Fan Speed Controller/Accelerator Mods

For the Playstation 3

User Manual

Circuit Surgery

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Description

This is a series of small modules designed to be inserted between the fan and the mainboard of the Playstation 3 in order to increase the speed of the fan within the console to give more airflow than that designed into the PS3.

Basic Accelerator (Blue)

This version increases the speed of the fan by a fixed 50% of the speed set by the system. For example, if the system is driving the fan at 20% of full speed, this module will increase the speed to about 30% of full speed. 30% of full speed will increase to 45% etc. System fan-speeds above 66% will result in the fan being driven at full speed by the module.

Adjustable Accelerator (Green)

This module does the same as the basic version with the added facility of being able to change the amount of increase by setting the switch to the required position. Each position represents a 10% increase:

Posn. 1. Fan speed increased by 10% of that set by the console
Posn. 2. Fan speed increased by 20% of that set by the console
:
:
Posn. 0. Fan speed increased by 100% of that set by the console (double the speed).

Adjustment is made using a small flat-bladed screwdriver to turn the switch to the desired setting.

Adjustable Controller (Red)

This version allows the user to set the minimum speed at which the fan will run. This gives the user the option of setting the fan to spin at a high rate even when the console is cold. If the console asks the fan to run faster than that set by the user, this higher rate will take priority.

The fan speed can be continuously varied between the speed demanded by the console and full speed, by adjusting the small pot on the board.

Adjustment is made using a small flat-bladed screwdriver to turn the switch to the desired setting.

Externally Variable Controller (Yellow)

Unlike previous versions, this module allows the user to vary the speed of the fan from outside the case by means of a potentiometer (pot) fitted to the console's case.

The fan speed can be varied continuously between the speed set by the console (based on the temperature of the CPU) and full speed. The module will not allow the speed to be reduced below that set by the console as that could allow the console to overheat and therefore potentially bring on YLOD.

Fitting this module is identical to that described for the other modules, but with the additional requirement to fit the pot in a suitable position. For information about fitting the pot, turn to the back page of this leaflet.

Illuminated Controller (Yellow/Red)

This version is the same as the "Externally Variable Controller" except that the control is mounted inside the case and is adjusted by means of a screwdriver inserted through a small hole drilled in the case. A red LED provides illumination of the hole to assist with location when adjustment is required.

Total Over-ride (Grey)

This is similar to the Yellow version except that this version does not allow the console to take priority. The fan may be set to spin at an rate irrespective of the demand from the console. **Caution must be exercised when using this mod as it is possible to make the fan spin too slowly to give sufficient cooling, and therefore allow the console to overheat!**

Fitting Details

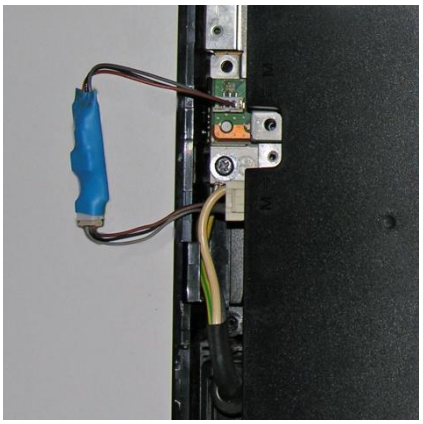
BEFORE YOU BEGIN, PLEASE NOTE THAT OPENING YOUR CONSOLE TO FIT THIS UNIT WILL INVALIDATE YOUR WARRANTY. NO RESPONSIBILITY WILL BE ACCEPTED FOR DAMAGE OR INJURY CAUSED DURING THE INSTALLATION OF THIS MODULE.

The dis-assembly of your Playstation is quite straightforward, and details may be found on numerous websites as well as on Youtube, therefore that information will not be repeated here.

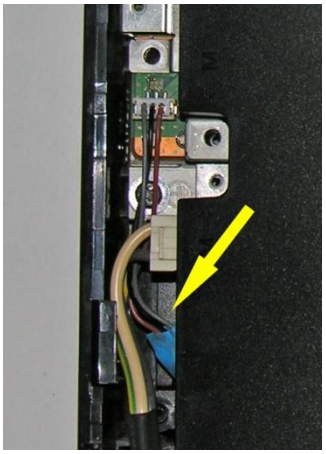
These instructions illustrate three versions of the PS3, however there may be other, different, configurations. The main point to remember is that you are simply looking for the point at which the wires from the fan connect to the main system board. Once that has been found, it is simply a case of unplugging the fan and plugging it into the accelerator module and then plugging the module into the mainboard fan socket. This is the same for all versions of the module. The fitting of the controls for the Yellow, Yellow/Red and Grey modules is described towards the end of this document.

Original PS3 (Later Version)

If you have a later version of the PS3 Fat, you may not need to go further than removing the top cover as the fan connector is on the top of the mainboard just behind the power supply unit.



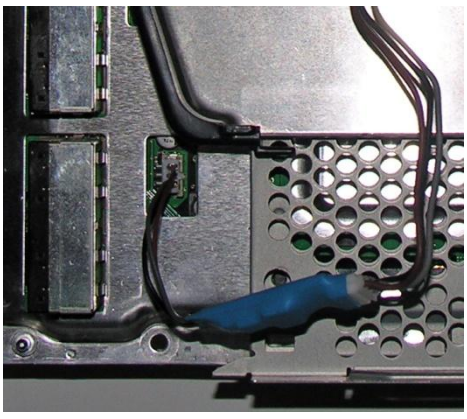
Gently but firmly pull the fan connector upwards out of its socket. In its place, insert the plug of the accelerator. This will only fit one way round. Once inserted into the socket, press firmly to make sure it's fully home.



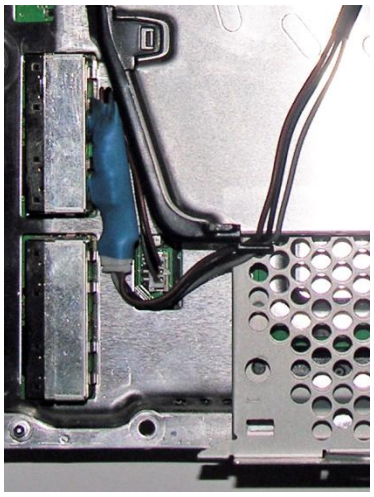
Take the fan connector and insert into the socket of the accelerator.
Tuck the unit into the space under the power unit. Temporarily removing the plug from the PSU will make this easier

Original PS3 (Earlier Version)

For earlier versions of the PS3 Fat it will be necessary to remove the mainboard assembly from the case, as the fan connector is on the underside of the board.



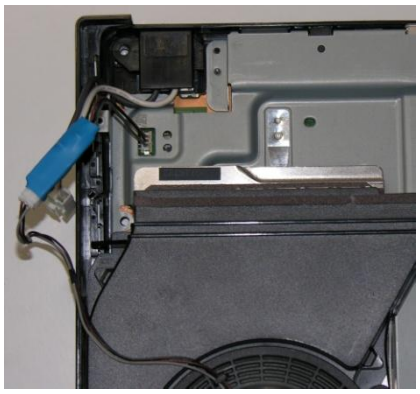
Gently but firmly pull the fan connector upwards out of its socket. In its place, insert the plug of the accelerator. This will only fit one way round. Once inserted into the socket, press firmly to make sure it's fully home.
Take the fan connector and insert into the socket of the accelerator.



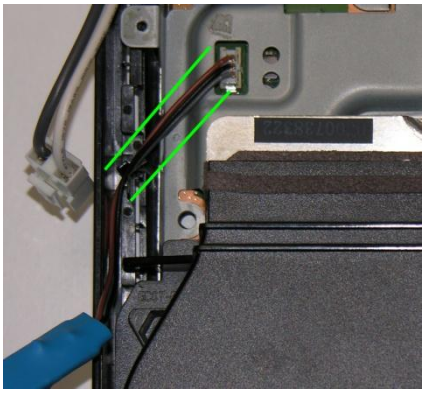
Tuck the unit neatly into the space just behind the USB ports.

PS3 Slim

You will need to temporarily remove the PSU in order to expose the fan connector in this model. Once the console top has been removed, unplug the mains connector and the low voltage connector (circled). Remove the two fixing screws (arrowed) and lift the PSU out. There will be some resistance but gently wriggling the PSU whilst lifting upwards will ease it out.



Once the fan connector has been exposed, gently but firmly pull the fan connector upwards out of its socket. In its place, insert the plug of the accelerator. This will only fit one way round. Once inserted into the socket, press firmly to make sure it's fully home. Take the fan connector and insert into the socket of the accelerator.



Lay the accelerator wires flat and route to the side of the console as shown.

The power supply may now be replaced into the console, the fixing screws replaced and the electrical connections reconnected. Tuck the excess wiring neatly down between the fan housing and the side of the case, and lay the module near the fan and next to the side of the case. Take care to keep wires etc well clear of the fixing screw hole (circled).

Next page:– Fitting the control of the yellow, Grey and Yellow/Red modules…

Externally Variable Controller - Fitting the Control

The pot is designed to fit through a hole 7.5mm diameter with a second locating hole of 3mm diameter (see diagram over the page). Whilst that is the ideal method of fitting, it's not strictly necessary to have both holes if the locating lug is removed from the pot - it's there to ensure the pot doesn't rotate in its fixing.

If you prefer not to drill holes in your console's case, then it's possible to make a small slot somewhere inconspicuous on the edge of the case which the cable may be routed through, and the pot stuck to the outside of the case using glue or double-sided tape. This is not such an attractive way of mounting the pot, but it does have the advantage of ease, and does not leaving an unsightly hole should you remove this mod to sell the console on at a later date.

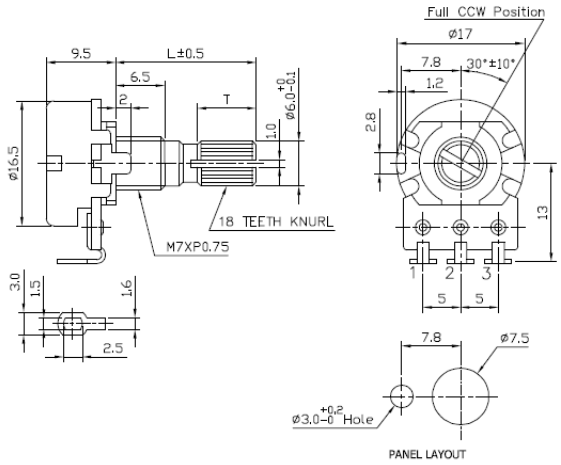
If you decide to fit the pot as designed, then with reference to Figure 1, the first thing that needs to be done is to locate a suitable position within the console with enough space to fit the pot. Make sure that this position has enough clearance all round so that when fitted, neither the body nor the terminals of the pot will come into contact with any internal part of the console when the case is put back together.

Place the self adhesive drilling template on the chosen location on the outer surface of the case. For guidance, the outline of the body of the pot is shown on the template. Carefully mark the centre of both holes using a scribe or similar sharp point. When drilling the holes, do so with a moderate to low drill speed; too high a speed may cause the plastic to melt resulting in an unclean hole.

Once the internals of the console have been replaced into the case, the module can be fitted, the cable routed carefully to the hole and the pot fitted and secured with the nut and washer supplied.

When refitting the top half of the console's shell, be careful not to nip the pot's cable between the plastic mouldings and also make sure that the cable does not cover the case fixing screw holes.

Figure 1: Potentiometer Dimensions



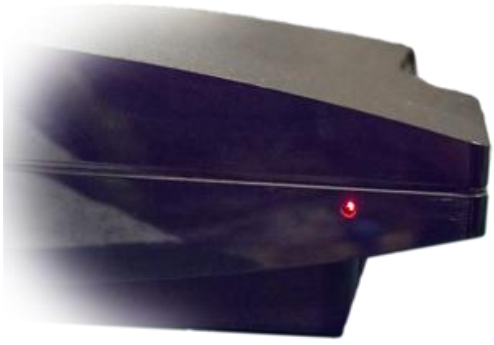
Illuminated Controller - Fitting the Control

Fitting the illuminated control is easier than above as there is only one small hole to drill in the case.

Locate a suitable position inside the case which has enough space to accommodate the pcb/pot assembly. Press the stand-offs into the holes in the pcb from the same side as the control pot. Offer the assembly to the selected position, but do not remove the protective film from the feet at this stage. This will give an idea as to where the hole needs to be drilled in the case. Drill a 3mm hole at the selected position.

In order to best align the pot with the hole, it may be easiest to insert a small (2mm) screwdriver through the hole to act as a guide. Remove the protective film from the feet and engage the control pot with the end of the screwdriver. Keeping the two together, present the assembly to the wall of the console. The pads will now stick to the case and the control should be suitably aligned with the hole.

The following images show the control fitted to a PS3 Slim:



For further information or support, please email colin@circuitsurgery.uk

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