

Time Machine Sounds

Amplifier Operating Instructions

(Instructions for Installation, Use and Care)

Foreword

These Operating Instructions apply to the TMS valve (tube) audio amplifiers 6060 Professional (TMS 6060P) and 6060 Boutique (TMS 6060B).

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Welcome

Congratulations on your purchase of a valve amplifier from Time Machine Sounds (TMS). This amplifier is hand-crafted with great care and patience from high quality components. It was developed over a period of several years and embodies knowledge gained from a century of experience with valves in audio electronics. Classic valve and modern solid-state technologies have been combined, to optimise performance in critical areas such as noise reduction, distortion minimisation and power handling.

Your TMS amplifier should give you many hours of musical listening pleasure with proper treatment and care, before it may need new valves or servicing.

Please read these Operating Instructions carefully for your safety and enjoyment.

In case service, under warranty or otherwise, is required, please take a moment to write down your model and serial number, located on the back panel of your equipment, and attach a copy of your receipt to this manual.

WARNINGS

Do not expose the equipment to liquids or moisture, to avoid electrical shock or fire hazard.

Do not cover the equipment or obstruct its ventilation, to prevent fire hazard.

Dangerous voltages exist within this equipment which pose a risk of serious electrical shock or injury.

Do not open the chassis, to avoid electrical shock.

Except for changing valves, this equipment contains no user-serviceable parts.

Refer servicing to qualified personnel.

Safety Precautions

This equipment operates on 230 V AC 50 Hz. Check that the operating voltage of your equipment and the voltage of your power supply correspond.

This equipment is not designed to be operated or kept outdoors.

Do not place objects containing liquids on the equipment, to prevent shock or fire hazard.

If liquids or small solid objects do fall into the equipment, unplug it from the mains and have it checked by qualified service personnel.

Do not obstruct the ventilation holes or slots in the equipment, to prevent overheating and fire hazard.

Do not install the equipment on a sloping or unstable surface, to prevent it falling and causing injury to a person, damage to objects or the equipment itself.

Do not connect other equipment unless this equipment is turned off.

Do not run this equipment without connecting loudspeakers, to prevent serious damage.

Do not place heavy objects on this equipment.

Always supervise use of this equipment by children and people with physical, mental or sensory incapacitation.

Disconnect the AC power cable from the mains outlet if you are not using the equipment for long periods of time.

Safety Instructions

Read these instructions.

Retain them for future reference.

Follow these instructions for use at all times.

Observe all warnings on the equipment.

Placement: Set up and operate this equipment in an indoor location only. Place the equipment on a stable surface, such as on a table top, in an open shelf or in the top position of a hi-fi rack, so that it cannot fall over. If it falls, it may cause serious injury to a person and damage to objects as well as to the equipment.

In floor locations, ensure people cannot fall over the equipment or its cables.

Do not place the equipment near a heat source or in direct sunlight.

Avoid environments with excessive dust, mechanical shock or vibration.

Keep children and household pets away from the hot surfaces of equipment.

Ventilation: Keep the ventilation holes or slots clear, to avoid overheating and fire hazard.

Maintain a distance of at least 30 cm to objects at the sides of and above the equipment.

Do not stand the equipment on a bed, rugs or soft carpets which could obstruct the ventilation holes.

Never operate the equipment in a closed cabinet or cupboard.

Never leave items such as newspapers, magazines, books or records etc., or place other electronic equipment like CD-players, telephones or computers etc., or household decorations like flower pots, sculptures etc., on the top of the equipment. Objects placed on top of the equipment are a serious fire risk.

Water and Moisture: Never operate the equipment in a wet or damp environment or, for example, near a bath tub, shower, wash bowl, kitchen sink, laundry tub, swimming pool or in a wet basement, outdoors in rainy weather or near a garden hose, to prevent shock and fire hazard.

Never place liquids, flammable objects or other objects on the equipment. These may cause a shock or fire hazard.

If brought indoors from the cold, allow several hours for the equipment to reach room temperature before operating.

Shock Hazard: This equipment develops high voltages internally which can cause shock and serious injury. Do not attempt to open, repair or alter the equipment.

Avoid letting objects fall through the ventilation holes. Prevent children from inserting objects through the ventilation holes into the equipment.

Cleaning: Turn off and allow to cool. Unplug from the mains outlet before cleaning. Use a dry duster or a damp cloth for cleaning and allow to dry before operating.

Never use liquid cleaners or solvents on the equipment.

Servicing: In models TMS 6060P and TMS 6060B, the valves can be replaced by the user. Instructions for changing valves are provided (in a video) on the website and summarised here. If you prefer, changing the valves can be performed by qualified service personnel. Otherwise, the equipment contains no user-serviceable parts. Refer servicing to qualified personnel.

Ownership: Give these Operating Instructions together with the equipment to the next owner when the equipment changes hands.

Connection instructions – Power Supply

Mains connection: The equipment operates on a mains voltage of 230 V AC, 50 Hz, suitable for Europe.

The equipment must be earthed (grounded) during operation. Do not operate this equipment if your mains outlet does not have an earth connection. Refer to a qualified electrician.

Use the standard IEC plug and cable provided and an earthed 3-pin mains plug suitable for your location.

Mains fuse: The equipment has a mains fuse (5 mm x 20 mm, 2 Amp, slow blow) located below the IEC socket assembly on the back panel. Replace a blown fuse only with one of the same rating. Pull out the fuse compartment drawer to access the mains fuse (nearest the equipment) and a spare fuse of the same rating (nearest the user).

If the fuse blows repeatedly, do not try to operate the equipment. Switch off, disconnect the power cable from the mains outlet and refer servicing to qualified personnel.

Connection Instructions – Input Equipment and Loudspeakers

Make all connections with the equipment switched off.

Never run a valve amplifier without loudspeakers, to prevent serious damage to the output transformers and valves.

Input connections: The audio source equipment (CD, TV, PC, Radio, Mobile device, pre-amp, mixer, DAC, DVD) is connected via the phono (RCA) or XLR input sockets on the back panel. Connect the red RCA plug to the red socket for the right channel. Connect the black or white RCA plug to the white socket for the left channel. Connect the XLR sockets as labelled for left and right channels. If the XLR sockets are used, leave the first pair of RCA sockets unoccupied.

The amplifiers TMS 6060P and 6060B will accept up to six input sources which are selected with a switch on the front panel. The XLR sockets are selected with the input switch in position 1.

Some video equipment (DVD and BluRay players) connections use an extra yellow phono plug in addition to the red and black/white ones. The yellow plug is intended for the video signal only and must not be connected to this audio equipment.

Speakers: Speaker connection posts on the back panel are made for speakers of 4, 8 and 16 Ohm impedance.

Connect speakers according to their impedance.

Connect the speaker cable identified by the colour black or the sign negative (-) or 0 to the black post.

Connect the speaker cable identified by the colour red or the sign positive (+) or the word "signal" to the appropriate red post, depending on its impedance.

Use of heavy duty speaker cable (3 – 5 mm) is recommended. Bare the ends of the cable for about 10 mm and twist the copper core strands to prevent fraying. Insert the bared ends fully into the speaker terminal posts and tighten the fixing screws.

Do not allow the bare speaker cables to touch the metal amplifier chassis, other speaker terminals or each other.

Every six months, and after moving or cleaning, check that the speaker cables are tight in their posts at the amplifier and speaker ends.

Switching On

When all connections have been made, plug the equipment into the mains outlet.

Switch on the amplifier with the switch on the back panel. The switch lights up red, indicating power to the unit.

After switching on, a red LED on the front panel indicates that power is applied to the valve heaters and the valves are warming up. After 35 seconds, power is applied to the high voltage circuits and the colour of the LED changes to green. The amplifier is now ready for use.

First Time Use

Valve amplifiers with new valves usually require several days of operation before they develop their full performance potential. TMS equipment is operated continuously for at least 72 hours on the work bench, in order to make final checks and adjustments. In this time, the equipment is effectively run-in for the customer before delivery.

Switching Off, Power Interruption

To conserve energy, switch off your amplifier at the end of a listening session, and if you leave it unattended (going out or overnight).

If you intend to leave the amplifier unused for extended periods, unplug it from the mains outlet.

If mains power is interrupted for more than 10 seconds during operation, the unit will restart after 35 seconds.

Transport

You may want to transport your amplifier to a new location.

After switching off, allow to cool, disconnect it from the mains and disconnect remaining system components. If you intend to move the amplifier only a short distance, wrap it in a blanket to protect it from scratches and carry it carefully.

If you intend to move the amplifier a long distance e.g. in a household removal, it should be protected from dust in a plastic bag and boxed with plenty of padded packaging material, e.g. "bubble-wrap".

It is advisable to remove the valves first and protect each one like delicate household glass items in bubble-wrap or foam.

See instructions below for changing or replacing valves.

Trouble Shooting – General

Symptom	Action
Red light does not come on in On/Off switch when turning on	Check power at mains outlet with e.g. a light Check power cable plugged in properly Check fuse in IEC socket. Replace fuse if necessary, observing cautions noted under section “Connection”
On/Off switch shows on but front panel light does not light up red or valve(s) do not light up	Valve(s) not plugged in properly. Follow instructions for replacing valves. Valve(s) defect. See section below and refer to service personnel Internal fuse blown, heater circuit failure. Refer to service personnel.
Valve(s) light(s) up but no sound	Turn off and check loudspeaker connections. Connect loudspeakers correctly. Check source gives signal, check input cables connected correctly. Check correct channel is selected for desired source with input selector switch. Check volume control is turned up for desired source. When changing signal source with input selector switch, listen for a light click sound as relays engage.. Absence of source selection: Internal power failure. Refer to service personnel
Source, source connection and source selection function properly, valves light up, speaker connection correct but no sound	Valve defect. See section below. Internal high voltage failure. Internal fuse in high voltage power supply blown. Refer to qualified service personnel. Do not attempt any access to or testing of high voltage supply. Danger of shock and serious injury

Trouble Shooting – Valves

The average valve lifetime is about 5,000 to 10,000 hours, corresponding to 5 to 10 years of normal use. In fact, the lifetime of valves can vary from several hundred to several tens of thousands of running hours but this cannot be predicted exactly for each valve and depends to some extent on operating and transport conditions. At some time, a valve may fail or the sound quality of the amplifier may suffer because of valve performance degradation due to aging.

TMS uses new valves available from current manufacture, rather than “New Old Stock” (NOS) ones. This measure is intended to prevent redundancy even after stocks of NOS valves are exhausted.

Various warning symptoms indicate impending valve failure, such as:

- excessive distortion
- intermittent lack of sound unrelated to proper source connections
- crackling sounds

In the event of valve failure one or more of the following symptoms may be observed:

- failure to heat up
- missing orange glow
- complete lack of sound, in one or both channels
- flashover within the valve, usually found in output valves
- strong blue coloration of the gas within the valve
- white discolouration of silver coating in the valve, indicating vacuum failure.

Switch off the amplifier immediately and unplug the power cable from the mains outlet.

The affected valve or (recommended) valve pair will need replacement. As an aid to servicing, if possible please note which valve or which channel is affected.

Follow the instructions for changing or replacing a valve below or, if you prefer, refer to qualified personnel.

Changing or Replacing a Valve

Turn off the amplifier and allow it to cool down.

Unplug the power cable from the mains outlet. Keep the mains plug within sight.

TMS 6060B

Remove the glass top by unscrewing the chrome caps on the four corner posts.

Place the glass sheet in a safe place where it cannot fall down.

TMS 6060B and TMS 6060P

Remove the knobs of the channel selector switch and the volume control.

Depending on the knob type you will need either a No. 1 (3mm) flat screwdriver or a 2.5mm hexagonal key to loosen the grub screw. Unscrew the grub screws about 2 turns and pull the knobs of the channel selector switch and the volume control off.

Remove the black plastic sleeves on the control shafts and put them safely aside.
With a No. T20 Torx® screwdriver, unscrew the four 4mm screws securing the cabinet.
These are located on the lower left and right hand sides at the front and back.
Slide off the cabinet in a forwards direction.

TMS 6060P Valves

Pre-amp: 2 x ECC88 or E88CC. Driver; 2 x ECC99.

Output: 4 x EL34 / 4 x 6550 / 4 x KT88 / 4 x KT120, depending on the original order.

TMS 6060B Valves

Pre-amp: 2 x ECC88 or E88CC. Driver; 2 x ECC99.

Output: 4 x KT88.

Replacement valves can be purchased by mail order on the internet from the original manufacturer JJ Electronics, Slovakia, or from electronic components suppliers, e.g. TubeTown GmbH, Germany, or Distrelec Export, The Netherlands. If you experience difficulties, please contact TMS. When ordering output valves, we recommend purchase in matching sets of four.

Looking from the top front, the valves located nearest the front are the preamp and driver valves, ECC88 and ECC99, or short and tall miniature 9-pin valves, respectively.
The larger output valves are located towards the back and are numbered 1 to 4, from left to right.

Valves are best replaced in pairs at the same time, e.g. both pre-amp valves or both driver valves, in order to have two valves of the same age, for optimal sound reproduction.

Remove valves by gently rocking them backwards and forwards while at the same time exerting an upwards pull on them.

Note the location of each valve with a sketch on paper and by writing its position on the glass envelope with a marker pen.

Replace valves by matching the pin pattern on the valve to the holes on the base (9-pin valves) or rotate the valve until the key engages (8-pin valves) and push the valves completely down into the socket.

Put discarded valves in the recycling for electrical and electronic items.

Biasing of Output Valves

TMS uses manual biasing for output valves in its equipment rather than semi-automatic or automatic biasing because of reliability and sound quality concerns with the latter systems.

Biasing is unnecessary for the valves in a new amplifier where the values are bench set. Biasing becomes necessary when valves are changed or replaced and it may be advisable once every two years to maintain optimal output stage performance.

With the cabinet removed in the TMS 6060B and TMS 6060P, a row of 4 biasing potentiometers can be found located on the right-hand side of the amplifier chassis towards the back. The potentiometers are numbered, front-to-back, 1 to 4, and correspond to the output valves, seen left-to-right, 1 to 4.

Each potentiometer controls the baseline current of its corresponding valve: Turned anticlockwise, the current is reduced. Vice versa, turned clockwise, the current is increased.

A meter is located between the two output transformers on the top of the amplifier chassis which measures valve current, and a 6-position selector switch to connect the meter to the output valve being measured. The positions of the switch are from left to right:

Position 1: open – Position 2: valve 1 – Position 3: valve 2 – Position 4: valve 3 – Position 5: valve 4 – Position 6: open.

During normal operation, the selector switch remains open, in positions 1 or 6 (fully left or fully right).

During biasing, the valve which has been changed or replaced is switched into circuit with the meter and the current adjusted with the corresponding potentiometer.

Biasing Procedure

Do Not power the amplifier on with empty valve bases. Caution High Voltages Present. Do not insert metal objects into the holes of empty valve bases. Danger of electric shock.

Replace the desired output valve(s) but not the cabinet. Plug the amplifier into the mains and switch on. Allow the green panel light to come on, indicating the amplifier is ready for use and power is applied to the output valves. Do not apply a sound signal to the amplifier, so that the bias adjustment is done in the resting state. Turn the selector switch to the position of the valve in question and adjust its current with the corresponding bias potentiometer according to the following values:

EL34	18 mA
6550	25 mA
KT88	30 mA
KT120	40 mA.

Repeat this procedure not only for each valve which has been changed or replaced but for all the others, then return the selector switch to one of the open positions.

When finished, turn off and unplug the amplifier before replacing the cabinet. Replace the cabinet, sleeves, knobs (and glass top) in the reverse order described above for removal.

Disposal

While Time Machine Sounds follows current official regulations regarding recycling (see below), it anticipates that these may change in the future, in favour of more durable products, in order to reduce electronic scrap. For this reason, we recommend that every

effort should be made to extend the useful life of TMS products by appropriate component replacement and repair strategies. Recycling should be considered as a last-resort solution for equipment which is irreversibly damaged.

Disposal of the equipment: It is mandatory that electrical and electronic equipment may not be disposed of in household waste. You are obligated to dispose of such devices separately.

Contact your local community authorities for information about the correct disposal of the device.

By disposing of the device correctly you are ensuring that it will be recycled or processed for reuse. This helps to prevent hazardous material from damaging the environment.

Disposal of the packaging: The packaging consists of cardboard and marked plastics that can be recycled separately. Dispose of these materials in appropriate recycling bins or in a recycling centre.

Contact, Enquiries, Servicing

For all enquiries concerning this equipment, including servicing, please contact TMS at:

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