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Q-tron Audio PA34 OTL amplifier user manual



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Fig 1 Front view



Rear view



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Introduction

Thank you for choosing the PA34 OTL amplifier from Q-tron Audio. The PA34 is a new improved OTL amplifier with 10 time's lower distortion than other OTL amplifiers of similar output power.

Content of delivery

Box 1

1. Amplifier PA 34
2. Tubes 6C33C 4 pcs
3. Tubes 6N2n-EB 3 pcs
4. Tubes 6N6P-I 2 pcs
5. monitor interface unit
6. adjustment screwdriver

Box 2

1. Amplifier PA 34
2. Tubes 6C33C 4 pcs
3. Tubes 6N2n-EB 3 pcs
4. Tubes 6N6P-I 2 pcs

Unpacking Box

Put each wooden box on a table or other steady surface. Make sure that the boxes is oriented correctly, i.e. that the side marked top is facing upwards. Open the boxes by prying open the metal flaps that is holding the top lid using a screw driver. When all metal flaps are bent so they point upwards the lid can be opened.

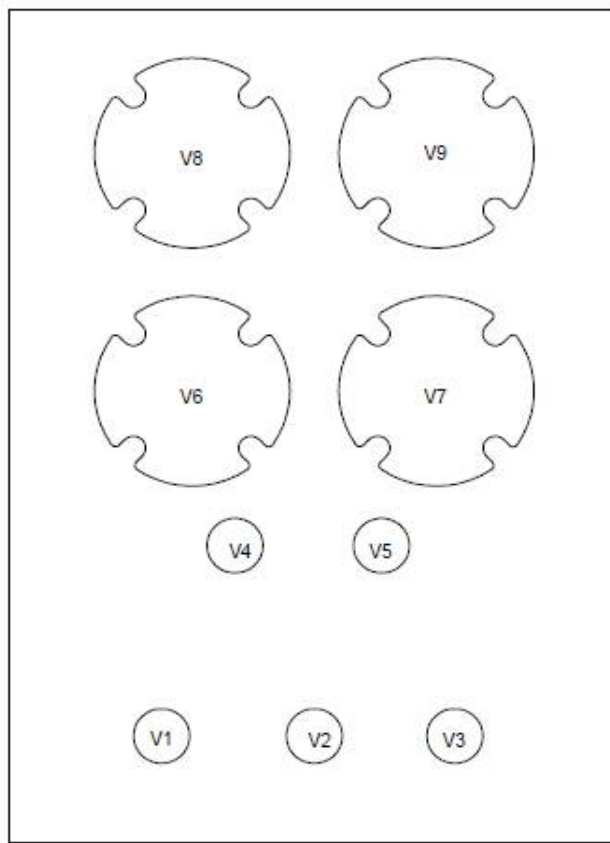
Remove packing material so that the amplifier can be lifted out of the box, be aware of the weight and handle the amplifier carefully.

Put the amplifier on a steady surface with the front panel facing towards you.

Unpack all tubes cartons, the adjustment screwdriver and the monitor interface unit and put them aside. Unpack all tubes one by one and put them into the correct tube sockets as indicated by the figure. NOTE! Output tubes are matched as a set of 4 and also to each individual amplifier, make sure that the tubes are set in their correct position in each amplifier.



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Tube placement

Note! V1, V3 and V4 are 6N2-EB, V2 and V5 are 6N6P, V6 – V9 are 6C33C-B

Controls and connectors

Front panel

On switch with integrated on indicator, this is a switch button which when pushed in will start the switch on sequence of the amplifier. If function is normal the area around the switch button will light up with green color after approximately 90 seconds. If function is abnormal, i.e. if output offset voltage is too high the amplifier will not switch on and the indicator will not be lit.

Back panel

Input connector unbalanced

This connector accept a standard RCA phono plug

Input connector balanced



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This connector accept a standard XLR male plug

Balanced/unbalanced switch

The switch should be set in the up position for balanced input and down for unbalanced operation

Speaker connectors

These connectors accept 4mm banana type plugs, bare wire and spade type connectors.

Mains power inlet with integrated fuse holder and mains switch.

The power inlet accepts a standard power cord with IEC320 plug. The 2 mains fuses can be accessed if the power cord is removed and the fuse cover/holder is removed, replace the fuses only with fuses of same rating, (for 230VAC mains power fuse rating is 4A slow blow and for 120VAC mains power fuse rating is 6.3A slow blow). The mains switch power up the amplifier if it is set to position 1, in position 0 the amplifier is disconnected from mains power.

Setup

Connect the amplifier to the mains voltage with a standard IEC 320 mains cable

Connect speakers to the isolated binding posts

Connect a preamplifier to the connector marked input

Function

The amplifier is equipped with phono and XLR connectors for input signal and isolated binding posts for connecting speakers. The amplifier is equipped with an output offset voltage protection circuit which protect any connected speakers in the case the amplifier would give a too high DC voltage on the output. A fail safe soft turn on circuit is also included.

Start up procedure

Check that the front push button switch is not pushed in. Switch on the mains switch on the back panel to position 1. Push in the front panel bush button, after approximately 1.5 seconds a "click" can be heard, this is an indication that the soft turn on circuit is activated. After approximately 90 seconds the area around the front panel push button will be lit green and the amplifier is ready for operation.

If the offset voltage protection circuit is activated this is indicated by the green area around the front panel bush button is not lit. To de-activate the offset voltage protection the amplifier has to be completely shutoff for at least 1 minute by setting the mains switch on the back panel to position 0. After the 1 minute delay the normal start up procedure can be followed.



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NOTE! The amplifier must be connected to speakers or other load in order to operate correctly, if not the offset voltage protection circuit will switch off the amplifier automatically directly after the start up sequence has been completed.

Bias and offset voltage check

We recommend to check offset and bias every 6 months, there is no need for more frequent checks.

Controls and connector for bias and offset voltage check on the rear panel

Bias control adjustment

Through these 2 holes the bias for each output tube pair can be adjusted using the adjustment screw driver.

Monitor

This connector is used to connect the monitor interface unit when adjusting the output tube bias point and offset voltage

Monitor interface unit

This unit is used when adjusting output bias and output offset voltage. The unit connects with a cable to the monitor connector on the rear of the amplifier.

NOTE! The monitor interface unit should only be connected to the amplifier during testing and adjustment; it should be removed during normal use.

The adjustment knob has 4 positions to select different test points.

1. Bias current
2. Output offset volt
3. No function

The 2 test points are for connecting an auto ranging DVM

Note! The monitor interface unit is used for PA3, PA12 2-channel amplifiers and the PA34 Monoblock, for use with PA34 the toggle switch should be set to right position when the switch is facing towards you.



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Test procedure:

1. Connect the monitor interface unit to the amplifier.
2. Connect an auto-ranging DVM to the monitor interface unit
3. Place the monitor interface unit so that the toggle switch faces towards you
4. Switch on the amplifier and wait at least 30 minutes.
5. Turn the adjustment knob on the monitor interface unit to position 1
6. Set the toggle switch to right position
7. Check the reading of the DVM for bias current, it should read between 150 -250mV which is equivalent to a bias current of 300 – 500mA.
8. Turn adjusting knob to position 2
9. Check the reading of the DVM for offset voltage, it should be less than 100mV
note! the offset voltage can be positive or negative but should in any case be less than 100mV
- 10. If readings are within specification you don't need to do anything, otherwise follow procedure described below.**

Adjustment procedure for bias and offset

NOTE! The adjustment is sensitive so adjustments should be made by turning the adjustment screwdriver a tiny amount each time, don't turn more than 5 degrees each time!

To increase bias both potentiometers should be turned counter clockwise.

To decrease bias both potentiometers should be turned clockwise.

For every adjustment of the potentiometers bias and offset should be measured. Adjust bias step by step until it reads between 150 - 250mV on the DVM

To increase or decrease offset the potentiometer marked V8, should be adjusted. For every adjustment offset should be measured, adjust offset so it is between -100mV and +100mV



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Performance data:

Output power in 8 ohm load	80W at 1% distortion at 1kHz
Output power in 4 ohm load	60W at 1% distortion at 1kHz
Output impedance	<0.4ohm
Harmonic Distortion	0.01% at 1kHz and 2W output power 0.1% at 1kHz and 25W output power
Power bandwidth	10 – 150000 Hz -3dB
Noise and hum	90 dB below 80W output power, (10 – 200000Hz) 100 dB below 80W output power, A-weighting filter
Line voltage	230V or 120V \pm 10%
Power consumption	600W maximum
Dimensions chassis	275 x 370 x 225 mm, (W x D x H)
Dimensions overall	275 x 370 x 335 mm, (W x D x H)
Tube complement	9 tubes in total, (6C33C x 4, 6N6P-I x 2, 6H2n-EB x 3
Input connectors:	
Unbalanced	Gold plated phono
Balanced	Gold plated XLR
Output connectors	CE approved isolated binding posts accepting 4mm banana connectors, spades and bare wire
Line voltage connectors	IEC320 jack with integrated mains switch and dual fuses
Weight	18kg

Contact information

Manufacturer	Q-tron Audio Sweden www.qtron.se sales@qtron.se
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