



TO INFORM YOU

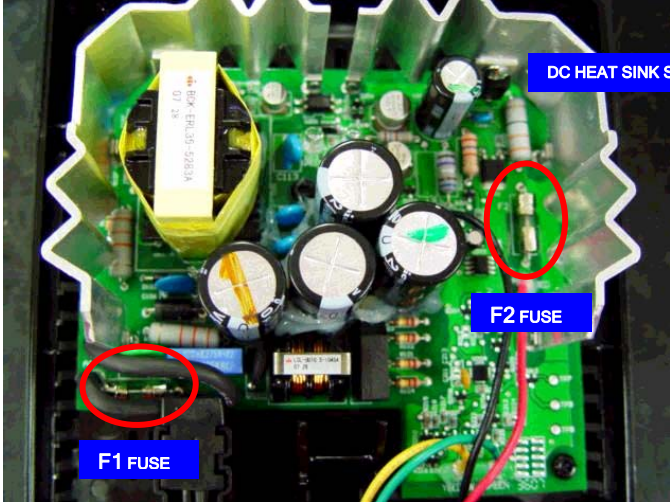
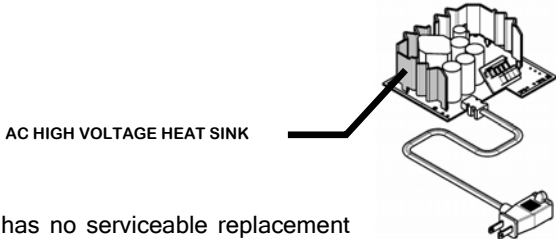
PRODUCT
SUPPORT
BULLETIN # 474

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

DATE: January 2008

TOOL(S) \ PRODUCT(S) AFFECTED: 2601-20 18.0V Li-Ion Compact Driver/Drill
48-11-1815 18.0V 1.4Ahr Li-Ion Battery Pack, 48-59-1801 18.0V Charger

SUBJECT: Troubleshooting Guide 48-59-1801 18.0V Charger / 48-11-1815 18.0V Li-Ion Battery Pack

Symptom	Possible Cause(s)	Solution(s)
Battery Pack connected to Charger, RED or GREEN LED lights failure to turn "on".  	Line voltage too high or too low (or no power present) Charger temperature too high >212°F (100°C) Faulty Battery Pack - 'blown' FET Faulty Charger	Remove Battery Pack. Unplug Charger and verify correct line voltage - 90VAC - 132VAC for 120VAC Charger Allow Charger to cool 3-5 minutes before attempting charge. Power must be removed for a minimum of one minute then reapplied if this condition occurs. Try known good Battery Pack on the questionable Charger, or try questionable Battery Pack on known good Charger. FET can fail when battery pack is repeatedly over-loaded - under extreme circumstances, the internal temperature of the battery becomes too high or subjected to water. UNPLUG Charger - high voltage is present at the AC High Voltage Heat Sink - when AC line voltage is applied to the Charger circuit board. Check for 'blown' Charger DC low voltage 'one-time' output protection fuse F2 with Volt-Ohm Meter and/or 'blown' Charger AC line fuse - F1, if fuse F2 checks OK. NOTE: Before checking fuses F1 or F2 unplug the Charger from power source and let it sit for 3-4 minutes before disassembling - this allows circuit board capacitor to self discharge.  Use only a battery operated VOM to perform FUSE continuity test - it may be necessary to pierce / scrap the protective coating of PCB board on end of fuse to obtain valid continuity reading.  48-59-1801 Charger has no serviceable replacement parts.

Symptom	Possible Cause(s)	Solution(s)
Battery Pack fuel gauge LEDs fail to progress from 1 to 2 to 3 to 4 LED lit first LED only, stays blinking – no progression	Charger needs to be reset Faulty Battery Pack	Progressive Charge Indication - indicates the approximate remaining charge time or if there is enough charge level on the pack to complete the job at hand. 3 Amp Charger - charges battery pack in 30 minutes or less. Fuel Gage LED lights will progress from 1 to 2 to 3 to 4 LED lit as Battery Pack is charged - if no progression is seen the Charger or Battery Pack is faulty; the internal temperature of the battery became too high, was subjected to water or is defective. [no progression - this can also take place occasionally, if power is interrupted and reapplied. Unplug Charger and remove Battery Pack for one minute (60 seconds). Plug Charger back in and reinstall Battery Pack on Charger]
	Battery Pack Protection	Battery Pack Protection - 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 will "buzz" for about 5 seconds before it turns OFF. To reset, 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. Under extreme circumstances, the internal temperature of the battery could become too high; the battery pack will then shut off. Remove the battery pack from the tool and place it on the charger to reset it.
Battery Pack connected to Charger. Alternately flashing red/green Charger lights.	Bad connection between Battery Pack and Charger Faulty Battery Pack Battery Pack temperature dropped below 14°F (-10°C) during charge Pack temperature higher than 149°F (65°C) at start of charge Water inside Battery Pack or Charger as a result of condensation from bringing cold product into a warm environment	Clean Battery Pack terminals. NOTE: Before checking battery pack terminals inside connector block or fuses F1 or F2 unplug the Charger from power source and let it sit for 3-4 minutes before disassembling - this allows circuit board capacitor to self discharge. Pack may not be accepting charge or Battery Pack electronics FET may be faulty. Attempt to charge Battery Pack on known-good Charger. Move Charger and Battery Pack to warmer environment. Allow to warm up, and then re-start charge. Allow Battery Pack to cool - 10 to 30 minutes - to appropriate temperature range [<149°F (65°C)] before attempting to charge. Allow Battery Pack or Charger to dry out.
Battery Pack shows four lights, and then – battery pack is 'dead' – fuel gauge drops to NO lights after one or two holes / screw insertions, etc	DEFECTIVE Battery Pack	Battery Pack fuel gauge drops to NO lights after one or two holes / screw insertions - no LEDs lit or blinking.