



## LITHIUM-ION BATTERY PACKS

New battery packs must be charged before first use.

### IMPORTANT SAFETY INSTRUCTIONS

**WARNING READ AND UNDERSTAND ALL INSTRUCTIONS.** Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury.

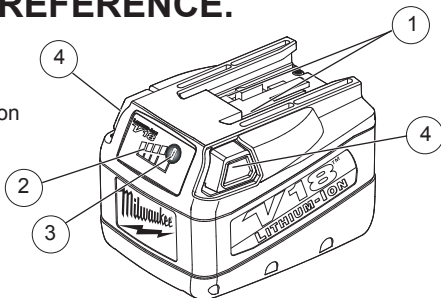
### SAVE THESE INSTRUCTIONS

This instruction sheet contains important safety and operating instructions for **MILWAUKEE** Lithium-Ion battery packs. Before using the battery pack, read this instruction sheet, your tool and charger operator's manuals, and any labels on the battery pack, charger and tool.

- CAUTION! TO REDUCE THE RISK OF INJURY, CHARGE MILWAUKEE LITHIUM-ION PACKS ONLY IN MILWAUKEE LITHIUM-ION CHARGERS.** Other types of chargers may cause personal injury or damage. Do not wire a battery pack to a power supply plug or car cigarette lighter. Battery packs will be permanently disabled or damaged.
- DO NOT BURN OR INCINERATE BATTERY PACKS.** Battery packs may explode, causing personal injury or damage. Toxic fumes and materials are created when Lithium-Ion battery packs are burned.
- AVOID DANGEROUS ENVIRONMENTS.** Do not use battery pack or charger in the presence of explosive atmospheres (gaseous fumes, dust or flammable materials) because sparks may be generated when inserting or removing battery pack, possibly causing fire.
- CHARGE IN A WELL VENTILATED AREA.** Do not block charger vents. Keep them clear to allow proper ventilation.
- DO NOT CRUSH, DROP, OR DAMAGE** battery pack. Do not use a battery pack or charger that has received a sharp blow, been dropped, run over, or damaged in any way (e.g., pierced with a nail, hit with a hammer, stepped on).
- DO NOT DISASSEMBLE.** Incorrect reassembly may result in the risk of electric shock, fire or exposure to battery chemicals. If it is damaged, take it to a **MILWAUKEE** service facility.
- BATTERY CHEMICALS CAUSE SERIOUS BURNS.** Never allow contact with skin, eyes, or mouth. If a damaged battery pack leaks battery chemicals, use rubber or neoprene gloves to dispose of it. If skin or eyes are exposed to battery chemicals, seek medical attention. Remove and dispose of contaminated clothing.
- DO NOT SHORT CIRCUIT.** A battery pack will short circuit if a metal object makes a connection between the positive and negative contacts on the battery pack. Do not place a battery pack near anything that may cause a short circuit, such as coins, keys or nails in your pocket. A short circuited battery pack may cause fire and personal injury.
- STORE YOUR BATTERY PACK AND CHARGER** in a cool, dry place. Do not store battery pack where temperatures may exceed  $1 \text{ }^{\circ}\text{C}$  ( $33 \text{ }^{\circ}\text{F}$ ) such as in direct sunlight, a vehicle or metal building during the summer. Charger will charge the battery when the temperature is between  $0 \text{ }^{\circ}\text{C}$  ( $32 \text{ }^{\circ}\text{F}$ ) and  $15 \text{ }^{\circ}\text{C}$  ( $59 \text{ }^{\circ}\text{F}$ ). When the battery temperature is outside that range, charging will not occur.

### READ AND SAVE ALL INSTRUCTIONS FOR FUTURE REFERENCE.

- Contacts
- Fuel Gauge
- Fuel Gauge button
- Release buttons



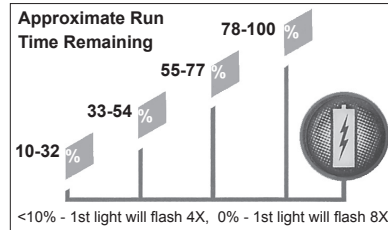
#### Symbology

**V** Volts Direct Current

#### BATTERY PACK OPERATION

##### Fuel Gauge

Use the Fuel Gauge to determine the battery pack's remaining run time. Press the Fuel Gauge button to display the lights. The Fuel Gauge will stay lit for two seconds.



**NOTE:** If the Fuel Gauge doesn't appear to be working, place the battery pack on the charger and charge as needed.

Unlike other battery pack types, **MILWAUKEE** Lithium-Ion battery packs deliver fade-free power for their entire run time. The tool will not experience a slow, gradual loss of power as you work. To signal to you that the battery pack is at the end of its run time and needs to be charged, power to the tool will drop quickly. When this happens, remove the tool from the workpiece and charge the battery pack as needed. If the tool begins to "pulse", but not run, charge the battery pack immediately.

**NOTE:** Immediately after using the battery pack, the Fuel Gauge may display a lower charge than it will if checked a few minutes later. The battery cells "recover" some of their charge after resting.

To protect itself from damage and extend its life, the battery pack's intelligent circuit monitors current draw and temperature.

In extremely high torque, binding, stalling, and short circuit situations, the battery pack will turn OFF the tool if the current draw becomes too high. In these situations, the tool may "buzz" for about 2 seconds before it turns OFF.

To prevent the tool from turning OFF, immediately reduce pressure on the application or release the trigger.

If the tool does turn off, the Fuel Gauge lights will flash 11 times. Release the trigger to reset. Under extreme circumstances, the internal temperature of the battery could become too high. If this happens, the battery pack will shut off. When the Fuel Gauge button is pressed, the lights will flash alternately. Allow the battery pack to cool. The battery is ready for use when the Fuel Gauge displays the remaining run time when the Fuel Gauge button is pressed.

##### Cold Weather Operation

The **MILWAUKEE** Lithium-Ion battery packs can be used in temperatures down to  $-20 \text{ }^{\circ}\text{C}$  ( $-4 \text{ }^{\circ}\text{F}$ ). When the battery pack is very cold, put the battery pack on a tool and use the tool in a light application. It may "buzz" for a short time until it warms up. When the buzzing stops, use the tool normally.

##### Maintenance and Storage

Do not expose your battery pack or cordless tools to water or rain, or allow them to get wet. This could damage the tool and battery pack. Do not use oil or solvents to clean or lubricate your battery pack. The plastic casing will become brittle and crack, causing a risk of injury.

Store battery packs at room temperature away from moisture. Do not store in damp locations where corrosion of terminals may occur. As with other battery pack types, permanent capacity loss can result if the pack is stored for long periods of time at high temperatures  $1 \text{ }^{\circ}\text{C}$  ( $33 \text{ }^{\circ}\text{F}$ ). **MILWAUKEE** Lithium-Ion battery packs maintain their charge during storage longer than other battery pack types. After about six months of storage, charge the pack as normal.

**WARNING** To reduce the risk of injury or explosion, never burn or incinerate a battery pack even if it is damaged, dead or completely discharged. When burned, toxic fumes and materials are created.

##### Disposing of MILWAUKEE Lithium-Ion Battery Packs

**MILWAUKEE** Lithium-Ion battery packs are more environmentally friendly than some other types of power tool battery packs (e.g., nickel-cadmium). Always dispose of your battery pack according to federal, state and local regulations. Contact a recycling agency in your area for recycling locations.

Even discharged battery packs contain some energy. Before disposing, use electrical tape to cover the terminals to prevent the battery pack from shorting, which could cause a fire or explosion.

**@A #98 'K 5 FF5 BHM! 5! GHF5 @5 '5 B8 ' B9K 'N95 @ B8**

Please refer to Techtronic Industries Pty. Ltd. warranty terms and conditions for Milwaukee products and accessories document.

**MILWAUKEE ELECTRIC TOOL CORPORATION**

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