

Cordless 5" Grinder – Milwaukee M18

Potential Injuries & Hazards 

	Pinch points
✓	Cuts
	Burns
✓	Eye injury
	Respiratory Damage
✓	Amputation
	Slip, trip or falls
✓	Head injury/concussion
✓	Electric shock
✓	Fire
	MSI
	Fatality
	Other:



Note: This task may expose workers to musculoskeletal injury (MSI) risks. Signs and symptoms include pain, burning, numbness, tingling, swelling, stiffness, and/or loss of movement or strength in a body part. Report these to your supervisor immediately.

This task may only be performed by trained and authorized personnel.

Personal Protective Equipment (PPE) required

										
CSA Safety Glasses	CSA Safety Boots	Hearing Protection	Face Shield	CSA Respirator	Cut Resistant Gloves	Nitrile Gloves	Fire Resistant Gloves	Electrical Gloves	Hard Hat / Bump Cap	Fall Protection
✓	✓	✓	✓	<input type="checkbox"/>	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Inspect your PPE before use. Report any damage to your supervisor immediately. Take care of your PPE: clean, maintain and store it properly.

Education and Training Prerequisites eg. Instructions or other SOP's

Read and understand Milwaukee M18 Cordless 5 Inch Grinder Manual Doc#11337

Cordless 5" Grinder – Milwaukee M18**SAFETY PRACTICES**

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.



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.



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.



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. Hold the power tool by insulated gripping surfaces only, when performing an operation where the cutting tool may contact hidden wiring. Contact with a "live" wire may also make exposed metal parts of the power tool "live" and could give the operator an electric shock.



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.



Do not operate the power tool near flammable materials. Sparks could ignite these materials. 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.



Prevent unintentional starting. Ensure the switch is in the off-position before connecting to battery pack, picking up or carrying the tool. Carrying power tools with your finger on the switch invites accidents.



Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.



Dress properly. Do not wear loose clothing or jewelry. Keep your hair and clothing away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.

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Kickback and Related Warnings



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 power tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below.



- 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 maximum control over kickback.



- Never place your hand near the rotating accessory. Accessory may kickback over your hand.



- 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.



- 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.



- 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.

Battery Tool Use and Care



- When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects that can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire.



- Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.



- Do not use a battery pack or tool that is damaged or modified. Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, explosion or risk of injury.

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Paddle Switch Operation

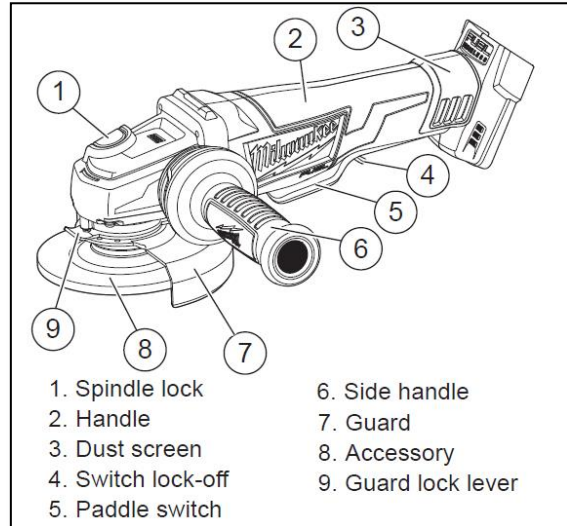
⚠WARNING Always hold the tool firmly with both hands using the handles provided before and during grinding.

START

To start the tool, grasp the handle and side handle firmly. Push the lock-off button forward and squeeze the paddle switch.

STOP

To stop the tool, release the paddle switch. Make sure the tool comes to a complete stop before laying down the tool.



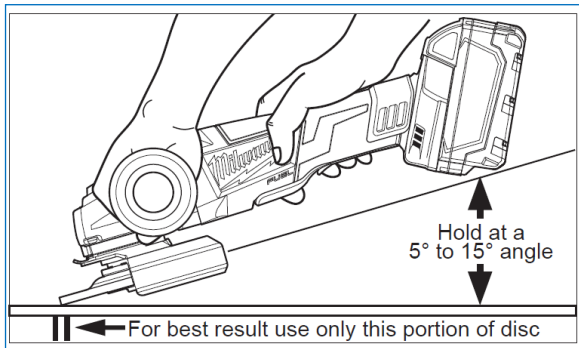
General Operation

1. If you have just installed an accessory or are beginning a period of work, test the wheel by letting it spin for one minute before applying it to the workpiece. **WARNING!** Never use an accessory that has been dropped. Out-of-balance or damaged accessories can damage the tool, and cause stress that may cause accessory failure.
2. Use a clamp, vise or other practical means to hold your work, freeing both hands to control the tool.
3. **WARNING!** Hold tool securely with both hands. Start the tool. NOTE: If the battery is inserted when the tool is ON, the tool will not run. Turn the tool OFF, then back ON to begin work.
4. Allow accessory to come to full speed before beginning work.
5. Control pressure and surface contact between accessory and workpiece. **WARNING!** Never bang accessory onto work. Too much pressure causes accessory failure or slows speed.
6. When finished, turn off the tool and make sure it comes to a complete stop before laying it down.

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Using Grinding Wheels

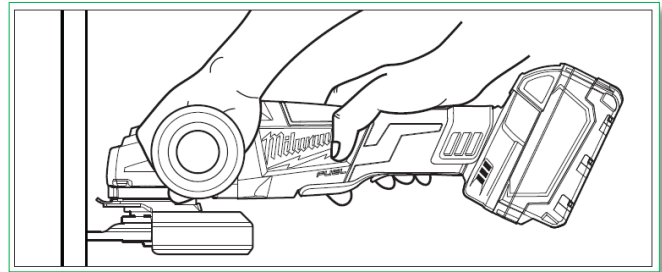
When grinding, hold tool at a 5-15 degree angle, using constant pressure for a uniform finish. Too great an angle causes concentrated pressure on small areas which may gouge or burn work surface.



Using Cut-Off Wheels

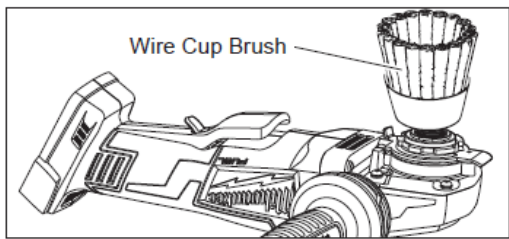
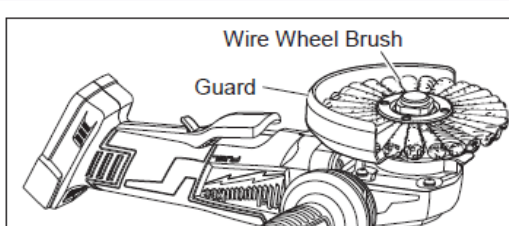
When using a cut-off wheel, hold the tool as shown, using only the edge of the wheel.

WARNING! Using the face of a Cut-Off Wheel (as in grinding) will cause the Wheel to crack and break, resulting in serious personal injury.



Using Wire Brush

WARNING! Fatigued wires and residue will fly off the brush with considerable force, causing potential for serious injury. Do not use a damaged brush or one that is functioning improperly (throwing wires, out of balance, etc.). These conditions increase the possibility of further brush failure and possible injury. Discard and replace damaged brushes immediately.



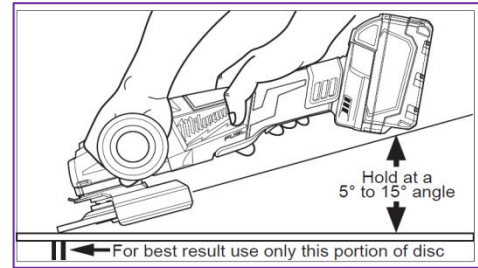
Test wheel for balance and loose or damaged wires by letting it spin for one minute before applying it to the workpiece. During this time, no one should stand in front of or in line with it.

Control pressure and surface contact between wheel and workpiece. Too much pressure causes over-bending of wires and heat build-up causing premature wire breaking, rapid dulling and reduced brush life. Instead of more pressure, try a wire wheel with more aggressive cutting action (increased wire size, decreased wire length or different brush type (knot type vs. crimped wire type).

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Using Sanding Discs

Hold tool at 5° to 15° angle to ensure proper sanding pressure and control. Too great an angle will result in too much pressure and could cause excessive wear to the disc and workpiece. Too small an angle will reduce control. Use long, sweeping, side to side strokes, advancing forward to produce the desired finish.



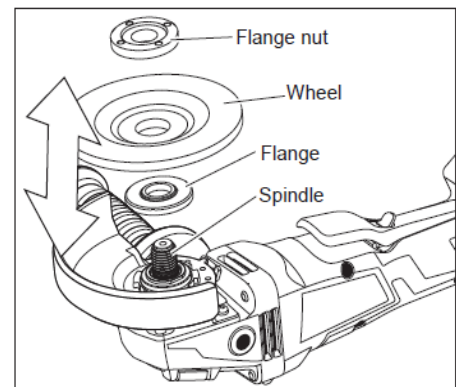
Cross Sanding - When finishing a surface that has been prepared by a coarse disc or wheel, sand at right angles to the strokes made by the coarser disc. Finishing marks left from previous sanding are easily seen and removed for a uniform finish. Failure to cross sand when changing from a coarse disc to a finishing disc may result in deep scratches and circular marks.

Removing Welds- When removing welds, limit coarse sanding to the immediate area. Use successively finer grits to smooth surface.

Finishing Metal - Constantly move across the surface. Work faster on curved surfaces where contact areas are smaller and pressure is greater. Flat areas may appear at the end of the stroke when pressure is too heavy. Ease up on pressure at end of each stroke and when reversing strokes.

Installing/Removing Grinding Wheels

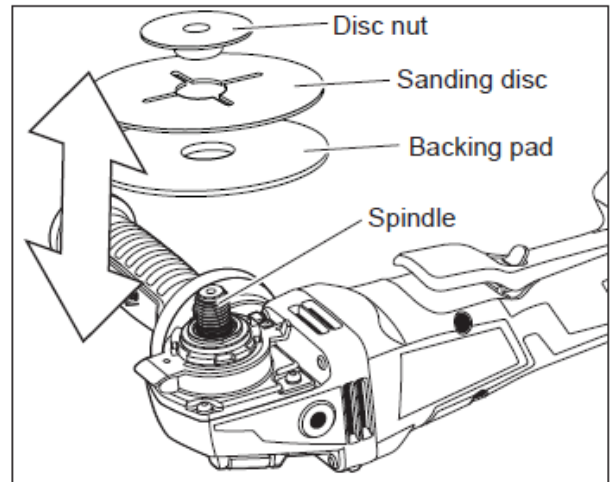
1. Remove the battery pack. **WARNING!** Always remove battery pack before changing or removing accessories.
2. Properly position the guard.
3. Wipe the flange, flange nut and spindle to remove dust and debris. Inspect the parts for damage. Replace if needed.
4. Place the flange on spindle, as shown.
5. Place the selected wheel on the spindle and align it with the flange.
6. Position the flange nut over the spindle according to wheel thickness.
7. Press in the spindle lock button while turning the flange nut clockwise. Tighten securely.
8. To remove wheel, remove the battery pack and reverse the procedure.



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Installing Backing Pad and Sanding Discs

1. Remove the battery pack. **WARNING!** Always remove battery pack before changing or removing accessories.
2. Wipe the accessories, disc nut and spindle to remove dust and debris. Inspect the parts for damage. Replace if needed. Use only MILWAUKEE mounting hardware designed for your tool.
3. Slip backing pad onto spindle with flat side away from gear case.
4. Place sanding disc on backing pad and secure assembly to spindle with disc nut.
5. Press in the spindle lock button while turning flange nut clockwise. Tighten securely.
6. To remove backing pad and sanding disc, remove the battery pack and reverse the procedure.



Report to your Supervisor any condition of the operation or tool you consider unsafe.

Reference Material:

Doc#10197 - Tool/Equipment Use and Inspection

Doc#10107 - Safety Policy

Doc#10541 - Workplace Safety and Health

Doc#10210 - Personal Protective Equipment (PPE)

Rev#	Reason for change:	Revised by:	Date:	Re Training Required
00	New SOP	Initial Release	March 12, 2018	Yes