

Echolette



Echolette MK I
Tube amp head

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1 General information

This manual contains important instructions for the safe operation of the unit. Read and follow the safety instructions and all other instructions. Keep the manual for future reference. Make sure that it is available to all those using the device. If you sell the unit please make sure that the buyer also receives this manual.

Our products are subject to a process of continuous development. Thus, they are subject to change.

1.1 Further information

On our website (www.thomann.de) you will find lots of further information and details on the following points:

Download	This manual is also available as PDF file for you to download.
Keyword search	Use the search function in the electronic version to find the topics of interest for you quickly.
Online guides	Our online guides provide detailed information on technical basics and terms.
Personal consultation	For personal consultation please contact our technical hotline.
Service	If you have any problems with the device the customer service will gladly assist you.

1.2 Notational conventions

This manual uses the following notational conventions:

Letterings

The letterings for connectors and controls are marked by square brackets and italics.

Examples: *[VOLUME]* control, *[Mono]* button.

Instructions

The individual steps of an instruction are numbered consecutively. The result of a step is indented and highlighted by an arrow.

Example:

1. ▶ Switch on the device.
2. ▶ Press *[Auto]*.
 ⇒ Automatic operation is started.
3. ▶ Switch off the device.

Cross-references

References to other locations in this manual are identified by an arrow and the specified page number. In the electronic version of the manual, you can click the cross-reference to jump to the specified location.

Example: See ↗ ‘Cross-references’ on page 8.

1.3 Symbols and signal words

In this section you will find an overview of the meaning of symbols and signal words that are used in this manual.

Signal word	Meaning
DANGER!	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.

Warning signs	Type of danger
	Warning – high-voltage.
	Warning – danger zone.

2 Safety instructions

Intended use

This device is intended to be used for amplification and playback of signals from musical instruments with electromagnetic pickups. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

Safety



DANGER!

Danger for children

Ensure that plastic bags, packaging, etc. are disposed of properly and are not within reach of babies and young children. Choking hazard!

Ensure that children do not detach any small parts (e.g. knobs or the like) from the unit. They could swallow the pieces and choke!

Never let children unattended use electrical devices.



DANGER!

Electric shock caused by high voltages inside

Within the device there are areas where high voltages may be present.

Completely disconnect the device from the power supply before you open or remove covers. Mount all covers and attach them firmly before connecting the device again.



DANGER!

Electric shock caused by short-circuit

Always use proper ready-made insulated mains cabling (power cord) with a protective contact plug. Do not modify the mains cable or the plug. Failure to do so could result in electric shock/death or fire. If in doubt, seek advice from a registered electrician.



NOTICE!

Risk of fire

Do not cover the device nor any ventilation slots. Do not place the device near any direct heat source. Keep the device away from naked flames.



NOTICE!

Operating conditions

This device has been designed for indoor use only. To prevent damage, never expose the device to any liquid or moisture. Avoid direct sunlight, heavy dirt, and strong vibrations.



NOTICE!

Power supply

Before connecting the device, ensure that the input voltage (AC outlet) matches the voltage rating of the device and that the AC outlet is protected by a residual current circuit breaker. Failure to do so could result in damage to the device and possibly injure the user.

Unplug the device before electrical storms occur and when it is unused for long periods of time to reduce the risk of electric shock or fire.

3 Features

- Full tube guitar amp head
- Drive channel (D-channel)
- Clean channel (F-channel)
- Serial FX loop with send / return level
- Two output stage tubes, five pre-stage tubes
- Class AB push-pull output stage

4 Notes on use

Unpack and carefully check that there is no transportation damage before using the unit. Keep the equipment packaging. To fully protect the device against vibration, dust and moisture during transportation or storage use the original packaging or your own packaging material suitable for transport or storage, respectively.

Handle the unit with care. The built-in tubes are especially in heated state very sensitive to vibration, e.g. during transport and setting the device down.

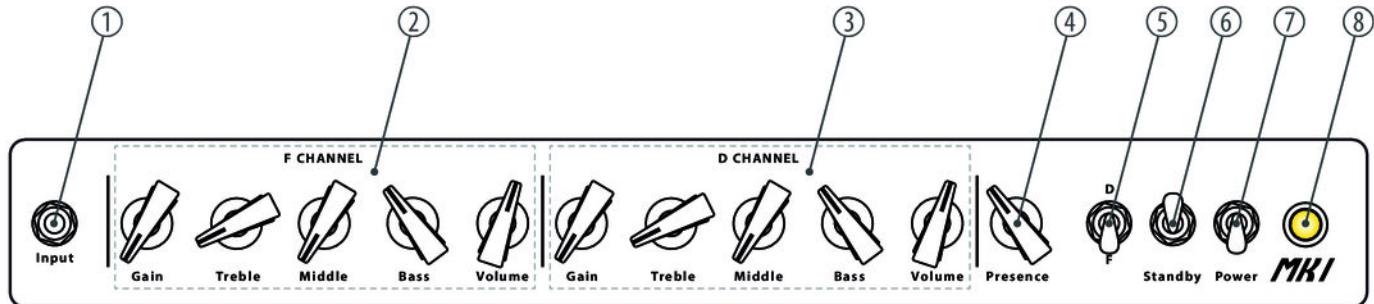
The pre-stage tubes can easily be exchanged without any detailed specialist knowledge. To exchange the output stage tubes, however, specialist knowledge in the field of electrical engineering is required. If in doubt, ask an authorised, qualified professional to replace these tubes for you.

After every exchange of the output stage tubes, the BIAS must always be adjusted. The process for exchanging the installed tubes and adjusting the BIAS is described in *↳ Chapter 6 'Maintenance' on page 23* more detail in .

All repairs and servicing of electrical components must only be performed by authorised personnel.

5 Connections and controls

Front panel



1	<i>[INPUT]</i> Input socket for instrument cable, designed as a 6.35 mm jack socket (mono).
2	<i>[F CHANNEL]</i> Clean channel for full, warm sound with lots of headroom, especially suitable for overdrive and distortion effects. <i>[Gain]</i> Gain signal for the clean channel. Amplifies the input signal and generates a slightly compressed sound. <i>[Treble], [Middle], [Bass]</i> Control to adjust the settings of the 3-band equaliser in the clean channel. <i>[Volume]</i> Control to adjust the volume of the clean channel. At high volume, the output stage tubes start to distort the sound.
3	<i>[D CHANNEL]</i> Drive channel (also known as the lead or dirty channel) for “clean” sound, warm crunch sound and rock sounds. The sound generated also depends on the input signal, i.e. on the guitar used and the sound settings (in the case of active instruments).

	<p><i>[Gain]</i></p> <p>Gain signal for the drive channel. Amplifies the input signal and generates a slightly compressed sound.</p>
	<p><i>[Treble], [Middle], [Bass]</i></p> <p>Control to adjust the settings of the 3-band equaliser in the drive channel.</p>
	<p><i>[Volume]</i></p> <p>Control to adjust the volume of the drive channel. At high volume, the output stage tubes start to distort the sound. From a certain setting, the volume is no longer increased but instead the distortion becomes more intense.</p>
4	<p><i>[Presence]</i></p> <p>Controller to raise or lower the threshold limiter of the satellite speaker in the upper frequency range.</p>
5	<p><i>[F D]</i></p> <p>Toggle switch between the clean and drive channel.</p>

6 [Standby]

With this switch, the high voltage is switched to the tubes (upper switch position). The amp is then ready for operation. If the high voltage is switched off (lower switch position), the amp is in standby mode.

To protect the tubes, the satellite speaker should be switched to standby around one minute before switching on the amp. After this, the amp can be switched to ready mode with the *[Standby]* switch.

Even during short breaks in play, we recommend switching the amp head to standby without switching it off completely with the *[Power]* switch.

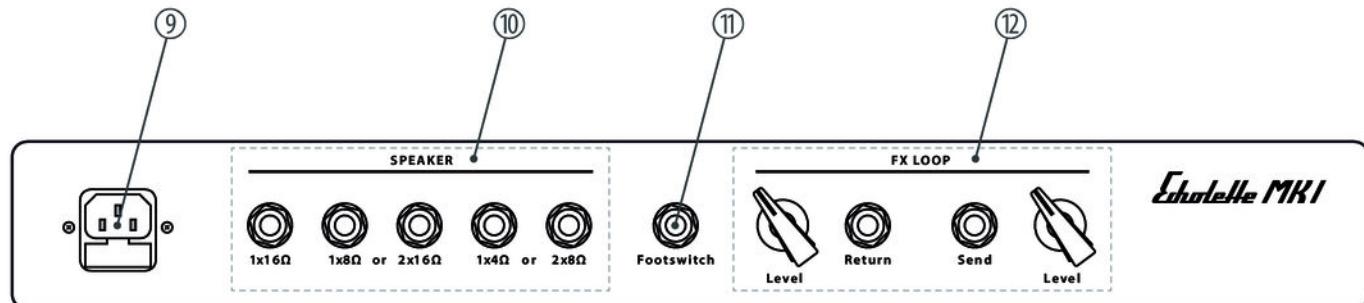
Before switching off the amp head, always switch the high voltage off first using the *[Standby]* switch!

7 [Power]

Main switch to turn the device on/off.

8 Power indicator. This LED glows as soon as voltage is applied to the device.

Rear panel



9	IEC chassis plug with fuse holder.	
10	<i>[SPEAKER]</i> Connection sockets for loudspeaker boxes (designed as 6.35-mm jack sockets) with the following connection options:	
	1 × 16 Ω	Connect a 16 Ω loudspeaker box to this socket.
	1 × 8 Ω or 2 × 16 Ω	Connect either one 8 Ω loudspeaker box or two loudspeaker boxes of 16 Ω each to these parallel sockets. The parallel switching means that both sockets can be used equally.
	1 × 4 Ω or 2 × 8 Ω	Connect either one 4 Ω loudspeaker box or two loudspeaker boxes of 8 Ω each to these parallel sockets. The parallel switching means that both sockets can be used equally.
	Before switching on the amp head, ensure that a loudspeaker box is connected. Otherwise the device may be damaged.	
11	<i>[FOOTSWITCH]</i> Connection socket for a footswitch for toggling between the clean and drive channel (designed as a 6.35-mm jack socket). As soon as you connect a footswitch to the amp head, the front channel selector is temporarily disabled.	
12	<i>[FX LOOP]</i> Effect section. The two connection sockets (6.35 mm jack sockets) can be used to interloop as many effects as you want between the pre-stage and output stage. If you do not connect any effect device, set the two Level controllers to the 3 o'clock position.	

	<p><i>[Return Level]</i></p> <p>Rotary controller, controls the signal strength from the effect device to the amp and can also be used as a master volume controller.</p>
	<p><i>[Return]</i></p> <p>Input socket for connecting an effect device (or the last effect in an effects chain) or an external pre-amp. As soon as a cable is connected, the pre-stage signal is separated from the amp's output stage signal.</p>
	<p><i>[Send]</i></p> <p>Output jack. This connection socket is used to feed the signal from the amp back into the input of the effect device. This output can also be used to connect an external output stage. The pre-stage is not separated from the output stage signal in this case.</p>
	<p><i>[Send Level]</i></p> <p>Rotary controller, controls the signal strength from the amp to the effect device or external output stage and can also be used as a master volume controller.</p>

6 Maintenance



DANGER!

Electric shock caused by high voltages inside

Inside the device, a voltage of up to 500 V may be present, even if the device is switched off.

The maintenance measures described below require specific electrical engineering expertise and must only be carried out by appropriately qualified personnel.

Disconnect the device completely from the power supply before opening or removing any covers. Only reconnect the device once the covers have been fully reattached and are firmly secured in place.



NOTICE!

Possible damage from dirt or fingerprints.

Dirt or fingerprints can destroy the glass pistons in the tubes.

Never hold the glass pistons directly with your fingers. Use clean gloves or a clean cloth made from lint-free material.

6.1 Replacing the main fuse

The fuse holder for the main fuse is located below the IEC chassis plug. When replacing the main fuse, ensure that the replacement fuse has the required parameters (see printed information on the fuse holder).

Faulty fuses must never be bridged!

If the device continues to not function after replacing the fuse, ask a specialist workshop to resolve the problem.

6.2 Replacing tubes

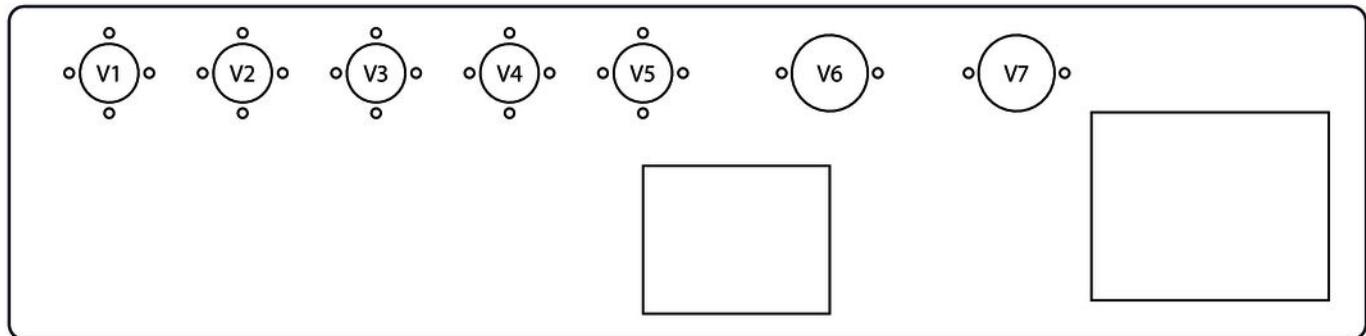
Replacing pre-stage tubes

Pre-stage tubes V1 ... V5 can easily be replaced without any detailed specialist knowledge. After a replacement, no further adjustment work is required in this case.

Pre-stage tubes of type ECC83, 12AX7 and 7025 are permitted. Also permitted - however with less gain with the same controller position - are pre-stage tubes of type ECC81, ECC82, 12AY7, 12AU7, 12AT7.

With pre-stage tube V1 especially, high quality must be ensured to avoid unwanted noise and microphonics.

The illustration below shows the position of tubes V1 ... V7 on the amp.



Name	Function
V1	First stage for both channels.
V2	Second stage for both channels.
V3	Third and fourth stage for the D-channel.
V4	FX Loop.
V5	Phase inverter.
V6	End stage tube.
V7	End stage tube.

1. ➤ Make sure that the device is turned off, disconnected from the mains and completely cooled down. The minimum wait time after disconnecting the voltage supply is ten minutes.
2. ➤ Remove the metal caps and remove the old tubes with a gentle, even pulling motion, gently rocking the tubes back and forth, out of the bases.
3. ➤ Push the pins of the new tubes with gentle, even pressure and slight back and forth movements into the base and place the metal caps on the tubes.

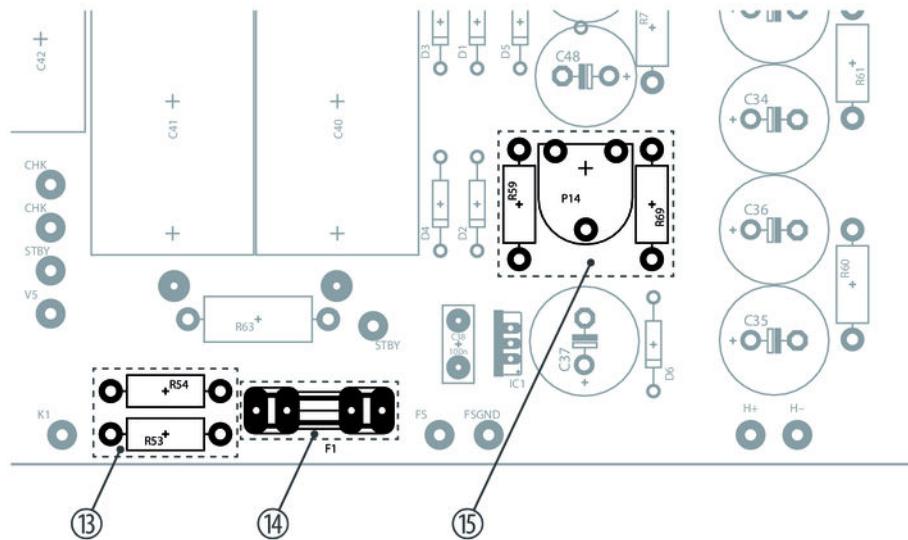
Replacing output stage tubes

The replacement of V6 and V7 output stage tubes requires specific electrical engineering expertise and must only be carried out by appropriately qualified personnel. Inside the amp, a voltage of up to 500 V may be present, even if the device is switched off!

Output stage tubes of type KT66 and other common output stage tubes, such as EL34, 6L6 or 5881, are permitted.

After changing the output stage tubes, the BIAS must be adjusted (see  *Chapter 6.3 'Adjusting the BIAS' on page 29*).

6.3 Adjusting the BIAS



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13 Resistors R53 and R54.

14 Fuse F1.

15 Potentiometer for setting the BIAS.

- 1.** ➤ Make sure that the device is turned off, disconnected from the mains and completely cooled down. The minimum wait time after disconnecting the voltage supply is ten minutes.
- 2.** ➤ Remove the cover on the reverse and pull the amp out of the housing.
- 3.** ➤ Using a multimeter, check that fuse F1 is OK.
- 4.** ➤ Connect a loudspeaker to the appropriate output and switch the device on using the main *[Power]* switch.
Ensure that no instruments are connected to the *[INPUT]*.
- 5.** ➤ Turn the *[Return | Level]* controller to "0".
- 6.** ➤ Turn the potentiometer to set the BIAS all the way in a clockwise direction.
- 7.** ➤ Using the *[Standby]*switch, apply high voltage to the tubes and wait for around a minute until the tubes have stabilised.

8. Using a voltmeter, measure the drop in voltage at the two resistors R53 and R54.

During measurement, turn the potentiometer anti-clockwise until the voltmeter displays a value of 25 mV. This corresponds to a value of 25 mA. This current is flowing through each of the two output stage tubes.

A difference of 2 ... 3 mV is tolerable. If the difference is greater than 3 mV between the two measured values, the output stage tubes are not well-tuned with each other and must be replaced.

9. Leave the amp running for 15 minutes and then repeat the measurement. If no further adjustments are needed, switch the device off, disconnect it from the mains and leave it to cool down completely.

10. After the minimum wait time (ten minutes after disconnecting the voltage supply), place the amp back in the housing and fit the cover on the reverse.

7 Technical specifications

Output power of AB push-pull output stage	35 W
Output stage tubes	2 × KT66 (standard), EL34 or 6L6 (optional)
Pre-stage tubes	5 × ECC83 (standard), 12AX7, 7025, ECC81, ECC82, 12AY7, 12AU7, 12AT7 (optional)
Loudspeaker connection options	1 × 4 Ω 1 × 8 Ω 1 × 16 Ω 2 × 8 Ω 2 × 16 Ω
Power consumption	70 W at 1/8 output power
Operating supply voltage	230 V ~ 50 Hz
Fuse	5 mm × 20 mm, 2 A, 250 V, slow-blow

Dimensions (W × D × H)	570 mm × 250 mm × 260 mm
Weight	8.3 kg

8 Plug and connection assignment

Introduction

This chapter will help you select the right cables and plugs to connect your valuable equipment in such a way that a perfect sound experience is ensured.

Please note these advices, because especially in 'Sound & Light' caution is indicated: Even if a plug fits into the socket, an incorrect connection may result in a destroyed power amp, a short circuit or 'just' in poor transmission quality!

Balanced and unbalanced transmission

Unbalanced transmission is mainly used in semi-professional environment and in hifi use. Instrument cables with two conductors (one core plus shielding) are typical representatives of the unbalanced transmission. One conductor is ground and shielding while the signal is transmitted through the core.

Unbalanced transmission is susceptible to electromagnetic interference, especially at low levels, such as microphone signals and when using long cables.

In a professional environment, therefore, the balanced transmission is preferred, because this enables an undisturbed transmission of signals over long distances. In addition to the conductors 'Ground' and 'Signal', in a balanced transmission a second core is added. This also transfers the signal, but phase-shifted by 180°.

Since the interference affects both cores equally, by subtracting the phase-shifted signals, the interfering signal is completely neutralized. The result is a pure signal without any noise interference.

1/4" TS phone plug (mono, unbalanced)

1	Signal
2	Ground, shielding

1/4" TRS phone plug (mono, balanced)

1	Signal (in phase, +)
2	Signal (out of phase, -)
3	Ground

9 Protecting the environment

Disposal of the packaging material



For the transport and protective packaging, environmentally friendly materials have been chosen that can be supplied to normal recycling.

Ensure that plastic bags, packaging, etc. are properly disposed of.

Do not just dispose of these materials with your normal household waste, but make sure that they are collected for recycling. Please follow the notes and markings on the packaging.

Disposal of your old device



This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE). Do not dispose with your normal household waste.

Dispose of this device through an approved waste disposal firm or through your local waste facility. When discarding the device, comply with the rules and regulations that apply in your country. If in doubt, consult your local waste disposal facility.



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