

Taking good care of your laptop

Article courtesy of <http://www.ergo.co.uk/support/tips.html>

Following some simple guidelines can significantly improve the performance and life-time of your laptop and battery.

General care



Do not place on uneven or unstable work surfaces. Seek servicing if the casing has been damaged.



Do not expose to or use near liquids, rain, or moisture. Do not use the modem during an electrical storm.



Do not place or drop objects on top and do not shove any foreign objects into the Notebook PC.



Do not expose to dirt. Do not expose to dirty or dusty environments. Do not operate during a gas leak.



Do not press or touch the display panel. Do not place together with small items that may scratch or enter the Notebook PC.



Do not expose to extreme temperatures above 50°C (122°F) or to direct sunlight. Do not block the fan vents!



Do not expose to strong magnetic or electrical fields.



Do not expose to extreme temperatures below 0°C (32°F), otherwise the Notebook PC may not boot.



Do not throw batteries in fires as they may explode. Check local codes for special battery disposal instructions.

Keeping your laptop clean

Disconnect the AC power and remove the battery pack before cleaning.

Wipe the laptop using a clean cellulose sponge or chamois cloth dampened with a solution of nonabrasive detergent and a few drops of warm water and remove any extra moisture with a dry cloth.

Preparing your laptop for transport

- * Turn the laptop OFF and disconnect all external peripherals to prevent damage to the connectors.
- * The hard disk drive's head retracts when the power is turned OFF to prevent scratching the hard disk surface during transport. Therefore, you should not transport your laptop while the power is still ON.
- * Close the display panel and check that it is latched securely in the closed position to protect the keyboard and display panel.
- * Remove floppy disks:
Make sure that the internal 1.44MB floppy disk drive does not contain a diskette when transporting the floppy disk drive.
- * When a diskette is inserted into the floppy disk drive, the eject button protrudes out. If you attempt to transport the floppy disk drive with a diskette in the drive, you risk damaging the eject button and also risk scratching the surface of the diskette when the floppy disk drive is jolted.

Extending the life-time of your battery

Recommendations

- * Try to keep the notebook plugged into the mains as often as possible
- * It is not recommended to remove the battery completely as Li-Ion batteries prefer to be kept topped rather than left on a shelf.
- * Try to keep deep DOD** (**Depth of Discharge**) cycles to a minimum
- * After using the machine try to charge it up again as soon as possible to keep the battery topped up.
- * Try not to use the notebook in very hot conditions when running on battery.
- * Very occasionally it can be a good idea to do one single deep DOD discharge, running the notebook until the battery is completely flat. Although this is a bad long-term practice it does re-calibrate the battery and may rejuvenate older batteries that have had continual shallow DOD cycles throughout their lifetime.

Battery life

Lithium Ion batteries like all rechargeable batteries will deteriorate with age. This document explains some of the reasons behind this and following the tips above will keep the battery running for as long as possible. This document applies to all Li-Ion and Li-Polymer batteries.

**** Depth of Discharge (DOD)** is the amount that a battery is run down to before it is put back on charge. For a notebook this can vary enormously. Many machines are only run down to 70% battery during short stints of battery power (known as a shallow DOD), others are discharged completely to 10% or 5% (known as deep DOD), this is when the notebook switches off or warns about low battery.

A charge cycle is a cycle of running the battery down and then charging it up again. One charge cycle is classified as when the battery is run down to 70% or less and then charged again to 90% or more. A battery does not have to be discharged until it is flat before a charge cycle is used.

Battery life of Li-Ion batteries varies but commonly accepted values are that an "Average" battery will last for 500 shallow DOD charge cycles and at the end of 500 cycles the battery will last for 50% to 70% of the time it lasted when new. In real terms this equates to about two years use in "normal" conditions.

Many things can vary this figure, the biggest variance is from deep and shallow depth of discharge. A deep DOD uses up much more of the batteries total life span than a shallow DOD, the effect of this is very severe. For example, if we have a battery that lasts for 2 hours and we do two simple tests.

In test "A" we run the notebook from the battery for the full 2 hours until it is completely flat (a deep DOD) and charge it up again. Then in test "B" we run the notebook for 40 minutes and then charge it again (a shallow DOD) and repeat this shallow DOD 5 times in a row. The total lifetime of the battery will have been reduced much more by test "A" than it will have by test "B". Although in test "B" the notebook was running from the battery for over an hour longer than in test "A".

The other main factor that affects battery life is temperature, the hotter the battery the less charge cycles it will run for, the industry suggestions are that a battery is run at between 10 and 30 degrees centigrade. It should be noted that it may be hotter inside the notebook where the battery is than in the room where it is being used.