

OCTAVE

HP 300 SE

Owner's Manual

English

INTRODUCTION

Congratulations and thank you for choosing the OCTAVE

HP 300 SE

You are about to enjoy the benefits of one of the world's most innovative and reliable preamplifiers. Take care of it, and your preamplifier will provide you with many years of listening pleasure.

You often hear people claim that there has been no real progress in tube amplifier design for years. The operating principles of tubes have been documented extensively and are well known to amplifier designers. Of course, the same can be said for transistor amplifiers.

Nevertheless, there is still room for further development with both of these technologies. This is both necessary and desirable. With tube amplifiers in particular, a general reluctance to depart from the classic circuit designs has not done the technology any favors. Today's loudspeakers and source equipment provide better performance than ever before, but also present greater demands on amplifiers. Modern sound reproduction equipment delivers a level of performance at a price that simply would not have been possible 20 or even 10 years ago.

These advances have been achieved through the application of cutting edge technology as it becomes available and more affordable.

Integrating these technologies into amplifier design demands a detailed knowledge of the inner workings of amplifiers and an appreciation of the sonic benefits of each modification.

We have specialized in tube amplification for the past 30 years, during which time we have developed a number of innovative technologies that have earned us a reputation as one of the leaders in the field.

We hope you will enjoy many hours of wonderful music with your OCTAVE preamplifier.



Andreas Hofmann

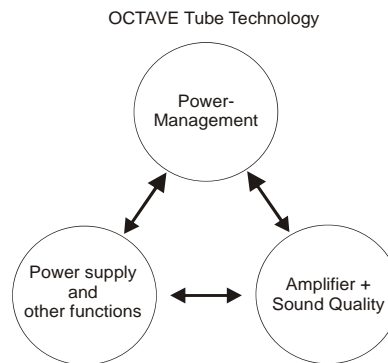
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1. OCTAVE TECHNOLOGY

1.1. Differences to other tube amplifiers

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| Sound | 1. The design goal of OCTAVE amplifiers is honest, natural sound reproduction. The sound characteristics of an amplifier are derived from the sum of all its parts. Tubes do not themselves guarantee high quality sound. |
| Amplifier Design | 2. The limitations of classic tube designs are evident as soon as you connect the amplifiers. These designs often only perform to their full potential when they are used with special cables and amps. OCTAVE amplification and power supply technology has largely overcome these well-known problems. Thanks to their unique output stage design, they will maintain their optimum sound quality with virtually any amplifier, irrespective of the cables. |
| Control + Monitoring | 3. OCTAVE employs the latest electronic circuit designs to create the best possible operating conditions for the tubes, and thus for the amplifier itself. |



OCTAVE amplifiers are equipped with a proprietary control and monitoring system we call Power Management. This is an "electronic brain" within the amp that regulates and controls all of the amplifier's functions. It includes the **Soft Start Electronics** that gently ramp up the heating and supply voltages to save wear and tear on the components. In the event of a problem, the Power Management's **protection system** will disconnect the unit from the power supply. Power Management helps us to achieve a completely consistent sound while at the same time ensuring the total reliability of our products.

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|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hand built | 4. OCTAVE amplifiers are hand built and individually tested. They are designed and developed by Andreas Hofmann. The company has its own winding department, in which all transformers are especially custom wound for each amplifier. |
| Made in Germany | 5. OCTAVE amplifiers are 100% built in Germany. Our employees are highly qualified and committed. We collaborate closely with local specialist subcontracting companies. The hardware components are all manufactured on modern CNC machines. |

1. OCTAVE TECHNOLOGY

1.2. Description HP 300 SE

- The HP 300 SE MKII is a member of a new generation of tube preamplifiers built by OCTAVE. The first model of this line was the reference preamplifier Jubilee. Heart of this line is a newly developed circuit design, which still has the tube as the central amplifying component, but the necessary output power is generated by a new type of super-gain semiconductor circuit. As OCTAVE decouples the output load from the tubes, the HP 300 SE convinces with excellent measuring results. Free from the output load the tubes can develop their tonal and dynamic sound characteristics unrestrained. It sounds vivid, relaxed, totally free or with one single word – simply light.
Because of that, the HP 300 SE preamplifier can be used extremely universal.
- Furthermore, the HP 300 SE is manufactured perfectly, which also finds expression in the stable, low resonance solid-metal chassis. Resonances are thereby ruled out. The solid connecting sockets allow the connection of high-quality NF-wires with large plugs.
Every product of OCTAVE is built in Germany in single-piece production and is subject to a 100% check. A 48-hour endurance run completes the final inspection.

Special Features of the SE generation

- Over and above the HP 300 SE uses a lavish external special power supply, which was developed especially for the HP 300 SE.
The power supply of the HP 300 SE carries out complex functions: On the one hand it ensures a constant acoustic quality by preventing mains disturbances and by creating constant working conditions with low noise high speed electronic voltage regulators. On the other hand the built-in control logic guarantees highest reliability and achieves with soft-start-techniques the theoretically maximal possible lifetime of the tubes (up to approximately 10 Years or more).
- An additional function of the power supply is the protection circuit, which releases the output of the HP 300 SE by a relay with a time delay or disconnects it immediately in case of a malfunction. Click-interferences etc. caused by the power supply are therefore absolutely ruled out.

Transformers are individually designed and produced in house.

- The bypass / multi-channel facility makes the HP 300 SE to one of the most versatile preamps in this range. The Bypass function can be selected for a Cinch or XLR Input.
- The HP 300 SE is fitted with two Balanced Inputs one of them can be selected for the Bypass function.
- Adjustable gain of the Line stage in three steps. This feature allows to optimize the HP 300 SE according to the sensitivity of the power amplifier and the loudspeakers. Thus, the volume control range is always in the optimum range and the volume can be adjusted finely.
- Transformer coupled Balanced Outputs as in professional Studios. Transformers have unsurpassed sound characteristics and eliminate ground loops effectively.
- Another useful feature is the buffered Monitor Output. Generally this Output is for any recording unit, like the AD converter of a PC or a headphone amplifier with separate Volume control.
- Energy efficient, the Power Supply and the Amplifier design burns no unnecessary energy to keep the temperature as low as possible of the HP 300 SE. This also increases the lifetime of the internal electronic parts of the HP 300 SE.

2. SAFETY INSTRUCTIONS

2.1. Before you begin

Before using your HP 300 SE, please check your local line voltage and pay attention to this manual

In case of emergency: disconnect the plug from the mains supply

Never use an amplifier that is damaged or faulty. Make sure that it cannot be used until it has been repaired by a qualified service technician.

Make sure that there is easy access to the IEC socket and power cord.

Do not open the case

There are dangerously high voltages and hot tubes inside this equipment. To avoid a burn or the risk of electric shock, never allow anyone except qualified personnel to open the case or remove the grille.

Servicing and maintenance

For reasons of safety, please ensure that servicing, repairs and other modifications to OCTAVE equipment are carried out only by a qualified technician. Fuses should also only be changed by a qualified technician. Always replace fuses with ones of the same type and rating. If your amplifier requires servicing, please ship or take your equipment directly to OCTAVE or to one of our authorized service centers.

Explanation of the warning symbols:



The exclamation point within an equilateral triangle is intended to alert the user to important operating and maintenance instructions.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of 'uninsulated dangerous voltages' within the product's enclosure that may be sufficient to constitute a risk of electric shock to persons.

Before connecting

Make sure that the voltage of your amplifier matches your electricity supply voltage.

Grounding

This amplifier is a protection class 2 device (without an earth conductor).

2. SAFETY INSTRUCTIONS

2.2. Placement

1. Location

OCTAVE equipment is designed strictly for use in a dry domestic environment. Do not use it in the open air or in damp environments!

Never place plants or liquid filled containers on your OCTAVE equipment. Take care that objects do not fall or liquids are not spilled into the enclosure. Should this happen, remove the mains plug immediately and have your amplifier checked by a qualified service technician.

Condensation may form if the amplifier is taken from a cold environment into a warm one. If you do this, wait until the amplifier has reached room temperature and is dry before switching it on.

Avoid installing the unit close to sources of heat such as radiators or anywhere that it may be in direct sunlight.

Do not operate the unit near flammable materials, gases or vapours. Avoid areas where there may be heavy accumulations of dust or where the unit may be subject to mechanical vibration.

Place your OCTAVE amplifier on a stable, even surface.

2. Cover

Never operate the amplifier without the cover.

3. Ventilation

Make sure that your amplifier has a good flow of air around it. If you intend to install your equipment in a cupboard or a shelf unit, ensure that there is at least a ten centimeter (four inch) gap between the ventilation slots and the walls all around the amplifier. Do not rest the equipment on a soft surface such as carpet or foam sheeting.

2.3. Warranty

OCTAVE can only guarantee the safety, reliability and performance of this unit if modifications and repairs are carried out by specialized personnel and if the amplifier is operated in accordance with the instructions contained in this manual.

3. SETTING UP

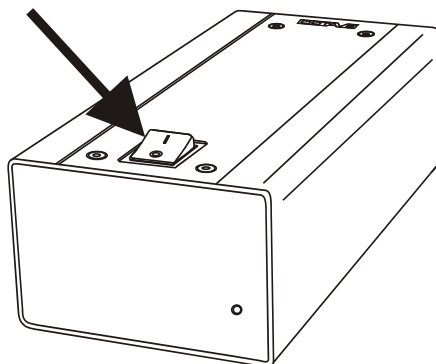
3.1. Package contents standard

- HP300SE with external power supply
- Power cord
- Remote control
- Owner's manual with warranty card

3.2. Connecting the amplifier

1. In your own interest, please observe the safety precautions and positioning advice (Chapter 2)
2. Before connecting your OCTAVE amplifier up, switch off all the other equipment that you intend to connect to it. This will avoid a source of possible problems when you plug these components in.
3. Connect the inputs from your amplifier to the appropriate outputs on the HP 300 SE amplifier.
4. Connect your loudspeakers to your power amplifier, making sure that you observe the correct polarity (positive on the amplifier to positive on the speakers).
5. Make sure that the Power Supply is switched OFF before you connect the Power supply to the mains and before you connect the Power supply with the HP 300 SE
6. Check that the volume control is not set at maximum before playing music through the amplifier and the function switch ⑤ is in the Position Gain Low, med or High.
7. Switch on the mains power, the rocker-switch is located on the top of the external power supply
8. Switch on the other components.

Mains power switch



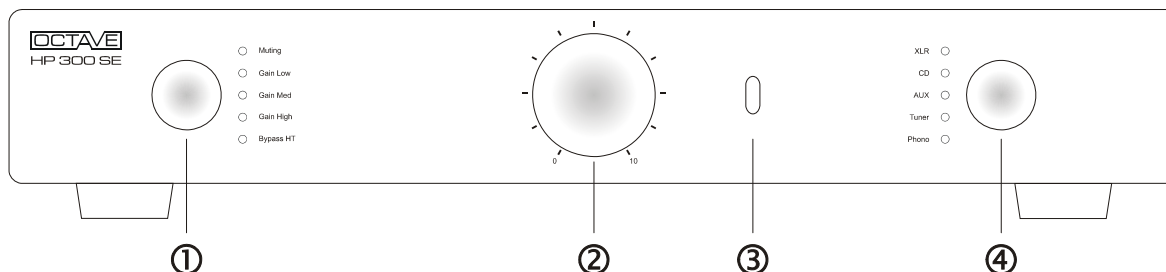
The preamplifier needs approx. 2 - 4 minutes warm up time. During the warm up period, the output is shorted to ground to avoid disturbances. When switching the mode switch from normal to - 6 dB gain operation, the output is muted for approximately 2 minutes. If you switch from high to low or vice versa the muting time will start again

3.3. Running in

All OCTAVE equipment is subject to a 48-hour continuous run-in period at the factory to break in the unit. The tubes are individually selected for use in each particular model. The sound quality of tube equipment improves throughout the initial running-in period of up to three month.

During this time, daily use is beneficial (even at high levels) but not a requirement.

4. OPERATION - Front panel



① **Mode Rotary switch**

This switch is to set the function: Muting, Gain Low, Med or High and the Multichannel Home Theatre Bypass

Muting

The Muting LED lights up. The Output is shorted to ground in this position. Playback is not possible. Muting is recommended while connecting source units to the HP 300 SE to avoid disturbances, especially in case a unit shall be connected via RCA.

The Muting-Function is automatically active in the time after switching on the amplifier with the mains switch. The preamp passes through the Soft-Start-Phase and the Muting will be disabled automatically after 2 minutes. The Muting LED extinguishes and the preamp is ready for Playback.

Gain Low, Med and High

The Gain of the Line Stage can be set for according the characteristics of the other components. The switching to another position with the Mode switch is always activating the Muting function for approx. 30 seconds. This is to avoid click noise caused by the Gain changeover of the tube circuit.

Bypass Home Theatre

In this position the Gain of the Line Stage is set to one and the Volume regulator is bypassed. (See chapter 6)

② **Volume Control**

③ **Remote control receiver**

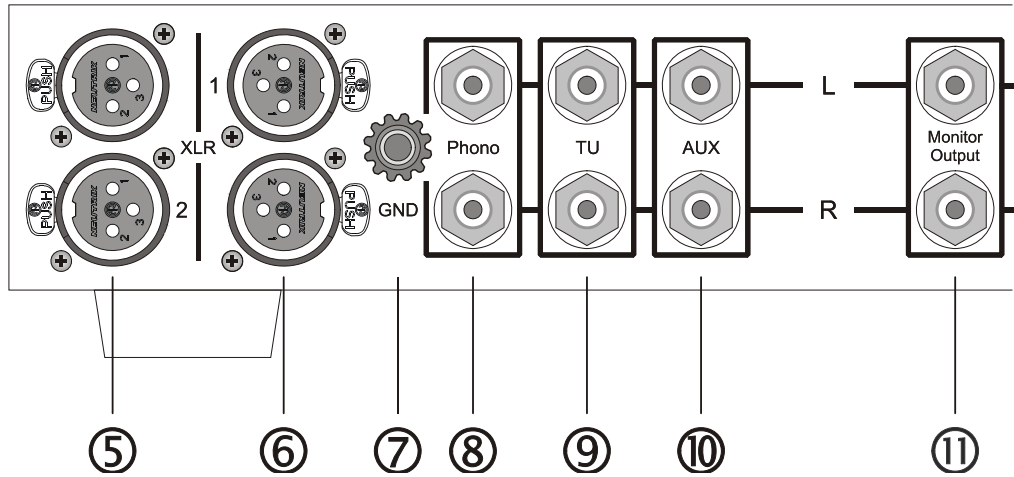
To ensure optimum operation of the IR remote control, do not cover this window

④ **Input-selector (rotary switch)**

The corresponding LED shows the selected Input.

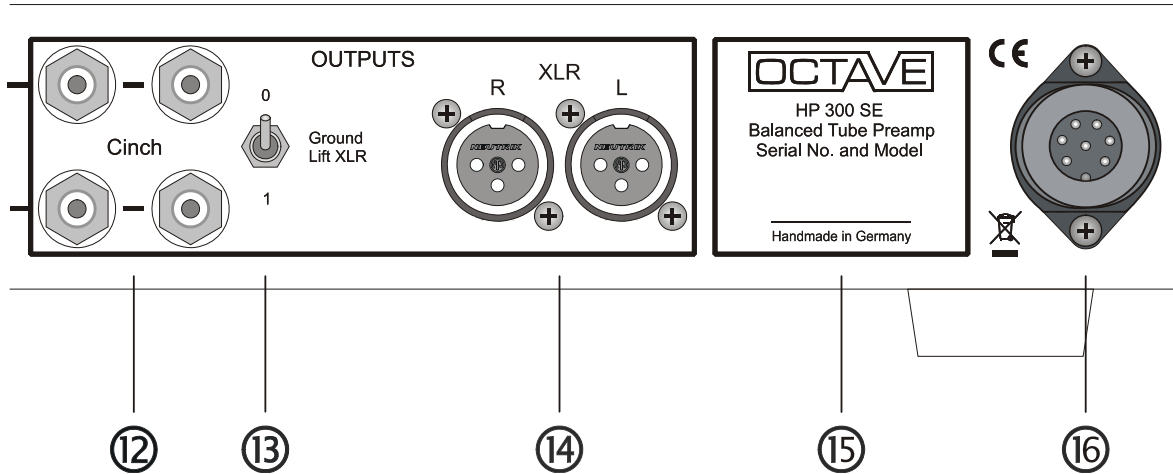
XLR	Balanced Input, labeled on the rear panel with XLR 2 In position Bypass – XLR this is the Home Theatre Input
CD	Balanced Input, labeled on the rear front with XLR 1
AUX	RCA Input, labeled on the rear front with AUX In Position Bypass – RCA this is the Home Theatre Input
Tuner	RCA Input, labeled on the rear front with Tuner
Phono	RCA Input, labeled on the rear front with Phono With the option Phono this is the Phono Input

5. CONNECTIONS: Rear panel



- ⑤ **XLR 2**
Balanced Input for balanced sources like CD-player etc.
In Position Bypass – XLR this is the Home Theatre Input
- ⑥ **XLR 1**
Balanced Input for balanced sources like CD-player etc.
- ⑦ **GND (Ground)-connector**
Suggested connection for the ground cable of your turntable. (See chap. 10.2 “Guidelines for connecting to the Phono section”)
- ⑧ **Phono**
RCA line-level Input. With the option Phono this is the Phono Input
- ⑨ **Tuner**
RCA line-level Input for any line level playback unit
- ⑩ **AUX**
RCA line Input for Video, TV or alternatively, as a second function, the RCA Bypass input
- ⑪ **Monitor Output**
RCA line level Output, unregulated. Buffered Output to allow the connection of a recording device or the connection with a PC Analog – Digital Converter.

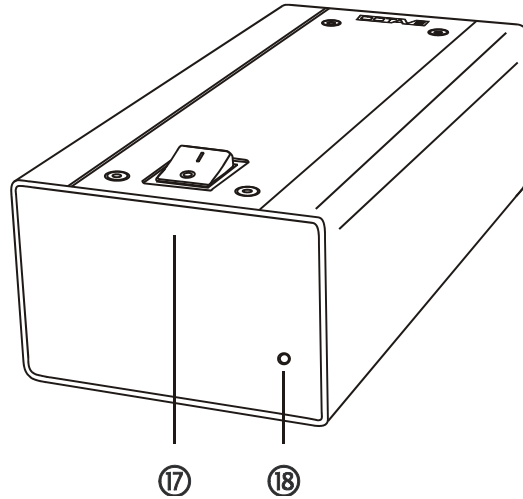
5. CONNECTIONS: Rear panel



- ⑫ **RCA Outputs for unbalanced Power Amplifiers**
Double Output to allow BI - Amping
- ⑬ **Ground Lift Switch**
The Ground Lift allows the separation of the ground of the Balanced Output and the ground of the HP 300 SE. This reduces effectively ground noise and ground hum loops. In position I this two ground lines are connected together with a resistance of 3,3 Ohm. In position 0 the connection has a resistance of 2.2 Meg Ohm; this resistance is necessary to avoid high electrostatic voltages
- ⑭ **Balanced Outputs**
Output for balanced amplifiers.
PIN assignment: PIN 1 = Ground, PIN 2 = Plus, PIN 3 = Minus
- ⑮ **Model identification plate**
Labeled with the serial no. and the version Line / Phono
- ⑯ Receptacle for the external Power Supply.

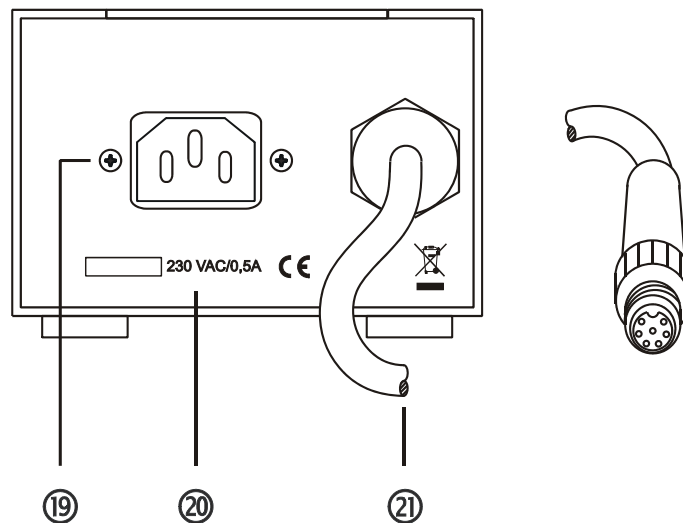
6. External Power Supply

Power Supply front



- ⑰ Mains power switch, I = On
- ⑱ Control LED

Power Supply rear panel



- ⑲ Mains Input, IEC receptacle
- ⑳ Serial number and mains voltage
- ㉑ Connecting cable with plug connector

6. ADVANCED FUNCTION: The bypass mode

This feature is very helpful if the two channel amplifiers and speakers supposed to be a part of a multi-channel system, normally the front left and right amplifier / loudspeaker channels. Therefore the HP 300 SE allows the user to combine the two way system and the multi-channel system without disconnecting the power amplifier or the speakers. The Bypass input can be switched from the RCA – AUX Input to a Balanced Input, the XLR 2 Input. This additional switch is located inside the HP 300 SE.

The bypass / multi-channel circuit of the HP 300 SE allows the use of the two way system to be a part of the multi-channel system, normally a 5 + 1 system. The two way system can be used for the front main channels. The problem of double volume regulation is eliminated.

How it works

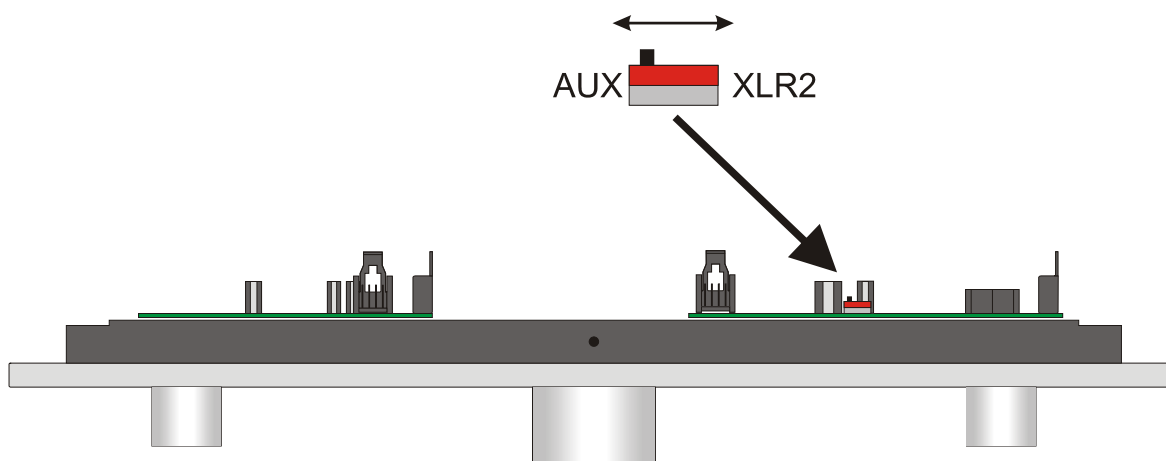
Connect the front right and left channels to the Aux L + R inputs⑤ of the HP 300 SE

The signal on the inputs Aux (Front L + R) can be monitored in the classical two channel way using the volume regulation of the HP 300 SE in the Gain Low, Med or High position of the Mode Switch

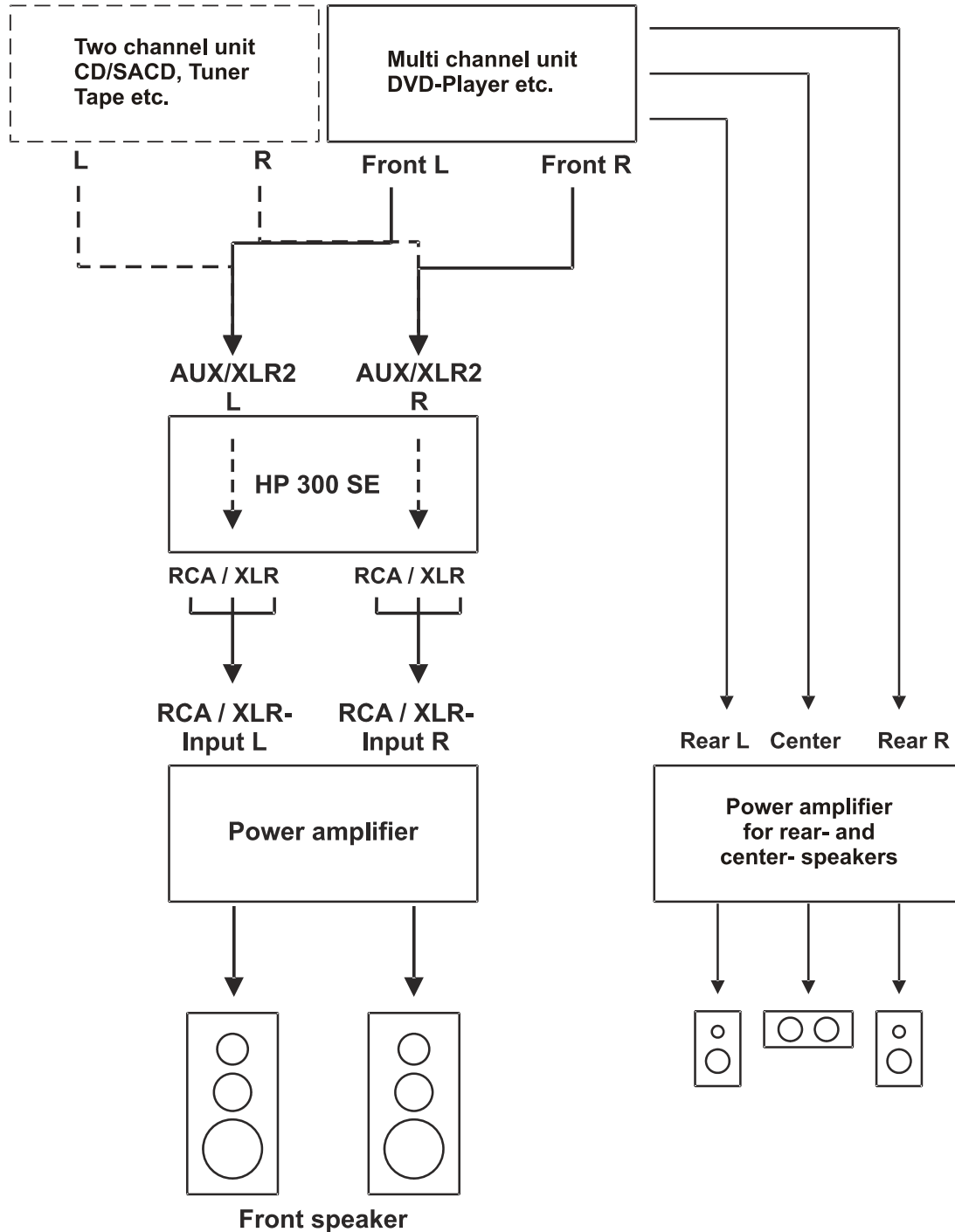
Note:

In the bypass position the volume control is done with the volume control of the multi-channel unit. Please make sure that the volume of this unit is regulated down to a low level when you switch over the HP 300 SE. Please turn on first the multi-channel unit, before you switch over the HP300SE to avoid excessive turn on signal levels from the multi-channel unit.

If you want to return to the two channel mode, or if you want to switch off all units, please turn the mode switch ① first to the muting or your preferred gain position.

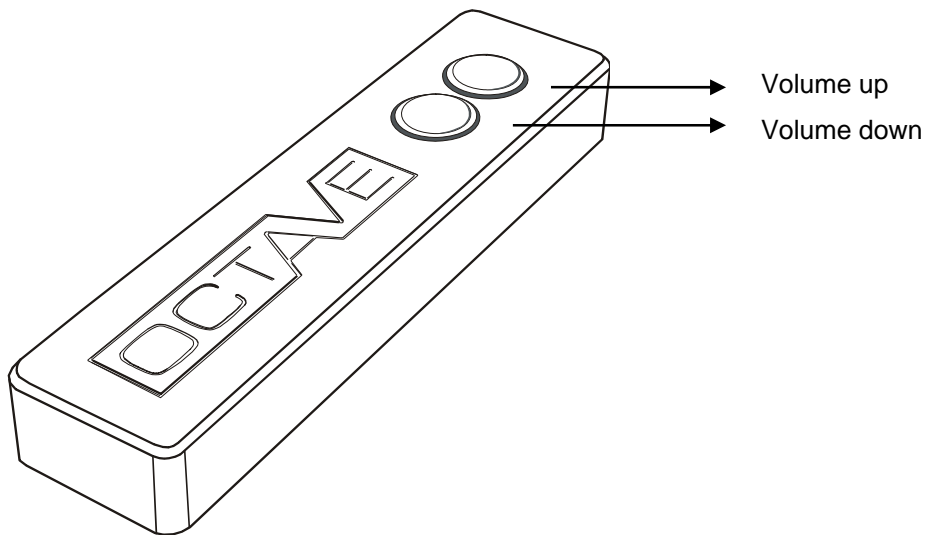


7. ADVANCED FUNCTION: The bypass mode



In the multi-channel mode the volume of the multi-channel system has to be adjusted at the multi-channel source, eg the DVD player, TV, etc. In the bypass mode the volume control of the HP300SE is out of function.

8. REMOTE CONTROL FOR VOLUME



Changing the batteries

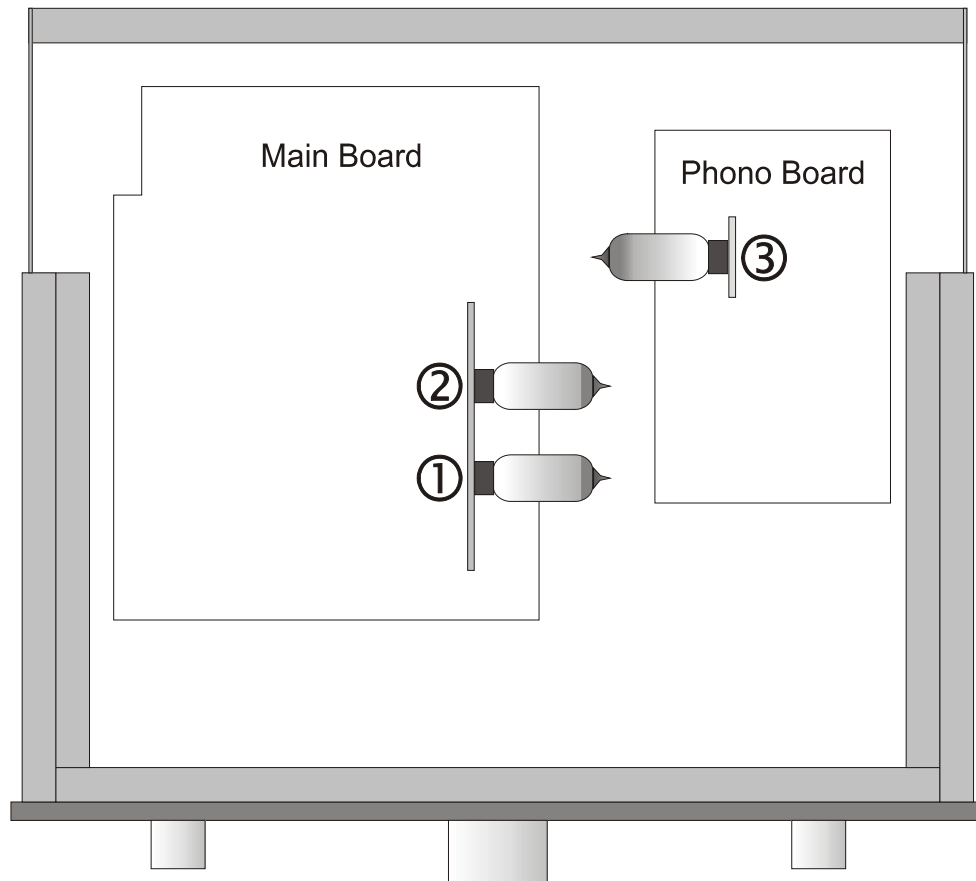
1. Take off the bottom plate (three screws size Phillips 1)
2. Change the batteries. Type: 2 x Type AAA 1.5 V
Please take care not to push the buttons of the remote control while inserting the new batteries
Please take care not to push the buttons of the remote control while inserting the new batteries.
If it still happens that the remote control does not work after changing the batteries, remove the new batteries and wait for the minimum of 2 hours. After 2 hours you can insert the new batteries again and the remote control should work.
3. Mount the bottom plate again, tighten the screws not too hard



Please don't trash the old batteries. Batteries must be disposed of as special waste. Stores that sell batteries should provide containers for the collection of used batteries.

9. TUBES

9.1. Tube layout



Before opening the cover it is mandatory to remove the power cord from the mains power inlet.

	Tubes used	also available under this description
Line board		
①	ECC 81	(E 81 CC / ECC 801 S / 12 AT 7)
②	6N6	(6 DJ 8 / E 88 CC / 6922 / ECC 88)
Phono MC Board		
③	ECC 81	(E 81 CC / ECC 801 S / 12 AT 7 / 12 AT 7 WA, 6072) The phono board is not mounted in Line Versions

9. Tubes

9.2. Replacing tubes

Please use only original OCTAVE replacement tubes. These have been selected and tested for use in our amplifiers. **Important! Changing tubes is a job for a qualified technician!**

1. Switch off the preamplifier, unplug the power cord from the wall socket, and allow the unit 10 minutes to cool down.
2. Take off the cover by removing the M 3 screws, (10 pc.)
3. Take out the old tubes.
Carefully remove the tubes from their sockets, taking care not to exert sideward pressure on the sockets.
4. Fit new tubes
Please ensure that the tube pins are all perfectly straight before inserting your new tubes. Straighten any bent pins very carefully by hand if necessary.
5. Cleaning tips
Cleaning agents and contact cleaners are not recommended for tube sockets. Clean dirty sockets with compressed air and carefully clean tarnished tube pins using a wire brush.
6. Please note:
No adjustments are necessary to your amplifier after fitting new tubes.
It may take new tubes some time (up to 300 hours) to achieve their optimum sound quality. Manufacturing faults in tubes may only become evident after about 100 hours of use. You should therefore be wary of installing untested tubes. However, faulty tubes or tubes of the incorrect type will normally not damage the amplifier.

9.3. Tube service life

- Thanks to the protection circuits and soft start electronics, the tubes used in your amplifier should achieve an average service life of **5 - 10 years**.
- Because the tubes have different service lives, it should never be necessary to renew the entire tube complement at the same time.

10. PHONO MC OPTION

10.1. The role of the phono preamplifier

A record player is an electro-mechanical device. Music signals are "pressed" into the grooves in the record, and these are physically tracked and read by the pickup cartridge. In order to get the entire 20 Hz - 20 KHz frequency range into the grooves, the frequency response has to be shaped by lowering the level of the low frequency information and raising the level of the high frequency information. This predefined equalization curve is known as RIAA equalization.

A phono amplifier must exactly equalize for RIAA recording characteristic if it is to avoid coloring the sound. Equalization accuracy must be within 0.5 dB over the entire frequency range, with channel matching of at least 0.2 dB.

10.2. The phono section of the HP 300 SE

The phono section of the HP 300 SE is an enhanced version of our hybrid phono technology. The phono section offers a greater level of compatibility with low output and low impedance moving coil cartridges. Most preamps have problems with such cartridges, since both gain and input impedance issues have to be addressed simultaneously.

We have developed an MC Head amp that successfully eliminates the problem areas. At the heart of the equalizer is a tube circuit containing 1 tube and two integrated circuits. It incorporates a switchable subsonic filter, which prevents very low frequencies generated by warped records or tone arm resonances from overloading the loudspeakers.

10.3. Guidelines for connecting to the phono section

1. Plug the RCA phono cable from your turntable into the appropriate (Phono ⑧) input of your HP 300 SE. Turn the input selector to phono.
2. Connect the ground cable supplied with your turntable to the GND connection ⑦ on the HP 300 SE, following the instructions provided by the turntable/arm manufacturer. Some tone arms do not have a separate earth cable, as the pickup system is grounded via the RCA phono plugs.

Explanation:

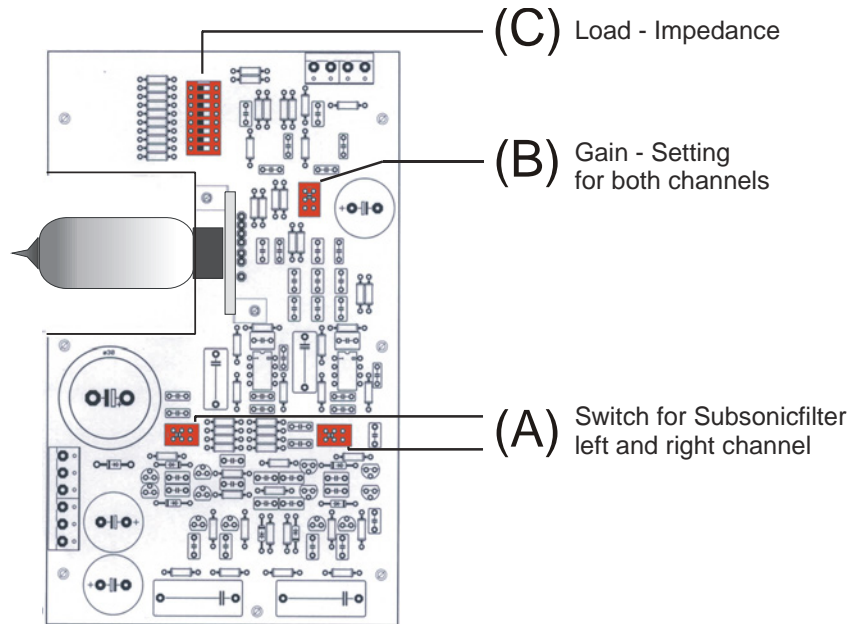
The ground is generally connected to the tone arm or the head shell. This is necessary to prevent hum or radio interference. It is usually advisable to connect the ground cable to reduce this kind of interference.

10. PHONO MC OPTION

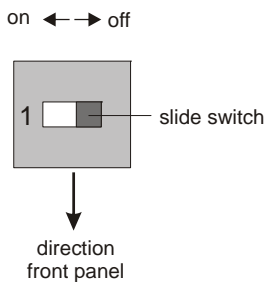
10.4. Adjusting the MC input



Before you can adjust the MC input, you need to take off the cover by removing the M 3 screws, (8 pc.)
 Before opening the cover it is mandatory to remove the mains power cord from the power supply.



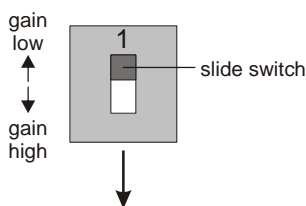
(A) Subsonic filter



Uneven records and mismatched cartridge – tone arm combinations can result in low frequency signals in the range below 15Hz (additional to the music reproduction). Signals of this low frequency cause excessive swing of the bass driver membrane, especially if it's a bass-reflex system. Electrostatic speakers should be protected against such low frequencies in general, because the bandwidth of the input transformer of a wide band electrostatic speaker is normally limited to approximately 20Hz.

The low frequency signals can be reduced with the Subsonic Filter. The cut – off frequency of this Filter is 15 Hz / - 3 dB.
Delivery State : Subsonic Filter ON

(B) Gain- Setting

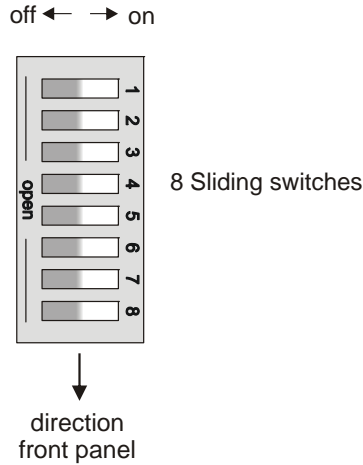


The gain switch allows you to match the gain factor of the phono-amp for your cartridge.
 gain high: for normal MC-cartridges < 0,5 mV
 gain low: for high Output-MC-Systems > 0,5 mV
State of delivery: gain high

10. PHONO MC OPTION

10.4. Adjusting the MC input

(C) Setting the MC-Load-Impedance



Adjustment range

Switch option	Left channel Switch 1 – 4			Right channel Switch 5 - 8		
	Switch no.	Switch position	Resistance (ohms)	Switch no.	Switch position	Resistance (ohms)
1	all	off	1000	All	off	1000
2	1	on	500	5	on	500
3	2	on	250	6	on	250
4	1 + 2	on	200	5 + 6	on	200
5	3	on	100	7	on	100
6	1 + 3	on	90	5 + 7	on	90
7	2 + 3	on	76	6 + 7	on	76
8	4	on	75	8	on	75
9	1 + 2 + 3	on	71	5 + 6 + 7	on	71
10	1 + 4	on	69	5 + 8	on	69
11	2 + 4	on	61	6 + 8	on	61
12	1 + 2 + 4	on	57	5 + 6 + 8	on	57
13	3 + 4	on	44	7 + 8	on	44
14	1 + 3 + 4	on	42	5 + 7 + 8	on	42
15	2 + 3 + 4	on	39	6 + 7 + 8	on	39
16	all	on	37	all	on	37

The input impedance setting is important in achieving a balanced sound from your pickup. You will find the recommended impedance in the specifications supplied with your pickup.

Default factory setting: 100 ohms - optimum for the most low output MC systems

11. TROUBLESHOOTING

■ Hum and crackling

Hum in an audio system is often caused by several system components being earthed individually. It is particularly common with tuners, VCRs or satellite receivers, where the earthed antenna cables cause a hum loop with other earthed units. Power amplifiers are normally earthed too. Removing the earth connection on your mains plugs is not a permitted solution. You can isolate the antenna ground connection with a special signal isolator. Such a device has no adverse effect on the sound or picture quality of tuners or TVs.

The HP 300 SE is not direct earthed and therefore cannot cause ground loops.

■ Clicks and pops

Older fridges and 12 V halogen lamps can cause cracking through the loudspeakers when they are switched on and off.

Solution: The only solution is to use a single power socket board for your entire system and to use a different power outlet in your listening room.

■ Channels are not balanced

Check that the RCA plugs are a tight fit. Bend the outer ground contact inwards slightly if necessary. Sometimes the internal pin in a RCA plug may not be a tight enough fit, in which case you should change either the interconnect or the socket.

1. Damaged cables and poorly fitting RCA plugs can create resistance in the signal path, enough to reduce the output level of one channel.

Solution: Try new cables or clean plugs and sockets with isopropyl alcohol. You could also try cleaning or contact fluid.

2. A faulty tube can cause a drop in output in one channel and generate distortion. Although a rare occurrence, the heater inside the particular tube may be the cause of the problem.

Solution: Replace the tube.

■ Increased hiss on one channel

Hiss that varies in level is a sign of a faulty or worn driver tube.

Solution: Replace the worn tube.

12. TECHNICAL DATA AND DIMENSIONS

In- and Outputs

Inputs	3 x RCA (one is phono with the option phono otherwise it is a line level input), 2 x XLR Bypass-Function for input AUX or XLR
Outputs	2 x RCA, 1 x XLR, 1 x Monitor (RCA)
Ratio of the XLR Transformer	1:0.5:0.5
PIN assignment XLR	1 = GND, 2 = Plus, 3 = Minus

Line stage

Output impedance	50 Ohm RCA; 150 Ohm XLR
Output impedance Monitor Out	100 Ohms
Maximum Output Level	9V
Maximum Output Current RCA / XLR	0.18A / 0.06A
Gain high	25 dB = 18.5
Gain med	19 dB = 8.8
Gain low	12 dB = 4
Signal-to-noise ratio: gain high	- 92 dB
Signal-to-noise ratio: gain low	- 100 dB
Signal-to-noise ratio: gain low	- 108 dB
Frequency response Gain high RCA	10 Hz – 200 kHz -0.1 dB
Frequency response Gain med RCA	10 Hz – 200 kHz -0.25 dB
Frequency response Gain low RCA	10 Hz – 200 kHz -1.5 dB
Total harmonic distortion, Gain Low/Med/High kOhm	0.005%/ 0.007%/ 0.003% at 3V / 7.5
Channel separation	90 dB 1 kHz
Crosstalk rejection between inputs	- 100 dB 1 kHz
Input impedance	100 kOhm
Channel tracking of volume control	0.5 dB - 70 dB

Phono MC

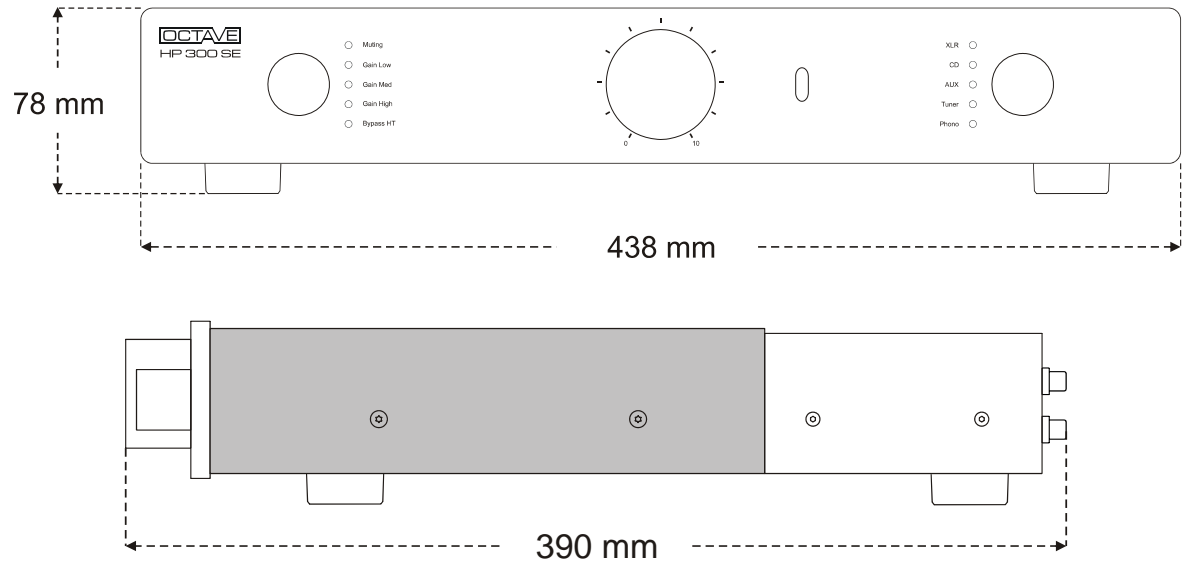
RIAA equalization accuracy	0.3 dB 15 Hz - 20 kHz
Subsonic filter corner frequency	15 Hz / - 3 dB
Input impedance	30 - 1000 Ohms
Sensitivity	0.2 mV / 0.7 mV
Gain MC Gain Low – Monitor OUT	58 dB
Gain MC Gain Low – Pre OUT	Gain Low: 70dB, Med: 77dB, High: 83dB
Gain MC Gain high – Monitor OUT	67 dB
Gain MC Gain High – Pre OUT	Gain Low: 79dB, Med: 86dB, High: 92dB

General:

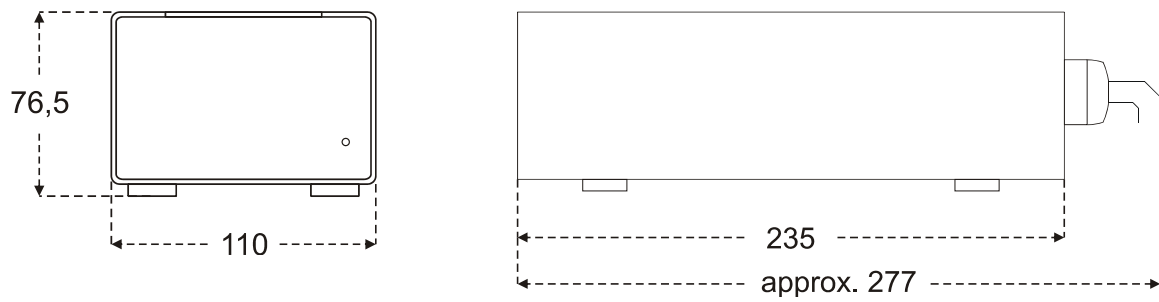
Power consumption	35 VA
Weight Preamp / Power Supply	9 kg / 3 kg
Standard accessories	mains power cord, remote control
Dimensions Preamp	438 x 78 x 390 mm (W x H x D)
Dimensions Power Supply	110 x 77 x 277 mm (W x H x D) (see page 25)

12. TECHNICAL DATA AND DIMENSIONS

Preampifier HP 300 SE

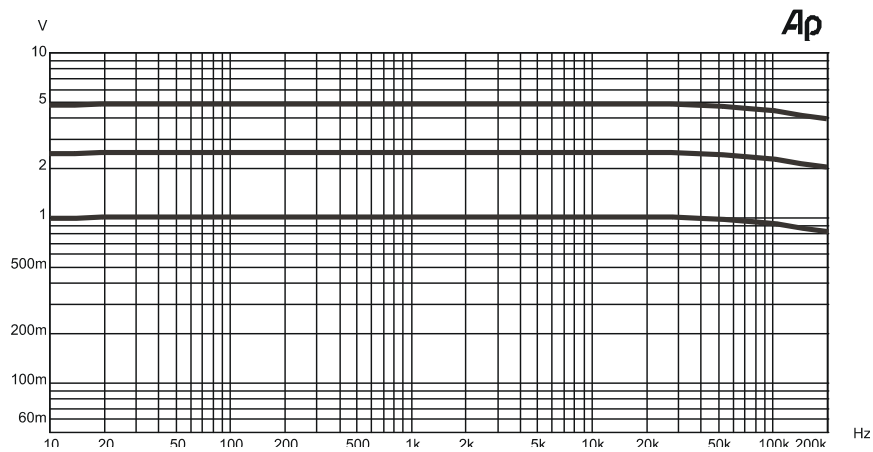


Power Supply



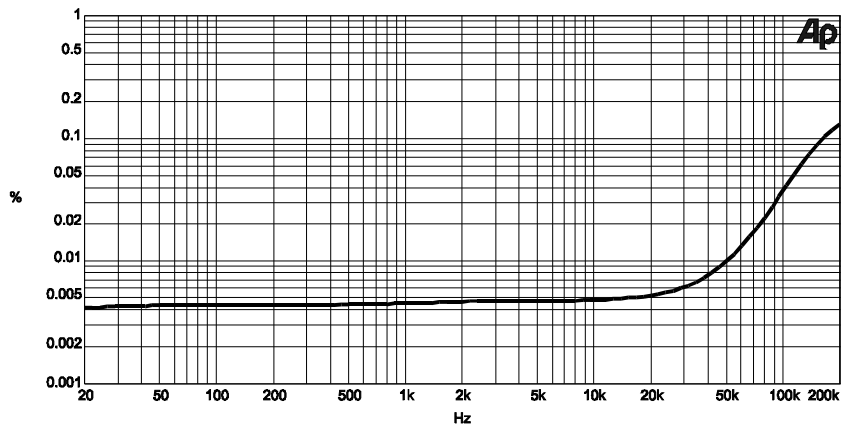
12. SPECIFICATION

Frequency response



Frequency response accuracy of line stages in 'Gain Low, Med and High. In the frequency response of 20 Hz - 200 kHz.

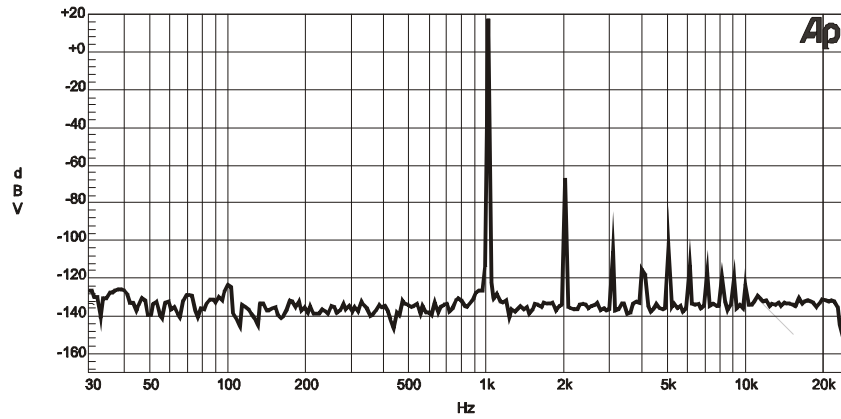
Total Harmonic Distortion, Line Stage



Overall distortion (THD + noise) of the line stage from 20 Hz to 200 kHz. Distortion remains low up to 20 kHz

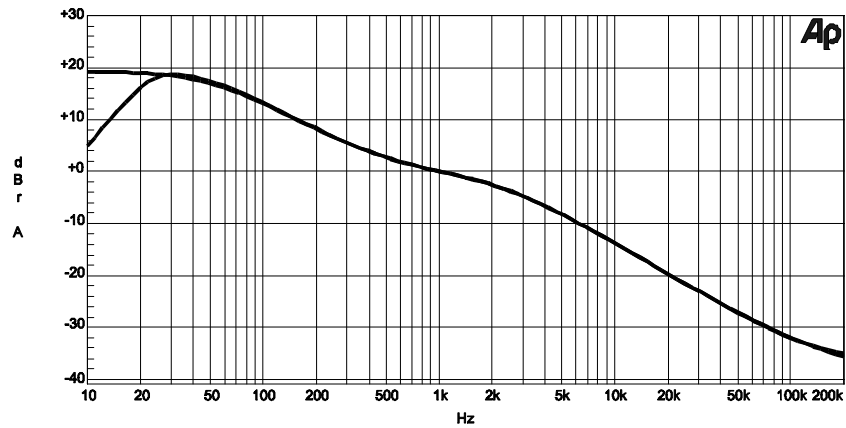
12. SPECIFICATION

FFT Spectrum



Distortion spectrum of line stage, 5 V output at 1 kHz. The low level of harmonic distortion and low noise level are clearly visible. There are no hum components at 50 Hz and 100 Hz.

Phono RIAA Equalization Graph



Frequency response of the phono stage with and without subsonic filter



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