

THERMIONIC

CULTURE



OPERATING MANUAL



WARNING

For your personal safety, please read this operating manual and warning thoroughly before using the equipment.

This unit must be installed in such a manner that operator access to the mains plug is maintained. Where the product is to be rack mounted, this may be achieved by having access to the disconnection device for the whole rack.

To reduce the risk of electric shock, it is essential that the unit is disconnected from the mains supply before removing the cover.

Please also note that the power supply capacitors within this unit can remain charged even after the mains supply has been disconnected. It is essential that these capacitors are discharged after the mains supply has been disconnected and the covers have been removed.

In the event that this unit has been dropped or has suffered an impact, an electrical safety test must be carried out before reconnection to the mains supply.

This equipment is not intended for use in explosion hazard environments. It must be used and stored in studio conditions, such that the ambient relative humidity does not exceed 80%, nor is the temperature to be allowed to drop to a level, which would cause dew point to be reached.

It is not advisable to operate this equipment if all valves are not in place and working, as voltages will rise and components may overheat and fail.

CONTENTS

| Section | | Page |
|----------------|----------------------------------|-------------|
| 1 | Introduction | 3 |
| 2 | Installation | 5 |
| 3 | Controls | 6 |
| | 3.1 Bass | 6 |
| | 3.2 Mid Cut | 6 |
| | 3.3 Mid Lift | 6 |
| | 3.4 Presence | 6 |
| | 3.5 Treble | 7 |
| | 3.6 Air | 7 |
| | 3.7 High Pass Filter | 7 |
| | 3.8 Gain | 7 |
| | 3.9 Bypass | 7 |
| 4 | Servicing and Maintenance | 8 |
| | 4.1 Valves | 8 |
| | 4.2 Operating Voltage / Fuse | 9 |
| 5 | Specification | 10 |

1 Introduction

This equaliser has been designed to be as much at home in tracking individual instruments or sitting across a stereo mix buss to equalise the final mix. As with other units of ours, such as The Phoenix, all controls are clearly labelled and setting up the EQ is quick and easy, so we named it after Britain's fastest bird in level flight.

THE SWIFT utilises influences of 2 classic designs of the "golden days" of all valve recording with improvements to bring the specs up-to-date for today's pro use, plus added features of our own designs.

The main electronics are based around a 1950s EMI desk but with extended top and bass response. It had a Baxandall type active EQ which we've kept and we added a Presence switch to give a broad band lift to mid/hi frequencies. This is based on one invented by Vic Keary in 1963 and used in his own mixing desks.

The mid lift controls are based on the Pultec design and are passive. For speedy operation and economy, we have chosen just 4 frequencies, with 3 "Q" settings.

Special features of ours are Hi Pass Filter, Mid Cut and "Air" (all passive). An interesting (Pultec type) effect can be obtained by setting the High Pass Filter at its last setting which combines a shelving bass cut with a filter at very low frequency, then using plenty of bass lift at either 50 or 100 Hz.

All pots are continuously variable. We have chosen not to use indented ones for subtlety and reliability reasons.

Gain is on switches, for comparison purposes. BYPASS switch disconnects the electronics so you hear the unadulterated

original signal. No metering is provided as it was deemed to be just a distraction. The Swift can output +20dBu without noticeable distortion and it's practically noiseless.

2 Installation

The Swift should be rack mounted. There are 4 valves in the unit and they get hot! There is usually no need for a gap to be left above if the ambient temperature in the rack is reasonably cool, but it may be prudent to leave a space of 1U in case equipment above is overheated by the valves. Common sense is needed and of course we cannot be held responsible for any damage.

DON'T FORGET TO ENSURE THAT THE MAINS SWITCH IS SET CORRECTLY FOR YOUR AREA BEFORE YOU SWITCH ON!

If we know the destination for the unit, we will set the switch and install the correct fuse but it's best to double-check.

Do not operate The Swift with monitor speakers facing directly into the back of the unit. We use valves with large electrodes for their special sound but they can be a tiny bit microphonic. Also their life may be shortened if they are subjected to very loud noise or vibration.

INPUTS are "balanced" (floating) with the signal on pins 2 & 3 (Pin 1 Ground). If coming from an unbalanced source, then always connect the signal to pin 2 and connect ground to pins 3 and 1.

OUTPUTS are unbalanced with the signal on pin 2 and 3 & 1 shorted.

Standard XLR twin screened cables should be used for both inputs and outputs. Cable length is not an issue, within reason. If a balanced output is required, a Balancing Box can be supplied containing 2 high level Sowter transformers.

3 Controls

3.1 Bass

The rotary control allows the amount of bass EQ to be adjusted continuously between $\pm 11\text{dB}$. The EQ has a shelving type curve, reaching its peak/trough at either 50Hz or 100Hz depending upon the position of the two-way frequency selector switch.

3.2 Mid Cut

Depending on the settings of the Q switch, this rotary control allows for a maximum cut of 15, 10 or 5dB as the Q is switched to H, M or L respectively. This will occur at 350, 700, 2k or 7k (Hz)

3.3 Mid Lift

Depending on the settings of the Q switch, this rotary control allows for a maximum lift of 17, 10 or 8dB as the Q is switched to H, M or L respectively. This will occur at 1, 2, 3 or 4.5 (kHz).

3.4 Presence

This switch allows for five different preset presence EQ curves to be applied to the signal. The curve is quite unique to this equaliser. It acts partly as a high pass shelf curve, then goes to a broad peak, followed by a drop at the upper audible range of the curve. The peak frequencies (at around 4dB) for the following switch positions are as follows: -

1= 0.9kHz, 2=2kHz, 3=4kHz

3.5 Treble

The rotary control allows the amount of treble EQ to be adjusted continuously between ± 11 dB. The EQ has a shelving type curve, reaching its peak/trough at either 7kHz or 12kHz depending upon the position of the two-way frequency selector switch.

3.6 Air

This allows a gentle lift of high audible frequencies to give a lovely “sheen” to the sound. It starts to lift at 7kHz and peaks at max at 30kHz, being 5 dB up at 11 kHz.

3.7 High Pass Filter

The high pass filter switch is a 12dB/octave filter, being 6dB down at 12, 24 48 or 68Hz. The final position is a 6dB/octave cut from 2kHz, levelling out at 400Hz then cutting again at 6dB/octave below 48Hz. This is very useful when combined with the bass lift.

3.8 Gain

This switch enables the user to change the gain of The Swift between -4.5 & +3dB, with an adjacent switch to cut the gain an extra 6dB if required.

3.9 Bypass

This switch provides a hardwired bypass that simply connects the unit’s inputs and outputs together, completely bypassing the unit’s electronics. When the switch is up, The Swift is in circuit and when down, it is completely bypassed.

4 Servicing & Maintenance

The Swift comes with a 12-month warranty covering all parts, including valves. It is essential that in the event of a fault occurring, it is returned to our factory, or to the dealer from which it was purchased for repairs to be carried out, otherwise the warranty will be invalidated. There is however, one exception to this rule.

4.1 Valves

It is safe for the user to change the valves, but the unit must not be operated without all valves plugged in. If a fault occurs, it may be a valve, so unplug the mains, remove the top cover, and wait for the valves to cool down a little. **DO NOT** touch any part of the circuit board or other components.

The two Input valves are on the left side of the unit (looking from the front). The 2 Output valves are a little to the right of centre.

You can swap the valves from side to side to isolate a fault. To remove a valve, press the screening can down and twist anti-clockwise, when it will spring out. Then remove the valve by pulling upwards, possibly using a cloth if it's still hot. Take care not to bend the pins when putting back in.

For optimum results, if valves are replaced, replace them in pairs. **DO NOT MIX INPUTS WITH OUTPUTS.**

Valve complement:

Input - 2 x 5965
Output - 2 x ECC802S/6189

4.2 Operating voltages/Fuse

The Swift can be set to operate from either 230V or 115V 50/60Hz AC. The appropriate voltage can be selected on the red switch located next to the mains inlet.

NOTE: Mains fuses must be replaced in accordance with the following table:

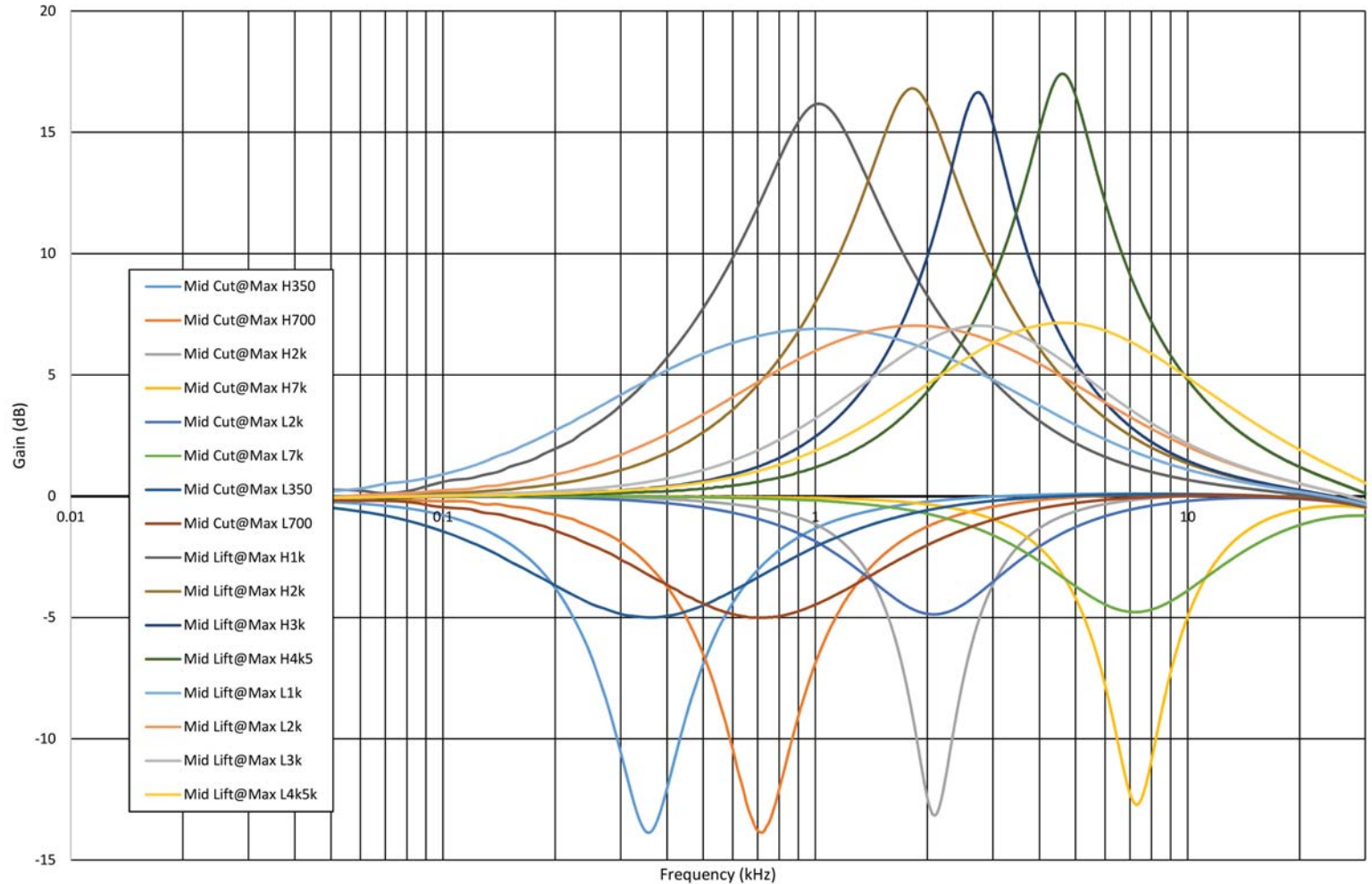
| Operating Voltage | Fuse Rating |
|-------------------|-------------|
| 115V | T630mA |
| 230V | T315mA |

5 Specification

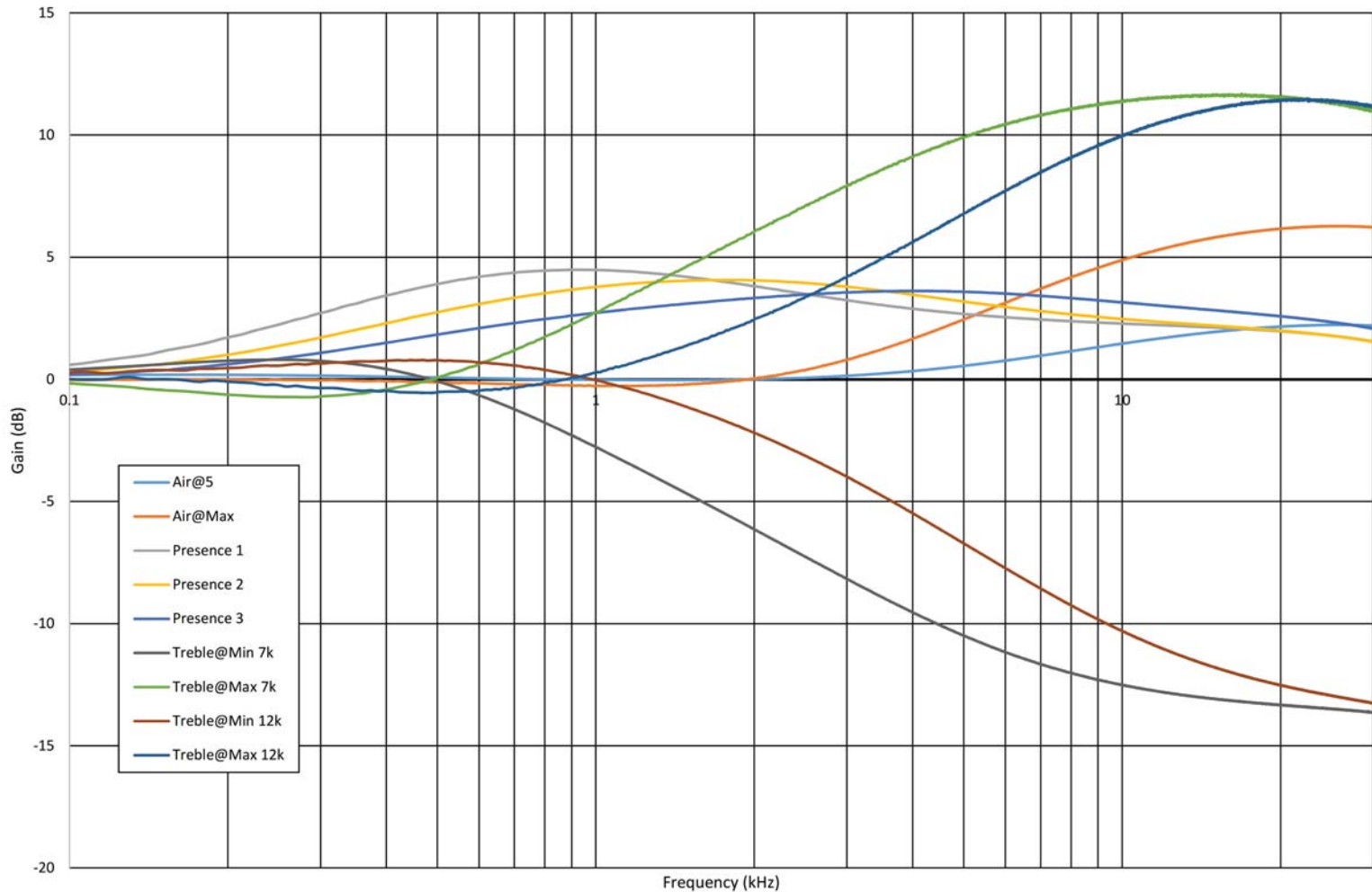
Typical measurements made with all controls set for flat response. Loading 10 kohms. 30kHz filter used to remove radio, etc. for Distortion and Noise measurements.

| | |
|---|---|
| Frequency Response | +0.5 / -1 dB 12 Hz to 40 kHz |
| THD (measured at 1kHz & 100Hz) | At +4 dBu 0.01% + 10 dBu 0.02% +18dBu 0.1% + 24 dBu 1% (MOL) |
| Noise (below max o/p level – MOL) | -115dB |
| Gain | -10.5 to +3 dB in 0.75 dB steps |
| Input impedance | 10 k Ω |
| Output impedance | 250 Ω |
| Power consumption at 115 or 230VAC mains in | 30W |
| Net Weight (no packaging) | 7 kg |
| Indicator lamp | 12V, 3W |

The Swift Frequency Response - Mid Cut & Mid Lift



The Swift Frequency Response - Air, Presence & Treble



Thermionic Culture Ltd., Harlow, Essex, UK
Tel: +44 (0)1279 414770 email: technical@thermionicculture.com

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