

Accuphase

STEREO PHONO AMPLIFIER

C-37

- Separate left/right MC head amplifier and equalizer circuitry ensures ultra low noise
- Highly precise equalization with only ± 0.3 dB RIAA deviation
- Versatile impedance switching with six settings for MC and three settings for MM
- Gain switching enables high gain of up to 70 dB
- Three analog player inputs with separate settings memory
- Balanced and line analog outputs
- Polarity selector for balanced outputs





The Ultimate Phono Equalizer Amp — Separate circuitry for left and right MC head amplifier and equalizer amplifier using latest devices ensure ultra low noise performance and outstanding RIAA precision. Versatile load impedance selector with six settings for MC and three settings for MM brings out the best in every cartridge. Subsonic filter, and high gain capability of up to 70 dB for MC and up to 40 dB for MM with gain switching. Three analog player inputs with separate parameter memory for each input.

Renewed interest in the analog phono record has led to a rising boom among discerning music lovers. The analog record is a medium where careful selection of individual components such as the tone arm, cartridge and phono equalizer amp, along with knowledgeable setup and fine-tuning can yield immensely satisfying results in terms of sound quality and music enjoyment. Ever since its beginnings, Accuphase has been accumulating considerable expertise in the domain of analog records. In 2008, this culminated in the release of the Phono Amplifier C-27, a product that astonished the audio world with its amazingly low S/N ratio and impeccable sound. The C-37 now sets the bar even higher. Designed to match the

Accuphase 40th anniversary models C-3800 and C-2820, the C-37 is a no-compromise standalone phono equalizer amplifier incorporating latest circuit design and utilizing materials and parts with optimal sonic qualities, making it capable of exploring the possibilities of the analog disc to the fullest. Because the output signal of a record player is extremely low, the voltage must be amplified to a level that is suitable for the subsequent stages. To perform this task, the phono amplifier must accurately handle the minute signal while keeping distortion and noise to an absolute minimum over the entire range from low to high frequencies. In the C-37, these goals are achieved by employing completely separate MC head amplifier and

equalizer sections, and keeping the left and right channels also separate. Circuit topology is designed to optimally match the characteristics of MM and MC cartridges respectively, realized with ultra low noise transistors. This enables the C-37 to fully bring out the characteristics and sonic qualities of any phono cartridge, allowing the listener to explore the legendary musical depth of analog discs. In terms of physical appearance, the gold-colored panel face and side panels of real wood with natural grain finish exude an aura of refined elegance, making the C-37 a perfect match for the C-3800 as well as other models such as the C-2820 or C-2420.

- Dual mono construction with left/right separate toroidal power transformers and left/right separate MC head amplifier and equalizer sections.
- Equalizer PCBs made from glass fluorocarbon resin with low dielectric constant and low losses.
- Gold-plating for all major parts in signal path.
- Gain switching enables high gain of up to 70 dB.
- Highly precise equalization: RIAA deviation only ± 0.3 dB.
- Versatile load impedance switching options with 6 settings for MC and 3 settings for MM.
- Three inputs for analog players or tone arms, each with a separate memory for MC/MM, load impedance, gain, subsonic filter and other settings.
- Subsonic filter (10 Hz, -12 dB/octave).
- Two sets of analog outputs for balanced and Line connections.
- Phase selector for balanced outputs.
- Elegant side panels of real wood with natural grain finish.
- Top plate designed to ensure uniform thermal diffusion while suppressing chassis vibrations.

LOAD IMPEDANCE MC/MM FILTER GAIN

Load impedance selector MC/MM selector Filter button Gain selector button

MC	3 Ω , 10 Ω , 30 Ω , 100 Ω , 300 Ω , 1k Ω
MM	1k Ω , 47k Ω , 100k Ω

3 Ω 10 Ω 30 Ω 100 Ω 300 Ω 1k Ω 47k Ω 100k Ω

Load impedance indicators

INPUT

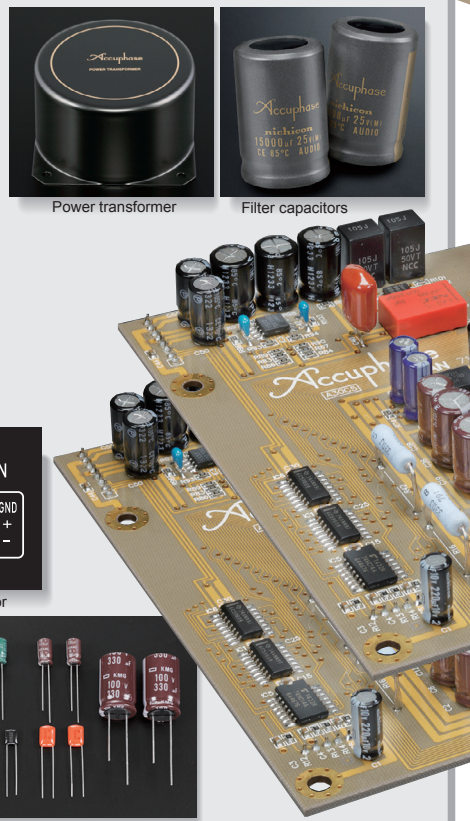
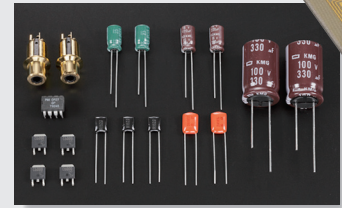
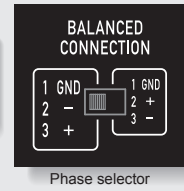
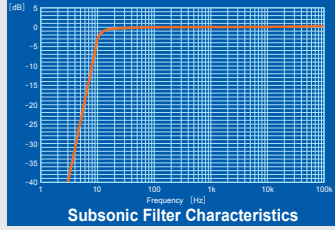
Input selector

Input connectors and ground terminal

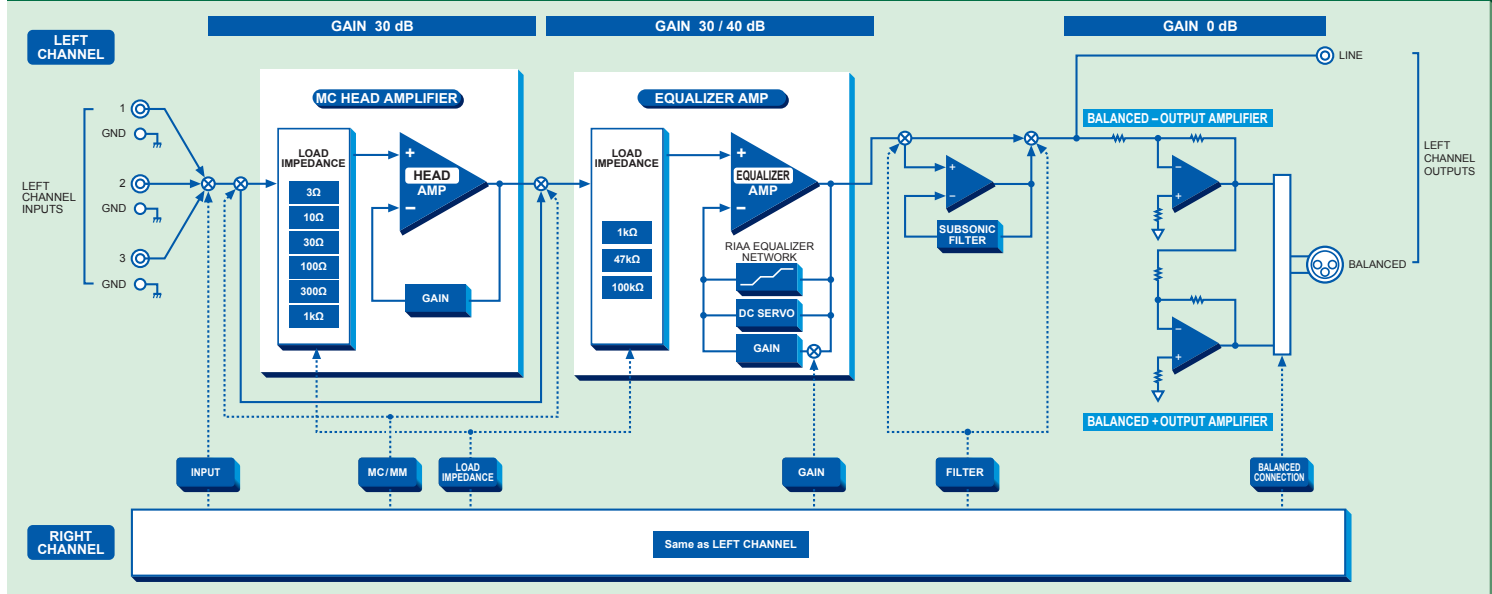
ON HIGH FILTER GAIN

Subsonic filter and gain indicators

Balanced output connectors



Block Diagram



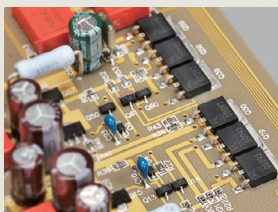


Two separate board assemblies for left and right channel, using glass fluorocarbon resin substrate and carrying MC head amplifier, phono equalizer amplifier, and logic relays for signal switching to ensure shortest possible paths between inputs and outputs.

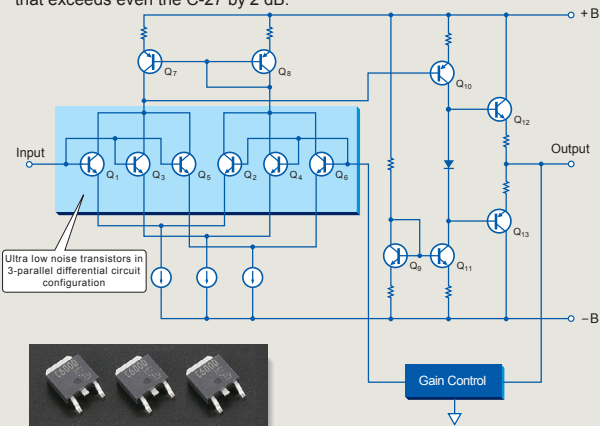
Completely separate left/right MC head amplifier and equalizer sections

One of the biggest challenges for a phono equalizer amp is the problem of noise. How to achieve high S/N ratio is a crucial point. The C-37 therefore features separate MC head amplifier and equalizer sections for the left and right channel, in order to precisely match the circuit configuration to the different requirements of MC and MM cartridges. Employing purpose-selected components and optimized operating points, this uncompromising approach results in outstanding S/N ratio, minimum distortion, and excellent frequency response characteristics. Amplifier performance finally approaches ideal levels.

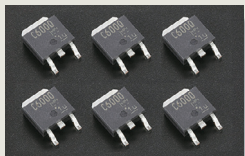
MC Head Amplifier



MC cartridges have an output signal that is a level of magnitude lower than that of MM cartridges. Residual noise of the amplifier therefore needs to be kept to an absolute minimum. In the C-37, this is achieved by using an MC head amplifier optimized for this type of cartridge, with a "3-parallel ultra low noise transistor differential circuit" as shown below to guarantee high S/N ratio that exceeds even the C-27 by 2 dB.



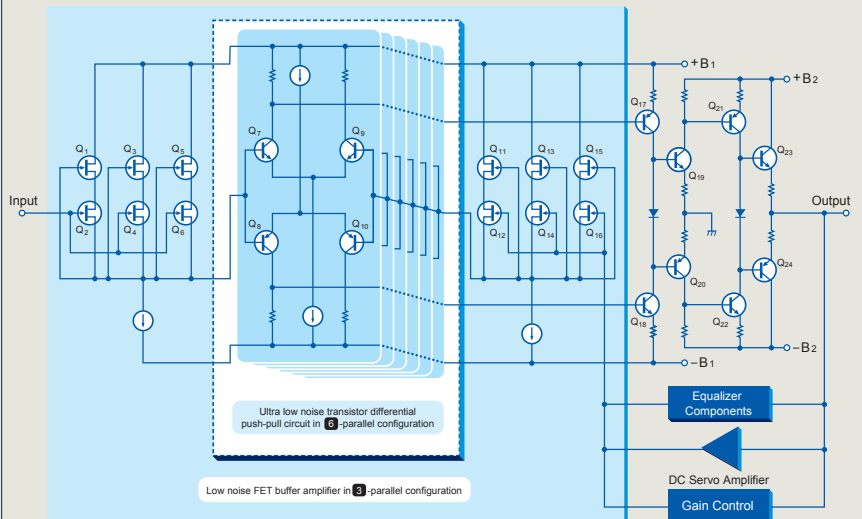
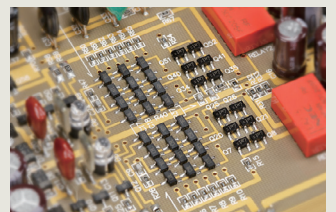
MC Amplifier Circuit Diagram



Ultra low noise transistors

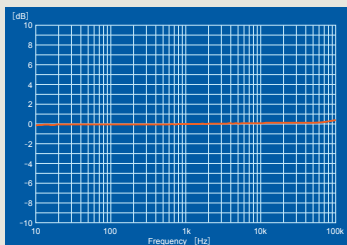
Equalizer Amplifier

The amplifier for MM cartridges must provide a high impedance input while also reducing residual noise. To achieve this, a sophisticated equalizer amplifier to suit the requirements of MM cartridges was designed. FET devices (field effect transistors) ideal for high impedance applications are used in the initial stage, and the circuit as shown below is configured as a "3-parallel low noise FET buffer amplifier" + "6-parallel ultra low noise transistor differential push-pull circuit".

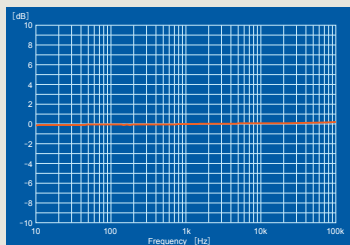


Equalizer Amplifier Circuit Diagram

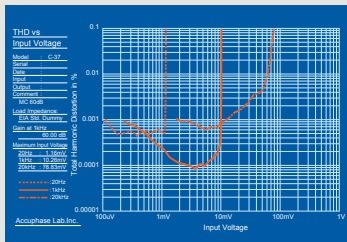
Performance Graphs



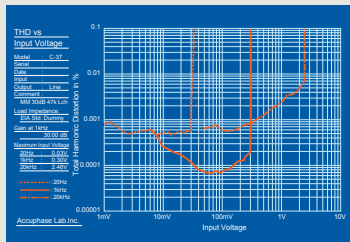
RIAA deviation (MC head amplifier)



RIAA deviation (MM equalizer amplifier)

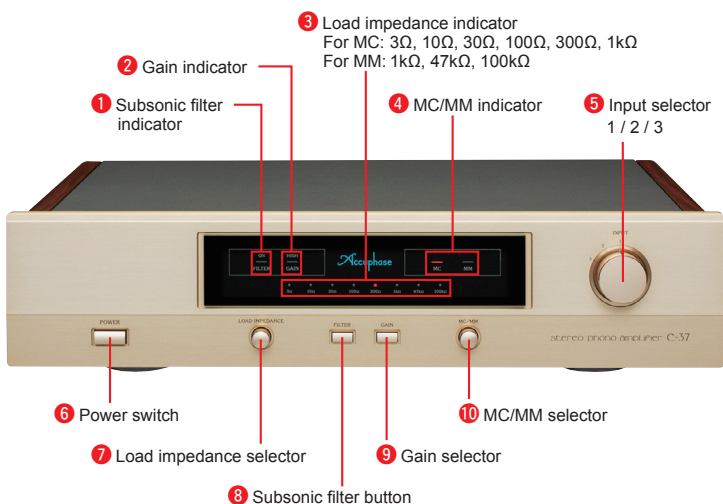


Input voltage vs. THD characteristics (MC head amplifier)

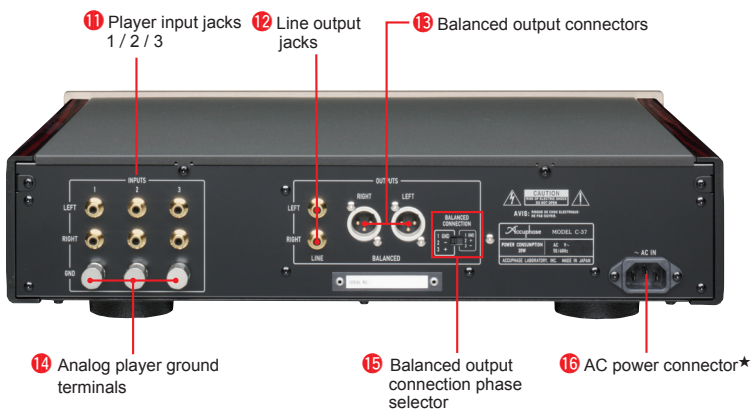


Input voltage vs. THD characteristics (MM equalizer amplifier)

◆ Front panel



◆ Rear panel

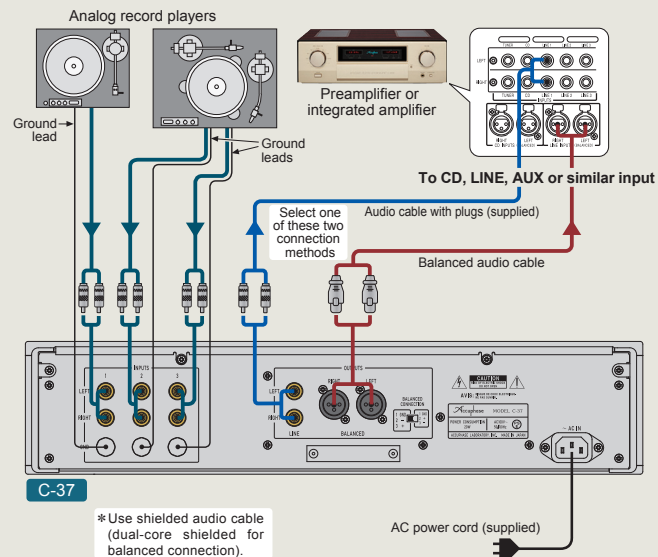


- Supplied accessories:
- AC power cord
 - Audio cables with plugs (equivalent to ASL-10, 1 m)
 - Cleaning cloth

Remarks

- ★ This product is available in versions for 120/220/230 V AC. Make sure that the voltage shown on the rear panel matches the AC line voltage in your area.
- ★ 230 V version has an Eco Mode that switches power off after 120 minutes of inactivity.
- ★ The shape of the AC inlet and plug of the supplied power cord depends on the voltage rating and destination country.

Connection Example



C-37 Guaranteed Specifications

[Guaranteed specifications are measured according to EIA standard RS-490.]

- **RIAA Deviation**

MC	10 - 20,000 Hz	±0.3 dB
MM	10 - 20,000 Hz	±0.3 dB
- **Total Harmonic Distortion** (1 kHz, at rated output) 0.005%
- **Gain** *INPUT → BALANCED / LINE OUTPUT

GAIN button OFF (Normal)	MC:	60 dB
	MM:	30 dB
GAIN button HIGH	MC:	70 dB
	MM:	40 dB
- **Input Sensitivity** (at rated output: 1 kHz, 2 V)

MC	60 dB:	2.0 mV
	70 dB:	0.63 mV
MM	30 dB:	63 mV
	40 dB:	20 mV
- **Maximum Input Voltage** (1 kHz, THD 0.005%)

MC	60 dB:	9.0 mV
	70 dB:	2.9 mV
MM	30 dB:	300 mV
	40 dB:	95 mV
- **Maximum Output Level** (THD 0.002% 20 - 20,000 Hz)
BALANCED / LINE OUTPUT: 8.0 V
- **Input Impedance**

MC settings:	3 ohms, 10 ohms, 30 ohms, 100 ohms, 300 ohms, 1 kilohm
	MM settings: 1 kilohm, 47 kilohms, 100 kilohms
- **Rated Output and Output Impedance**

BALANCED OUTPUT	2 V	50 ohms
LINE OUTPUT	2 V	50 ohms
- **S/N Ratio, Input-converted Noise**

Input terminal	Input shorted (A weighting)	
	S/N ratio at rated output	
MC: 60 dB	100 dB	
MC: 70 dB	91 dB	
MM: 30 dB	110 dB	
MM: 40 dB	102 dB	
- **Minimum Load Impedance** BALANCED / LINE OUTPUT: 10 kilohms
- **Crosstalk** -90 dB or less (10 kHz)
- **Residual Noise (A-weighted)**

GAIN button OFF (Normal)	MC:	19 µV or less
	MM:	6 µV or less
GAIN button HIGH	MC:	59 µV or less
	MM:	16 µV or less
- **Subsonic Filter** -12 dB/octave, 10 Hz
- **Power Requirements** AC120 V/220 V/230 V, 50/60 Hz (Voltage as indicated on rear panel)
- **Power Consumption** 20 W
- **Maximum Dimensions**

Width	465 mm (18.31")
Height	114 mm (4.49")
Depth	407 mm (16.02")
- **Mass**

	14.5 kg (32.0 lbs) net
	20.0 kg (44.1 lbs) in shipping carton

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ACCUPHASE LABORATORY, INC.