RECALIBRATING YOUR PS2 LASER **(For use at your own risk)**
(updated 05-Jan-03 by Charlie_PS2)

Introduction

The PS2 laser is factory calibrated for CD to a resistance that will deliver the right current to read CDs and DVDs. This provides sufficient power for the lens to focus on the groove and read data from pressed CD or DVD media that conforms with the ECMA specification.

The CD laser operates in the infra-red spectrum at 780 nano-metres and the DVD laser operates in the higher frequency red spectrum at 650 nano-metres wavelength (so requiring more power). So for the DVD laser, absolute precision is required as more than 6 times as much data is packed into a DVD compared with a CD.

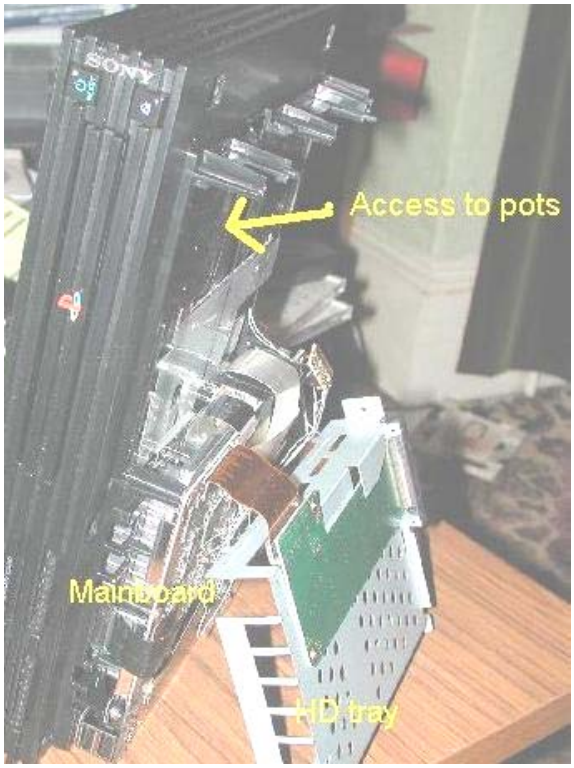
The basis of operation for both CD and DVD is that the laser beam is reflected back from the disk and each such spot represents and there needs to be sufficient reflectivity for this to occur. Quality pressed disks and DVD-Rs have a optically clear compound layers with high transmissivity and a good reflective layer; cheaper DVD-R media will not have such optically good materials and reflectivity usually falls below 45% which is when the laser struggles.

When the laser struggles, it wears out faster requiring higher power levels to produce the correct light intensity for media at the lower reflectivity end. Hence, recalibration.

Note please that as a result of recalibration, you will hasten the demise of the laser by a time quantum that is related to the quality of media used. It takes a fraction over the current (and thus pots resistance) threshold to instantly fry the laser diode.

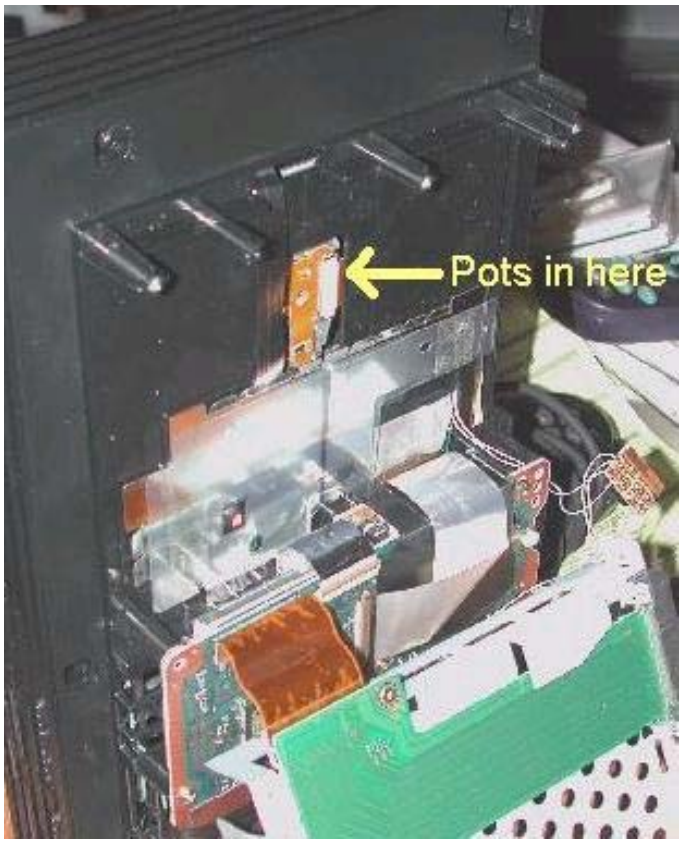
Basic Steps

To recalibrate your laser (usually the DVD laser diode) the principal steps (with the PS2 switched on) are:



1. Open the PS2 so that the underside is facing upward
2. Remove the metal cage guarding the disk drive
3. Reveal the underside of the laser unit
4. Put a continuity meter between the pot/ground and note resistance (e.g. CD=1220 ohms; DVD=850 ohms; this will vary between laser unit models)
5. Adjust by turning the pot to **reduce the ohms by no more than 10%** and try it with the disk in question
6. Expect shorter laser life

Indicative photographs for PS2 v1 – v3 are shown here (acknowledgements to www.infofree.org); detail will vary between PS2 models. V1 – v3 models are the ones in greatest need of recalibration!

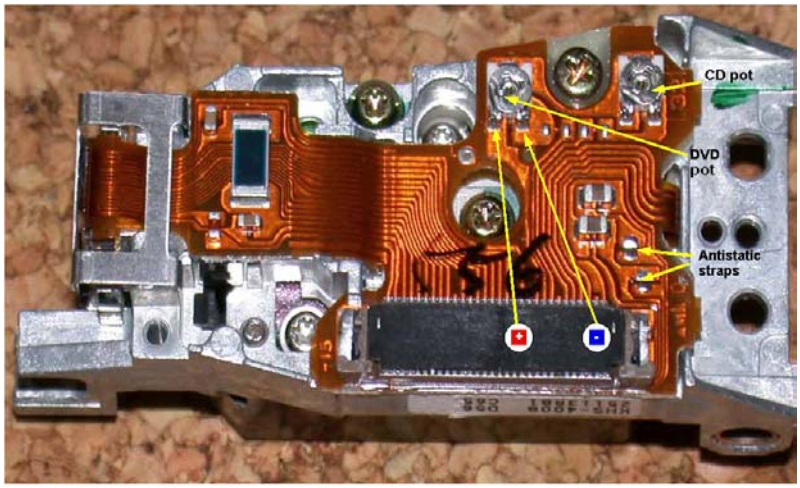


Detailed Steps

With reference to the photograph below, it will be seen that the DVD pot is to the left. There is a small **+** symbol in the bottom left of the pot and a small **–** symbol on the copper at the top right. The resistance meter goes across that pair of points and you turn the pot clockwise to reduce resistance to **90%** of the factory value (checking the meter as you do this).

It is best to use a plastic pot adjuster so that no distortion occurs through a metal screwdriver.

1. Assuming that your DVD laser is currently set to **e.g**. 850 ohms, slowly move the pot clockwise until you reach the value 765 ohms.
2. Bearing in mind that this can be done with the PS2 running (but take great care not to let metal or any object fall into the works) you should try both originals (that previously worked) and backups that worked as well as backups that didn't work). If everything works, you're finished.



3. If at 765 ohms the offending DVD-R backups don't work, reduce resistance in 20 ohms steps and no lower than 725 ohms (85% of nominal); you can go lower but your laser will fry quickly.
4. When you are finished, turn off your PS2 and re-assemble. Take care not to snag any cables or screw them into any holes!
5. Check PS2 fully when re-assembled.

END.