

Qualiton X200 © User's Manual

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IMPORTANT SAFETY INSTRUCTIONS

PLEASE READ THEM BEFORE OPERATING THIS EQUIPMENT!



1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Improper installation may cause malfunction!
6. Do not use this apparatus near water.
7. Clean only with a dry cloth.
8. Do not block any ventilation openings since this may lead to fire. Install in accordance with the manufacturer's instructions.
9. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
10. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
11. Connect mains power supply cord only to a mains socket outlet with a protective earthing connection.

IMPORTANT SAFETY INSTRUCTIONS

PLEASE READ THEM BEFORE OPERATING THIS EQUIPMENT!



12. Be careful with appliance cables! Do not lead them across sharp surfaces, do not clam them together and do not leave them in a hanging position.

Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

13. You must not operate the appliance with damaged cables.

14. Before powering up your amplifier, make sure protective cover, ports, plugs and cables are checked for intactness.

15. Only use attachments/accessories specified by the manufacturer.

16. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



17. Unplug this apparatus during lightning storms or when unused for long periods of time.

18. **No user-serviceable parts inside. Improper repair may lead to loss of warranty! Refer servicing to qualified service personnel.**

IMPORTANT SAFETY INSTRUCTIONS

PLEASE READ THEM BEFORE OPERATING THIS EQUIPMENT!



19. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

20. You must not start up damaged or faulty appliance. In case of any malfunction, unplug your amplifier immediately.

21. In case of a malfunction, the protective cover must not be opened or removed.

22. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.

23. Do not touch the appliance or its mains cable with wet hands.

24. In case of fire, you must not use water to extinguish the fire, even if the amplifier is switched off.

25. The appliance may only be used by qualified adults or children above 14 years of age if supervised by a qualified adult.

26. Keep the appliance out of the reach of children.

27. Make sure your domestic animal does not lie or sit on the top of the appliance.

28. If you do not use your amplifier for a long time, unplug the appliance carefully.

IMPORTANT SAFETY INSTRUCTIONS

PLEASE READ THEM BEFORE OPERATING THIS EQUIPMENT!



29. To completely disconnect this equipment from the AC mains, disconnect the power supply cord plug from the AC receptacle.

30. The mains plug of the power supply cord shall remain readily operable.

31. Do not expose batteries to excessive heat such as sunshine, fire or the like.

32. **WARNING!** To reduce risk of fire or electrical shock, do not expose this equipment to rain or moisture.

33. **CAUTION!** To reduce the risk of electric shock, do not remove cover.

MARKINGS



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance.



CAUTION: Hot Surface! Do Not Touch!
Protective cover of the product may become hot when operating this product continuously.



The crossed-out wheeled bin is the European Union symbol for indicating separate collection for electrical and electronic equipment. This product contains electrical and electronic equipment which should be reused, recycled or recovered and should not be disposed of with unsorted regular waste. Please return the unit or contact the authorised dealer from whom you purchased this product for more information.



The product meets the relevant directives and standards of the European Union.



Supplied with alternating current (AC).

115 V / 230 V Nominal supply voltage.

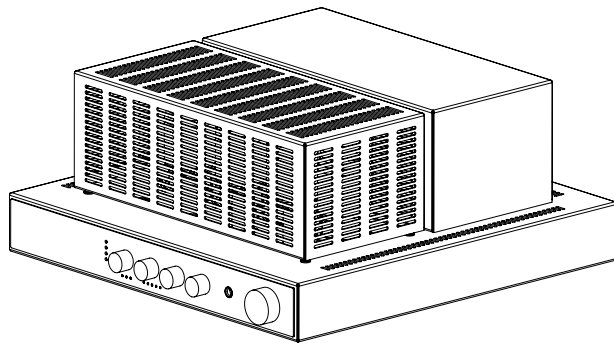
50 Hz / 60 Hz Nominal supply frequency.

PREFACE

Before installing the Qualiton X200 integrated stereo amplifier, please study this User's Manual carefully!

Operating your power amplifier in a manner it is designed for, ensures you an utmost musical experience and a reliable operation.

If you have any questions on our products or services, please do not hesitate to contact us on our website www.audiohungary.com



BASIC INFORMATION

For your convenience, please fill out the following lines to facilitate any future technical assistance and repair service:

Serial Number:

Date of purchase:

Dealer Name:

Vacuum tubes used:

TECHNICAL ASSISTANCE AND SERVICE INFORMATION

If at any time you have any questions about your Qualiton product, do not hesitate to contact your local Qualiton dealer, who is at your disposal. If you or your dealer need more help, you can receive technical assistance at:

Audio-Hungary Ltd.
132 Derkovits Street
4400, Nyíregyháza, Hungary
Phone: +36 42 446-688
Fax: +36 42 446-688
E-mail: info1@audiohungary.hu

If it becomes clear that your Qualiton product needs service, you should still contact your local dealer first. You can also contact us directly for more instructions at one of the contact details above.

PREAMPLIFIER SPECIFICATIONS

Parameter	Input	Output	Value	Notes
Input impedance	PHONO IN	-	47 kOhm 120 pF	-
Max. input signal	PHONO IN	-	40 mV(rms)	f = 1 kHz
Gain	PHONO IN	LINE OUT	+46 dB	f = 1 kHz
Max. deviation from RIAA equalization curve	PHONO IN	LINE OUT	+/- 0.5 dB	-
Total Harmonic Distortion	PHONO IN	LINE OUT	< 0.03%	U(out) = 1 V(rms), f = 10 kHz
Signal-to-noise ratio	PHONO IN	LINE OUT	> 60 dB	U(out) = 1 V(rms), without A-filter
Input impedance	LINE IN	-	25 kOhm 10 pF	-
Max. input signal	LINE IN	-	8 V(rms)	-
Gain	LINE IN	LINE OUT	0 dB	-
Frequency response	LINE IN	LINE OUT	4 Hz - 1 MHz (-3 dB)	U(out) = 1 V(rms)

PREAMPLIFIER SPECIFICATIONS

Parameter	Input	Output	Value	Notes
Total Harmonic Distortion	LINE IN	LINE OUT	<0.001%	U(out) = 1 V(rms), f = 20 Hz to 20 kHz
Max. undistorted output signal	LINE IN	LINE OUT	6 V(rms)	-
Signal-to-noise ratio	LINE IN	LINE OUT	> 90 dB	U(out) = 1 V(rms), without A-filter
Bass boost in setting I	LINE IN	EQ OUT	+5.6 dB	-
Bass boost in setting II	LINE IN	EQ OUT	+7.6 dB	-
Treble boost in setting I	LINE IN	EQ OUT	+6 dB	-
Treble boost in setting II	LINE IN	EQ OUT	+8 dB	-
Total Harmonic Distortion	LINE IN	EQ OUT	<0.002%	f = 20 Hz to 20 kHz, EQ in any position
Signal-to-noise ratio	LINE IN	EQ OUT	> 90 dB	U(out) = 1 V(rms), without A-filter

PHONES SPECIFICATIONS

Parameter	Input	Output	Value	Notes
Rated output power	DIRECT BAL IN	PHONES OUT	2 x 0.3 W	RL = 32 Ohm
Gain	DIRECT BAL IN	PHONES OUT	-6 dB	RL = 32 Ohm
Frequency response	DIRECT BAL IN	PHONES OUT	4 Hz - 1 MHz (-3 dB)	RL = 32 Ohm, P(out) = 0.125 W
Total Harmonic Distortion	DIRECT BAL IN	PHONES OUT	<0.008%	RL = 32 Ohm, P(out) = 0.125 W
Signal-to-noise ratio	DIRECT BAL IN	PHONES OUT	> 95 dB	RL = 32 Ohm

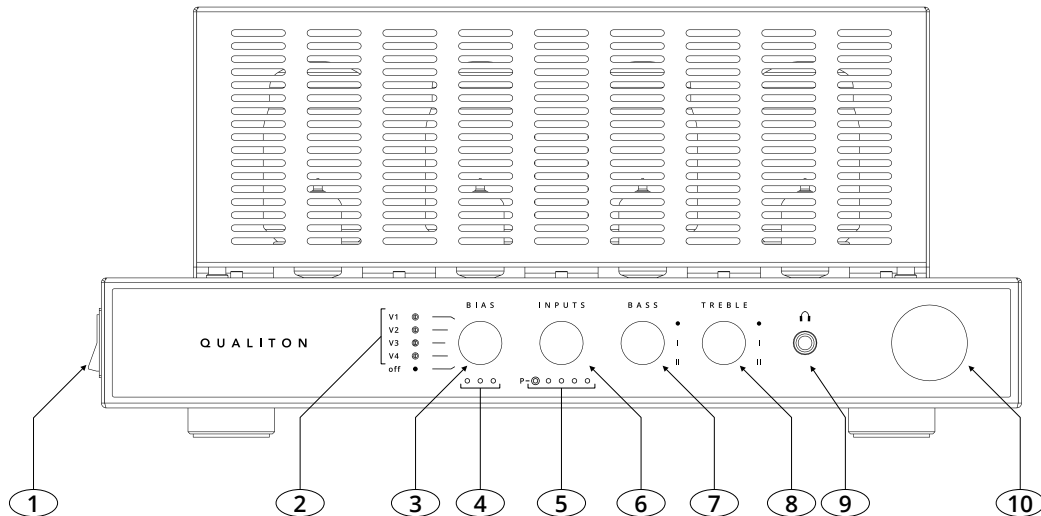
POWER AMPLIFIER SPECIFICATIONS

Parameter	Input	Output	Value	Notes
Rated output power	DIRECT BAL IN	POWER OUT	2 x 100 W	-
Input impedance	DIRECT BAL IN	POWER OUT	20 kOhm	-
Input impedance	DIRECT UNBAL IN	POWER OUT	10 kOhm	-
Input sensitivity	DIRECT BAL IN	POWER OUT	460 mV(rms)	RL = 8 Ohm, rated output
Input sensitivity	PREAMP IN (LINE)	POWER OUT	460 mV(rms)	RL = 8 Ohm, rated output
Input sensitivity	PREAMP IN (PHONO)	POWER OUT	2.25 mV(rms)	RL = 8 Ohm, rated output
Gain	DIRECT BAL IN	POWER OUT	+35.5 dB	RL = 8 Ohm
Frequency response	DIRECT BAL IN	POWER OUT	27 Hz - 70 kHz (-3 dB)	RL = 8 Ohm, rated output
Total Harmonic Distortion	DIRECT BAL IN	POWER OUT	< 0.5%	RL = 8 Ohm, f = 1 kHz, rated output
Signal-to-noise ratio	DIRECT BAL IN	POWER OUT	> 100 dB	RL = 8 Ohm, rated output

GENERAL SPECIFICATIONS

Number of input ports	1 unbalanced PHONO IN per channel, 4 unbalanced LINE IN per channel, 1 unbalanced DIRECT IN per channel, 1 balanced DIRECT IN per channel
Number of output ports	1 unbalanced LINE OUT per channel, 1 unbalanced SUB OUT per channel, 1 unbalanced EQ OUT per channel, 1 unbalanced PHONES per channel, 1 balanced POWER OUT per channel
Tubes required	4 x KT120; 2 x 6922; 2 x 12AX7
Weight	23 kg
Dimensions	43 x 47,5 x 20 cm
Power requirement	720 W

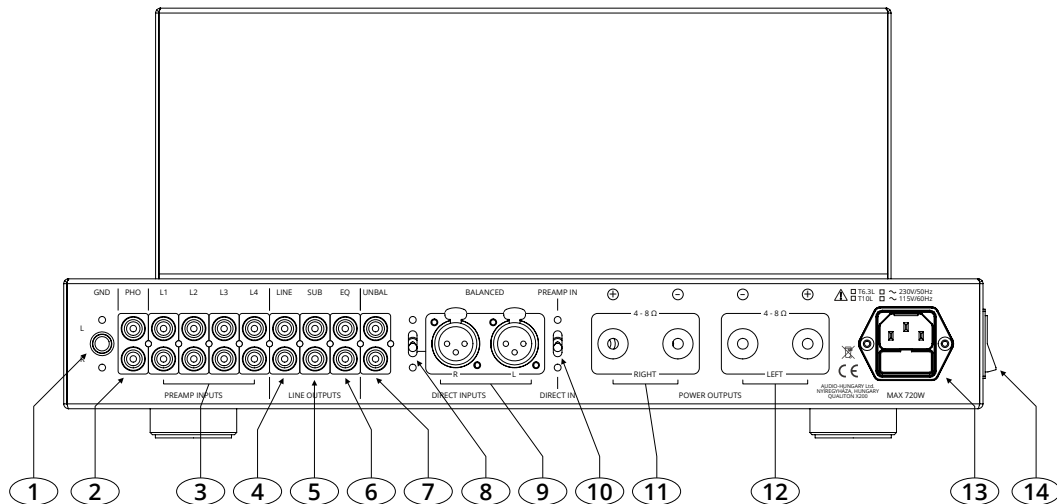
FRONT PANEL



FRONT PANEL

1. MAIN SWITCH with position indicator
2. BIAS TRIMs allows adjustment of the selected vacuum tube's bias status
3. BIAS SELECT allows selection of vacuum tube to be indicated and adjusted
4. BIAS LEDs indicating the selected vacuum tube's bias status
5. INPUT LEDs indicating the selected input port of the preamplifier. From left to right: PHONO, LINE 1, 2, 3 and 4
6. INPUT SELECTOR rotary switch allows selection of preamplifier channel used. From left to right: PHONO, LINE 1, 2, 3 and 4
7. BASS CONTROL of the preamplifier's parallel equalizer
8. TREBLE CONTROL of the preamplifier's parallel equalizer
9. HEADPHONE connection for dynamic headphones
10. VOLUME control allows adjustment of the stereo listening level when using PREAMP IN

REAR PANEL



REAR PANEL

1. GND terminal accepts a ground wire from a turntable
2. PHONO INPUT accepts signals from a moving magnet phono cartridge
3. LINE 1, 2, 3 and 4 INPUTS accept high level program source signals
4. LINE OUTPUT provides a buffered version of the signal connected to the currently selected preamplifier channel
5. SUBWOOFER OUTPUT provides a buffered version of the signal connected to the currently selected preamplifier channel
6. EQUALIZER OUTPUT provides a buffered and parallel equalized version of the signal connected to the currently selected preamplifier channel
7. UNBALANCED DIRECT INPUT accepts high level program source signals. This input is used to drive the power amplifier directly without preamplifier and volume control.
8. UNBALANCED / BALANCED direct input selector switch
9. BALANCED DIRECT INPUT accepts high level program source signals. This input is used to drive the power amplifier directly without preamplifier and volume control.

REAR PANEL

10. PREAMP IN / DIRECT IN selector switch. In PREAMP IN position one of the PHONO, LINE 1, 2, 3 or 4 inputs can be used, in DIRECT IN position the selected UNBALANCED or BALANCED direct input can be used.

11. RIGHT POWER OUTPUT - Connections for a 4, 6 or 8 Ohm loudspeaker.

WARNING! The amplifier has a fully balanced floating output, the negative (-) terminal must not be connected to ground potential.

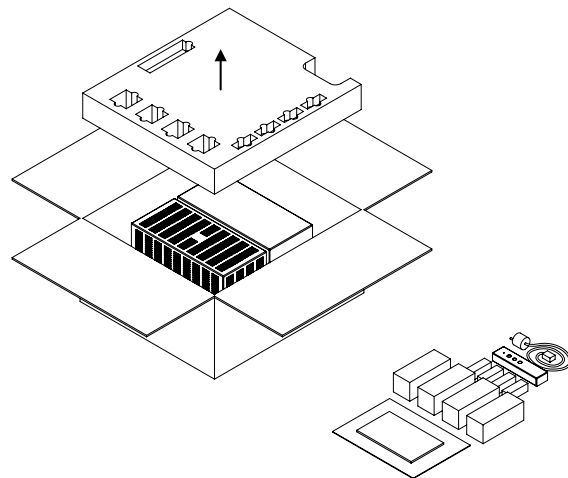
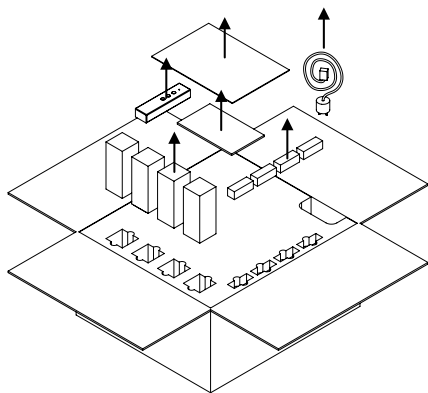
12. LEFT POWER OUTPUT - Connections for a 4, 6 or 8 Ohm loudspeaker.

WARNING! The amplifier has a fully balanced floating output, the negative (-) terminal must not be connected to ground potential.

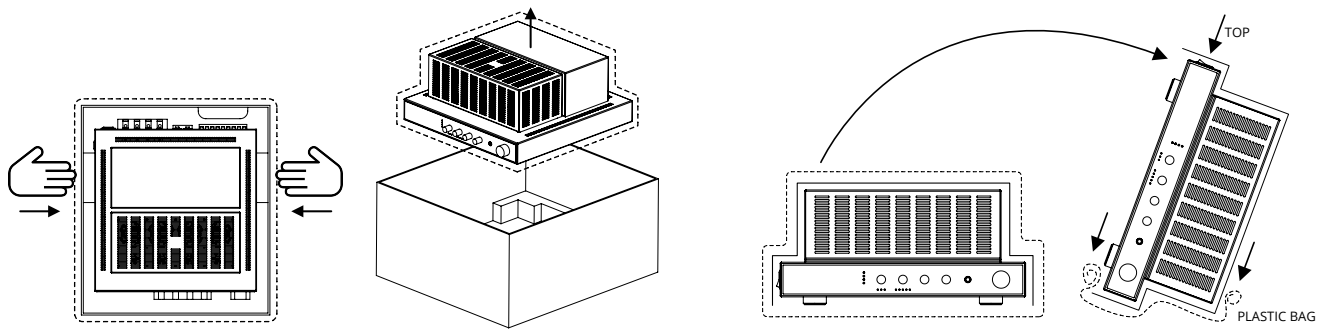
13. IEC Appliance AC INLET with built-in main fuse holder to connect the Qualiton X200 to a live AC outlet

14. MAIN SWITCH with position indicator

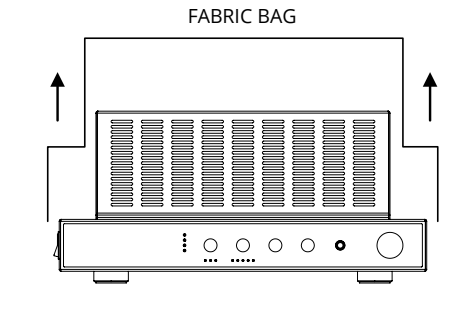
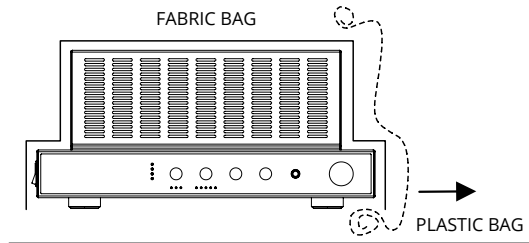
UNPACKING



UNPACKING



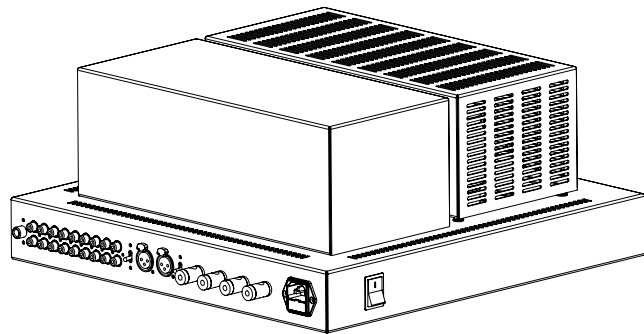
UNPACKING



CONTENTS OF PACKAGE

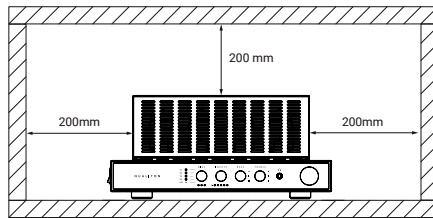
Once you have unpacked the entire contents of the package, you can now check that you have received all the accessories.

- 1 pc Qualiton X200
- 1 pc Remote Control
- 1 pc User's Manual
- 4 pcs KT120 power tubes
(KT150 power tubes optionally)
- 2 pcs 6922 vacuum tubes
- 2 pcs 12AX7 vacuum tubes
- 1 pc Standard Mains Cable
- 1 pc Torx Wrench (TX10)
- 1 pc Plastic Screwdriver



PLACEMENT

- Please read the following carefully to select a correct location for your amplifier.
- **IMPORTANT!** Due to the vacuum tube construction of the amplifier, it may heat up during use. Thus, choose a location for installation where the appliance can be well ventilated.
- The ventilation holes of the amplifier must not be covered (by tablecloth, curtain, newspaper, book, etc.). Impairing ventilation can lead to overheating and irregular operation conditions.
- Do not stack multiple units on top of each other.
- Avoid relocating the appliance from a cold to a warm environment. Sudden temperature changes can lead to moisture condensation. Please wait until moisture is evaporated before putting your amplifier into operation.
- The aforesaid applies to the very first installation of the amplifier as well. Prior to the first installation, leave the amplifier at its place of operation at least for 2 hours. Once this time is over, the amplifier can be powered up, according to this guide.
- The appliance is designed for indoor use. Do not operate it in wet, humid environment.

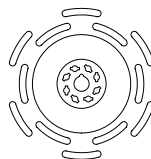
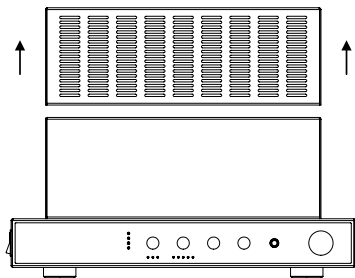


- Do not store any electrical device or object in a perimeter of 200 millimetres around your amplifier. Do not use the appliance next to heating sources and radiators. Keep it away from hot or dusty environment and flame.

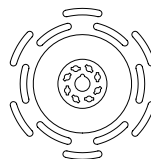
INSTALLATION OF VACUUM TUBES

1. You have to remove the protective cover to prepare for the insertion of the electron tubes. Because the protective cover locks in place with relatively high resistance, be careful not to scratch the device while removing it. See the figure below.
2. Remove the first vacuum tube from the box labeled KT120 (V1) and carefully place it in its position (labeled V1: KT120 / KT150 on the amplifier). Make sure that the position of the small 'key' on the bottom of the vacuum tube matches the position of the notch in the middle of tube socket and fits in it correctly. See the figure below.
3. Repeat the same steps with the three remaining KT120 tubes (V2, V3, and V4). If all four power tubes are in place, the driver tubes may follow.
4. Remove a tube from one of the boxes labeled 12AX7 and carefully place it in one of the positions labeled 12AX7 / ECC83 on the amplifier. Make sure that the holes in the electron tube socket fit the pins of the electron tube correctly. See the figure below.
5. Repeat the previous step with the other 12AX7 tube.
6. Remove a tube from one of the boxes labeled 6922 and carefully place it in one of the positions labeled 6922 / E88CC on the amplifier. Make sure that the holes in the electron tube socket fit the pins of the electron tube correctly. See the figure below.
7. Repeat the previous step with the other 6922 tube.
8. Carefully put the protective cover back in place. See the figure below.

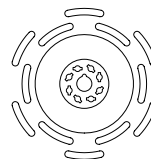
INSTALLATION OF VACUUM TUBES



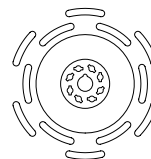
V1: KT120 / KT150



V2: KT120 / KT150



V3: KT120 / KT150



V4: KT120 / KT150



6922 / E88CC



12AX7 / ECC83

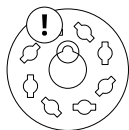
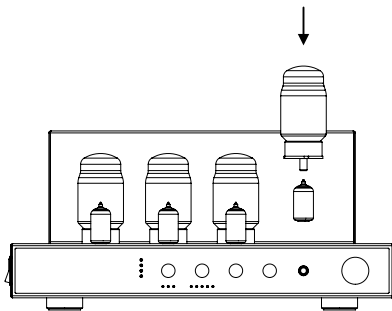


12AX7 / ECC83

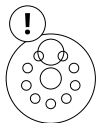


6922 / E88CC

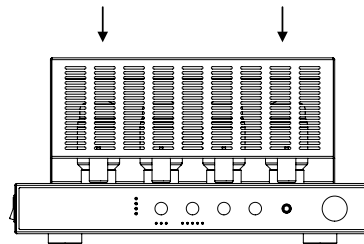
INSTALLATION OF VACUUM TUBES



KT120 / KT150



6922 / E88CC



LOUDSPEAKER CONNECTIONS

- Connect your speakers to the X200's outputs.
- Connect a single loudspeaker only to the output terminals.
- Do not operate the amplifier without a sufficient load. Do not power up the amplifier until correct loads (4 to 8 Ω , marked on the amplifier) are connected to the output terminals.

WARNING! The amplifier has a fully balanced floating output, the negative (-) terminal must not be connected to ground potential!

AC MAINS CONNECTION

- The Qualiton X200 is factory configured for one of the following AC Mains Voltages:

 - ~ 115 V/60 Hz at 10.0 Amps

 - ~ 230 V/50 Hz at 6.3 Amps

- Make sure you want to operate the X200 at the AC mains voltage and frequency marked on the back.

- The standard IEC power inlet with fuse holder are placed on the rear panel.

- The amplifier is of Class 1 construction and must be connected to a mains socket outlet with a protective earthing connection.

- The appliance can be operated safely only with the supplied standard IEC mains cable.

WARNING! Do not connect any external source to the appliance until you have connected it to a mains socket outlet with a protective earthing connection.

BEFORE FIRST-TIME OPERATION

1. Make sure no other device is connected to the X200.

2. Make sure the PREAMP IN / DIRECT IN switch on the back of the unit is in the PREAMP IN position.

3. Make sure the VOLUME control on the front panel of the unit is set to the minimum position (all the way down in counterclockwise direction).

4. Make sure the BIAS SELECT switch on the front panel of the unit is in the OFF position.

5. Check the loudspeaker connections and the AC mains connection again, and if everything is OK, turn on the X200 using the MAIN SWITCH.

If everything works correctly, you should see the following:

* None of the BIAS LEDs are lit.

* LINE 1 INPUT LED (second from left) lights up white, all others pale red.

DESCRIPTION OF THE X200's BIAS SYSTEM

- Allow the X200 to warm up for at least 10 minutes before starting the BIAS setting process. After the warm-up time has elapsed, the X200's semi-automatic BIAS system can be used to check and accurately adjust the quiescent current of the power tubes.

- The bias status of a power tube can be checked using the BIAS SELECT switch and the BIAS LEDs: the BIAS LED bar indicates the bias status of the power tube selected with BIAS SELECT.

- Fine tuning of the optimal bias current level can be done using BIAS TRIM for the selected power tube. To do this, insert the supplied plastic screwdriver head into the same BIAS TRIM slot as the BIAS SELECT, making sure it fits perfectly.

If the color of BIAS LED is:

BLUE - The quiescent current of the selected power tube is lower than the optimal value. Turn the BIAS TRIM of the selected tube clockwise (to the right) until the BIAS LED turns solid green.

GREEN - The quiescent current of the selected power tube is within the optimal range, no further fine tuning is required.

RED - The quiescent current of the selected power tube is higher than optimal, reduce it to a safe level as soon as possible. To do this, turn the BIAS TRIM of the selected tube counterclockwise (to the left) until the BIAS LED turns solid green.

ATTENTION! The fine tuning of the quiescent levels can only be done correctly with the PREAMP IN / DIRECT IN switch set to PREAMP IN position, and with the volume control set to the minimum position!

USING THE X200's BIAS SYSTEM

1. Make sure the PREAMP IN / DIRECT IN switch on the back of the unit is in the PREAMP IN position.

2. Make sure the VOL volume control on the front panel of the unit is set to the minimum position (all the way down in counterclockwise direction).

3. Set the BIAS SELECT switch to position 'V4'. In this case, the BIAS LED will indicate the bias status of the V4 power tube as described in the previous section (DESCRIPTION OF THE X200's BIAS SYSTEM).

If the BIAS LED lights up in BLUE or RED, fine tuning is required: to do this, continuously monitor the BIAS LED to set the bias status of the V4 tube to the GREEN range using BIAS TRIM V4.

4. Set the BIAS SELECT switch to position 'V3'. Repeat the bias setup process, in this case using the BIAS TRIM V3.

5. Set the BIAS SELECT switch to position 'V2'. Repeat the bias setup process, in this case using the BIAS TRIM V2.

6. Set the BIAS SELECT switch to position 'V1'. Repeat the bias setup process, in this case using the BIAS TRIM V1.

7. As a final check, click the BIAS SELECT switch one by one from V1 to V4 and use the BIAS LED indicator to make sure all tubes are in the optimal GREEN state. If necessary, fine-tune the setting with the BIAS TRIM of the appropriate tube.

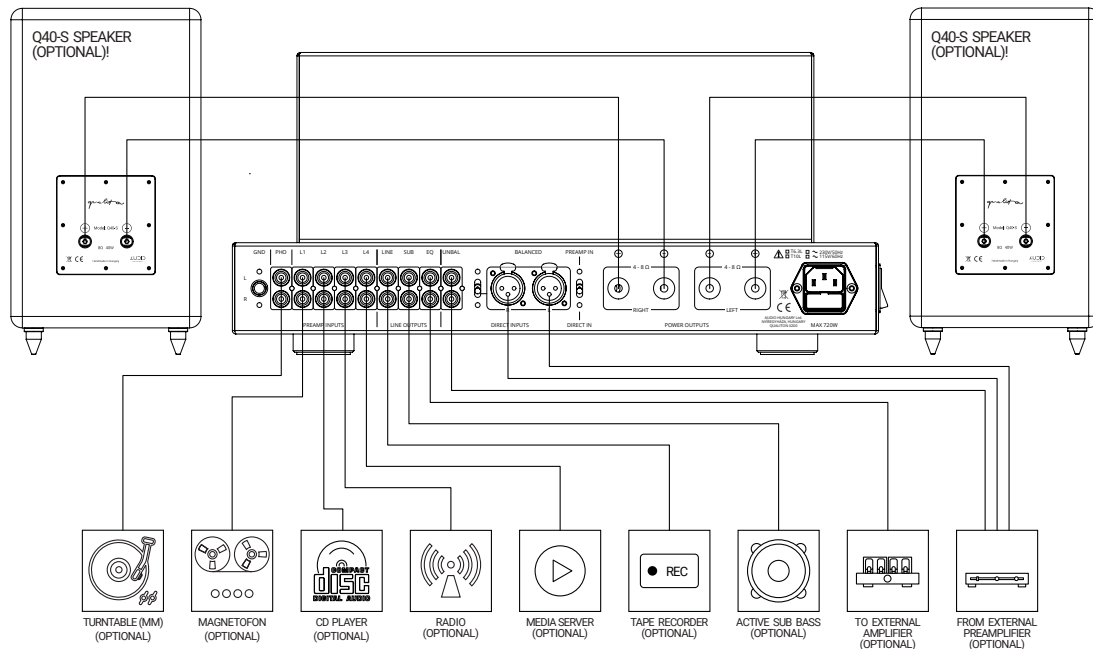
8. The last step in the bias setup process is to set the BIAS SELECT switch to OFF position.

FINAL STEP

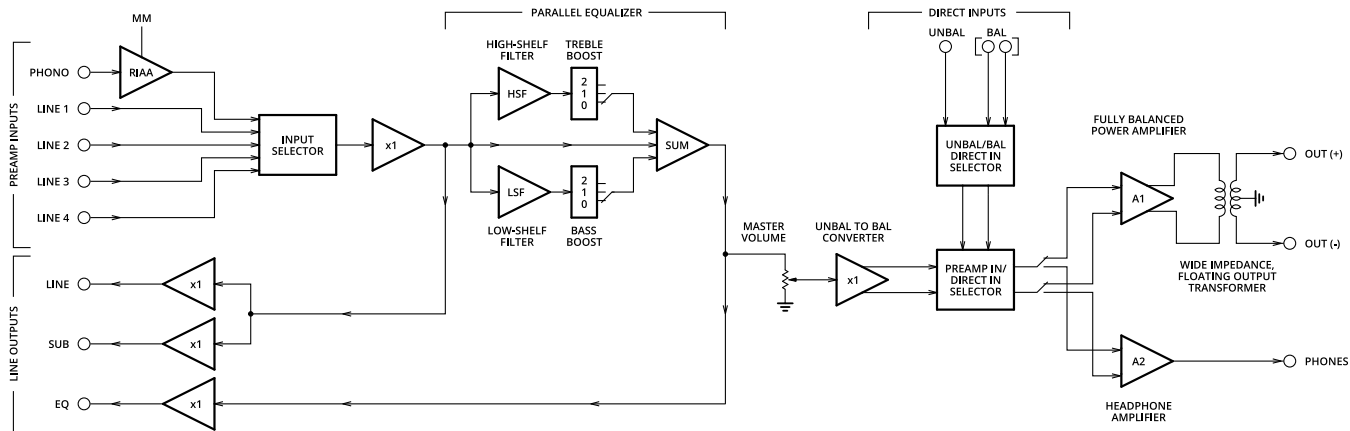
Congratulations, you have successfully installed your Qualiton X200!

In order to properly connect the signal sources you want to use to the appropriate inputs of the X200, please study the CONNECTION DIAGRAM and the BLOCK DIAGRAM carefully now.

CONNECTION DIAGRAM

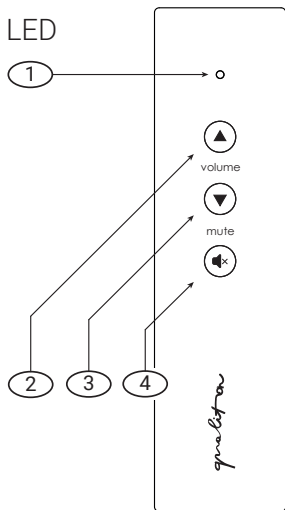


BLOCK DIAGRAM



REMOTE CONTROL

1. Communication indicator LED
2. Volume UP
3. Volume DOWN
4. MUTE

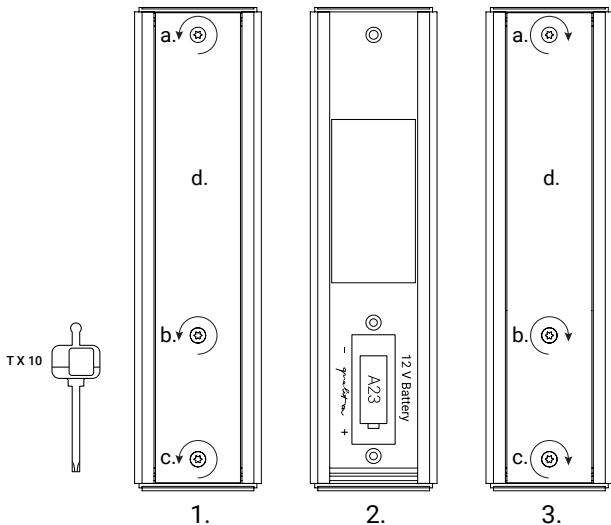


INSERTING / REPLACING BATTERY

PLEASE NOTE: X200's remote control comes without battery. The remote control operates with type A23 battery. Battery should be installed by the user before first use:

1. Unscrew the screws on the back (a., b., c.) with the torx wrench, included in the package, then remove the cover. (d.)
2. Insert an A23 battery, as shown in the diagram.
3. Place back the cover and fasten it tightening the screws.

INSERTING / REPLACING BATTERY



REMOTE CONTROL STATUS INDICATION

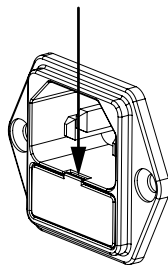
During volume control, communication indicator LED illuminates white.

After pushing the button "MUTE", communication indicator LED illuminates red.

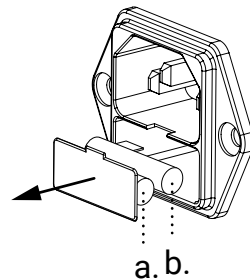
REPLACEMENT OF FUSE

The IEC power inlet features a built-in fuse holder. The specification of replacement fuses are: T 6.3 L for 230 V AC mains and T 10.0 L for 115 V AC mains.

1. Open the fuse holder with a screwdriver.
2. Change the used main fuse (b.) for the spare fuse (a.).



1.



2.

WASTE MANAGEMENT

- The appliance and its packaging are made of recyclable materials.
- The appliance contains repairable or recyclable components and materials. Waste separation makes their recycling possible.
- A faulty appliance or an appliance meant to be discarded has to be sent or brought to an adequate waste collection place or to our company site.
- For further information on waste disposal please contact our company or local authorities.



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