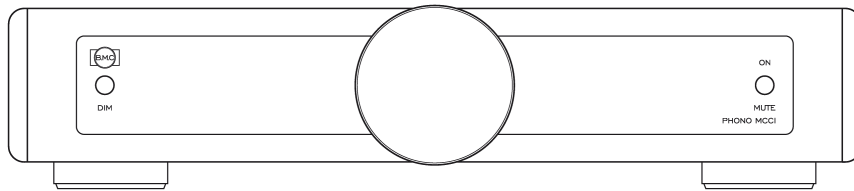


# B.M.C. Audio PHONO MCCI Quick Start



## Phono MCCI Owner's Manual



### DIM

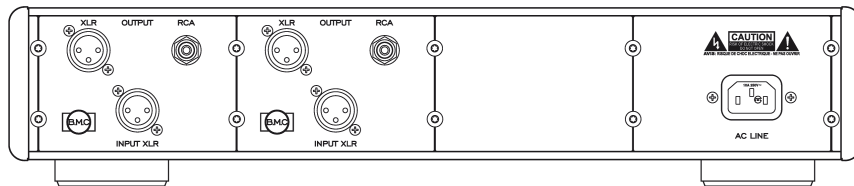
Reduce the illumination brightness

### POWER

Turn right for power on

### MUTE

Mute the output



Right Channel

Left Channel

AC Power Inlet

Top line left & right: Balanced and RCA outputs

Bottom line left & right: Balanced MC input for **ground-free connection only!**

Pinning:

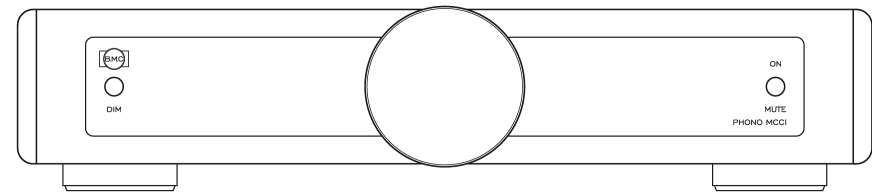
Pin 2 = Hot (+), Pin 3 = Cold (-), Pin 1 = Shield (see inside manual for details)

### Caution:

**The balanced Current-Injection-Input of the Phono MCCI is technically different to standard phono preamps! A wrong connection may damage the MC cartridge or the Phono MCCI itself. Damages which origin from such mishandling are excluded from warranty.**

**Take care that there is no connection from any cartridge pin, neither to the tonearm, nor to the chassis, nor in-between the 4 signal lines.**

**Find a detailed description and illustration inside this owner's manual.**



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## Technical Specifications

Frequency Response 20Hz – 20kHz	+/- 0.25dB
Input Impedance	< 3 Ohm
The input sensitivity and thus the gain are not represented by usual specifications, as they depend on the cartridge's impedance and current. This way a virtually „automatic“ gain adjustment is achieved. Additionally the gain can be set in a range of 12dB. Experiences show that even lowest output cartridges still deliver enough current for a decent output signal.	
Output Impedance	100 Ohm
Output Voltage max. at 1% THD	8,4Vrms
THD at 1kHz, 4Vrms	0,025%
THD at 1kHz, 2Vrms	0,007%
Signal to Noise (A-bew.)	> 80dB
Signal to Noise above 1kHz	> 95dB
Subsonic-Filter (intern einstellbar)	-6dB / 10 Hz
Power Consumption	18-20 Watt
Dimensions (W x H x D)	435 x 78 x 320mm
Dimensions Including knobs and terminals	435 x 91 x 350mm
Weight	8 Kg

Note: Technical specifications are subject of change. All specifications without warranty.

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## CE-Conformity Declaration

B.M.C. AUDIO GmbH declares that this product is in conformance with the Low Voltage Directive 73/23/EEC and Electromagnetic Compatibility 89/336/EEC as amended by 92/31/EEC and 93/68/EEC.

The conformity of this product with the regulations of Directive number 73/23/EEC (LVD) is proved by full compliance with the following standards: B.M.C. AUDIO GmbH declares that this product is in conformance with the Low Voltage Directive 73/23/EEC and Electromagnetic Compatibility 89/336/EEC as amended by 92/31/EEC and 93/68/EEC.

The conformity of this product with the regulations of Directive number 73/23/EEC (LVD) is proved by full compliance with the standard EN60065, issued 2002, including test types Marking, Hazardous radiation, Heating under normal conditions, Shock hazards under normal, operating conditions, Insulation requirements, Fault conditions, Mechanical strength, Parts connected to the mains supply, Components, Terminal devices, External flexible cords, Electrical connections and mechanical fixings, Protection against electric shock, Stability and mechanical hazards, Resistance to fire.

The conformity of this product with the regulations of Directive number 89/336/EEC (EMC) is proved by full compliance with the following standards:

Standard number	Date of issue	Test type
EN55013	2001	Conducted emissions
EN55013	2001	Absorbed emissions
EN55020	2002	Immunity

## FCC notice

Note: This equipment has been tested and found to comply with the limits for Class B digital devices, according to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause interference to radio communications. There is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Connect this unit to a different outlet than the receiver.
- Relocate or reorient the receiving antenna.
- Increase space between this equipment and receiver.
- Consult your dealer or an experienced radio/TV technician.

## Waste Electrical and Electronic Equipment (WEEE) Directive

Waste Electrical and Electronic Equipment Directive Directive 2002/96/EC of the European Parliament and of the Council.

The bin symbol is shown on this product. It indicates that the product should not be disposed of with regular household waste, but should be disposed of separately.

Electrical and electronic equipment may contain materials that are hazardous to the environment or human health and therefore should be disposed of at a designated waste facility or returned to your retailer for appropriate recycling.

If you wish to dispose of this unit and it still functions, please consider recycling/reusing it by selling it, trading it in at your dealer for new equipment, giving it away to friends or donating it to a charity shop.



## Introduction

Thank you for purchasing this exceptional MC phono preamplifier! Also thanks for supporting an important step for the phono reproduction quality: The need of balanced operation for overcoming traditional limitations in musical performance! Since phono cartridges by their nature are truly an earth-free signal source, balanced operation has obvious advantages which are known since longer time, but so far balanced operation got rarely applied due to old conventions from the mass-market.

The balanced "Current Injection" input truly sets new standards for the amplification of MC cartridge signals. For the first time a balanced "Current Injection" circuitry has been developed specifically for the purpose of use with MC cartridges. The outstanding signal-to-noise ratio allows the match with very low output cartridges without the need of a transformer.

Due to the mandatory earth-free operation mode there could be some incompatibilities with unbalanced interconnections.

Take care of a truly earth-free interconnection as described within this manual. You may ask your retailer for help in case of any question.

Due to the very low-noise current input of the PHONO MCCI the selection criteria for a moving coil cartridge could be re-evaluated, as the need for having a reasonable voltage level is not that important anymore. Low impedance is important for signal strength as well.

High-Output MC cartridges always have multi-layer-coils and since with every coil layer the geometrical precision degrades, the performance might be affected.

Please have a look at "Cartridge Selection" (page 6).

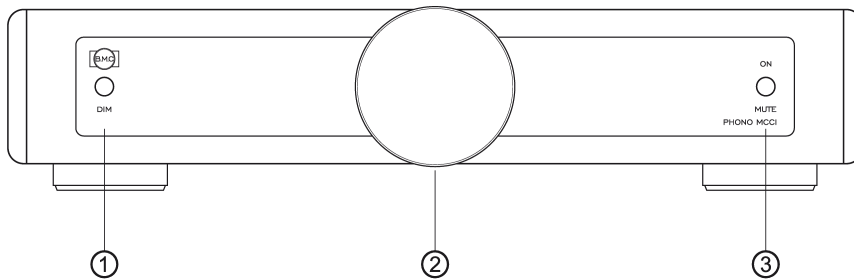
## Content of Packing

PHONO MCCI unit

AC Power Cable

Owner's Manual

## Front Panel Functions



### ② POWER

Power on the units by turning right the wheel.  
Power off the unit by turning left the wheel.

### ① DIM

Reduce the illumination intensity.

### ③ MUTE

Press the knob for muting the output.  
This function is recommended when using the tonearm lift.

## General Safety Precautions

1. Read this owner's manual.
2. Keep the owner's manual.
3. Pay attention to all important safety informations and warnings.
4. Follow the manual instructions.
5. Never use the unit close to water or in humid surroundings, like basins, a humid basement, swimming pools...
6. For cleaning use a dry micro fiber cloth exclusively.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. If placed in a shelf make shure to keep about 10cm to each side and 20cm to the top. Do not place the unit in a way covering the bottom plate like a sofa, a bed, thick carpets or blankets.
8. Do not install the unit near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not spoil the safty meaning of earthed AC power cables! The earth contact pin serves your safety. In case the attached cable does not match to your AC-Line wall socket, please ask an electrician to replace such outdated wall outlet.
10. Protect the unit's power cord from being walked on or pinched, especially around the plugs, convenience receptacles, and where it exits PHONO MCCI's casing.
11. Only use attachments/accessories specified by the manufacturer.
12. Only use the unit with a cart, stand, tripod, bracket, or table specified by the manufacturer or sold with the unit. If using a cart, exercise caution when moving the cart unit combination to avoid injury from it tipping over.
13. Unplug the unit during lightning storms or when leaving it unused for extended periods of time.
14. Refer all servicing to qualified professionals. Servicing is required when the PHONO MCCI itself, its power-supply cord, or plug has been damaged in any way, when liquids have been spilled onto the unit, when foreign objects have fallen into the unit, when the unit has been exposed to rain or moisture, when the unit does not operate normally, or when the unit has been dropped.
15. Plug the AC power cord into an easily accessible AC wall outlet, so it can be quickly unplugged in case of emergency.
16. Remove the AC wall plug for seperating the unit from the AC power line. The AC plug should always be accessible.
17. Do not expose the unit to drips or splashes. Do not place any objects filled with liquids, such as vases, on the unit.
18. Do not place any open fire close to the unit, like candles.
19. PHONO MCCI was designed to work properly in a temperature range from 10°C to 30°C and a maximum of 80% humidity.

## Important Safety Information

### Decription of used symbols:

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to potential shock hazards within the product's enclosure.



The exclamation point within an equilateral triangle, is intended to notify the user to the presence of important operating and maintenance (servicing) instructions in the accompanying documentation.



### CAUTION:

**TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER OR REAR PANEL. IT DOES NOT CONTAIN ANY USER-SERVICEABLE PARTS. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL. ANY FUSE WITHIN THE PHONO MCCI SHOULD JUST BE REPLACED BY QUALIFIED SERVICE PERSONELL. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.**



### WARNING :

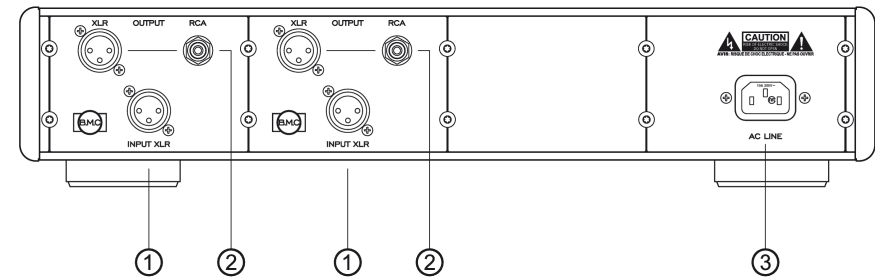
**TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

### Power Cord

The units is equipped with a power cable matching to the local AC power line sockets in the country of sale. Just the attached power cord is specified for the use with PHONO MCCI. In case of questions please ask an electrician.



## Rear Functions



### ① INPUT XLR

#### Current-Injection MC Phono-Input

Terminal for an earth-free balanced connection from a turntable with moving coil cartridge. The signal lines must be exclusively connected to XLR Pin2 (+=Hot) and Pin 3 (-=Cold). An independend shield can be connected to Pin 1 as well as the turntable chassis and the tonearm. The shield must NOT be connected to any of the four signal lines.

### ② OUTPUT XLR / RCA

#### Balanced (XLR) / unbalanced (RCA) Output

Balanced and unbalanced line level output terminals for connection to the B.M.C. DAC preamp module, an integrated amplifier or a preamplifier. XLR interconnection should always be the preference!

### ③ AC-LINE

#### AC Line Terminal

For connecting the AC power line using the included power cable. Please make sure your local AC line voltage matches to the voltage printed on the rear panel of the unit.

## Cartridge Selection

The selection for best performing moving-coil cartridges changes if, instead of a conventional voltage amplifier input, a current-injection input precedes the signal.

One difference is the much higher electro-magnetic damping of the CI input, controlling cartridges with less mechanical damping. Simultaneously, the outstanding electro-magnetic damping of the cartridge is not at the expense of dynamics - on the contrary: The current withdrawn from the Moving Coil is used as the original music signal.

The output voltage of a pickup is not the only criteria for the expected volume and dynamics. Only in correlation with the internal impedance of a Moving Coil, the corresponding current can be calculated. Although due to different measurement methods, not perfectly comparable values, but a trend can be clearly seen, as long as both electrical parameters are available: The output voltage of a pickup as well as its internal resistance.

Based on Ohm's law the signal current can be calculated:

$$V : (R_{mc} + R_{in}) = I$$

$$\frac{V}{R_{MC} + R_{IN}} = I$$

V = defined output voltage  
R<sub>mc</sub> = internal resistance of the MC cartridge  
R<sub>in</sub> = input resistance of the phono amplifier  
I = signal current

On the low side some MCs deliver 10µA or less, under CI-Input conditions. A wide middle range of cartridges deliver between 10 and 30µA. High efficient Moving Coils exceed 30µA, some models deliver up to 100µA. Extremely high efficient Moving Coils may need individual gain settings inside of BMC PHONO MCCI, which is an easy job for any authorised BMC Service.

Phono amplifiers with current input stage are still rare, therefore some MC manufacturers didn't consider the MC's efficiency so much. Nevertheless in recent years several brands did increased efforts of improving their cartridge's efficiency, due to significant quality improvement.

## Troubleshooting

If you suspect a malfunction of the unit, please check the following chart before calling your dealer.

### No power

- Check the connection at both ends of the AC power cord.
- Make sure there is power at the wall outlet.
- Check the power switch position.
- Check if the fuse is not broken.

### No sound

- Check the connection to the turntable
- Check the connection to the amplifier.
- Check the function, input selection and volume of the amplifier.

### Hum noise, switch noise, radio noise

- Use a true balanced interconnection instead of coaxial type.
- Do not use RCA-XLR adaptor instead of true balanced wiring.

## Maintenance

- There is no maintenance required inside the unit.
- Clean the units with a dry micro fiber cloth only.
- Take care of not scratching the acrylic windows.

## Service

In case you need to contact the service centre please prepare the following information

- Model name and serial number
- Purchase date
- Dealer name and contact information
- Description of the unit's problem

## Jumper Settings In Detail

### BLUE: Gain Adjustment:

There are three different levels of gain available.

Low Gain: Jumper on JP3; JP4 open

High Gain: Jumper on JP4; JP3 open

Very High Gain: Jumper on JP3 + JP4

### GREEN: RIAA-Equalisation with Neumann-Option:

The RIAA equalisation corrects a corresponding mirrored pre-equalisation present on every record. The classical RIAA has an endless filtering on the top frequency range, which would imply that the record was pre-equalised with an endless gain during the LP production process - apparently this is impossible. When cutting a record the top frequency gain of course has a limit and the Neumann company defined the quasi standard for this ultrasonic limit. A Phono MCCI's default setting with Neumann time constant delivers a decent but clearly audible advantage of reproduction quality on the top end of the frequency range, due to better phase response and a slight correction on the frequency response. In any case this equalisation matches better to the original pre-equalisation than the classical RIAA. Beside the top end of the frequency range the equalisation is identical to the RIAA. Optionally Phono MCCI can be set to traditional RIAA equalisation, which in fact causes a soft roll-off of the top end frequencies.

RIAA with Neumann-Option: Jumper on JP9 + JP10; JP11 + JP12 open

RIAA without Neumann-Option: Jumper on JP11 + JP12; JP9 + JP10 open

### ORANGE: Subsonic-Filter:

Due to the cartridge-tonearm resonance in some cases a substantial resonance peak in the infrasonic frequency range may degrade the sound quality and in worst case cause damages to the speakers or amplifiers. The performance depends on a good match of cartridge and tonearm as well as proper arm damping. A linear low frequency response close to DC is not possible for phono reproduction and a flat low-end response requires careful setup of the cartridge, the tonearm and the turntable.

In case of such troubles it is recommended to activate Phono MCCI's subsonic filter. It is a rather soft type as strong frequency peaks should be corrected by an improved setup.

Linear (no Subsonic): Jumper on JP1 + JP2

Subsonic: JP1 + JP2 open

### RED: Low End Corrections:

The opposite of the above also happens sometimes: A too early low-end-frequency roll off and in consequence a lack of sonic substance. For this purpose Phono MCCI offers different settings:

Linear: JP5 + JP6 open (JP7 + JP8: don't care)

Bass boost: Jumper on JP5 + JP6 + JP7 + JP8

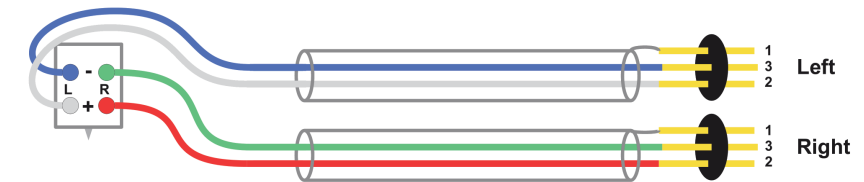
Bass boost and „warmer“ sound: Jumper on JP5 + JP6; JP7 + JP8 open

Note: Combining a bass boost with subsonic may make sense in some cases. This way the sonic substance could be increased while adding speaker protection.

## 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.

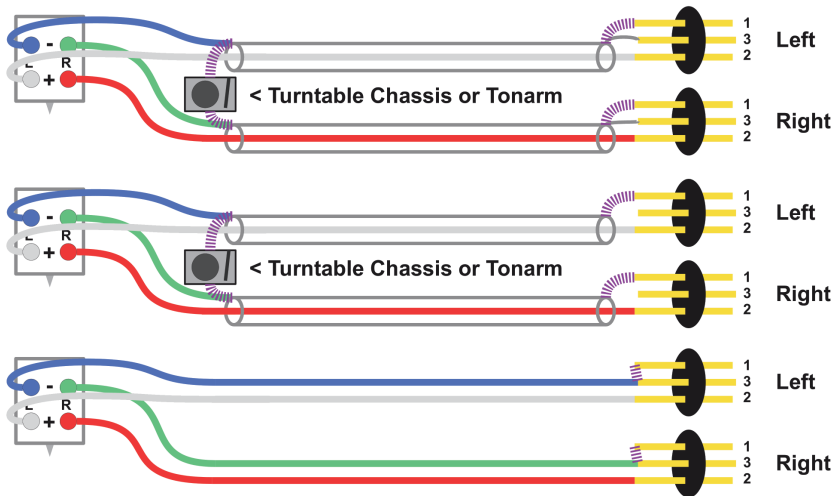
As this is indeed not a clean balanced interconnection you may expect some noise as well as reduced sound quality. Such adaptor should be just a short-term solution.

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

**NEVER PLUG ANY CABLE WHILE THE UNIT IS POWERED ON!**



## Caution: Dangerous Connections



### Wrong wiring from the turntable and Phono MCCI 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 do not match for the use with Phono MCCI
- In case of question please consult your retailer

## Settings Inside Phono MCCI

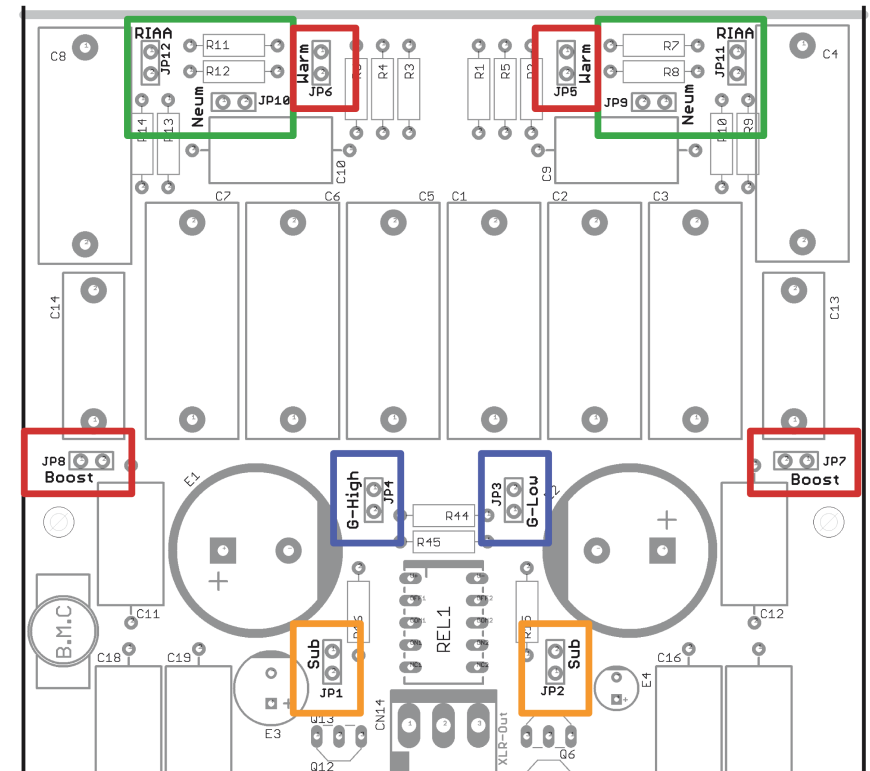
Inside the PHONO MCCI there are settings, which should be proceeded only by professionals for safety reasons. Please show the following instructions to your qualified service personell for reference!

The following instruction is addressed to professionals only.

**Attention: Power OFF the unit and unplug the power cable prior to any change of jumper settings!**

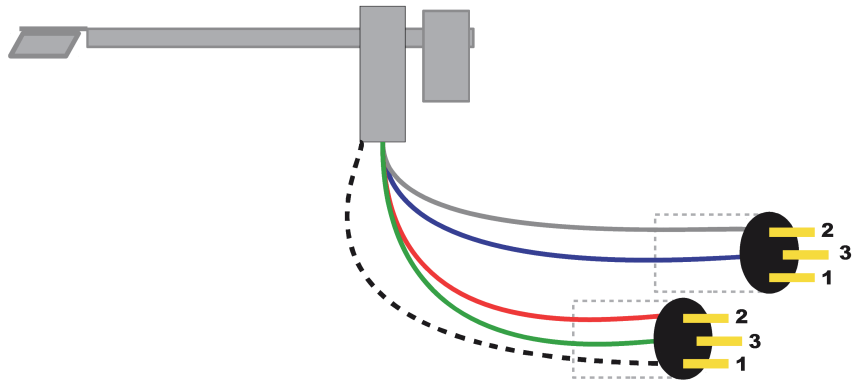
Please use the enclosed jumpers. In case of loss: Jumpers from a computer shop will be fine.

Exclusively the jumper combinations according to the following description are to be used.





## Tonearm with Attached Balanced Cable



The attached direct wiring is generally the best interconnection with the least contact transitions. An optimum sound quality requires an excellent sounding interconnection.



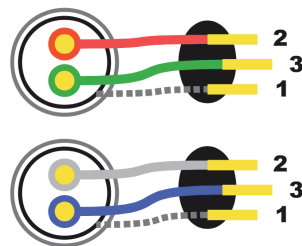
Coaxial cables are not balanced at all. They are sensitive to hum and RF interference and sound inappropriate. An optimum musical experience requires the use of balanced interconnections.



Twin cables per channel are fine, twisted or interwoven cables are best.

Shielding is not always required, but recommended in a turbulent electromagnetic environment. Without shielding a more open sound may arise.

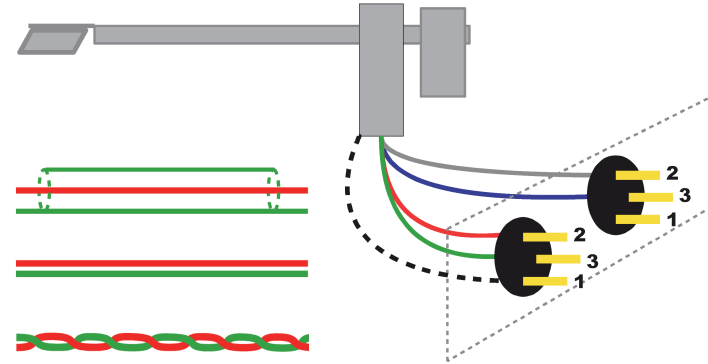
In many cases an existing internally balanced tonearm cable with RCA connectors can be easily converted to balanced circuit with XLR connectors according to the pattern shown here. The shield should be connected only to pin 1, if there is not any connection to any of the inner conductors.



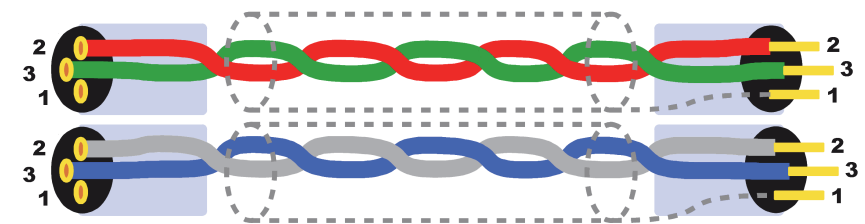
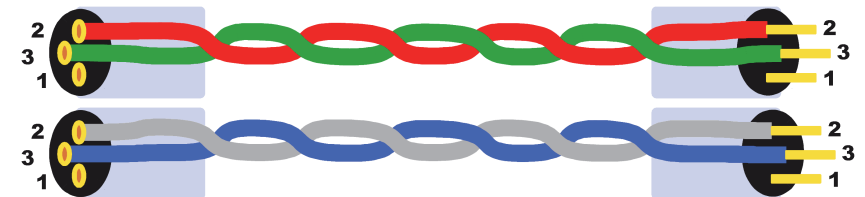
**Warning:** Rega tonearms with no separate ground cables usually have a connection between the tonearm mass and the blue wire of the left channel. This connection must be strictly separated by a professional!

Thorens TP16 tone arms have a connection from the green cable to the headshell. This must be removed from the pin to the head shell and isolated. The green wire in the headshell should be connected exclusively to the Right Minus contact of the pickup.

## Turntable / Tonearm with XLR Jack



Within a record player balanced cables should be used. Coaxial cables should be replaced as far as possible.



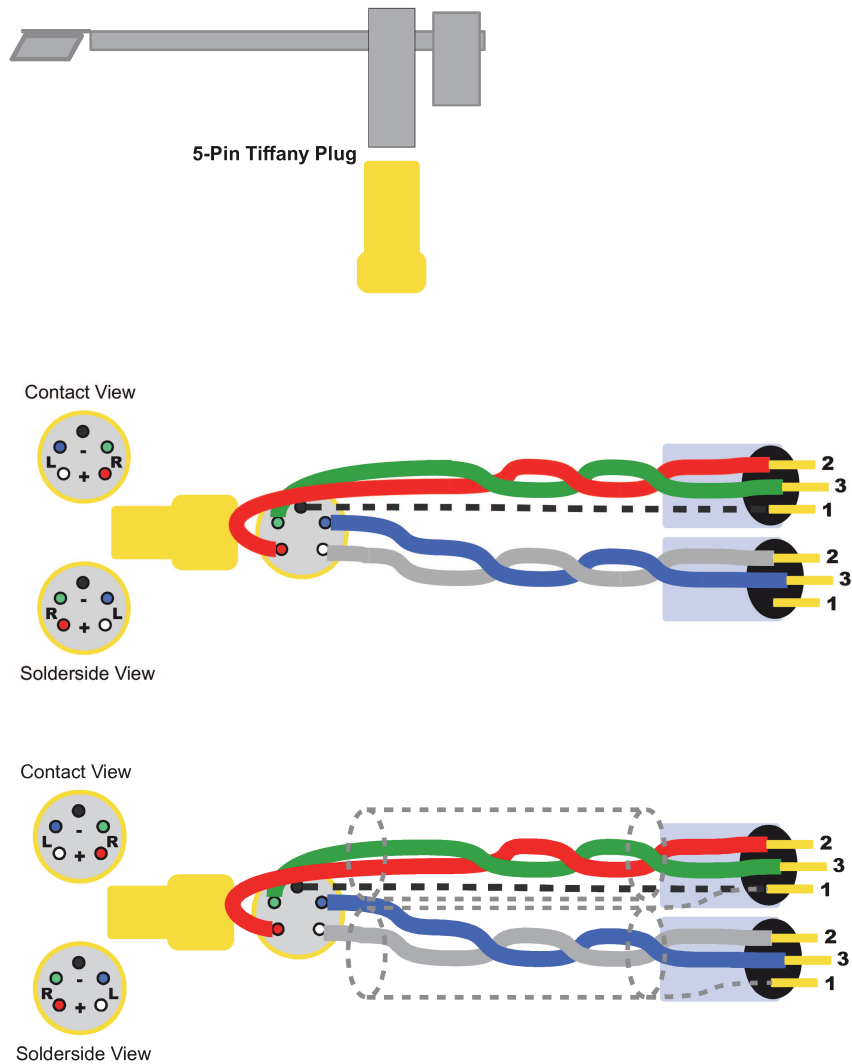
XLR to XLR is a standard balanced connection. However, here is something special: As a floating balanced connection, it does not need any ground connection, just non-inverting and inverting signals.

As far as a shield is in place, it may be connected to pin 1 of the XLR connection at one end only: The PHONO MCCI end.

If there is need for a ground connection from tonearm to PHONO MCCI, only connect it to XLR pin 1 of ONE channel. Thus avoiding hum noise due to ground loops.

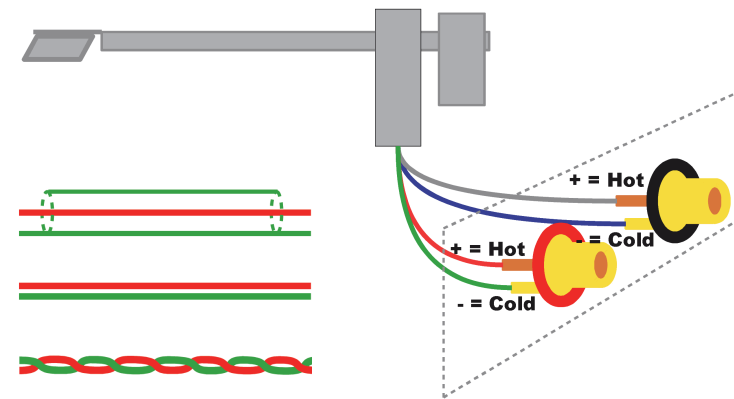
No connection of any of the 4 signal wires to pin 1 of XLR is allowed!

## Tonearm with 5-Pin Tiffany Jack

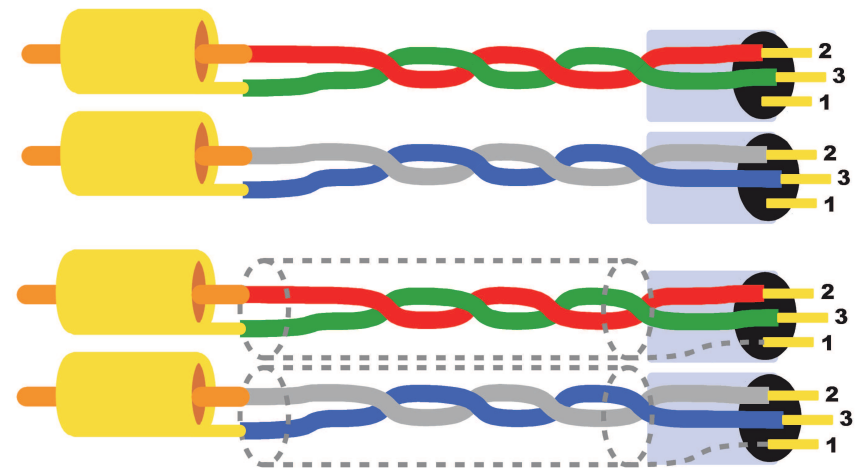


For the 5-Pin Tiffany to XLR connection it is to be noted particularly that the tonearm ground is connected from the middle pin of the Tiffany-plug only to ONE channel XLR pin 1, otherwise risking hum noise due to a ground loop. The shield (if any) should however be separately connected to pin 1 of the XLR connector for each channel.

## Turntable / Tonearm with RCA Jack



Within a record player balanced cables should be used, even if they end in RCA jacks. Coaxial cables should be replaced if possible.



For RCA to XLR connection it is essential to ensure that the RCA "ground" has no connection to the XLR-ground (pin 1)! Reminder: RCA in this case has no ground!

As far as a shield is in place, it can be connected to pin 1 of the XLR connector, but not to the RCA plug.

Since the "ground" contact and the metal case of the RCA plug leads the inverted signal, it is sensitive to touch. It is therefore recommended isolating the RCA plugs with shrinking tube.

Reminder: RCA in this case has no ground! Pin and outside connector are signal connections!

A 2-pin RCA connection is balanced here, because this is a floating balanced connection which only carries the inverted and non-inverted signals, but no ground.