



OPERATOR'S MANUAL

**Cat. No.
M12 BPS-0
M12 BPS-301B**



M12™ CORDLESS 2" SANDER / 3" POLISHER

TO REDUCE THE RISK OF INJURY, USER MUST READ AND UNDERSTAND OPERATOR'S MANUAL.

GENERAL POWER TOOL SAFETY WARNINGS



WARNING READ ALL SAFETY WARNINGS AND ALL INSTRUCTIONS. Failure to follow the warnings and instructions 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.

WORK AREA SAFETY

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

ELECTRICAL SAFETY

- **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.
- **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.
- **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- **Do not abuse the cord. Never use the cord 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.
- **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.
- **If operating a power tool in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) protected supply.** Use of an GFCI reduces the risk of electric shock.

PERSONAL SAFETY

- **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use 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.
- **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.
- **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 energising power tools that have the switch on invites accidents.
- **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.

- **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 jewellery. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.
- **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.

POWER TOOL USE AND CARE

- **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.
- **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.
- **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.
- **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.
- **Maintain power tools. 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.
- **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- **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.

BATTERY TOOL USE AND CARE

- **Recharge only with the charger specified by the manufacturer.** A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
- **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.
- **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.

SERVICE

- **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.

SPECIFIC SAFETY RULES

Safety Warnings Common for Sanding and Polishing Operations:

- **This power tool is intended to function as a sander or polisher. 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.
- **Operations such as grinding, wire brushing or cutting-off are not recommended to be performed with this power tool.** Operations for which the power tool was not designed may create a hazard and cause personal injury.
- **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.
- **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.
- **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.
- **Threaded mounting of accessories must match the GRINDER spindle thread. For accessories mounted by FLANGES, the arbour 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.
- **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.
- **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.

- **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.
- **Hold the power tool by insulated gripping surfaces only, when performing an operation where the cutting accessory may contact hidden wiring.** Contact with a "live" wire will also make exposed metal parts of the power tool "live" and could give the operator an electric shock.
- **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 in to the spinning accessory.
- **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.
- **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.
- **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.
- **Do not operate the power tool near flammable materials.** Sparks could ignite these materials.
- **Do not use accessories that require liquid coolants.** Using water or other liquid coolants may result in electrocution or shock.

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, if provided, for maximum control over kickback or torque reaction during start-up.** The operator can control torque reactions or kickback forces, if proper precautions are taken.
- **Never place your hand near the rotating accessory.** Accessory may kickback over your hand.

- **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.
- **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.
- **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 Sanding Operations:

- **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:

- **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.

Additional Safety Warnings

• **Maintain labels and nameplates.** These carry important information. If unreadable or missing, contact a **MILWAUKEE®** service facility for a replacement.

• **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 paint
- 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.

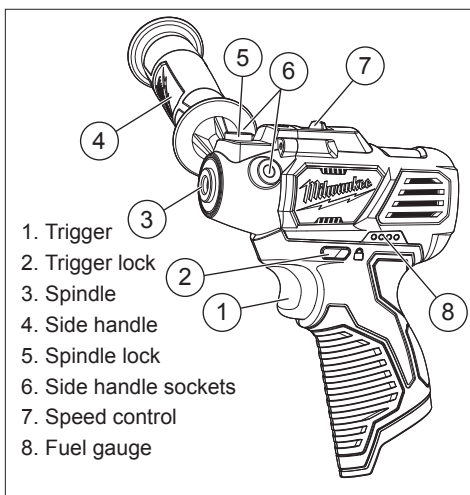
SPECIFICATIONS

Cat. No.	Volts DC	No Load RPM	Spindle Thread Size	Sanding Disc Diameter	Polishing Pad Diameter
M12BPS	12	High 0 - 8 300 Low 0 - 2 800	M9 x 0.75	2"	3"


SYMBOLGY

	Volts	n_0 XXXX min. ⁻¹	No Load Revolutions per Minute (RPM)
	Direct Current		Underwriters Laboratories, Inc. United States and Canada

FUNCTIONAL DESCRIPTION




ASSEMBLY

 **WARNING** Recharge only with the charger specified for the battery. For specific charging instructions, read the operator's manual supplied with your charger and battery.

Inserting/Removing the Battery

To **remove** the battery, push in the release buttons and pull the battery pack away from the tool.

To **insert** the battery, slide the pack into the body of the tool. Make sure it latches securely into place.

 **WARNING** Always remove battery pack before changing or removing accessories. Only use accessories specifically recommended for this tool. Others may be hazardous.

Installing Side Handle

The side handle may be installed on either side of the gear case. Position side handle in the location which offers best control and guard protection. To install, thread side handle into side handle socket and tighten securely.

OPERATION

⚠ WARNING Always remove battery pack before changing or removing accessories. Only use accessories specifically recommended for this tool. Others may be hazardous.

⚠ WARNING To reduce the risk of injury, wear safety goggles or glasses with side shields.

Fuel Gauge

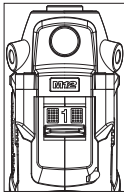
To determine the amount of charge left in the battery, pull the trigger. The Fuel Gauge will light up for 2-3 seconds.

To signal the end of charge, 1 light on the fuel gauge will flash for 2-3 seconds.

Selecting Speed

The speed selector is on top of the motor housing. Allow the tool to come to a complete stop before changing speeds.

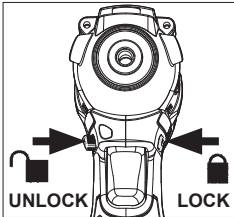
1. For **Low** speed, push the speed selector to display "1".
2. For **High** speed, push the speed selector to display "2".



Locking the Trigger

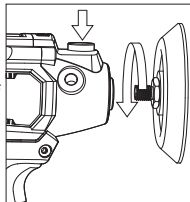
Always allow the motor to come to a complete stop before locking the trigger. Always lock the trigger or remove the battery pack before performing maintenance, changing accessories, storing the tool and any time the tool is not in use.

To **lock** the trigger, push the trigger lock from the **LOCK** side of the tool. To **unlock**, push the trigger lock to the **UNLOCK** side of the tool.



Installing Backing Pads

1. Remove the battery pack.
2. Wipe the accessories and spindle to remove dust and debris. Inspect the parts for damage. Replace if needed.
3. Press in the spindle lock and thread the backing pad into the spindle. Hand tighten securely.
4. To remove backing pad, remove the battery pack and reverse the procedure.



Installing/Removing Hook and Loop Polishing Pads

1. Remove the battery pack.
2. To install, line up the polishing pad with the backing pad and press firmly onto the tool.
3. To remove, pull the polishing pad off of the backing pad.

NOTE: Use side handles for better control.

Sanding Disc Selection

Use sanding discs and accessories that are:

- correct size as written on tool's nameplate.
 - rated at or above the RPM listed on the tool's nameplate.
 - correct accessory, wheel type and grit for the job.
- Refer to the table below to select the correct type of sanding disc for your job. Generally, use 24 or 36 grit for heavy stock removal; 50, 60, or 80 grit for medium stock removal and 120 grit for finishing. Always begin with a coarse grit, using successively finer grits to obtain the desired finish.

Aluminum Oxide

For fast cutting, general purpose discs for most metal jobs. Best for cold-rolled steel, stainless steel or metals requiring tough, fast cutting, long lasting abrasives.

Aluminum Zirconia Bi-Cut

Unique grit pattern is arranged in clusters for faster stock removal and cleaning. Ideal for removing paint from cars, boats, etc. without clogging.

Ceramic

Lasts up to 3 times longer than Aluminum Oxide Discs. For general metal working. Ideal for tough jobs.

Installing/Removing Sanding Discs


Use Roloc™ type (Twist Lock) sanding discs.

1. Remove the battery pack.
2. Press in the spindle lock and thread sanding disc onto the backing pad. Hand tighten securely.
3. To remove, reverse the procedure.

General Operation

1. Use a clamp, vise or other practical means to hold your work, freeing both hands to control the tool.
2. Hold tool securely with both hands.
3. Start the tool.
4. Allow accessory to come to full speed before beginning work.
5. Control pressure and surface contact between accessory and workpiece. Too much pressure slows speed.
6. When finished, turn off the tool and make sure it comes to a complete stop before laying it down.

MAINTENANCE


 **WARNING** To reduce the risk of injury, always unplug the charger and remove the battery pack from the charger or tool before performing any maintenance. Never disassemble the tool, battery pack or charger. Contact a **MILWAUKEE** service facility for **ALL** repairs.

Maintaining Tool

Keep your tool, battery pack and charger in good repair by adopting a regular maintenance program. After six months to one year, depending on use, return the tool, battery pack and charger to a **MILWAUKEE**® service facility for:

- Lubrication
- Mechanical inspection and cleaning (gears, spindles, bearings, housing, etc.)
- Electrical inspection (battery pack, charger, motor)
- Testing to assure proper mechanical and electrical operation

If the tool does not start or operate at full power with a fully charged battery pack, clean the contacts on the battery pack. If the tool still does not work properly, return the tool, charger and battery pack, to a **MILWAUKEE**® service facility for repairs.

 **WARNING** To reduce the risk of personal injury and damage, never immerse your tool, battery pack or charger in liquid or allow a liquid to flow inside them.


Cleaning

Clean dust and debris from charger and tool vents. Keep tool handles clean, dry and free of oil or grease. Use only mild soap and a damp cloth to clean the tool, battery pack and charger since certain cleaning agents and solvents are harmful to plastics and other insulated parts. Some of these include gasoline, turpentine, lacquer thinner, paint thinner, chlorinated cleaning solvents, ammonia and household detergents containing ammonia. Never use flammable or combustible solvents around tools.

Repairs

For repairs, return the tool, battery pack and charger to the nearest service center.

ACCESSORIES

 **WARNING** Always remove battery pack before changing or removing accessories. Only use accessories specifically recommended for this tool. Others may be hazardous.

For a complete listing of accessories refer to your **MILWAUKEE**® Electric Tool catalog or go online to www.milwaukee.com. To obtain a catalog, contact your local distributor or service center.

WARRANTY - AUSTRALIA and NEW ZEALAND

Please refer to the Techtronic Industries Pty. Ltd. Warranty Terms and Conditions for **MILWAUKEE®** products and accessories which is supplied with the tool or kit. This warranty applies only to product purchased from an authorised **MILWAUKEE®** dealer in Australia or New Zealand.

**AUSTRALIA AND NEW ZEALAND
MILWAUKEE® Service**

MILWAUKEE® prides itself in producing a premium quality product that is Nothing But Heavy Duty®. Your satisfaction with our products is very important to us! If you encounter any problems with the operation of this tool, please contact your authorised **MILWAUKEE®** dealer or service centre.

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