



TO INFORM YOU

**PRODUCT
SUPPORT
BULLETIN # 477**

TO: AUTHORIZED *portable electric tool* SERVICE STATIONS
factory SERVICE / SALES SUPPORT BRANCH

DATE: January, 2008

TOOL(S) \ PRODUCT(S) AFFECTED: 48-11-0490 4.0V, 48-11-1815 18.0V, 48-11-1830 V™18 18V,
48-11-2401 12.0V, 48-11-2830 V™28 28V Lithium-Ion Battery Pack
48-59-0490 4.0V, 48-59-1801 18.0V, 48-59-2401 12.0V,
48-59-2801 V™28, 48-59-2818 V™18V/ V™28V Lithium-Ion Charger

**SUBJECT: COLD WEATHER symptoms / affects - Troubleshooting Guide
Milwaukee Lithium-Ion Battery Pack & Charger**

— COLD WEATHER SYMPTOMS / AFFECTS LITHIUM-ION BATTERY PACK TROUBLESHOOTING GUIDE —		
Symptom	Possible Cause(s)	Solution(s)
Battery Pack status - Fuel Gage shows four lights, and then drops to one light after one or two holes / cuts Tool seems to slow or stalls - <i>(fuel gage showed four lights, and then drops to one light after one or two holes / cuts)</i>	Battery Pack temperature is below < 40°F (4°C)	<p>Battery Pack Fuel Gage is most accurate when the battery pack has not been used for 1 minute after the load is removed - <u>checking fuel gauge immediately after use will indicate less than the true power available in the battery pack</u> - the battery pack will 'bounce back' and the 'fuel-gauge' will give an accurate reading of battery packs state-of-charge level within 60 seconds.</p> <p>This is normal. In this situation, the tool might seem "slow" and /or "buzz" for about 5 seconds before it turns OFF.</p> <p>Battery Pack Protection - to protect the battery from damage and extend its life, <u>the tools' or battery packs' intelligent circuit</u> monitors current draw, temperature, and voltage drops. <u>In extremely high torque, binding, stalling, and short circuit situations that cause high current draw, the tool will vibrate - 'buzz' for about 5 seconds, the fuel gauge will flash, and then the tool will turn OFF</u> - checking fuel gauge immediately after will indicate less than the true power available in the battery pack. To reset battery pack, pull and release the trigger. If this happens repeatedly, the battery pack will shut down and need to be placed on the charger to reset.</p> <p>Battery Pack Protection - <i>tool might seem "slow" and /or "buzzes"</i> - is more prevalent at cold temperatures, temperatures < 30°F (-1°C). If tool begins to stall, reduce pressure allowing tool to regain full speed - to eliminate 'buzzing' - continue to use the tool at reduced force.</p>
Battery Pack connected to Charger. Red Charger light flashing.	Battery Pack temperature is below <14°F (-10°C)	<p>This is normal. Charger is waiting for Battery Pack temperature to reach acceptable range for charging. Charge will commence once temperature reaches proper range.</p> <p>If Battery Pack is obviously in the acceptable temperature range - between 15°F (-9°C) and 149°F (65°C) - and flashing red charger light persists, try known good battery pack on charger. If the charger functions correctly with the second battery, retry the first battery. If the charger continues to flash red the battery is damaged or is faulty.</p>
Battery Pack connected to Charger. Red Charger light turns on and a "chirping" sound is heard coming from the Charger.	Pack was depleted to a very low voltage	<p>This is normal. Charger will attempt to "recover" a deeply depleted Battery Pack. Chirping sound is due to electronics inside the Charger. If Battery Pack does not recover, Charger will flash red/green. In that case, make several attempts to charge by removing/reinserting the Battery Pack. If it still does not go into normal charge, Battery Pack is probably damaged.</p>

— COLD WEATHER SYMPTOMS / AFFECTS LITHIUM-ION BATTERY PACK TROUBLESHOOTING GUIDE CONTINUED —

Charger lights go out after charging for a short period of time.	Battery Pack was cold	Charging in cold weather can cause this effect to occur. Remove/reinsert Battery Pack. If lights do not turn on, unplug Charger for one minute and plug it back in.
Fuel gauge lights blink when Battery Pack is placed on Charger.	Pack is cold while charging	If the Battery Pack is cold, charge current is “pulsed” at a slow rate. This can show up as blinking fuel gauge lights. Wait for green Charger LED to indicate full charge, or in some conditions, Charger lights will turn off (see above).
Fuel gauge lights inaccurate while charging.	Battery Pack is cold	If the Battery Pack is cold, the Battery Pack voltage rises higher than normal during times when charge current is applied. This can cause the fuel gauge to read higher than the Battery Pack actually is. This effect will be more apparent at the start of charge with a cold, discharged Battery Pack. Wait for green Charger LED to indicate end of charge or in some conditions, charge lights will turn off (see above).
Fuel gauge button does not operate with Battery Pack connected to Charger.	Normal	Pack fuel gauge button is inoperable while Battery Pack is on Charger. Remove Battery Pack from Charger.

— COLD WEATHER SYMPTOMS / AFFECTS LITHIUM-ION CHARGER TROUBLESHOOTING GUIDE —

Symptom	Possible Cause(s)	Solution(s)
Battery Pack takes a long time to charge.	Cold Battery Pack under < 40°F (4°C)	Charger reduces charging current at low temperatures. Increased charge times are normal under these conditions. Move Charger and Battery Pack to warmer location, if faster charge time is desired.

Battery Pack Protection - a feature not offered in competitor Li-Ion Battery Packs; damage to these battery packs can result with an ensuing reduction in their battery pack performance and life.

RBRC Seal



Rechargeable Battery Recycling Corporation. RBRC is a non-profit, public service organization created to promote the recycling of portable rechargeable batteries and cellular phones.

The RBRC licensees, participating battery manufacturers and marketers, purchase the rights to imprint the RBRC Battery Recycling Seals on their Ni-Cd, Ni-MH, **Li-Ion** and Pb **portable rechargeable batteries** and products. Rechargeable batteries are the power source for cordless power tools, cellular and cordless phones, laptop computers and camcorders. If it's rechargeable, it's recyclable!

A depleted, used up, worn-out, faulty or defective **48-11-0490 4.0V, 48-11-1815 18.0V, 48-11-1830 V18™ 18V, 48-11-2401 12.0V, 48-11-2830 V28™ 28V Lithium-Ion Battery Pack** should be recycled using the RBRC consolidation centers in the USA and Canada. For additional information on recycling portable cordless power tool battery packs visit the RBRC website <http://www.rbrc.org>

This bulletin is for informational purposes. PLEASE NOTE ON SERVICE PARTS LIST: 54-04-1810, 54-04-7000, 54-04-7010, 54-04-7020, 54-04-7021, 54-04-7030, 54-06-2610, 54-08-7000, 54-24-0830, 54-24-7010, 54-24-7020, 54-26-0880, 54-26-0890, 54-26-7000, 54-40-7000, 54-40-7020, 54-40-7040, 54-40-7050, 54-42-0490, 54-42-2400