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AC PRO 60

User Manual

Guitar Combo

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ACOUSTIC AMPLIFIER
AC PRO 60

1 General information

This user manual contains important information on the safe operation of the device. Read and follow all safety notes and all instructions. Save this manual for future reference. Make sure that it is available to all persons using this device. If you sell the device to another user, be sure that they also receive this manual.

Our products and user manuals are subject to a process of continuous development. We therefore reserve the right to make changes without notice. Please refer to the latest version of the user manual which is ready for download under *www.thomann.de*.

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.

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.
CAUTION!	This combination of symbol and signal word indicates a possible dangerous situation that can result in minor 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. Never remove any covers. There are no user-serviceable parts inside. Do not use the device if covers, protectors or optical components are missing or damaged.

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.

CAUTION!

Possible hearing damage

The device can produce volume levels that may cause temporary or permanent hearing impairment. Over an extended period of time, even levels that seem to be uncritical can cause hearing damage. Decrease the volume level immediately if you experience ringing in your ears or hearing impairment. If this is not possible, keep a greater distance or use sufficient ear protectors.

CAUTION!

Possible hearing damage

Using headphones for a prolonged period and at high volume can cause hearing damage. Avoid using the device at high volume, especially when using headphones.

NOTICE!

Risk of fire

Do not block areas of ventilation. Do not install 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. Only operate the device within the ambient conditions specified in the chapter 'Technical specifications' of this user manual. Avoid heavy temperature fluctuations and do not switch the device on immediately after it was exposed to temperature fluctuations (for example after transport at low outside temperatures). Dust and dirt inside can damage the unit. When operated in harmful ambient conditions (dust, smoke, nicotine, fog, etc.), the unit should be maintained by qualified service personnel at regular intervals to prevent overheating and other malfunction.

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.

NOTICE!

Possible damage due to installation of a wrong fuse

The use of different types of fuses can cause serious damage to the unit. Fire hazard! Only fuses of the same type may be used.

NOTICE!

Possible staining

The plasticiser contained in the rubber feet of this product may possibly react with the coating of your surface and after some time cause permanent dark stains. In case of doubt, do not put the rubber feet directly on the surface and use a suitable underlay if necessary, i.e. felt pads or similar.

3 Features

Special features of the device:

- Inputs:
  - Channel 1: Instrument (switchable sensitivity)
  - Channel 2: MIC/LINE (switchable sensitivity)
  - MP3 player, AUX
- Outputs: Headphones, tuner, mixer/amp
- Effects loop
- Speakers: 8" bass, 1" tweeter
- Separate controls for channels 1 and 2:
  - Channel 1: Gain, bass, mids, treble, contour
  - Channel 2: Gain, bass, treble
- Switchable effects: Reverb, plate reverb, chorus, delay
- Effects depth and assignment to channels 1 and 2 steplessly adjustable
- Foot switch connector for an optionally available FS for effects on/off control
- Volume control
- Black textured coating
- Automatic standby (can be disabled)

4 Installation and starting up

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

Create all connections while the device is off. Use the shortest possible high-quality cables for all connections. Take care when running the cables to prevent tripping hazards.

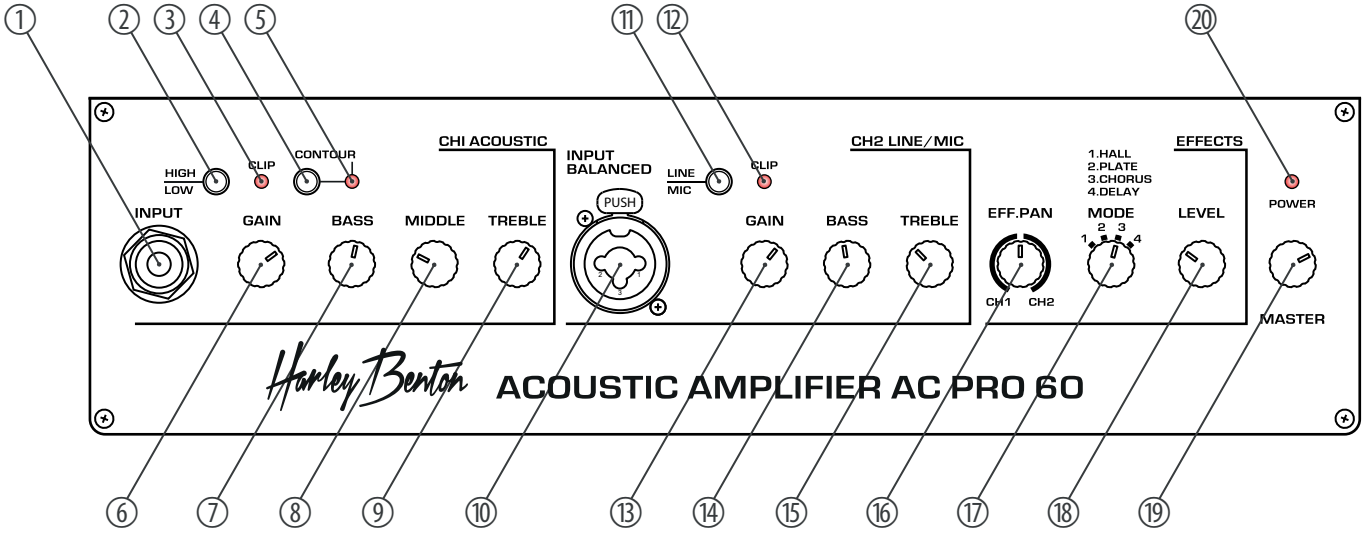
NOTICE!

Possible property damage by magnetic fields

Loudspeakers produce a static magnetic field. Therefore, maintain an appropriate distance to devices that can be adversely affected or damaged by an external magnetic field.

5 Components and functions

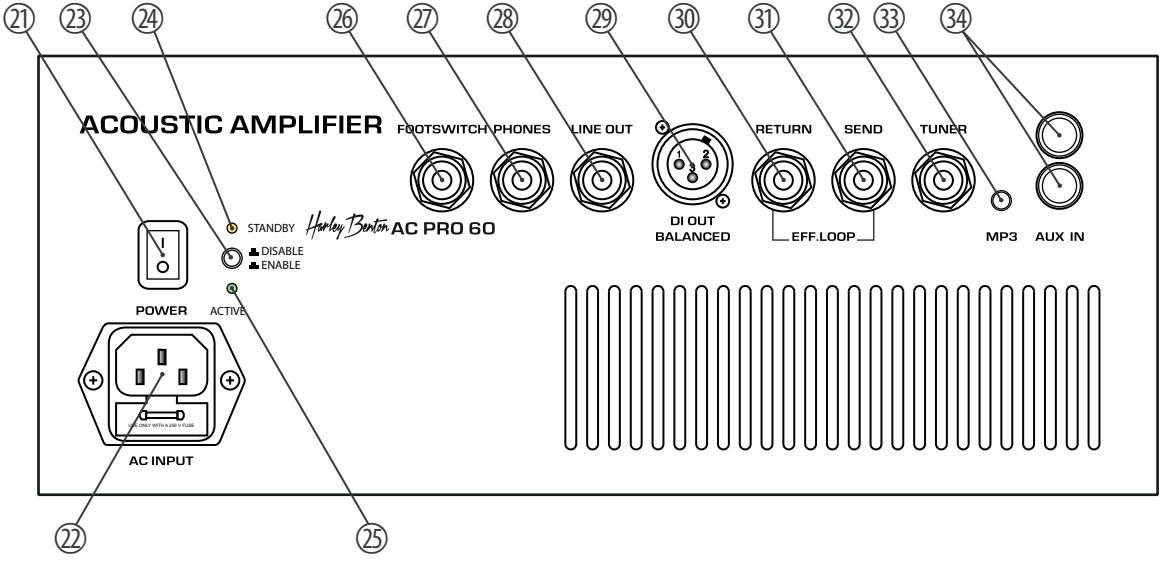
Top side



1	*[INPUT]* | 1/4" jack socket (mono) for the input signal (channel 1) coming from your instrument
2	*[HIGH/LOW]* | switch for adjusting the sensitivity (channel 1)
3	*[CLIP]* | This LED lights up red when the pre-amplifier (channel 1) is overdriving. If this happens, reduce the input gain using the *[GAIN]* control (6).
4	*[CONTOUR]* | switch for the mid attenuation (channel 1) and simultaneous increasing of low and high frequencies.
5	*[CONTOUR]* | control LED for the *[CONTOUR]* switch (red)
6	*[GAIN]* | input gain control (channel 1)
7, 8, 9	*[BASS]*, *[MIDDLE]*, *[TREBLE]* | controls to attenuate or increase the low, mid and high frequencies (channel 1) by ±10 dB
10	*[INPUT BALANCED]* | XLR / 1/4" jack combo socket for an additional signal source (channel 2), e.g. another instrument o a microphone
11	*[LINE/MIC]* | switch for adjusting the sensitivity (channel 2) to the signal source.
12	*[CLIP]* | This LED lights up red when the pre-amplifier (channel 2) is overdriving. If this happens, reduce the input gain using the *[GAIN]* control (13)
13	*[GAIN]* | input gain control (channel 2)
14, 15	*[BASS]*, *[TREBLE]*, TREBLE | controls to attenuate or increase the low and high frequencies (channel 2) by ±10 dB

16	*[EFF PAN]* | control to distribute steplessly effects to both channels If you use only the built-in effects module, the following applies: In the middle position of the control, the effect selected with the *[MODE]* switch affects channel 1 and channel 2. In position *[CH1]*, the effect only affects channel 1, in position *[CH2]*, the effect only affects channel 2. If you use the built-in effects module and additionally loop an external effects device into the signal path (connections *[SEND]/[RETURN]*), the following applies: In the middle position of the control, both effects affect both channels. In position *[CH1]*, the internal effects module affects channel 1 and the looped external effects device affects channel 2. In position *[CH2]*, the internal effects module affects in reverse channel 2 and the looped external effects device affects channel 1.
17	*[MODE]* | switch for selecting an effect of the built-in effects module (reverb, plate reverb, chorus or delay)
18	*[LEVEL]* | effects depth control
19	*[MASTER]* | overall volume control
20	*[POWER]* | The LED lights up red when the device is switched on and operational.

Rear panel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ACOUSTIC AMPLIFIER
FOOTSWITCH
PHONES
LINE OUT
DI OUT
BALANCED
RETURN
SEND
TUNER
MP3
AUX IN
EFF.LOOP
STANDBY
Harley Benton AC PRO 60
DISABLE
ENABLE
POWER
ACTIVE
AC INPUT
22
25

21	*[POWER]*	main switch. Turns the device on and off.
22	IEC chassis plug with fuse holder
23	*[STANDBY]*	push-button to enable (*[ENABLE]*) or disable (*[DISABLE]*) the power saving mode If there is no signal input in power saving mode at the *[INPUT]* jack for 15 minutes, the device will automatically enter standby mode. As soon as the *[INPUT]* jack receives a signal again, the device switches back to normal mode.
24	LED *[STANDBY]*	standby mode. This LED lights up when the device – on activated power saving mode – switches to standby mode and turns off when the device is switched back to normal operation.
25	LED *[ACTIVE]*	mode indicator. This LED lights up continuously green in normal operation and turns off when the device – on activated power saving mode – switches to standby mode.
26	*[FOOTSWITCH]*	1/4" jack socket to connect optionally available foot switches for switching effects
27	*[PHONES]*	1/4" headphone jack socket. If you connect headphones, the internal speakers are disconnected. To avoid annoying noises, turn the *[MASTER]* (19) control down before plugging headphones in or out.
28	*[LINE OUT]*	1/4" jack socket (mono) which provides the preamp output signal You can use the preamp signal to feed a separate power amp.
29	*[DI OUT BALANCED]*	XLR plug (balanced) which provides the preamp output signal. You can use the preamp signal e.g. at the microphone input of a mixing console.
30	*[RETURN]*	1/4" jack socket (mono) to connect the output of an effects device
31	*[SEND]*	1/4" jack socket (mono) to connect the input of an effects device
32	*[TUNER]*	1/4" jack socket (mono) to connect a tuner

33	*[MP3]* | 3.5 mm jack socket (stereo) as additional signal input, for example for an MP3 player
34	*[AUX IN]* | RCA sockets for additional signal input, for example for a CD player

6 Technical specifications

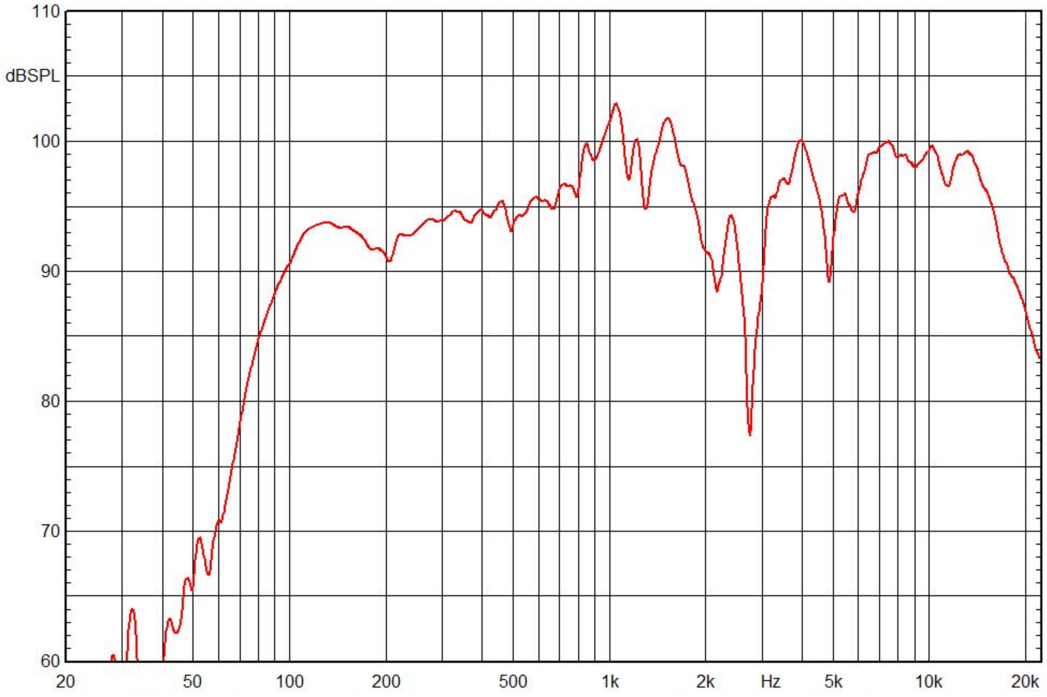
Speaker		1 × 8" speaker 1 × 1" tweeter
Input connections	Power supply	1 × IEC chassis plug C14
	Signal input *[CH1]*	1 × 1/4" jack socket
	Signal input *[CH2]*	1 × XLR / 1/4" jack combo socket (LINE: 22 kΩ; MIC: 600 Ω)
	Signal input *[MP3]*	1 × 3.5 mm jack socket
	Signal input *[AUX IN]*	1 × RCA sockets pair
	Foot switch *[FOOTSWITCH]*	1 × 1/4" jack socket
Output connections	Headphones *[PHONES]*	1 × 1/4" jack socket
	Output signal *[LINE OUT]*	1 × 1/4" jack socket
	Effects device *[RETURN]*	1 × 1/4" jack socket
	Effects device *[SEND]*	1 × 1/4" jack socket
	Output signal *[DI OUT BALANCED]*	1 × XLR panel plug
	Tuner *[TUNER]*	1 × 1/4" jack socket

Input impedance		11.2 kΩ
Output power		45 W (RMS @ 8 Ω)
Frequency range		80 Hz to 19 kHz
Signal-to-noise ratio		89 dB
Total harmonic distortion (THD)		0.126% (Clean-Sound)
Power consumption		40 W (max. 87 W)
Operating supply voltage		230 V ~ 50 Hz
Fuse		5 mm × 20 mm, 1 A, 250 V, slow-blow
Dimensions (W × H × D)		346 mm × 346 mm × 280 mm
Weight		11 kg
Ambient conditions	Temperature range	0 °C…40 °C
	Relative humidity	20 %…80 % (non-condensing)

Further information

Reverb	yes
External effects loop	yes
Line input	yes
Foot switch connector	yes
Incl. foot switch	no
Channels	2
Effects processor	yes
Microphone input	yes
Battery operation	no

Frequency response



7 Plug and pin assignments

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.

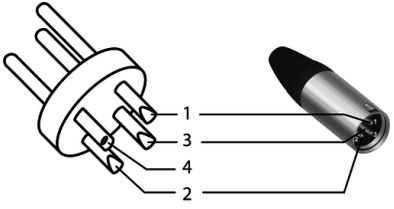
1/4" TS phone plug (mono, unbalanced)

1	Signal
2	Ground, shielding

Three-pole 1/8" mini phone jack (stereo, unbalanced)

1	Signal (left)
2	Signal (right)
3	Ground, shielding

XLR plug (balanced)



1	Ground, shielding
2	Signal (in phase, +)
3	Signal (out of phase, –)
4	Shielding on plug housing (option)

RCA connection

Drawing and table indicate the pin assignment of an RCA plug.

1	Signal
2	Ground, shielding

8 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) in its currently valid version. 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.