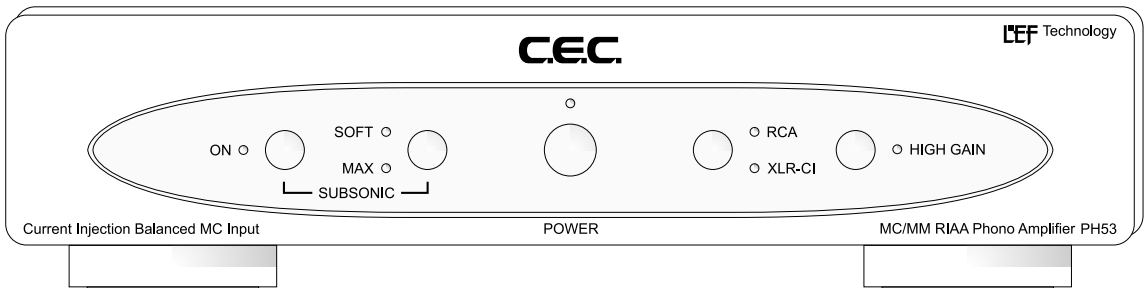


CEC

PH53

Precision MM + Balanced MC Phono Amplifier



Owner's Manual

Introduction

Thank you for purchasing **PH53**! Please read the manual carefully in order to use your **PH53** in the best possible way.

PH53 is a state of the art phono amplifier. The unique balanced current injection input for a wide range of moving coil pickups and the **LEF** amplifier technology for the output stage provides today's top level sound quality. Standard RCA input for unbalanced use with Moving Magnet or Moving Coil cartridges is available as well. All amplifier sections run without any overall negative feedback. Thus no dynamic distortions are created by the amplifier.

Only use XLR or RCA input! Never both!

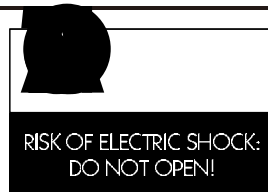
PH53 is an excellent choice for high end audio equipment users looking for optimum phono quality for home HiFi systems.

Due to **PH53**'s balanced XLR current injection input and also balanced XLR output, **PH53** is best choice for professional users.

So **PH53** is a unique and impressively sounding product and this manual is intended to introduce you the available features.

Attention: Only connect XLR OR RCA Input! Never both!

Important Safety Instructions



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT OPEN THE UNIT. NO USER-SERVICEABLE PARTS INSIDE: REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash within a triangle is intended to alert the user to the presence of dangerous voltage inside the product's enclosure that may cause an accident resulting in injury or death by fire or electrical shock.



The exclamation point within a triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions.



WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE





Cautions Regarding Handling



Precautions for use

- Check that the operating voltage of your unit is identical with the voltage of your local power supply (see operating voltage on the rear panel of the unit). PH53 has a switching power supply to handle 100 - 240 Volt AC, 50 or 60 Hz.
- Attention: Only connect XLR OR RCA Input! Never both!



- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
 - Sometimes in summer you have faults in your local power supply due to overloading. Unplug the unit from the wall outlet when there is a thunderstorm.
-



This sign is intended to alert the user to disconnect the power cord from the wall outlet in dangerous situations!

Always unplug the power cord from wall outlet by grasping the plug. Never pull the cord itself!

- Unplug the unit from the wall outlet if it is not to be used for an extended period of time.
- Unplug the unit from the wall outlet before connecting other units or opening the unit.

AC-Line

- If there is any break or cut in the AC-line cord, unplug it from the wall outlet and replace it by a new one!
-



Location

- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.



Condensation

- When this unit is brought into a warm room from previously cold surroundings or when the room temperature rises sharply, condensation may form inside, and the unit may not be able to attain its full performance. In cases like this, allow the unit to stand for about an hour or raise the room temperature gradually.
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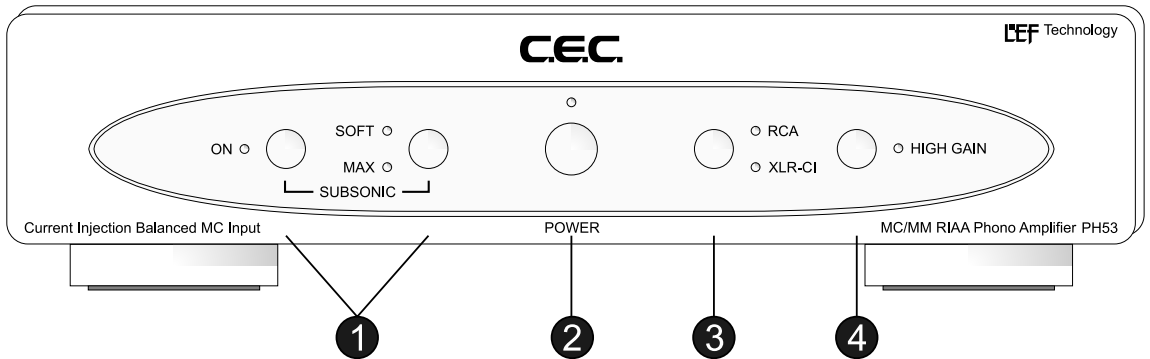
THIS SIGN PROHIBITS DISASSEMBLING!
DO NOT OPEN! NO USER-SERVICEABLE PARTS INSIDE!
Refer servicing to qualified service personnel!

Fuses

- The fuses are inside of the unit and should be changed by qualified personnel only.

Caution

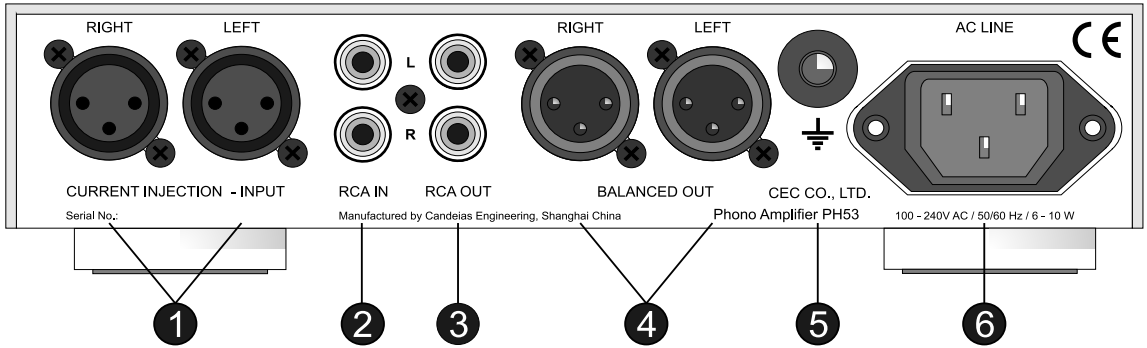
- Changes or modifications to this equipment not expressly approved by CEC Co.Ltd. for compliance will void the user's warranty.



Front Panel

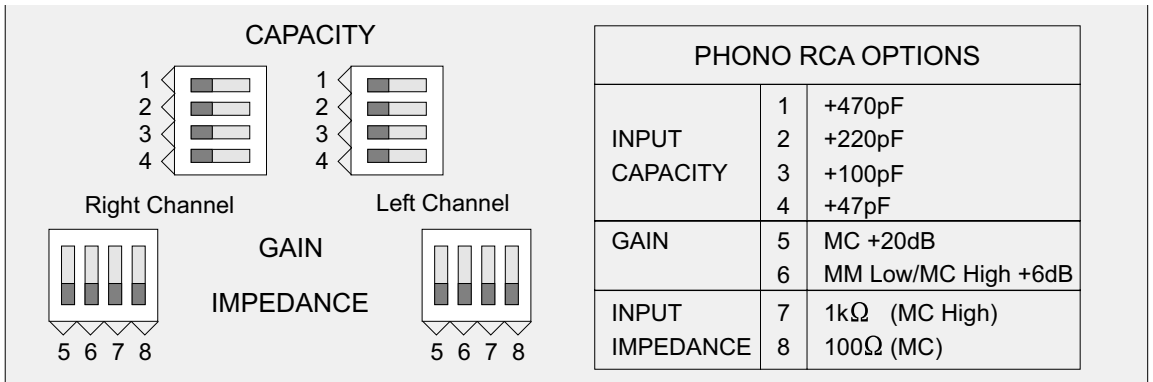
- 1** Subsonic - Use these switches to reduce subsonic noise and large woofer excursions. The left switch activates / deactivates subsonic, the right switch changes between a moderate soft mode and the maximum subsonic reduction.
- 2** Power - AC Power switch - turns the unit on / off.
- 3** Input - Input Selection to change between unbalanced RCA-Input and balanced XLR-Current-Injection-MC-Input.

Attention: Only connect XLR OR RCA Input! Never both!
- 4** High Gain - Use this switch to double gain (+6 dB).

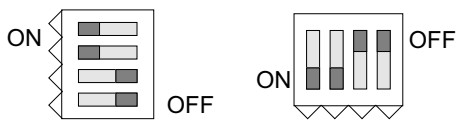


Rear Panel

- 1** Balanced MC Input - Balanced Current Injection XLR Input for Moving Coil Pickup System. Whenever a suitable moving coil system and balanced tonearm cable is available this input is the first choice in sound quality. XLR pinning as followed:
 1 = Ground
 2 = Non-inverted input, also called “hot” or “+” input.
 3 = Inverted input, also called “cold” or “-” input.
- 2** RCA MM/MC Input - Standard RCA Input for moving magnet (MM) or moving coil (MC) cartridges. Set capacitance, gain and impedance at the bottom plate switches.
- 3** RCA Output - Standard RCA output.
- 4** Balanced Output - Balanced XLR Output. Whenever a suitable amplifier is available this output is the first choice in sound quality. XLR pinning as described above at **1**
- 5** Ground - Ground clamp for connecting turntable / tone arm grounding wire. May also be used for additional grounding to proper external ground.
- 6** AC-Line - Connection for the AC power cord. All AC voltages from 100 to 240 Volt 50/60 Hz accepted.



RCA Options on Bottom



INPUT CAPACITY

- Use the capacity switches for adjusting the high frequency performance of moving magnet cartridges. The basic input capacitance is 47 pF and each selected capacitance is added to the basic value. Keep in mind: The usual cable capacitance is around 150-300 pF. The effective load capacitance is the summary of all selected capacitors, the internal basic capacitance (47 pF) and cable capacitance. 1 nF should good choice for most low output moving coil cartridges.

GAIN

- Switch 6 adds 6 dB gain for use with low output moving magnet or high output moving coil cartridges. Switch 5 adds 20 dB gain for low output moving coil cartridges.
- For the perfectionist: Moving Coil cartridges with a slight unbalance between left and right channel can be slightly corrected: At the louder channel switch only switch 5, at the lower channel switch 5 + 6. This will increase the lower channel +1 dB.

INPUT IMPEDANCE

- Input Impedance is adjustable by switch 8 to 100 Ω, which is a common value for most moving coil cartridges. Switch 7 sets the input to 1 kΩ, which is a standard value for most high output moving coils cartridges. The basic input impedance is 47 kΩ.

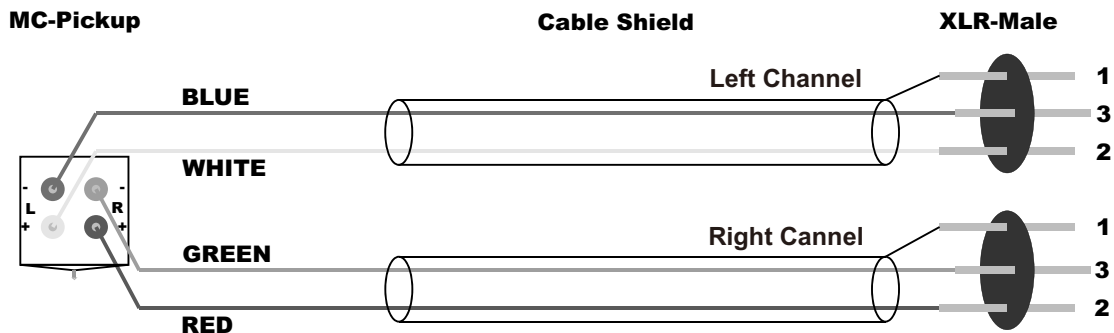
In spite of all options for the RCA input the XLR-Current-Injection-MC-Input is the first choice for best sound quality!

Tips and Hints

- **PH53** has a unique balanced current injection input for moving coil cartridges. No need for impedance adjustment. Be sure to have a true balanced connection from cartridge to **PH53**.
- **Never connect RCA AND XLR-CI Input! Only RCA OR XLR!**
- Don't use any RCA-to-XLR adaptor for XLR-CI input, because this might not be an earth-free connection causing massive hum or other noise.
- All unbalanced cartridges with pin connection to the cartridge body, turntables with RCA output or tonearms with RCA wiring should to be connected to the RCA input. Adjustment of the high frequency range is available by the capacitor switches on the bottom of the unit.
- Whenever a balanced XLR connection for output is available it is preferable to RCA.
- Use high quality cables and connectors.
- Use a grounded AC-Power connection if possible.
- In case there is a grounding cable at tonarm or turntable, connect it to the external ground connector at the rear panel of PH53.
- Whenever your woofer is visibly and slowly moving while playing records: Use **PH53's** subsonic filter.
- The **PH53** uses RIAA equalisation with Neumann extension. The Neumann time constant or some equivalent is used on almost all recordings. RIAA with Neumann extension allows a wider top frequency extension and thus clearly improves the sound quality.
- The XLR-Current-Injection-MC-Input is the first choice for best quality! Almost all cartridges are naturally balanced and just a simple rewiring of the tonearm is required for using the true balanced XLR-CI input.
- To keep this unit clean use only a soft cloth and never use any solvents or abrasives. Dust and fingerprints may be removed with a soft cloth moistened only with a few drops of water.

Attention: Only connect XLR OR RCA Input! Never both!

Moving-Coil-Pickups are naturally balanced, but usual Turntable- or Tonearm-wiring are not. For true balanced XLR-CI use rewire the Tonearm according to the following schematic drawing. Low inductance cable is more important than extensive shielding.



Specifications

Specifications

- RCA-Input-Sensitivity: 12.5 mV_{rms} / 1 kHz (6.5 mV_{rms} at High Gain)*
- RCA-Input-Sensitivity +6 dB: 6.7 mV_{rms} / 1 kHz (3.5 mV_{rms} at High Gain)*
- RCA-Input-Sensitivity +16 dB: 2.2 mV_{rms} / 1 kHz (1.1 mV_{rms} at High Gain)*
- RCA-Input-Impedance: 47 kΩ, switchable to 1 kΩ and 100 Ω

- XLR-Current-Injection-Input: approx. 10 Ω
The sensitivity of the Current-Injection-Input is depending on Voltage and Impedance of the moving coil cartridge: Higher Voltage increases output, higher impedance reduces gain and thus output voltage. Consequently the difference of a High-Output- / High-Impedance Moving Coil Pickup to a Low-Output- / Low-Impedance Moving Coil Pickup is lower than expected by the difference of Moving Coil's output voltage.
This Current-Injection-Input fits to a wide range of Moving Coil Pickups including High-Output-MC. Some Very-Low-Output-MCs need "High Gain" setting.

- Equalisation-Filter: RIAA with Neumann time constant, +- 0.25 dB
- Subsonic-Filter soft: -6 dB / 10 Hz, -12 dB / 5 Hz, -22 / 3 Hz, -36 / 2 Hz
- Subsonic-Filter max: -9 dB / 10 Hz, -18 dB / 5 Hz, -32 / 3 Hz, -48 / 2 Hz
- Power consumption: 5 W
- External dimensions (w / h / d): approx.: 217.5 x 59 x 280 mm
- Weight: approx.: 2 kg

*) for 1 V_{rms} Output

Note:

- Specifications and design subject to possible modification without notice, due to improvements. Errors excepted.

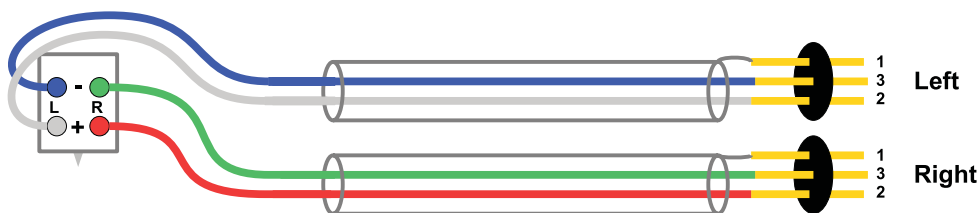
CEC Co. Ltd.

Saitama, Japan

Balanced Phono Interconnection



The coaxial connection is a questionable compromise which might be useful for testing. An already present RCA connection can just be connected to XLR plugs. This is not a balanced connection indeed and this you may expect some noise interference. Concerning sound quality we do not recommend this solution either.



The best way to connect is a balanced "twisted pair" cable with additional shielding. The cartridge can be directly connected to the balanced input this way and the shield is connected just one-sided and eventually to the turntable chassis. No cartridge pin is allowed to be shorted to the tonearm or chassis! With this connection you can enjoy excellent sound quality results.



A balanced connection without any shielding might sound best as long as you don't experience any noise by interferences. Twisted cables are mandatory for this type of connection! The CI-input is not very sensitive to capacitive noise and also has a high rejection of common-mode noise. The cable should generally be low-inductive for CI-connections. In case of any trouble you better use the above suggestion.



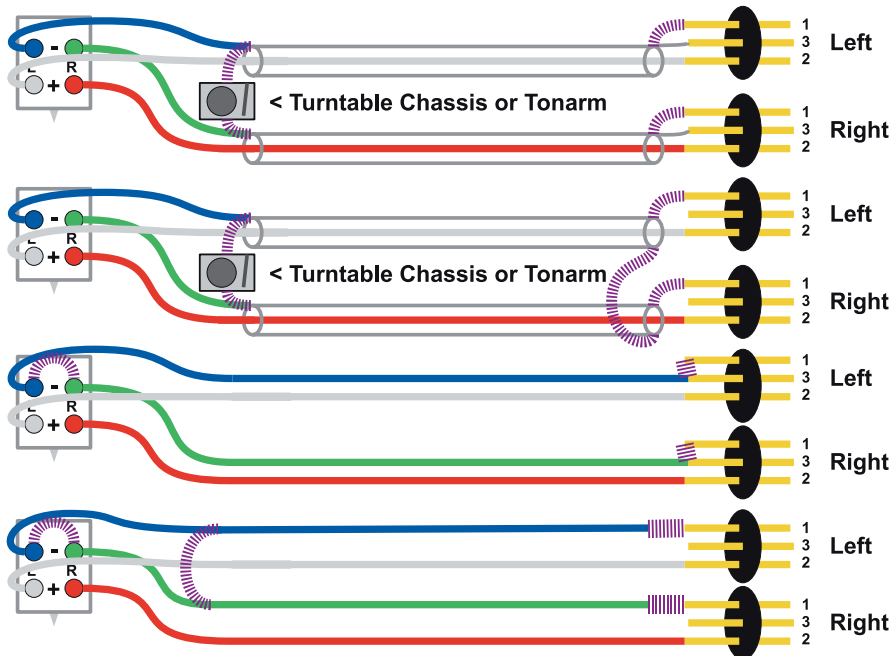
In case of making a testing adaptor from RCA to XLR following point should be considered:

1. The adaptor must be connected according to the above drawing. Pin 1 of the XLR Plug must remain unused!
2. None of the RCA grounds is allowed to be connected to the tonearm or chassis. Better check the above suggestion by a multi-meter for short circuits.

As this is indeed not a clean balanced interconnection you may expect some noise as well as reduced sound quality. Such adaptor should be just a short-term solution.

Any unbalanced cable at the PH53 input is a waste of sound quality!

Caution: Dangerous Connections



Wrong wiring from the turntable and PH53 may lead to damages!

The magenta coloured dotted lines on the above drawings show the dangerous wiring that must be avoided in any case.



- Never connect pin 1 and 3 from the XLR input connector.
- Never connect pin 1 and 2 from the XLR connector.
- Never connect any of the four signal lines to pin 1.
- Whenever using a coaxial interconnection take care the shields are never connected to the turntable chassis or the tonearm.
- Whenever using a coaxial interconnection take care the shields from left and right channel are never connected to each other.
- Cartridges with common ground does not match for the use with PH53.
- In case of question please consult your retailer.