

icon Audio

HP 205D Manual

Directly Heated Triode Headphone Amplifier

David Shaw Signature
High Spec Version with
Mundorf silver gold capacitors
and upgraded valves

IMPORTANT!
THIS MANUAL CONTAINS
ESSENTIAL HEALTH & SAFETY
INFORMATION FOR YOU AND
YOUR AMPLIFIER. PLEASE
READ & KEEP SAFE AND
REFER TO IF NECESSARY



Signature version with Mundorf Silver/Gold Capacitors and Psvane WE 205Ds

designed by David Shaw

No Compromise High End Pure Valve SE Headphone Amplifier

About the HP 205D

Thank you for purchasing one of our amplifiers, a lot of care has gone into the design, selection of components and production of this amplifier. We are sure that you will hear the difference.

Designed in Leicester by David Shaw

My design goal was to design a very high quality headphone amplifier which is very musical and not fatiguing. There are many headphone amplifiers on the market but a common complaint is that they sound too bright with poor long term listening qualities. The warmer sound of valves and lots of copper coupled with the superb WE designed 205D valve enables a very "listenable" sound with high definition.

Our HP 205D is in fact a low powered high quality integrated hi fi amplifier. We use a custom wound multi-tap output transformer which provides perfect matching to virtually any headphone load. The power supply begins with a substantial mains transformer. The "high tension" or HT voltage is rectified by a valve, then filtered through a high quality "choke" to give the finest quality power. Each 205D has its own DC supply for a quiet background.

The separate power supply means that the amplifier section is not contaminated by mains RF noise.

We found the 1950s 6922 to be a good choice for driving the 205D. Finally the output comes from our own hand-wound multi-tap output transformers. The HP 205D tops the scales at 16kg, giving you an idea of how much copper and iron we have used

Like our other models the HP 205D has no printed circuit board* and is all hard wired with top quality components. We use silver PTFE audio cable, gold plated terminals and the famous "ALPS" volume pot from Japan for sonic purity.

The first stage gain uses the excellent 6922. This wonderful valve has exceptional detail and fluidity. Its smoothness complements the 205D. This combination will give you a simply stunning insight into inner detail of your favourite recordings whether Analogue or digital.

Like other Icon Audio amplifiers, close attention has been paid to the finish of the HP 205D. It uses the same "Bullet Proof"* build (*Hi Fi News/Hi Fi Choice) as our other amplifiers with a combination of anodised alloy plate, stainless and painted steel. We avoid the use of "tin and plastic"!

The HP 205D is very versatile. It may be connected to your hi fi in several ways:

- 1, In a normal hi fi system you would connect to the "record out" of your amplifier. This will then be directly connected to the "source" that you have selected.
- 2, If your amplifier does not have a suitable output, splitter leads may be used.
- 3, With "Pre and power" systems a connection may be made from the pre-amplifier.
- 4, As a stand alone unit you can directly connect to any CD/MP3 player.
- 5, 205D or 300B valves are both compatible with this amplifier.

*excluding Bluetooth receiver.

Final Inspection

This amplifier has been carefully checked, tested and final adjustments made by Icon Audio in Leicester UK.

It has passed our rigorous listening test and final inspection to assure you of optimum performance and reliability.

Date/...../.....
Model
Amp Serial Number
Customer

Check amplifier finish	.....	Bluetooth receiver fitted	..Y / N..
Run "burn in" test	.....	Mains voltage	230-240V / 117V
Check inputs/outputs	.....	IEC Mains Fuse 240V (117V)	500mA (1A)
Sound Quality	.....	Plug Fuse (if fitted)	.....3A
Channel Balance	.....	Chassis linearity	.....
Valve Microphony	.....	Cosmetic condition	.....
Valve Seating	.....	First stage valve	.....
Hum & noise level	.....	Output valve	.....
RF Test	.....	Capacitors	.....
Serial No sticker and recorded	.....	

Signed off by

Checked by

Notes:

QUICK SET UP GUIDE

1 Unpack unit carefully. Make sure that it is in good condition. It is important you keep the custom packaging for any warranty/service as this provides maximum protection.

2 Fit the valves if necessary.

Or if fitted check that they are seated properly. (see also valve replacement). The smaller 6922 valves should be firmly pushed into place.

Handle the 205D (or 300B) valves carefully. They have four pins, two are slightly larger, please observe this when fitting. All four valves are marked with the socket they should be inserted into.

The single rectifier valve (274B/GZ34/5AR4) should be fitted into the power supply. Please note orientation!

Connect the multipin plug to the power supply unit.

Connect the power supply to your wall socket.

3 Connect the HP205D to your source unit (e.g. CD player) or from the "Record Out" of your amplifier.

"Loop Out" Facility This enables you to connect the HP 205D between a pre-amplifier and power amplifier for example, or it may be used as a "record out". Using the "Loop" facility does not require the HP 205D to be switched on.

For best results use a screened RCA-RCA cable to avoid noise pick up.

3.1 For Bluetooth connection see next page.

4 Connect to mains supply using the attached mains lead to wall supply. **Outside the UK you may need to change plug or cable, the welded plug must be removed and replaced with a suitable type. Please then remove fuse and dispose of carefully away from children.** The replacement plug should be wired in the following way Brown to Live terminal, Blue to Neutral terminal and Green/Yellow to Earth terminal.

5 Connect your headphones and SWITCH ON!

The power LED indicator should light up and unit will take approximately 40 seconds to start working. All valves should have a visible orange glow from the cathode heaters. With the volume control set to minimum (fully anti-clockwise) there should be no sound coming from your headphones except a barely discernible hum.

5a, Headphone Impedance

The right hand knob marked **L M and H** refer to the matching impedance of your headphones and are banded as follows:

Low	8-200 Ohms	(ideally 70 centred on 40-125)
Med	60-600 Ohms	(ideally 200 centred on 125-400)
High	250-2000	(ideally 600 centred on 400-950)

The "centred on" figures will give the best matching impedance, highest power and lowest distortion. The HP205D is designed for high quality headphones which are generally higher impedance and less efficient. Low impedance high efficiency headphones are not recommended.

6 Your unit should now be functioning. If not check you have selected either "INPUT" or "BLUETOOTH" (if fitted), the volume is not set to zero and that you have a an input signal. The best sound quality will be when the unit has warmed up for about 10 minutes.

7 Health and Safety. The valves when operating have moderately high surface temperatures. Keep out of reach of children and pets.

Under no circumstances operate with valves removed!

Like all valve amplifiers there are potentially lethal voltages inside (300v DC), which when switched off can take up to 15 mins to discharge! Do not remove bottom panel unless you are a competent engineer. There are no user serviceable parts inside. Like other household electrical appliances do not leave unattended whilst switched on.

Allow for ventilation!

Do not cover the unit!

Do not allow to get wet!

Do not operate if there is possibility of lightning outside.

It is essential to install the HP 205D on a stable non slippery surface when it cannot be easily be moved by accidental pulling of the headphone cable.

Connecting inputs & outputs

Many problems with hi fi equipment involve connecting leads which are usually either '**Bad, or Wrong connection**'. So it's worth making sure that you have good connections and that your leads are the right way round. Use a well screened RCA cable.

Inputs

The amplifier will work with any standard piece of hi fi e.g. CD, Tuner, Tape Deck, Mini Disc, TV, Video Recorder, DVD etc.

General points

- Leave some gap between the power supply and HP205D to minimise noise.
- Some mobile phone 'breakthrough' is normal.
- Some initial noise will be heard until the valves are fully warmed up.
- Do not store in damp conditions this could damage to transformers and other components.
- 300B valves are more microphonic.

Headphone types

The HP205D is designed to work with almost any conventional moving coil headphones. We use Beyer Dynamic, Audio Technica and Sennheiser for testing. Generally high impedance (100Ω plus) headphones will sound better. High efficiency types will reveal more noise.

Connecting Leads

Use good quality connecting leads, which are no longer than they need to be.

Leaving the amp switched on

Whilst the amplifier will sound at its best when it is properly warmed up after about 5 minutes, there is no advantage leaving it switched on when it is not in use. It is using electricity and using up valve life. Conversely the valves and other components are stressed more at switch on; therefore do not switch on and off unnecessarily. **Although the amplifier should sound good within a few minutes, like most hi fi units it will take a couple of months of regular use before it is fully 'run in'.**

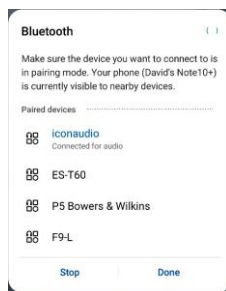
Cabinet Care

To remove dust from the cabinet and valves we suggest gentle brushing with a soft paintbrush and a duster. Finger marks can usually be removed with a damp cloth. Always clean with the power disconnected.

Bluetooth Operation

(Where fitted)

1. Attach antenna to rear of amplifier unit.
2. To start Bluetooth pairing operation switch the front selector to "Bluetooth".
3. Now open the Bluetooth menu of your phone (or other device) and search for "iconaudio" in the list, then "pair" with the HP205D.
4. Select and play music as required.
5. From your Bluetooth menu select "LDAC" for best quality if supported.
6. Note the maximum range may be limited by walls, furniture and other interference sources.
7. When the HP205D selector switch is changed to "source" the Bluetooth receiver is switched off, so it will be necessary to "pair" again before use. In some cases this will occur automatically.



To give you the best sound quality from your phone or other Bluetooth devices we have used a sophisticated receiver which complements the design of the HP205D. Use maximum volume level on your phone for best signal to noise ratio.

Under some circumstances you may hear interference from your phone or paired device if it is too close. Occasionally strong wi-fi or other interference may be heard. Switch off other unit or move to another location.

Features:

- Uses the CSR8675 chip, one of the best available.
- Bluetooth digital audio signal reception by I2S digital signal transmission with ES9018 chip decoding.
- The analogue audio output is buffered by a Burr Brown OPA2604AP dual op amp MOS FET chip.
- Uses LDAC protocol and supports a sampling rate of 24bit/96kHz, which exceeds the APTX-HD's 24-bit/48kHz sampling rate.
- Uses an advanced DC power supply with multi stage voltage regulator to low noise and high quality operation. The Bluetooth module, DAC chip, op amp chip are powered independently. The op amp uses dual (positive and negative) 13V power

Trouble Shooting

Amplifier Dead

Check the 500 mA (1 amp USA) "T" 20mm mains fuse which is in the IEC mains socket on the rear of the power supply. A spare is in the little drawer. These are available from Icon Audio should you have any difficulty. The fuse in the UK mains plug (if fitted) should be a 3 or 5 amp fuse, although unlikely to fail.

If the amplifier is lit up but no sound there is also a 100mA "T" fuse inside the amplifier unit with a spare. If fuses continue to blow there is fault which needs the attention of an engineer.

No sound

Have you selected the right input? Are the connections OK? Is everything switched on? Are the headphones connected? With headphones connected but no input connection slight noise will be heard at full volume.

Distorted sound.

Try another source; if sound improves then it's probably something wrong with the first source. If no improvement try different headphones, if no improvement could be an amplifier problem.

Hum Adjustment for V1, V2

The 205D DHT (Directly Heated Triode) valve uses the heater filament for the "Cathode" which means that a circuit is needed to "balance out" any hum for both left and right channels. **It is unlikely that will ever need adjusting as it is pre-set in the factory, refer to a qualified engineer.** It will not help with hum problems external to the HP205D.

Other Hum Problems

If you experience hum that increases with the volume control this is external to the HP205D this could be caused by poor grounding or using unscreened RCA cables or a "ground loop". This may be checked by trial and error by consulting your dealer. Example: Disconnect other sources one by one. You could try a different wall socket.

Other causes of low-level hum can be from adjacent equipment, so experiment with moving equipment around to see if this makes the hum better or worse.

One channel missing.

Usually 'bad' connection on either the input or the headphones. Try swapping the connection over to establish if the cause is:

(a) Input to the amp. Sound will move to the other channel.

(b) Amplifier or headphones. Sound will not move.

Strange noises coming through headphones

Turn volume to minimum, if the noise persists there may be a problem with amplifier, or external interference from mobile phone, wi fi etc.

A valve problem may be checked by swapping the valves over from left to right. A valve that is glowing does not mean it is working properly; but a valve that is not glowing cannot function.

Valve life and Replacement

Valve life depends upon such things as hours of use and number of on/off cycles. As a very rough guide we would estimate life of approximately 4 to 6 years. But this can vary massively depending upon usage and the possibility of sudden failure.

As a rough guide if the amplifier sounds good the valves are probably fine. Valve can reduce by up to 30% without any drop in performance.

What can happen?

A valve is at the end of its life or has failed if one of the following happens:

- The valves wear out reducing the sound quality especially at high volume levels.
- One of the glowing heaters fails, in the 205Ds or the 6922s (two heaters in each valve).
- A valve could get "noisy" or excessively "microphonic" Tap them gently to find out). 205Ds are normally a little microphonic.
- The emission (and therefore output and sound quality) may fall giving low output.
- The valve works intermittently.
- An air leak causes the valve to fail and the silver "getter" material to turn white.

To maintain the sound quality we recommend the valves be changed every 2-5 years* to maintain the full sound quality. A new set of valves will give you back a "NEW" HP 205D amplifier! (* depending upon use and not withstanding valve failure).

Icon Audio can supply a new set of valves which are ideal for the HP 205D ranging from standard to "premium" types. They will be matched and tested for quality, and audio tested again to check that they are sonically perfect.

It is essential that only the correct valves are used as some similar looking valves have a different pin connection and insertion could result in damage to the amplifier and risk of electric shock. 5U4/5Z3 rectifier is not suitable.

It is not good practice to remove the valves unnecessarily as this can strain the pins and cause micro air leaks. Icon Audio are happy to check valves and check the performance of your amplifier, and advise on the latest upgrades available FOC.

Method:

Switch off, disconnect from mains and allow to stand for 10 mins to allow voltages to discharge. You should carefully remove the valves, these should be held by the base when removing to prevent damage. Care should be taken when removing and inserting the valves. The rectifier valve has a centre location "spigot" observe correct orientation. Do not operate without valves!

CAUTION – HEALTH & SAFETY!

When making any adjustments remember to isolate from power supply, and remember that high voltages can remain present inside for some time after switch off.

Service: Should you suspect a problem you could return the unit to your dealer or Icon Audio for a periodic service or return the valves for testing free of charge. You should carefully remove the valves they should be well packed in cardboard & foam or similar and returned to Icon Audio. (Valves are very rugged if packed properly).

We welcome any comments you may have regarding errors or omissions in this manual.

Should you need further advice or information regarding the use of this unit please contact us.

NEW OWNER?

If you have bought this unit from someone else, please register with us by email or post stating your name, address, model, serial number and whom you purchased from in order that we can keep you up to date with upgrades and improvements

Specifications and Features

- All hand wired point to point
 - No printed circuit board to 'colour' sound
 - Japanese Blue ALPS volume pot.
 - High quality Bluetooth receiver (option)
 - Class A, all Triode circuit
 - Output impedance matching from 16 to 600Ω
 - 2 x 205D-L or 300B output valves
 - 2x 6922/E88CC/6DJ8/ECC88 first stage valve
 - 1x GZ34/5AR4/274B (not 5U4)
 - 2x 1W output per channel max (depending upon load)
 - Signal to noise level -90db
 - Freq response 20hz-20kHz
 - Total harmonic distortion typically less than 0.2% 1kHz
 - Custom hand wound output transformers
 - EI transformers with low oxygen copper
 - High quality 2W metal film, & wire-wound resistors
 - LED mains indicator
 - Polypropylene audio capacitors or Mundorf upgrade option.
 - Silver PTFE audio cable
 - Gold plated Input terminals
 - One line input with "loop out" facility
 - 400mV input sensitivity for full output
 - 230/117volts 50 watts. Fuse 500mA (2A USA) "T" anti-surge.
 - Internal Fuse 100mA "T" type.
 - C E, ROHS and WEEE compliant where applicable.
 - Dimensions:-
 - Amplifier section 22cm W x 32 cm D x 17 H, 7.5 kg (allow space for connections)
 - Power supply – 13cm W x 31cm D x 19cm H, 8.5kg (allow space for power lead to amp at rear and ventilation for valves)
 - Boxed unit – 45cm D x 40cm W x 32cm H, 20 kgs
- (Specifications subject to change, errors & omissions excepted. General 31/10/24)

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