Valve based amplifier V 10

T+A elektroakustik GmbH has been in existence for 25 years, and we have been building amplifiers and valve output stages since 1984 - so we can certainly claim to have plenty of experience in this field. To celebrate our anniversary year we have decided to develop a unique range of superb new products, and introduce a new High-End series for audiophile fans of classic two-channel reproduction. The **V 10** valve-based integrated amplifier is the first in this series, to be followed in December by the **G 10** vinyl disc player.

Naturally our aim in developing the **V 10** was - once again - to set entirely new standards. This integrated amplifier features a range of technologies which have never been seen before in valve-based amplifiers.

High output power is a fundamental necessity in our view, but not at the cost of hideous case designs and Utopian expense. We found the solution to this conundrum in new valve types which have never been used before, in combination with an ingenious circuit design which we have termed **SPPP** (**S**ingle **P**rimary **P**ush **P**ull). This eliminates the symmetry problems in the output ***transducers*** [Uebertrager] of conventional valve amplifiers.

A crucially important factor to our developers was the stability of the amplifier's sound qualities and technical performance in practical daily usage. The problem here is the valves themselves: on the one hand individual examples from normal production vary enormously, and on the other the valves are very sensitive in operation and suffer inevitable ageing effects. To overcome these problems we have again introduced measures which we believe to be unique: all valves are subjected to a sophisticated selection process, and only the units exhibiting the closest tolerances are approved for use in our amplifiers. At the same time a micro-processor constantly monitors all the system's operational parameters, such as signal levels, currents and overload margins. All the device's activities are recorded by a form of dynamic counter, and this information is used to calculate the residual run-time of the valves, so that the valves can be replaced in good time in order to maintain the amplifier's sound quality. The normal useful life of the valve set is in the range

3000 to 5000 hours, depending on load and stress levels. For example, a cold start shortens the valves' lives more than switching on after the pre-warming phase. Idle current levels can be displayed at any time.

The mechanical construction and case design of an amplifier of this type must fulfil the most exacting requirements. Any hint of mechanical jolting or vibration has a significant adverse effect on sound quality. For this reason the basic cradle is of strong steel construction, mounted on four shock absorbers. The external aluminium components are of sandwich construction since this provides better damping of body sound, while the thick acrylic panel suppresses and absorbs vibration and prevents microphony effects. The ***transducers*** [Uebertrager], the main transformer and the output stage capacitors are encapsulated in solid aluminium ***containers*** [Toepfe] which prevent resonance effects and effectively disperse generated heat.

Specifications

Nominal output	2 x 80 Watt RMS
Peak output	2 x 110 Watt RMS
Load impedance	4 or 8 Ohm (switchable)
Bandwith - 3dB	8 Hz - 100.000 Hz
Total harmonic distortion / Intermodulation	< 0.08 % at 1 Watt < 0.5 % at full modulation
Inputs	5 high-level-inputs switched by gold-contact relays
Output	1 Tape out
Control interface	RLink
Remote control	F 10, included

Valves

2 x ECC83	low-distortion double triode (pre-amplifier)
2 x ECL82	triode / pentode (= 6BM8) (input stage for power amplifier)
2 x ECC99	double triode with large current supply capacity (driver stage)
4 x EL509/II	new audio power pentode (power output stage)

We reserve the right to alter technical specifications.