

## **AH! It must be the Njoe Tjoeb 4000 Valve CD Player!** **Neville Roberts**

Power amp, pre amp, phono amp, headphone amp – not a transistor in sight! Having re-discovered my record collection thanks to the magic of valves, my CD have taken a back seat when it comes to choosing music to listen to. Unfortunately, records are becoming increasingly difficult to obtain and classical recordings have not be released on vinyl for some years. I therefore needed to upgrade my ageing CD player to one that would match the rest of my equipment.

Of course, records are not without their problems. However good the quality of the record deck, records are a mechanical medium and are therefore susceptible to clicks and pops caused by dust, scratches and static electricity. Adding to this are problems introduced during the manufacturing process such as poor pressings and subsequent warping of the disk. Finally, there is the inevitable crosstalk caused by the single stylus extracting both the left and right channels from the groove, as well as distortions introduced by a combination of RIAA equalisation and tracking errors during playback. It really is amazing that records sound as good as they do.

Enter the Compact Disk! Playing the numbers game, as CDs do, effectively eliminates all of the above problems, but unfortunately introduces others. Firstly, the CD was designed for the mass market and therefore only high quality players will reproduce the music to a standard that is compatible with true Hi-Fi systems. A very stable clock and very high quality digital to analogue converters (DACs) and transport mechanisms are all essential. Secondly, those of us valve addicts realise that the elimination of semiconductors from a CD player would create a machine the size of the first digital computers built in the 1940s containing thousands of valves and needing a small warehouse to accommodate it!



**Figure 1. The AH! Njoe Tjoeb 4000 Web Site**

But it is not all gloom and doom! The trick is, of course, realising that digital technology relies on the storage and processing of numbers. In essence, it doesn't matter whether you add up a column of figures in a ledger with a quill pen or use a calculator, as long as it is done accurately, the answers will be identical. Looking at the design of a CD player, you can use semiconductors to handle the digital data and logic controls and introduce valve technology only when the signal becomes analogue. A CD player with a valve output stage therefore becomes a very feasible proposition.



**Figure 2. The OEM CD4000**

However, the inability of high quality audio equipment to interface satisfactorily with one's bank account has attracted many to the joys of DIY. Wouldn't it be great if someone produced a high quality but affordable valve CD player that would allow the odd tweak or two?

My hunt for such a beast led me to a company called DÉ HIFIWINKEL based in Holland that advertises on the web (to keep marketing costs to a minimum) and is run by Frank van Duijvenvoorde and Herman van den Dungen who has over 25 years of high-end audio experience. They have a select range of products aimed at the true audiophile and marketed under the appealing name of AH!. Not surprisingly, much of their web site (<http://www.hifi-notes.com>) is in Dutch. However, clicking on <http://www.hifi-notes.com/ah1-en.htm> takes you to a section in English. Suitably intrigued, I homed in on their third generation CD player with valve output – the Njoe Tjoeb (pronounced 'new tube') 4000.

The player is based around an OEM CD4000 chassis with extensive modifications ending up with a valve output stage. Further investigation revealed that the company recognise that many an audiophile will want to get inside the box and do some tweaking, so they even supply the appropriate size of Torx screwdriver!

In order to find out more on the cost of going Dutch, I fired off an email to the company and almost by return I received a friendly and informative response from Herman with more details. Purchasing is very simple. You simply send your credit card details to them and they debit your card in the local currency – Dutch Guilders or 'Hfl' (Hollandse florijnen).

As I had never purchased directly from abroad before, I wasn't clear on the rules on import duty and VAT within the EEC. Following a phone call to the UK Customs and Exercise department, I was even more confused! In the end, I contacted Herman who went to the trouble of finding out the situation for me. Evidently, no import duty is payable within the EEC and you only pay VAT once in the country of origin: in this case 19% in Holland.



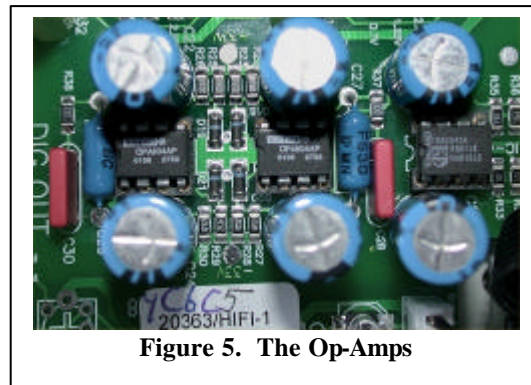
**Figure 3. The Njoe Tjoeb 4000 As Shipped**



**Figure 4. The Circuit Board**

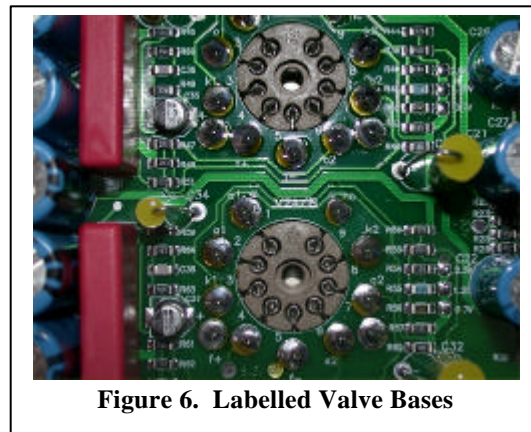
There are currently two versions available for the UK mains voltage – a standard model at Hfl 1,250 and a ‘SuperTjoeb 4000’ at Hfl 1,550 (about £356 and £441 respectively) including their VAT. Carriage charges to the UK for either model are an extra Hfl 45 (£12.80).

The standard model now includes items that were extra on previous versions. In addition to the OEM CD4000 fitted with the AH! valve output stage, the standard has the coax digital output, AH! AC NoiseKiller and the AH! SuperCrystal oscillator. The ‘Super’ version is fitted with a digital output transformer and adds better quality feet (called ‘TjoebSjoes’), the AH! AC Direkt KB8 quality mains lead, DE Mat and Tjoeb Ribs for extra damping.

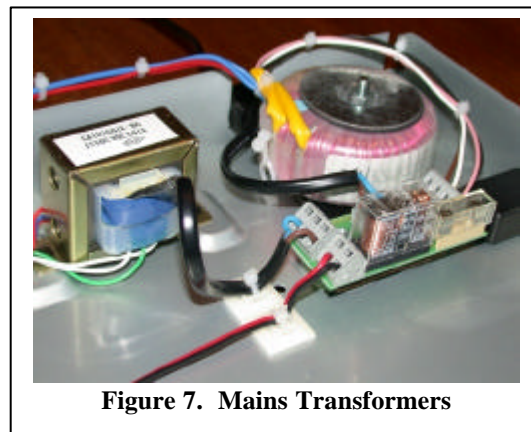


In the end, I decided on the standard version, which I have reviewed here, knowing that I can fit the clogs (sorry, TjoebSjoes) etc. at a later date. My card details were emailed and my lovely Njoe CD player duly arrived within a few days. The first job was, of course, to put the Torx #10 screwdriver to good use and remove the lid to examine my new purchase on the inside (well, what did you expect?)! Actually, this is an essential first step as the valves and the CD upper clamp are packaged separately and have to be fitted before use.

The most obvious features are the pair of valve sockets nestling on a circuit board amidst more electrolytic capacitors than the brain can comfortably comprehend. These capacitors are, in fact, the power supply filter bank and total in excess of 0.03F (yes, Farads!). Some may argue that all this filtering is ‘gulderyng the lily’, but this proved to be just the right amount based on extensive listening tests, according to the manufacturers.



I was immediately impressed with the overall quality of the electronics. The red Wima MKS4 output capacitors are clearly visible. The valves are seated in heavy-duty sockets, acknowledging that many DIY’ers will want to experiment with different makes of valve. A toroidal mains transformer provides the HT and filament supply and this transformer sits alongside the ‘original’ transformer that supplies the power for the digital circuitry. The toroidal transformer is switched via a relay that is controlled by the digital electronics.

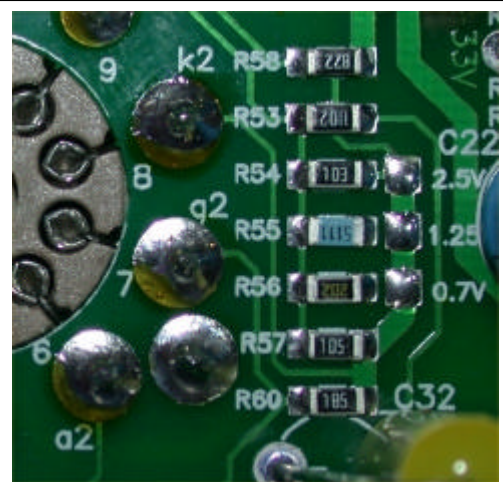


Another nice touch is the bypassing of the transistorised muting circuit. This function is now undertaken with a relay in each channel. This effectively eliminates a potential source



of distortion by removing all semiconductors from the audio signal path. All that remains is a barely audible pleasing “click” from inside the unit when the CD starts playing.

All the valve pin connections are clearly marked on the printed circuit board (useful if you want to connect an LED to the DC filament supply – see later). To the right of each valve base is a group of resistors for changing the output level of the unit. Output is factory-set at 2.5V, but if this proves too high for your amplifier, you can easily reduce it by soldering across adjacent solder pads – another nice feature. Very clear instructions are given on how to do this.



**Figure 8. Output Level Adjustment**

The OEM CD4000 includes full remote control facilities and sports the Philips VAM 1201 transport mechanism and digital servo drive. This allows the unit to play both CD-Rs and CD-RWs in addition to conventional CDs. All the technical details are available on the website.



**Figure 9. The Philips Transport**

Early on in my use of the unit, I noticed that, on occasions, the mains relay did not deactivate when the player was switched off. This has the effect of leaving the valves powered up. It happens when a CD is removed, the drawer closed and the player allowed to detect that there is no CD in place (after a few seconds, the display changes from “READING” to “NO DISK”). If, however, the CD player is switched off before this time, or with a CD in place, the whole unit powers off normally. A short e-mail was sent to Herman who confirmed that this was, in fact, a “feature” of the OEM CD4000 firmware! A simple work around to ensure that the unit is always switched off is to either power the unit off with the disk tray out (the tray is automatically retracted and the unit switches off completely) or leave a CD in when switching off. You can easily hear the click when the relay drops out. In actual fact, this is quite a useful feature as it effectively provides a “standby” facility by leaving the valves powered up ready for use next time and eliminating the warm-up time. However, to be on the safe side, I decided to fit a small blue LED powered from the 6.3VDC filament supply. This is quite easy to do as there are ‘f+’ and ‘f-’ pads clearly marked on the printed circuit board. The blue LED needs about 20mA and this current is supplied via a 150 ohm series resistor soldered onto one of the legs of the LED. From here, a pair of wires twisted together were run along the edge of the case and soldered to the appropriate pads on the top of the circuit board. A small hole was drilled to the left of the ‘Power On/Standby’ switch to accommodate the LED which, I think, adds to the overall appearance.



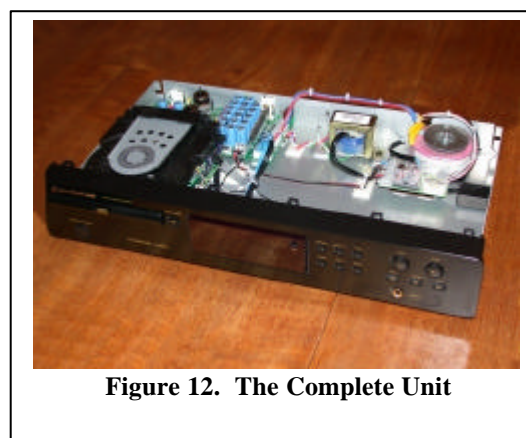
**Figure 10. The Addition of a Power LED**

So much for the technical details – what does it sound like? For the listening tests, I included a couple of recordings that were available on both CD and vinyl in addition to playing a wide range of music on CD. Of course, a comparison of the same recording transcribed onto record and CD is not a true test as you are at the mercy of the recording engineer who may use slightly different mixes for each type of media. Also, as I have said before, both types of media have their own limitations, but such a comparison does have a place in subjective testing when used as part of the overall assessment process.



**Figure 11. Wiring in the Power LED**

After a few days of running in, I settled down to some serious listening. I started off by listening to a few of my ‘old favourites’ on my existing CD player and then on the Njoe Tjoeb. You will notice that I have not named my existing CD player, which is a well-known make. The reason is that the difference was so startlingly, I soon realised why I hardly listened to my CDs in recent years! The Njoe Tjoeb from the word ‘go’ was in a different league and such an improvement that any comparisons would have been pointless. It would have been like trying to compare the ride of a Mini with a Rolls Royce! The Njoe Tjoeb had an overall cleaner sound, more extended bass and a much clearer and less harsh top end. I could detect more instruments that had been masked by my old CD player.



**Figure 12. The Complete Unit**

The next stage was to compare an ‘identical’ recording of Vivaldi’s “The Four Seasons” (The Academy of St. Martin-in-the-Fields conducted by Neville Marriner) on record and CD. Previously, the strings on the CD sounded harsh and the overall sound was ‘topy’ when compared to the record. The Njoe Tjoeb, however, considerably reduced the harshness and the overall balance of the orchestra was much closer to the sound from the vinyl. This was a sound I could listen to. The CD sound had, for the first time, the depth and smoothness that I knew was present on the master recording. Similarly, a friend’s copy of Brian Wilson’s self-titled album yielded similar results. Repeated switching of the “Love and Mercy” track between record and CD player showed that the bass of the Njoe Tjoeb was tight, extended and well controlled which had not been the case with the old CD player.

At this point, I brought in a more heavyweight CD player - a Marantz CD-63 Mk2 KI Signature Edition - to provide a realistic reference for comparison purposes than my old CD player. It was clear from the outset that this player was far closer to my ‘reference’ of vinyl, but A/B tests between it and the Njoe Tjoeb resulted in a unanimous verdict that the valve sound of the 4000 offered more presence, clarity and realism to the sound than its solid state counterpart. Indeed, listening to “Why Does my Heart Feel so Bad” from “Moby Plays Live” on the 4000 provided a far greater sense of ‘being there’ with the audience.

The easiest way to describe the overall effect of the sound is by reference to traditional musical instruments that many readers will be able to compare to 'the real thing'. The strident sounds of trumpets come through without sounding harsh or edgy. Pianos, which are notoriously difficult to record, have a realism and presence in the room. Vocals which, in my opinion, can sound strained when reproduced on many CD players come thorough clear and effortless as though the artist is actually enjoying the performance. The sharp punch of a bass drum is tight and well controlled and less like the instrument has been filled with treacle! At the other end of the spectrum, the xylophone has a lovely 'milky' musicality with the same presence, detail and clarity as with other instruments.

So which sounded better? Well, in all honesty I would be lying if I said the CDs sounded better than the records. To my ears, vinyl still has the edge over the CD, but the gap had considerably narrowed to the point where the difference was only quantifiable through the A/B testing process mentioned earlier. I have been fortunate to hear similar comparisons of records against CDs with players costing many thousands of pounds and I came to the same conclusion. What is really amazing is that the Njoe Tjoeb can certainly compete with these expensive units, even with the standard version.

No review of the Njoe Tjoeb would be complete without a word or two on the choice of valves. The unit is supplied with a pair of Philips Jan 6922 valves. I had to hand a couple of Sovtek 6922s and also a pair of ECC88/6922 Harma valves. Some more listening tests followed, swapping repeatedly between the supplied 'Dutch bulbs' and the other two makes of valves. The differences were subtle but, on balance, I felt both the Sovteks and the Harmas to have a clearer and more 'alive' sound than that the Philips, together with a slightly tighter bass and more overall depth to the image. The Sovteks had the smoothest sound, but almost too smooth with the strings sounding a little too far back and yet 'grainy' when compared to the Harma valves. On balance, the Harmas won, in my opinion, combining the clarity of the strings without any tendency to dull the sound and a more controlled bass response compared to the Sovteks. Listening to Kyung Wha Chung playing Tchaikovsky's Violin Concerto, my wife agreed that the music was more compelling and conveyed more emotion with the Harmas. I must emphasise that all three makes of valves sounded excellent and some may well prefer the smoothness of the Sovteks.

My overall verdict? If you like the sound of valves and vinyl and you want your CDs to fight back, then my advice is to grab your credit card and head for your PC! This is truly a Dutch delight with an amazing price/performance ratio. Ordering direct from Holland is as easy as buying from the UK and with an impressively rapid delivery. In my opinion, this is an excellent player which allows your CD collection to take their rightful place alongside your records and not sound like 'the poor relation'.

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