particles generated by your operation.** Prolonged exposure to high intensity noise may cause hearing loss.*
- h) **Keep bystanders a safe distance away from work area. Anyone entering the work area must wear personal protective equipment.** Fragments of workpiece or of a broken accessory may fly away and cause injury beyond immediate area of operation.*
- i) **Hold the power tool by insulated gripping surfaces only, when performing an operation where the cutting accessory may contact hidden wiring or its own cord.** Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.*
- j) **Position the cord clear of the spinning accessory.** If you lose control, the cord may be cut or snagged and your hand or arm may be pulled into the spinning accessory.*
- k) **Never lay the power tool down until the accessory has come to a complete stop.** The spinning accessory may grab the surface and pull the power tool out of your control.*
- l) **Do not run the power tool while carrying it at your side.** Accidental contact with the spinning accessory could snag your clothing, pulling the accessory into your body.*
- m) **Regularly clean the power tool's air vents.** The motor's fan will draw the dust inside the housing and excessive accumulation of powdered metal may cause electrical hazards.*
- n) **Do not operate the power tool near flammable materials.** Sparks could ignite these materials.*
- o) **Do not use accessories that require liquid coolants.** Using water or other liquid coolants may result in electrocution or shock.*
- p) **Do not use Type 11 (flaring cup) wheels on this tool.** Using inappropriate accessories can result in injury.*
- q) **Always use side handle. Tighten the handle securely.** The side handle should always be used to maintain control of the tool at all times.*
- r) **When starting the tool with a new or replacement wheel, or a new or replacement wire brush installed, hold the tool in a well protected area and let it run for one minute. If***

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the wheel has an undetected crack or flaw, it should burst in less than one minute. If the wire brush has loose wires, they will be detected. Never start the tool with a person in line with the wheel. This includes the operator.

- s) **Use of accessories not specified in this manual is not recommended and may be hazardous.** Use of power boosters that would cause the tool to be driven at speeds greater than its rated speed constitutes misuse.
- t) **Use clamps or another practical way to secure and support the workpiece to a stable platform.** Holding the work by hand or against your body leaves it unstable and may lead to loss of control.
- u) **Avoid bouncing the wheel or giving it rough treatment.** If this occurs, stop the tool and inspect the wheel for cracks or flaws.
- v) Always handle and store wheels in a careful manner.
- w) **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.
- x) **Air vents often cover moving parts and should be avoided.** Loose clothes, jewelry or long hair can be caught in moving parts.

Causes and Operator Prevention of Kickback

Kickback is a sudden reaction to a pinched or snagged rotating wheel, backing pad, brush or any other accessory. Pinching or snagging causes rapid stalling of the rotating accessory which in turn causes the uncontrolled power tool to be forced in the direction opposite of the accessory's rotation at the point of the binding.

For example, if an abrasive wheel is snagged or pinched by the workpiece, the edge of the wheel that is entering into the pinch point can dig into the surface of the material causing the wheel to climb out or kick out. The wheel may either jump toward or away from the operator, depending on direction of the wheel's movement at the point of pinching. Abrasive wheels may also break under these conditions.

Kickback is the result of tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below:

- a) **Maintain a firm grip on the power tool and position your body and arm to allow you to resist kickback forces. Always use auxiliary handle, if provided, for maximum control over kickback or torque reaction during start up.** The operator can control torque reaction or kickback forces, if proper precautions are taken.
- b) **Never place your hand near the rotating accessory.** Accessory may kickback over your hand.

- c) **Do not position your body in the area where power tool will move if kickback occurs.** Kickback will propel the tool in direction opposite to the wheel's movement at the point of snagging.
- d) **Use special care when working corners, sharp edges etc. Avoid bouncing and snagging the accessory.** Corners, sharp edges or bouncing have a tendency to snag the rotating accessory and cause loss of control or kickback.
- e) **Do not attach a saw chain woodcarving blade or toothed saw blade.** Such blades create frequent kickback and loss of control.

Safety Warnings Specific for Grinding and Abrasive Cutting-Off Operations

- a) **Use only wheel types that are recommended for your power tool and the specific guard designed for the selected wheel.** Wheels for which the power tool was not designed cannot be adequately guarded and are unsafe.
- b) **The grinding surface of center depressed wheels must be mounted below the plane of the guard lip.** An improperly mounted wheel that projects through the plane of the guard lip cannot be adequately protected.
- c) **The guard must be securely attached to the power tool and positioned for maximum safety, so the least amount of wheel is exposed towards the operator.** The guard helps to protect the operator from broken wheel fragments, accidental contact with wheel and sparks that could ignite clothing.
- d) **Wheels must be used only for recommended applications. For example: do not grind with the side of cut-off wheel.** Abrasive cut-off wheels are intended for peripheral grinding, side forces applied to these wheels may cause them to shatter.
- e) **Always use undamaged wheel flanges that are of correct size and shape for your selected wheel. Proper wheel flanges support the wheel thus reducing the possibility of wheel breakage.** Flanges for cut-off wheels may be different from grinding wheel flanges.
- f) **Do not use worn down wheels from larger power tools.** Wheel intended for larger power tool is not suitable for the higher speed of a smaller tool and may burst.

Additional Safety Warnings Specific for Abrasive Cutting-Off Operations

- a) **Do not "jam" the cut-off wheel or apply excessive pressure. Do not attempt to make an excessive depth of cut.** Overstressing the wheel increases the loading and susceptibility to twisting or binding of the wheel in the cut and the possibility of kickback or wheel breakage.

- b) **Do not position your body in line with and behind the rotating wheel.** When the wheel, at the point of operation, is moving away from your body, the possible kickback may propel the spinning wheel and the power tool directly at you.
- c) **When wheel is binding or when interrupting a cut for any reason, switch off the power tool and hold the power tool motionless until the wheel comes to a complete stop. Never attempt to remove the cut-off wheel from the cut while the wheel is in motion otherwise kickback may occur.** Investigate and take corrective action to eliminate the cause of wheel binding.
- d) **Do not restart the cutting operation in the workpiece. Let the wheel reach full speed and carefully reenter the cut.** The wheel may bind, walk up or kickback if the power tool is restarted in the workpiece.
- e) **Support panels or any oversized workpiece to minimize the risk of wheel pinching and kickback. Large workpieces tend to sag under their own weight.** Supports must be placed under the workpiece near the line of cut and near the edge of the workpiece on both sides of the wheel.
- f) **Use extra caution when making a “pocket cut” into existing walls or other blind areas.** The protruding wheel may cut gas or water pipes, electrical wiring or objects that can cause kickback.

Safety Warnings Specific for Sanding Operations

- a) **Do not use excessively oversized sanding disc paper. Follow manufacturers recommendations, when selecting sanding paper.** Larger sanding paper extending beyond the sanding pad presents a laceration hazard and may cause snagging, tearing of the disc or kickback.

Safety Warnings Specific for Polishing Operations

- a) **Do not allow any loose portion of the polishing bonnet or its attachment strings to spin freely. Tuck away or trim any loose attachment strings.** Loose and spinning attachment strings can entangle your fingers or snag on the workpiece.

Safety Warnings Specific for Wire Brushing Operations

- a) **Be aware that wire bristles are thrown by the brush even during ordinary operation. Do not overstress the wires by applying excessive load to the brush.** The wire bristles can easily penetrate light clothing and/or skin.
- b) **If the use of a guard is recommended for wire brushing, do not allow any interference of the wire wheel or brush with the guard.** Wire wheel

or brush may expand in diameter due to work and centrifugal forces.

- c) **Safety goggles or safety glasses with side shields and a full face shield compliant with ANSI Z87.1 MUST be worn by the operator and others that are within 50' (15.2 m) of the use of this product.**

Additional Safety Information



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 the State of California 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.

- **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 disperse 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.



CAUTION: When not in use, place tool on its side on a stable surface where it will not cause a tripping or falling hazard. Some tools with large battery packs will stand upright on the battery pack but may be easily knocked over.

- **Air vents often cover moving parts and should be avoided.** Loose clothes, jewelry or long hair can be caught in moving parts.

- **An extension cord must have adequate wire size (AWG or American Wire Gauge) for safety.** The smaller the gauge number of the wire, the greater the capacity of the cable, that is, 16 gauge has more capacity than 18 gauge. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. When using more than one extension to make up the total length, be sure each individual extension contains at least the minimum wire size. 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 lower the gauge number, the heavier the cord.

Minimum Gauge for Cord Sets

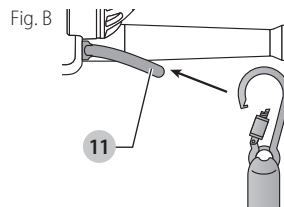
Volts		Total Length of Cord in Feet (meters)			
		25 (7.6)	50 (15.2)	100 (30.5)	150 (45.7)
120 V		25 (7.6)	50 (15.2)	100 (30.5)	150 (45.7)
240 V		50 (15.2)	100 (30.5)	200 (61.0)	300 (91.4)
Ampere Rating More Than	Not More Than	American Wire Gauge			
		0	6	18	16
6	10	18	16	14	12
10	12	16	16	14	12
12	16	14	12	Not Recommended	

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

- V volts
- Hz hertz
- min minutes
- or DC direct current
- Ⓜ Class I Construction (grounded)
- ... /min per minute
- BPM beats per minute
- IPM impacts per minute
- RPM revolutions per minute
- sfpm surface feet per minute
- SPM strokes per minute
- A amperes
- W watts
- ~ or AC alternating current
- Ⓜ or AC/DC alternating or direct current
- Ⓜ Class II Construction (double insulated)
- n₀ no load speed
- n rated speed
- ⊕ earthing terminal
- ⚠ safety alert symbol
- ⚠ visible radiation
- ☉ wear respiratory protection
- ☉ wear eye protection
- ☉ wear hearing protection
- 📖 read all documentation

- Use only with lanyards appropriate for this tool type and rated for at least 6.0 lbs (2.72 Kg).
- **Crush, cut or entanglement hazard.** Do not use near moving parts, mechanisms or running machinery.
- Do not anchor the tool lanyard to anything on your body. Anchor to a rigid structure that can withstand the forces of a dropped tool.
- Make sure the lanyard is properly secure at each end prior to use.
- Inspect tool and lanyard before each use for damage and proper function (including fabric and stitching). Do not use if damaged or not functioning properly.
- Do not alter the lanyard connection or use in a manner other than as instructed in this manual.
- Only attach tool to a lanyard with a locking carabiner. Do not attach by looping or knotting the lanyard. Do not use rope or cord.
- Electrical shock hazard. Be sure power is off when working in high voltage areas. Some lanyards are conductive.
- Dropped tools will swing on the lanyard, which could cause injury or loss of balance.
- Do not carry the tool by attachment device or the lanyard.
- Do not attach more than one tool to each lanyard.
- Only use appropriate DeWALT brand attachment point. NEVER modify tools to create attachment points.
- Only transfer the tool between hands while properly balanced in a stable orientation.
- Do not attach lanyards to tool in a way that keeps guards, switches or lock-offs from operating properly.
- Avoid getting tangled in the lanyard.
- Keep lanyard away from the cutting area of the tool.
- Do not use lanyards or attachment devices to get additional leverage from the tool.
- Do not use for personal fall protection.
- **Falling object hazard!** Only change accessories and attachments where a dropped object won't cause a hazard below you. Consult your AHJ or site supervisor for procedures for working at height.
- Use multi-action and screw gate type carabineers. Do not use single action spring clip carabineers.

The lanyard connection **11** is intended for use by competent personnel, who are trained and knowledgeable regarding working with tools in and around machinery and "at height". A lanyard connection may be added to certain models (DWE43114N, DWE43144N) by an authorized service center.



Lanyard Connection (Fig. B)

Safety Warnings Specific for Use At Height

WARNING: If the tool is dropped for any reason the lanyard connection must be inspected and properly serviced prior to re-use. The lanyard connection is designed to stretch to absorb the shock of a drop. Any permanent stretch to the connection exposing the red marked internal coils indicates it has been compromised and must be serviced prior to reuse.

- Always keep the tool and accessories tethered when working "at height". [Maximum lanyard length: 6.5 ft (2m)]

SAVE THESE INSTRUCTIONS FOR FUTURE USE

Motor

Be sure your power supply agrees with the nameplate marking. Voltage decrease of more than 10% will cause loss of power and overheating. DEWALT tools are factory tested; if this tool does not operate, check power supply.

COMPONENTS (FIG. A)

WARNING: Never modify the power tool or any part of it. Damage or personal injury could result.

Refer to Figure A at the beginning of this manual for a complete list of components.

Intended Use

Your heavy-duty small angle grinder has been designed for professional grinding, sanding, wire brush, and cut-off applications at various work sites (i.e., construction sites).

DO NOT use under wet conditions or in presence of flammable liquids or gases.

Your heavy-duty small angle grinder is a professional power tool. **DO NOT** let children come into contact with the tool. Supervision is required when inexperienced operators use this tool.

Features

DWE4222N, DWE43114, DWE43114N, DWE43144, DWE43144N

E-switch Protection™

The ON/OFF trigger switch has a no-volt release function. In the event of a power outage or other unexpected shut down, the trigger switch will need to be cycled (turned on and off) to restart tool.

E-Clutch™

This unit is equipped with an E-Clutch™ (Electronic Clutch), which in the event of a high-load or wheel pinch, the unit will be shut off to reduce the reaction torque to the user. The switch needs to be cycled (turned on and off) to restart tool.

Power-OFF™ Overload Protection

The power supply to the motor will be reduced in case of motor overload. With continued motor overload, the tool will shut off. The switch needs to be cycled (turned on and off) to restart tool. The tool will power off each time the current load reaches the overload current value (motor burn-up point). If continued overload shutdowns occur, apply less force/weight on the tool until the tool will function without the overload engaging.

Electronic Soft Start

This feature limits the initial start up momentum, allowing the speed to build up gradually over a 1 second period.

ASSEMBLY AND ADJUSTMENTS

WARNING: To reduce the risk of serious personal injury, turn unit off and disconnect it from power source before making any adjustments or removing/installing attachments or accessories. An accidental start-up can cause injury.

Attaching Side Handle (Fig. A)

WARNING: Before using the tool, check that the handle is tightened securely.

Screw the side handle **5** tightly into one of the holes on either side of the gear case. The side handle should always be used to maintain control of the tool at all times.

Guards

CAUTION: Guards must be used with all grinding wheels, cutting wheels, sanding flap discs, wire brushes, and wire wheels. The tool may be used without a guard only when sanding with conventional sanding discs. Refer to Figure A to see guards provided with the unit. Some applications may require purchasing the correct guard from your local dealer or authorized service center.

NOTE: Edge grinding and cutting can be performed with Type 27 wheels designed and specified for this purpose; 6.35 mm thick wheels are designed for surface grinding while thinner Type 27 wheels need to be examined for the manufacturer's label to see if they can be used for surface grinding or only edge grinding/cutting. A Type 1 guard must be used for any wheel where surface grinding is forbidden. Cutting can also be performed by using a Type 41 wheel and a Type 1 guard.

NOTE: See the **Accessories Chart** to select the proper guard / accessory combination.

Adjusting and Mounting Guard (Fig. C, D)

CAUTION: Turn unit off and unplug the tool before making any adjustments or removing or installing attachments or accessories.

CAUTION: BEFORE operating the tool, identify which guard adjustment option your tool is set to.

Adjustment Options

For guard adjustment, the guard release lever **7** engages one of the alignment holes **14** on the guard collar using a ratcheting feature. Your grinder offers two options for this adjustment.

- **One-touch™:** In this position the engaging face is slanted and will ride over to the next alignment hole when guard is rotated in a clockwise direction (spindle facing user) but self-locks in the counter-clockwise direction.
- **Two-touch™:** In this position the engaging face is straight and squared off. It will NOT ride over to the next alignment hole unless guard release lever is pressed and held while simultaneously rotating the guard in either a clockwise or counter-clockwise direction (spindle facing user).

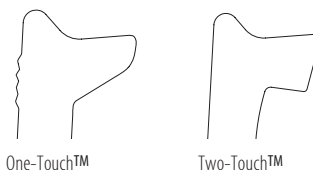
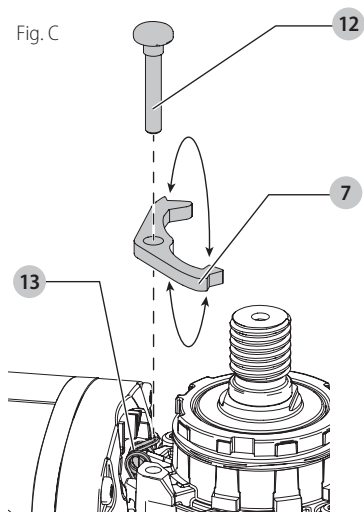


Fig. C



Setting Guard Adjustment Options

To adjust the guard release lever 7 for desired adjustment option:

1. Remove screw 12 using a T20 bit.
2. Remove the guard release lever taking note of the spring position. Choose the end of the lever for the desired adjustment option. One-touch will use the slanted end of the lever 7 to engage the alignment holes 14 on the guard collar. Two-touch will use the squared end to engage the alignment holes 14 on the guard collar.
3. Replace the lever, positioning the chosen end under the spring 13. Ensure the lever is in proper contact with the spring.
4. Replace screw and torque to 2.0-3.0N-m. Ensure proper installation with spring return function by depressing guard release lever 7.

Mounting Guard (Fig. D)

CAUTION: Prior to mounting guard, ensure the screw, lever, and spring are fitted correctly before mounting the guard.

1. With the spindle facing the operator, press and hold the guard release lever 7.
2. Align the lugs 15 on the guard with the slots 16 on the gear case cover.
3. Push the guard down until the guard lugs engage and rotate them in the groove on the gear case cover. Release the guard release lever.
4. To position the guard:

One-touch™: Rotate the guard clockwise into the desired working position. Press and hold the guard release lever 7 to rotate the guard in the counter-clockwise direction.

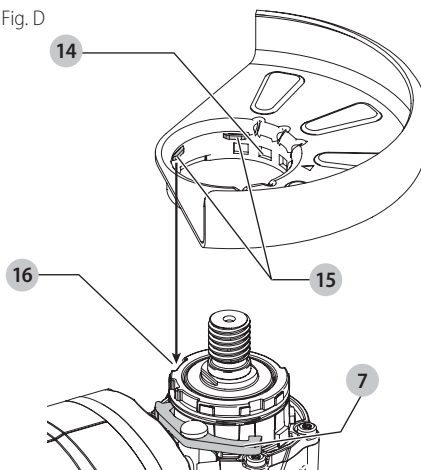
Two-touch™: Press and hold the guard release lever 7. Rotate the guard clockwise or counter-clockwise into the desired working position.

NOTE: The guard body should be positioned between the spindle and the operator to provide maximum operator protection.

The guard release lever should snap into one of the alignment holes 14 on the guard collar. This ensures that the guard is secure.

5. To remove the guard, follow steps 1–3 of these instructions in reverse.

Fig. D



Flanges and Wheels

CAUTION: Turn unit off and unplug the tool before making any adjustments or removing or installing attachments or accessories.

Mounting Non-Hubbed Wheels (Fig. E, F)

WARNING: Failure to properly seat the flanges and/or wheel could result in serious injury (or damage to the tool or wheel).

CAUTION: Included flanges must be used with depressed center Type 27/42 grinding wheels and Type 1/41 cutting wheels. See the **Accessories Chart** for more information.

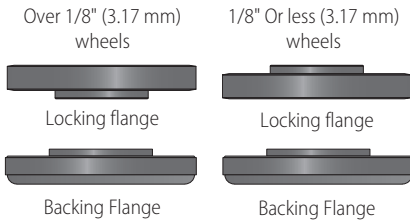
WARNING: A closed, two-sided cutting wheel guard is required when using abrasive cutting wheels or diamond coated cutting wheels.

WARNING: Use of a damaged flange or guard or failure to use proper flange and guard can result in injury due to wheel breakage and wheel contact. See the **Accessories Chart** for more information.

1. Place the tool on a table, guard up.
2. Install the unthreaded backing flange 3 on spindle 1 with the raised center (pilot) facing the wheel.
3. Place wheel 17 against the backing flange, centering the wheel on the raised center (pilot) of the backing flange.
4. While depressing the spindle lock button and with the hex depressions facing away from the wheel, thread the threaded locking flange 4 on spindle so that the lugs engage the two slots in the spindle.

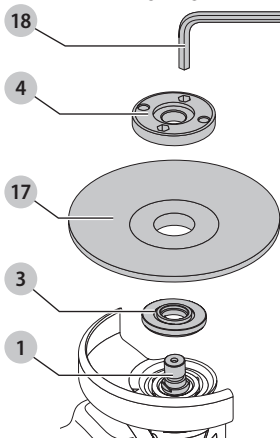
NOTE: If the wheel you are installing is more than 1/8" (3.17 mm) thick, place the threaded locking flange on the spindle so that the raised section (pilot) fits into the center of the wheel. If the wheel you are installing is 1/8" (3.17 mm) thick or less, place the threaded locking flange on the spindle so that the raised section (pilot) is not against the wheel.

Fig. E



- While depressing the spindle lock button, tighten the threaded locking flange **4**:
 - Tighten the threaded locking flange using a wrench **18**.
- To remove the wheel, depress the spindle lock button and loosen the threaded locking flange.

Fig. F



Mounting Sanding Backing Pads (Fig. G)

NOTE: Use of a guard with sanding discs that use backing pads, often called fiber resin discs, is not required. Since a guard is not required for these accessories, the guard may or may not fit correctly if used.

WARNING: Failure to properly seat the clamp nut and/or pad could result in serious injury (or damage to the tool or wheel).

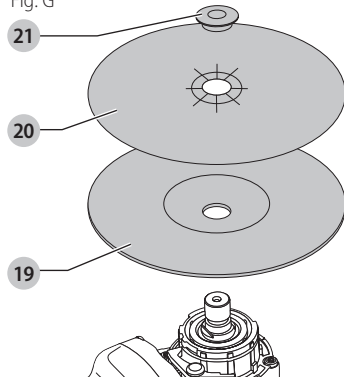
WARNING: Proper guard must be reinstalled for grinding wheel, cutting wheel, sanding flap disc, wire brush or wire wheel applications after sanding applications are complete.

- Place or appropriately thread backing pad **19** on the spindle.
- Place the sanding disc **20** on the backing pad **19**.
- While depressing spindle lock button **2**, thread the sanding clamp nut **21** on spindle, piloting the raised

hub on the clamp nut into the center of sanding disc and backing pad.

- Tighten the clamp nut by hand. Then depress the spindle lock button while turning the sanding disc until the sanding disc and clamp nut are snug.
- To remove the wheel, grasp and turn the backing pad and sanding pad while depressing the spindle lock button.

Fig. G



Mounting and Removing Hubbed Wheels (Fig. A)

Hubbed wheels install directly on the spindle. Thread of accessory must match thread of spindle.

- Remove backing flange by pulling away from tool.
- Thread the wheel on the spindle **1** by hand.
- Depress the spindle lock button **2** and use a wrench to tighten the hub of the wheel.
- Reverse the above procedure to remove the wheel.

NOTICE: Failure to properly seat the wheel before turning the tool on may result in damage to the tool or the wheel.

Mounting Wire Cup Brushes and Wire Wheels (Fig. A)

WARNING: Failure to properly seat the brush/wheel could result in serious injury (or damage to the tool or wheel).

CAUTION: To reduce the risk of personal injury, wear work gloves when handling wire brushes and wheels. They can become sharp.

CAUTION: To reduce the risk of damage to the tool, wheel or brush must not touch guard when mounted or while in use. Undetectable damage could occur to the accessory, causing wires to fragment from accessory wheel or cup.

Wire cup brushes or wire wheels install directly on the threaded spindle without the use of flanges. Use only wire brushes or wheels provided with a threaded hub. These accessories are available at extra cost from your local dealer or authorised service center.

- Place the tool on a table, guard up.
- Thread the wheel on the spindle by hand.

- Depress spindle lock button **2** and use a wrench on the hub of the wire wheel or brush to tighten the wheel.
- To remove the wheel, reverse the above procedure.

NOTICE: To reduce the risk of damage to the tool, properly seat the wheel hub before turning the tool on.

Prior to Operation

- Install the guard and appropriate disc or wheel. Do not use excessively worn discs or wheels.
- Be sure the backing and threaded locking flange are mounted correctly. Follow the instructions given in the **Grinding and Cutting Accessory Chart**.
- Make sure the disc or wheel rotates in the direction of the arrows on the accessory and the tool.
- Do not use a damaged accessory. Before each use inspect the accessory such as abrasive wheels for chips and cracks, backing pad for cracks, tear or excess wear, wire brush for loose or cracked wires. If power tool or accessory is dropped, inspect for damage or install an undamaged accessory. After inspecting and installing an accessory, position yourself and bystanders away from the plane of the rotating accessory and run the power tool at maximum no-load speed for one minute. Damaged accessories will normally break apart during this test time.

OPERATION



WARNING: To reduce the risk of serious personal injury, turn unit off and disconnect it from power source before making any adjustments or removing/installing attachments or accessories. An accidental start-up can cause injury.

Proper Hand Position (Fig. H)



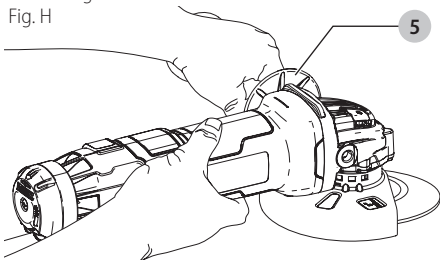
WARNING: To reduce the risk of serious personal injury, ALWAYS use proper hand position as shown.



WARNING: To reduce the risk of serious personal injury, ALWAYS hold securely in anticipation of a sudden reaction.

Proper hand position requires one hand on the side handle **5**, with the other hand on the body of the tool, as shown in Figure H.

Fig. H



Paddle Switch (Fig. A)



CAUTION: Hold the side handle and body of the tool firmly to maintain control of the tool at start up and during use and until the wheel or accessory stops

rotating. Make sure the wheel has come to a complete stop before laying the tool down.



CAUTION: Before connecting the tool to a power source depress and release the paddle switch **8** once [DWE402: without depressing the lock-on button **10**] to ensure that the switch is off. Depress and release the paddle switch as described above after any interruption in power supply to the tool, such as the activation of a ground fault interrupter, throwing of a circuit breaker, accidental unplugging, or power failure. If the paddle switch is locked on, the tool will start unexpectedly when it is reconnected.

NOTE: To reduce unexpected tool movement, do not switch the tool on or off while under load conditions. Allow the grinder to run up to full speed before touching the work surface. Lift the tool from the surface before turning the tool off. Allow the tool to stop rotating before putting it down.

- To turn the tool on, push the lock-off lever **9** toward the back of the tool, then depress the paddle switch **8**. The tool will run while the switch is depressed.
- Turn the tool off by releasing the paddle switch.

Lock-On Button

DWE402, DWE402G, DWE4222, DWE43114, DWE43144

The lock-on button **10** offers increased comfort in extended use applications. To lock the tool on, depress the lock-on button while the tool is running. The tool will continue to run after the switch is released. To unlock and turn off the tool, depress and release the switch.

NOTE: A grinder should never be locked ON by any other means.

Spindle Lock (Fig. A)

The spindle lock **1** is provided to prevent the spindle from rotating when installing or removing wheels. Operate the spindle lock only when the tool is turned off, unplugged from the power supply, and has come to a complete stop.

NOTICE: To reduce the risk of damage to the tool, do not engage the spindle lock while the tool is operating. Damage to the tool will result and attached accessory may spin off possibly resulting in injury.

To engage the lock, depress the spindle lock button and rotate the spindle until you are unable to rotate the spindle further.

Surface Grinding, Sanding and Wire Brushing (Fig. I)



CAUTION: Always use the correct guard per the instructions in this manual.

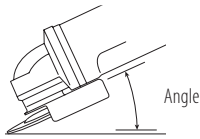


WARNING: Metal dust build-up. Extensive use of flap discs in metal applications can result in the increased potential for electric shock. To reduce this risk, insert an RCD before use and clean the ventilation slots daily by blowing dry compressed air into the ventilation slots in accordance with the below maintenance instructions.

To perform work on the surface of a workpiece:

1. Allow the tool to reach full speed before touching the tool to the work surface.
2. Apply minimum pressure to the work surface, allowing the tool to operate at high speed. Material removal rate is greatest when the tool operates at high speed.

Fig. I



3. Maintain an appropriate angle between the tool and work surface. Refer to the chart according to particular function.

Function	Angle
Grinding	20°-30°
Sanding with Flap Disc	5°-10°
Sanding with Backing Pad	5°-15°
Wire Brushing	5°-10°

4. Maintain contact between the edge of the wheel and the work surface.
 - If grinding, sanding with flap discs or wire brushing move the tool continuously in a forward and back motion to avoid creating gouges in the work surface.
 - If sanding with a backing pad, move the tool constantly in a straight line to prevent burning and swirling of work surface.

NOTE: Allowing the tool to rest on the work surface without moving will damage the work piece.

5. Remove the tool from work surface before turning tool off. Allow the tool to stop rotating before laying it down.



CAUTION: Use extra care when working over an edge, as a sudden sharp movement of grinder may be experienced.

Precautions To Take When Working on a Painted Workpiece

1. Sanding or wire brushing 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.
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

1. No children or pregnant women should enter the work area where the paint sanding or wire brushing is being done until all clean up is completed.
2. 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.

3. 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

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

Cleaning and Disposal

1. 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.
2. Plastic drop cloths should be gathered up and disposed of along with any dust chips 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.
3. All toys, washable furniture and utensils used by children should be washed thoroughly before being used again.

Edge Grinding and Cutting (Fig. J)



WARNING: Do not use edge grinding/cutting wheels for surface grinding applications because these wheels are not designed for side pressures encountered with surface grinding. Wheel breakage and injury may result.



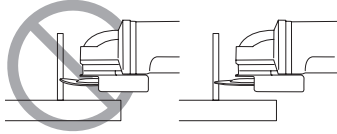
CAUTION: Wheels used for edge grinding and cutting may break or kick back if they bend or twist while the tool is being used. In all edge grinding/cutting operations, the open side of the guard must be positioned away from the operator.

NOTICE: Edge grinding/cutting with a Type 27 wheel must be limited to shallow cutting and notching—less than 13 mm in depth when the wheel is new. Reduce the depth of cutting/notching equal to the reduction of the wheel radius as it wears down. Refer to the **Accessories Chart** for more information. Edge grinding/cutting with a Type 41 wheel requires usage of a Type 1 guard.

1. Allow the tool to reach full speed before touching the tool to the work surface.

2. Apply minimum pressure to the work surface, allowing the tool to operate at high speed. Grinding/cutting rate is greatest when the tool operates at high speed.
3. Position yourself so that the open-underside of the wheel is facing away from you.
4. Once a cut is begun and a notch is established in the workpiece, do not change the angle of the cut. Changing the angle will cause the wheel to bend and may cause wheel breakage. Edge grinding wheels are not designed to withstand side pressures caused by bending.

Fig. J



5. Remove the tool from the work surface before turning the tool off. Allow the tool to stop rotating before laying it down.

MAINTENANCE

- WARNING:** To reduce the risk of serious personal injury, turn unit off and disconnect it from power source before making any adjustments or removing/installing attachments or accessories. An accidental start-up can cause injury.

Cleaning

- WARNING:** Blow dirt and dust out of all air vents with clean, dry air at least once a week. To minimize the risk of eye injury, always wear ANSI Z87.1 approved eye protection when performing this.
- 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.

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.

Repairs

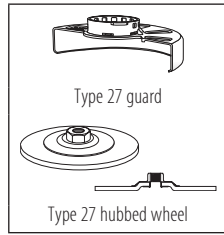
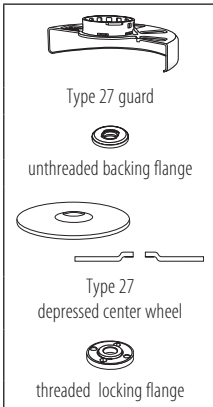
The charger and battery pack are not serviceable.



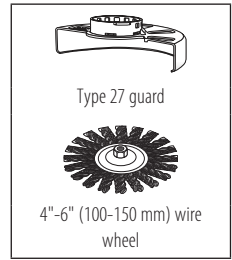
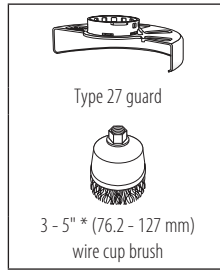
WARNING: To assure product SAFETY and RELIABILITY, repairs, maintenance and adjustment (including brush inspection and replacement) should be performed by a DEWALT factory service center or a DEWALT authorized service center. Always use identical replacement parts.

ACCESSORIES CHART

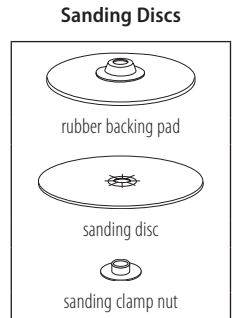
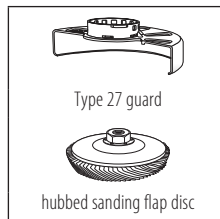
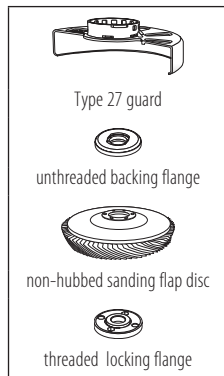
4.5" (115 mm) and 6" (150mm) Grinding Wheels



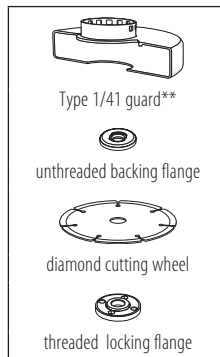
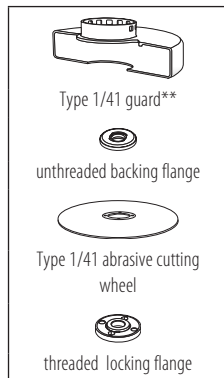
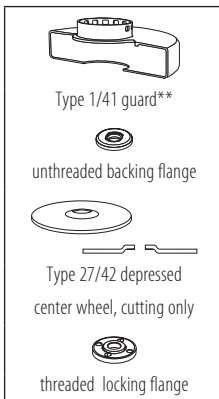
Wire Wheels



4.5" (115 mm) and 6" (150mm) Sanding Flap Discs



4.5" (115 mm) and 6" (150mm) Cutting Wheels



! Type 1/41 guards are intended for use with Type 1/41 cutting wheels and Type 27 wheels marked for cutting only. Grinding with wheels other than Type 27 and Type 29 require different accessory guards. Always use the smallest proper guard possible that does not contact the accessory.

** NOTE: A Type 1/41 guard is available at extra cost from your local dealer or authorized service center.

** NOTE: A Type 1/41 guard is included with the DWE42144 and DWE42144N.

Learn more about power grinders and rotary we have.