

Build Quality

World Designs Pre3CF is a beautifully engineered preamplifier offered as a kit. If you want to build quality, this is it says Noel Keywood.

After the lovely remote controlled Pre4 preamplifier I reviewed in our May 2019 issue the question arose: what about the less expensive Pre3, recently released in budget CF form? Lacking remote control and balanced outputs it costs less and is a great way to have the satisfaction of a product you have built yourself and can tweak or repair to last a lifetime, or you can buy it built. Not a disposable product then, but one moulded to standards of a different time when disposability wasn't an option.

A product with mechanical solidity as well as a great standard of finish is a lost art – but not here. The front alloy fascia is machined and

finished from a 3mm thick aluminium billet and the knobs are also solid and heavy machined metal, fine chrome plated for a lustrous shine. That Pre3CF has a standard of build and finish not seen in commercial product is hopefully apparent in our pics. Dimension are a width of 135mm, depth 314mm and height 82mm, with weight of 1.3kg.

So here it is as a kit you can build yourself, price £360, or you can buy in built form for a £180 surcharge. It requires an external power PSU3 supply, price £299 with a build charge of £90. Total cost in built form is £929. World Design also offer an XL version with gold plated valve base, upgraded audio cabling and higher grade audiophile Vishay /

Soniqs capacitors, price £430.

Pre3CF has no gain, being a zero-gain buffer preamplifier. It acts as a high quality source selector and volume control, able to drive a long line to a power amplifier. There are five line level inputs, through sturdy gold plated phono sockets. Selection is made by the rotary control at right that actuates gold-plated sealed small-signal relays to avoid the use of a simple mechanical switch that will oxidise and degrade sound quality as it does so. It's a high quality solution that ensures long life, such relays being rated at millions of operations.

At left is the volume control, a high quality, audiophile-standard Alps Blue potentiometer. With big body, long track and smooth bearings



this little unit has an unchallenged reputation – and long life. The large, machined, chrome-plated control knob offers a lovely feel. This being a kit you get to see and solder up the unit.

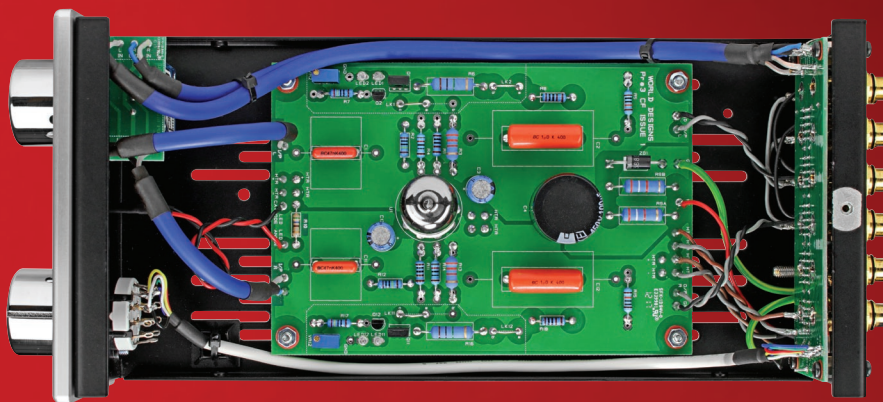
Measurement showed a gain of $\times 0.9$, meaning Pre3CF will accept digital sources, most of which give 2V maximum output, sending it to power amplifiers that commonly need 1V maximum input. The only time this will be inadequate is with low output external sources like some phono stages.

The main difference between Pre3 and Pre3CF I am reviewing here is absence of output transformers – expensive items. Where Pre3 can be configured to give balanced output through phono sockets, Pre3CF offers only

"a sleekly smooth sound that was atmospheric yet beguiling in its purity and clarity"

unbalanced output through phono sockets. You don't get the quality and isolation that transformers provide, but nor their cost.

Pre3 uses a single E88CC



A relatively simple internal circuit board with the single Tesla E88CC double-triode at centre. The rotary input selector (bottom left) is mechanical but it operates sealed gold-plated long-life audio grade relays on the input board at rear, keeping signal lines short and avoiding degradation as switch contacts wear and oxidise.

current diode can optionally be used in the cathode follower to give better results than a standard resistor. It's optional because such diodes are FETs and not everyone wants one of those in a purist valve amplifier! The external supply ensures there is no hum.

The PSU 3 power supply uses solid-state rectification with Schottky diodes – there are no valves – fed from a toroidal mains transformer. To suppress both noise and hum a frame

(6922) low noise double triode valve configured in what is known as Cathode Follower arrangement – hence CF – in order to drive a long cable to a power amplifier. A constant





The single Tesla E88CC double-triode valve sits in conventional PCB base. Those wanting a bit more glitz can order a base with gold plated pins, at extra cost.

construction choke is used. Chokes offer greater suppression of noise than solid-state regulator chips but are far more expensive.

SOUND QUALITY

I connected the World Designs Pre3CF to our Creek Evolution 100A amplifier through its direct (no volume control) unbalanced Line 4 phono socket inputs. The Creek was connected to our Martin Logan ESL-X via Chord Company Signature Reference cables, the system being run from an Isotek Evo3 Mosaic



The small rear panel carries five line level inputs plus a tape out. There are two line outputs. All run through solid gold plated sockets.

Genesis regenerated mains supply.

Source was an Audiolab M-DAC+ fed CD from an Oppo BDP-205D acting as a transport. An Astell&Kern AKI20 portable digital player was connected via S/PDIF and a MacBook Pro via USB, running an

earth loop currents.

Playing DSD through the Pre3CF showed how its smoothness and easy dynamics suited the Haydn Concerto for Horn by Jasper De Waal (DSD64) where horn took rich and well textured presence

WDPre3 Kit Assembly Instructions

WIRING THE INPUTS AND VOLUME CONTROL

Fig. 14 Take 275mm Blue twin core screened cable, cut back the outer insulation AND the screen braid to approx 25mm and insulate to avoid fraying. Solder the White/Clear inner core to the potentiometer terminal L3 and the Blue inner core to the terminal L1.

Repeat for the Right channel, soldering the White/Clear inner core to terminal R3 and the Blue inner core to terminal R1.

Take 200mm Blue twin core screened cable and cut back the outer insulation to approx 25mm. Cut back the Blue inner core insulation to 25mm, unplat the braid, twist these wires together, and insulate. Solder these wires to the potentiometer terminal L1, and the White/Clear inner core to the potentiometer terminal L2.

Repeat for the Right channel, this time using approx 75mm cable.

Fit the potentiometer to the front panel using the washer and nut provided. If necessary, scrape some paint away from inside the chassis to make sure that the potentiometer is grounded.

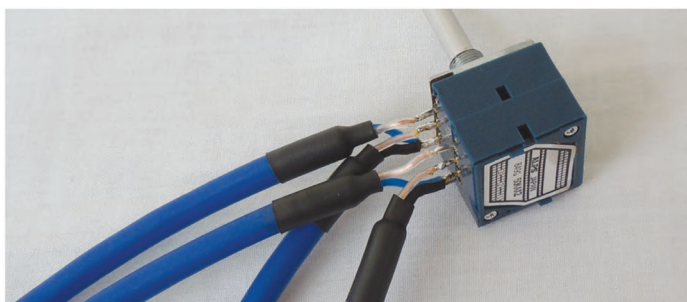
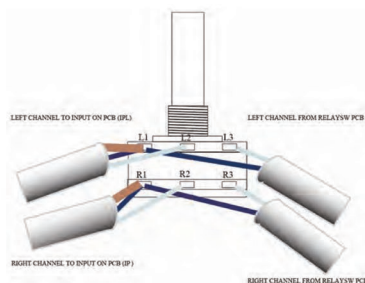


Fig. 14 Potentiometer Wiring



CAN YOU BUILD A KIT?

Here's an instruction page from the World Designs Pre3 (not CF) showing an Alps Blue potentiometer (volume control) and its wiring, with both picture and diagram. Other examples are on the World Designs website. If you can solder well and have a small understanding of electrical circuits, plus a few inexpensive tools, then likely you can build a kit.

Audirvana Plus player able to send all digital files, including DSD.

Both the Oppo and AKI20 were connected optically as isolated sources, the former with QED Quartz glass-fibre optical cable. The MacBook Pro was run from battery power, also to be an isolated floating source free from

centre stage, dancing strings a silky accompaniment laid out in space behind.

With John Coltrane's Easy to Remember (24/96) his tenor saxophone was velvet smooth at left, piano having body and a gentle but full bodied character, each note subtly but fully delineated, the final



Inside PSU3 power supply is a toroidal mains transformer (right) with a smoothing choke just above it in our shot. Chokes better eliminate noise across the audio band than solid-state regulators – known to be noisy.

drum roll jumping out strongly.

With faster Rock like Tom Petty's Refugee (24/96) Pre3CF showed it could deliver with assured sense of pace from clean resolution of Petty's vocals backed by Hammond B3 organ and soaring guitar work, underpinned by a solid sounding drum kit free of blur or smear.

Same with Safri Duo's Samb Alegro where the insistent opening synth drum beat pounded through with pulsive power and the sense of subterranean depth valves can give, whilst percussion struck in from left and right on the wide sound stage. The expensive sound staging of Pre3CF was obvious in this track, giving it a sense of powerful majesty that applied equally to all Rock I played.

CONCLUSION

The World Designs Pre3 CF preamplifier was easy and simple to use. It offers a sleekly smooth sound that was atmospheric yet beguiling in its purity and clarity, being less stark and seemingly more natural than solid-state preamps. What you get from valves is a sense of spaciousness, fine stereo imaging

on a wide sound stage. Couple this with superb build quality and Pre3CF is nothing other than a fine preamplifier. As a kit it is a great way to build a simple but pure preamplifier, with valve amplification. Or at reasonable extra cost you can get a built version.



The PSU3 rear panel has outputs for both the Pre3CF and the company's valve phono stage, Phono3. This is a linear supply, not a cheap switch-mode.

MEASURED PERFORMANCE

World Designs Pre3CF uses a Tesla E88CC (6922) double triode valve as a buffer and line driver, giving x0.9 gain, meaning output is slightly lower than input. A CD player with 2V out will give 1.8V out from Pre3, but this is enough to drive most power amplifiers that need 1V, Pre3 acting as a volume control with switchable inputs. With an output of over 20V it will not overload whatever is fed in.

Distortion measured a very low 0.006% at 1V (in 895mV out) as our analysis shows. At higher inputs distortion rises, to 0.25% at 2V for example but with low order harmonics.

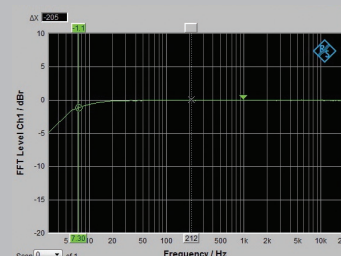
Frequency response measured flat from 7Hz to 100kHz at all positions of the volume control so there is no limitation with hi-res digital (24/192kHz) reaching 96kHz.

Noise was very low at -115dB at all volume control positions, with no hum components whatsoever.

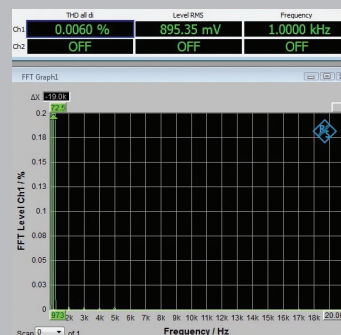
WAD Pre3 measured well in all parameters. It acts as a neutral zero gain valve buffer preamplifier able to support all inputs, including hi-res digital. **NK**

Frequency response	7Hz-100kHz
Separation	69dB
Noise	-115dB
Distortion (1V)	0.006%
Gain	x0.9
Overload	20V

FREQUENCY RESPONSE



DISTORTION



Our supply lead was 1 metre long but most DIY'ers will be able to tailor length to suit their system, minimising lead-clutter.

WD PRE3CF £929 (BUILT)



OUTSTANDING - amongst the best.

VALUE - keenly priced.

VERDICT

A simple yet elegant valve preamplifier with fabulous build quality and glorious sound. Kit or built.

FOR

- good build instructions
- sound quality
- build and finish
- available built

AGAINST

- needs skill to build
- no remote control

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