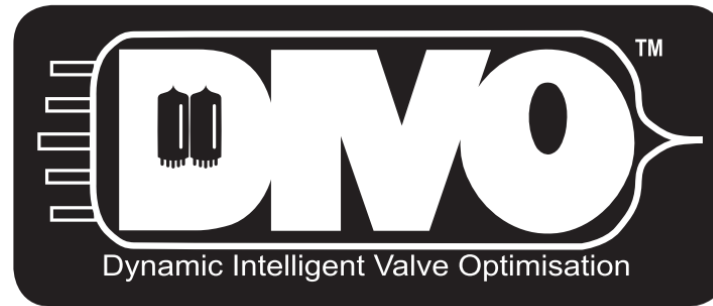
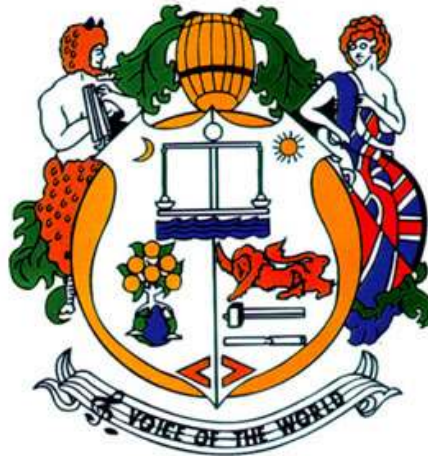


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OV4 Installation Manual



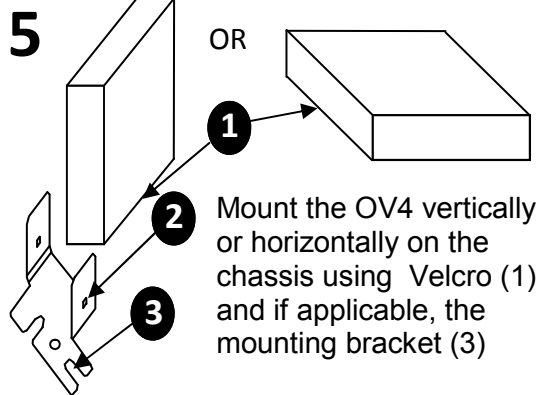
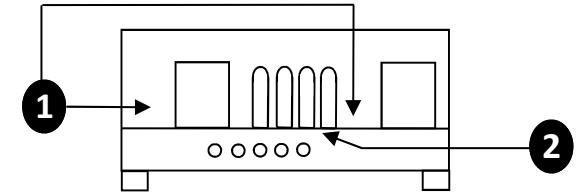
! WARNING : Working on guitar valve amplifiers involves working with **POTENTIALLY FATAL HIGH VOLTAGES. INSTALLATIONS MUST BE PERFORMED BY AN APPROVED ORANGE FITTING CENTRE. ALWAYS CONNECT SPEAKERS WHEN APPLYING POWER TO THE AMP.**

1 Confirm the OV4 is suitable for installation within the chosen amplifier, typically 100w or 50w fixed bias valve amps with octal power valves, and sufficient space to mount the OV4.

2 Before you start ensure that the amp functions correctly, with no faults. Ensure that the bias settings within the OV4 are correct for the amplifier. The factory settings are : 35mA for standard and 35mA for custom. Note : The custom setting can be changed by authorised Orange fitting centre.

3 After ensuring that the amplifier is **TURNED OFF** and the valves are cool, remove the back panel of the amp to access the chassis and output valves.

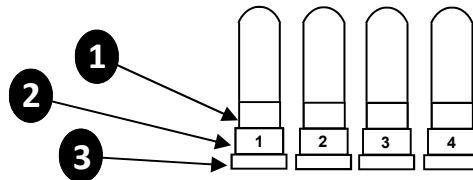
4 Find a suitable location within the amp to mount the OV4. Typically this is on top of the chassis at a distance where the wiring harness can easily reach the valves. eg. (1) Carefully remove the valves from the amp (2)



Mount the OV4 vertically or horizontally on the chassis using Velcro (1) and if applicable, the mounting bracket (3)

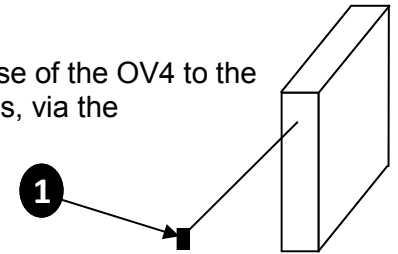
To avoid drilling additional holes in the chassis, it may be possible to use existing fixings. An optional screw can be inserted into (2) to secure the unit if required. During mounting, consideration must be taken to give access to the control buttons and jack inputs.

6 Plug the valve 'interceptors' (2) into the valve sockets (3) and then plug the valves (1) into the interceptors. These are marked 1,2,3,4 and need to be in the correct places to enable fault diagnosis. The LEDs on the OV4 unit correspond to the position of the interceptor, i.e. LED 1 is 1, LED 2 is 2 and so on. Plug the harness into the OV4 and verify that everything is securely connected.



7 Connect the black 0v wire from the harness to the true 0 volts of the amp. **NOTE :** In most amplifiers 0v is the metalwork of the chassis, however in some amplifiers 0v is not directly connected to the chassis. Care must be taken to ensure the black zero 0v wire is connected correctly.

8 Connect the case of the OV4 to the amplifier chassis, via the green wire(1)



IMPORTANT : Double-check that the black 0v and green earth wires have good connections and are secure. (Shake proof washers are recommended). When everything is securely connected, the amp can be 'powered up' (standby switch on) The valve LEDs will flash, indicating power to the OV4. After the LEDs stop flashing **wait 3 minutes**, then the OV4 is operational.



Functional Diagram

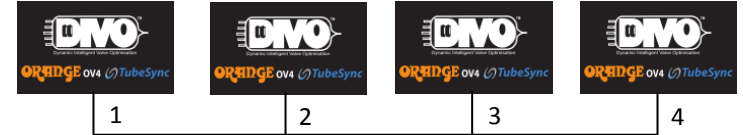
Mechanical Information

Size 160mm X 100mm X 30mm

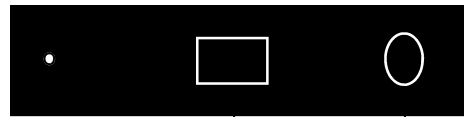
Approx Weight 470g

Valve fault indicators.
LEDs flash during power up.
Individual LEDs illuminate to a corresponding valve failure.
For 100W heads all four LEDs are in operation.
For 50W heads LEDs 2&3 are in operation

Valves ↑
Valve sockets ↓



Connector interface to the power valve interceptors and amp 0v

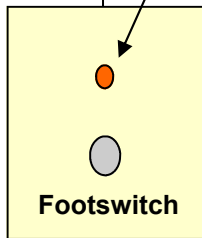


Earth connection to chassis

Interface connection (for authorised personnel) Module configuration and interrogation

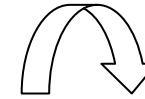
Optional half power footswitch Input (100W amps)

If the amp is going to be used regularly or 'driven 'hard' in 'two valve' mode, the speaker should be correctly matched to the amplifier. E.g. if you are using an 8 ohm speaker change to 4 ohms or if you are using a 16 ohm speaker change to 8 ohms.



For 100W amps an OV4 compatible footswitch may be used to run the amp at half power.

NO LED: ALL VALVES ARE SELECTED
SLOW FLASH: VALVES 1 AND 4 ARE SELECTED
FAST FLASH: VALVES 2 AND 3 ARE SELECTED
PERMENTLY LIT: FAULT INDICATION



Amp bias button standard and custom

'Share the wear' button
On : Valves alternate between pairs when in half power
Off : Valves 2 & 3 are always selected when in half power



Bias Runner Interface

The 'Bias Runner' software is compatible with all versions of Microsoft Windows® including XP, Vista, and 7. The software requires .NET Framework to run which should be already installed within modern Windows® systems. If the PC is old and does not have .NET Framework it can be downloaded free from <http://k79.com/c/netfw35> or from the Microsoft® website.

To install the software, simply insert the memory stick into the PC, click on the icon and follow the instructions.

To interrogate and program DIVO / TubeSync hardware connect the PC and interface as per the diagram below.



NEVER CONNECT TO DIVO / TUBESYNC HARDWARE WHEN THE AMP IS POWERED AND ALWAYS DISCONNECT VIA THE SOFTWARE, BEFORE UNPLUGGING THE HARDWARE.

USB connection from the PC to the interface module



RJ45 connection from the interface module to hardware





Bias Runner Interface

Green 'saved' icon appears here to indicate data has been successfully saved to the OV4.

Amp serial number cross-reference entry. Access via the pencil icon.

Amp service hours

Fault reset

If the hardware detects a valve fault a counter will be incremented. When interrogated the total number of faults are displayed. A reset function can be performed by authorised personnel.

Always disconnect before unplugging hardware

Displays the history of all entries

Under normal circumstances audio threshold, fault times and fault currents should remain at the factory set conditions and should not be modified.

The screenshot shows the Bias Runner Interface software. The top bar includes the ORANGE and DVO logos, and the TubeSync logo. A status bar indicates 'Device Connected, ready.' The interface is divided into two main panels: 'Device Status' and 'Device Settings - History'. The 'Device Status' panel has three sections: 'Information' (Status: Connected, Version: 402, Serial No.: 69, Amp Serial No. with a pencil icon), 'Timers' (Total Service Hours: 0, Hours Driven With Audio: 0, Total Hours Idle: 0), and 'Fault' (T1, T2, T3, T4, each with a counter of 0 and a reset icon). The 'Device Settings - History' panel includes: 'Bias Current Audio Present (mA)' with 'Individual Values' checked and four input fields (Tube 1-4) set to 35; 'Bias Current Idle (mA)' with 'Individual Values' checked and four input fields (Tube 1-4) set to 35; 'Audio Threshold Value' set to 50; 'Fault Time (Seconds)' set to 1; 'Fault Currents (mA)' with Min 10, Max 100, and an 'Edit Fault Currents' checkbox; and a 'Notes (for history)' text area. At the bottom are 'Disconnect', 'History', and 'Save' buttons. A warning message reads: 'Always disconnect before unplugging the TubeSync hardware to ensure safe operation'.

Valve bias settings with and without audio

Notes field

When save is pressed the values entered will be saved to the hardware