Sinner Bass Drive

Based on:
Sansamp Bass Driver

Effect type:
Versatile Overdrive

Build difficult:
Advanced

Number of parts:
High, total 95 components

Technology:
Op Amp

Power consumption:
9V

Enclosure type:
1790NS

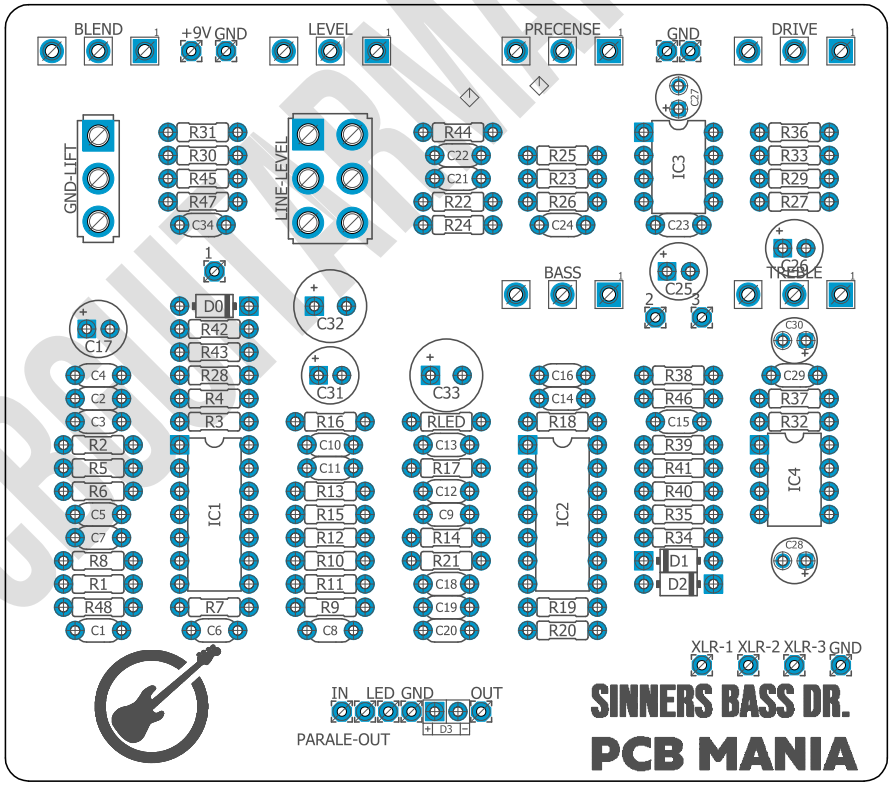
Get your board at:
Sinner Bass Drive

Get your kit at:
Das Musikding (Europe)

Project overview:

Come with us and sin... with bass!

The Sinne Bass Drive is a true swiss army knife of bass pedals. At first sight this pedal is just another overdrive effect, but you couldn't be more wrong. Designed specifically for the bass guitarist's needs, this little devil will come in handy in the studio as well as on the stage and anywhere in between. Let's have a gander at what's on offer here.



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Introduction

How many times have you connected your bass into a PA or an audio interface to record just to experience some sort of weird noise that you couldn't get rid of? Well, the nightmare is over with the Sinner Bass Drive as it offers a nifty little switch that lifts the ground from the signal chain and removes the interference that is caused by a ground loop. With the ground loop out of the way, we are able now to connect your bass to a PA or an audio interface, but what's the problem now? The device has only a line level input? Not a problem! The Sinner Bass Drive comes with a switch that changes your output signal to line level and mixing that with the available balanced XLR output, there is nothing that will stand in your way to shake the place with your low-end rig.

As the switches have been taken care of, let's have a look at the 6 available potentiometers - DRIVE, LEVEL, BLEND, TREBLE, BASS and PRESENCE. With DRIVE you can decide how much distortion is added when the pedal is engaged - from barely noticeable to an orchestra of harmonics - your call. LEVEL is the control over the volume of the pedal. The BLEND knob gives you the possibility of adding some of your clean signal to the distorted one in order to maintain clarity of your notes. TREBLE, PRESENCE and BASS is the EQ section that allows for control over the highs, mids and low end respectively.

Ever since rock and roll has been labeled as the music of the devil, people tried to satisfy him with sacrifices made of distortion. This hell of a unit will put a smile on the fussiest devil out there. Sin on!

Controls

Potentiometers

- Bass
- Blend
- Drive
- Level
- Presence
- Treble

Switches

- GND – Lift
- Line – Level

Bill of materials

Resistors	
Part	**Value**
R1	10K
R2	100K
R3	2K2
R4	22K
R5	1M
R6	100K
R7	330K
R8	3K3
R9	330K
R10	3K3
R11	10K
R12	22K
R13	22K
R14	10K
R15	22K
R16	33K
R17	33K
R18	22K
R19	10K
R20	22K
R21	10K
R22	10K
R23	3K3
R24	10K
R25	1M
R26	1K
R27	100K
R28	100K
R29	10K
R30	22K
R31	3K2
R32	10K
R33	10K
R34	10K
R35	100R
R36	1K
R37	10K
R38	10K
R39	100R
R40	1K
R41	1K
R42	100k
R43	100k
R44	22K
R45	3K2
R46	6k2
R47	10K
R48	1m
RLED	4K7

Capacitors	
Part	**Value**
C1	22n
C2	22n
C3	22n
C4	22n
C5	22n
C6	220p
C7	10n
C8	220p
C9	47n
C10	470p
C11	10n
C12	1.2n
C13	2.2n
C14	22n
C15	47n
C16	47n
C18	33p
C19	100n
C20	10n
C21	22n
C22	22n
C23	10n
C24	33p
C29	33p
C34	33p

Electrolytics Capacitors	
Part	**Value**
C17	2.2u
C25	2.2u
C26	2.2u
C27	10u
C28	10u
C30	10u
C31	47u
C32	220u
C33	220u

Potentiometers	
Part	**Value**
BASS	100K B
BLEND	100K B
DRIVE	100K B
LEVEL	100K B
PRECENSE	100K B
TREBLE	100K B

IC	
Part	**Value**
IC1	TL074P
IC2	TL074P
IC3	TL072
IC4	TL072

Switches	
Part	**Value**
GND - Lift	SPDT On-On
Line - Level	DPDT On-On
-	3PDT Stomp foot

Diodes	
Part	**Value**
D0	1N5817
D1	1N4001
D2	1N4742A
D3	3mm red LED

Jacks	
Part	**Value**
-	DC JACK
-	AUDIO JACK
-	AUDIO JACK
Jack	**XLR***

Shopping list

Resistors		
Qty	**Value**	**Parts**
6	100K	R2, R6, R27, R28, R42, R43
2	100R	R35, R39
14	10K	R1, R11, R14, R19, R21, R22, R24, R29, R32, R33, R34, R37, R38, R47
4	1K	R26, R36, R40, R41
3	1M	R5, R25, R48
8	22K	R4, R12, R13, R15, R18, R20, R30, R44
1	2K2	R3
2	330K	R7, R9
2	33K	R16, R17
2	3K2	R31, R45
3	3K3	R8, R10, R23
1	4K7	RLED
1	6k2	R46

Capacitors		
Qty	**Value**	**Parts**
1	1.2n	C12
1	100n	C19
4	10n	C7, C11, C20, C23
1	2.2n	C13
2	220p	C6, C8
8	22n	C2, C3, C4, C5, C14, C21, C22, C1
4	33p	C18, C24, C29, C34
1	470p	C10
3	47n	C9, C15, C16

Electrolytics Capacitors		
Qty	**Value**	**Parts**
3	10u	C27, C28, C30
3	2.2u	C17, C25, C26
1	47u	C31
2	220u	C32, C33

Potentiometers		
Qty	**Value**	**Parts**
6	100K B	BASS, TREBLE, BLEND, DRIVE, LEVEL, PRECENSE

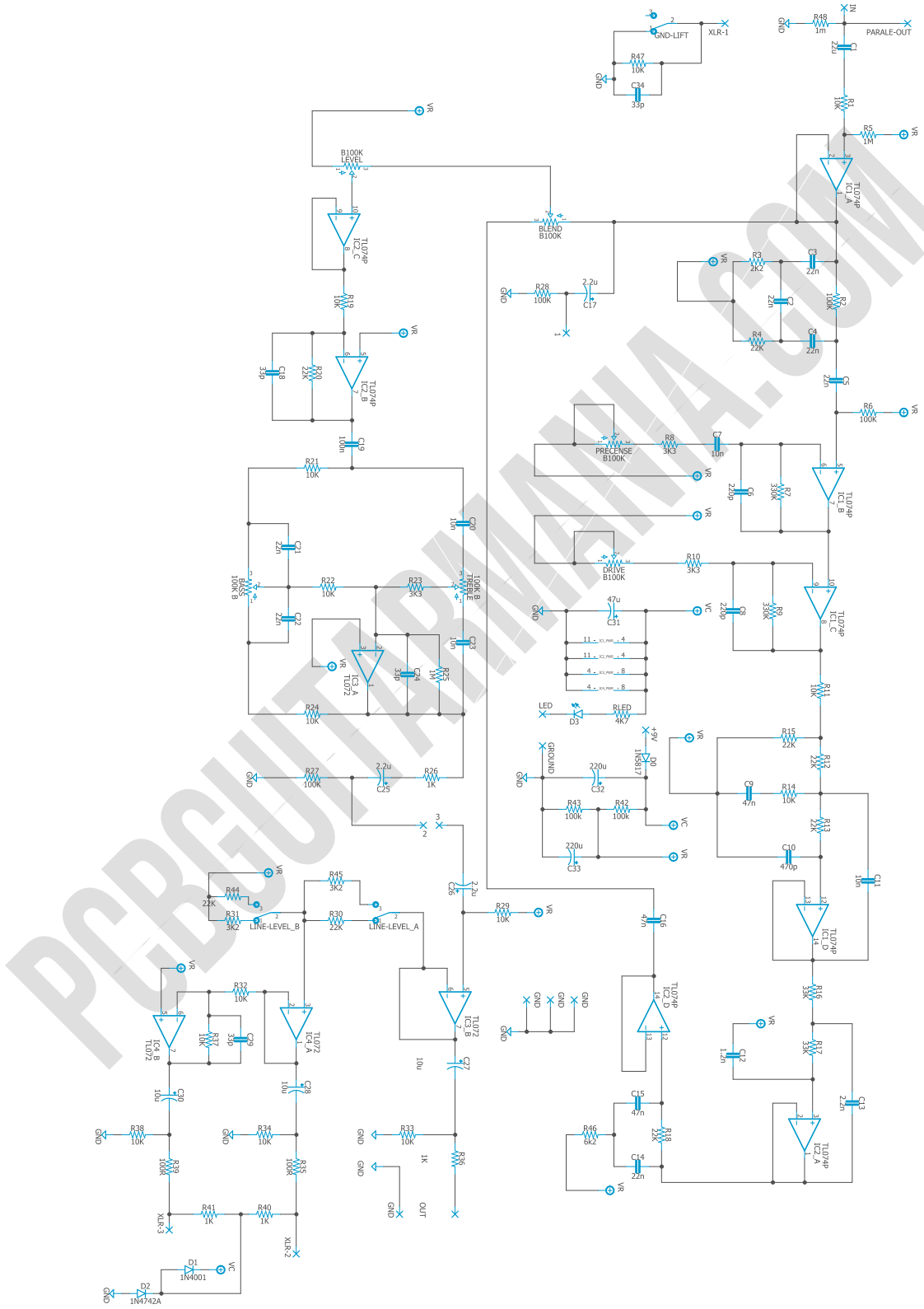
IC		
Qty	**Value**	**Parts**
2	TL072	IC3, IC4
2	TL074P	IC1, IC2

Switches		
Qty	**Value**	**Parts**
1	SPDT On-On	GND-Lift
1	DPDT On-On	Line-Level
1	3PDT Stomp foot	-

Diodes		
Qty	**Value**	**Parts**
1	1N4001	D1
1	1N4742A	D2
1	1N5817	D0
1	3mm red LED	D3

Jacks		
Qty	**Value**	**Parts**
1	DC JACK	-
2	AUDIO JACK	-
1	**XLR***	Jack

Schematic



Components Recommendations

As many people like to experiment with some pedals with higher voltage, always ensure your **electrolytic capacitors'** max tolerance is over 25v.

This board has been tested using Film box capacitors for most of the values over 1nf and ceramics discs for those under 1nf. However, high-quality components such as Wima's Capacitors and Panasonic's electrolytics can deliver a better performance.

All the resistors used for testing this project are 1/4W Metal Film.

The BOM and Shopping list are exclusive regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

Build Notes

If this is one of your first projects, I recommend you to take a look at our Pedal Building Guide.

For a successful and tidy build, it's recommended the following order:

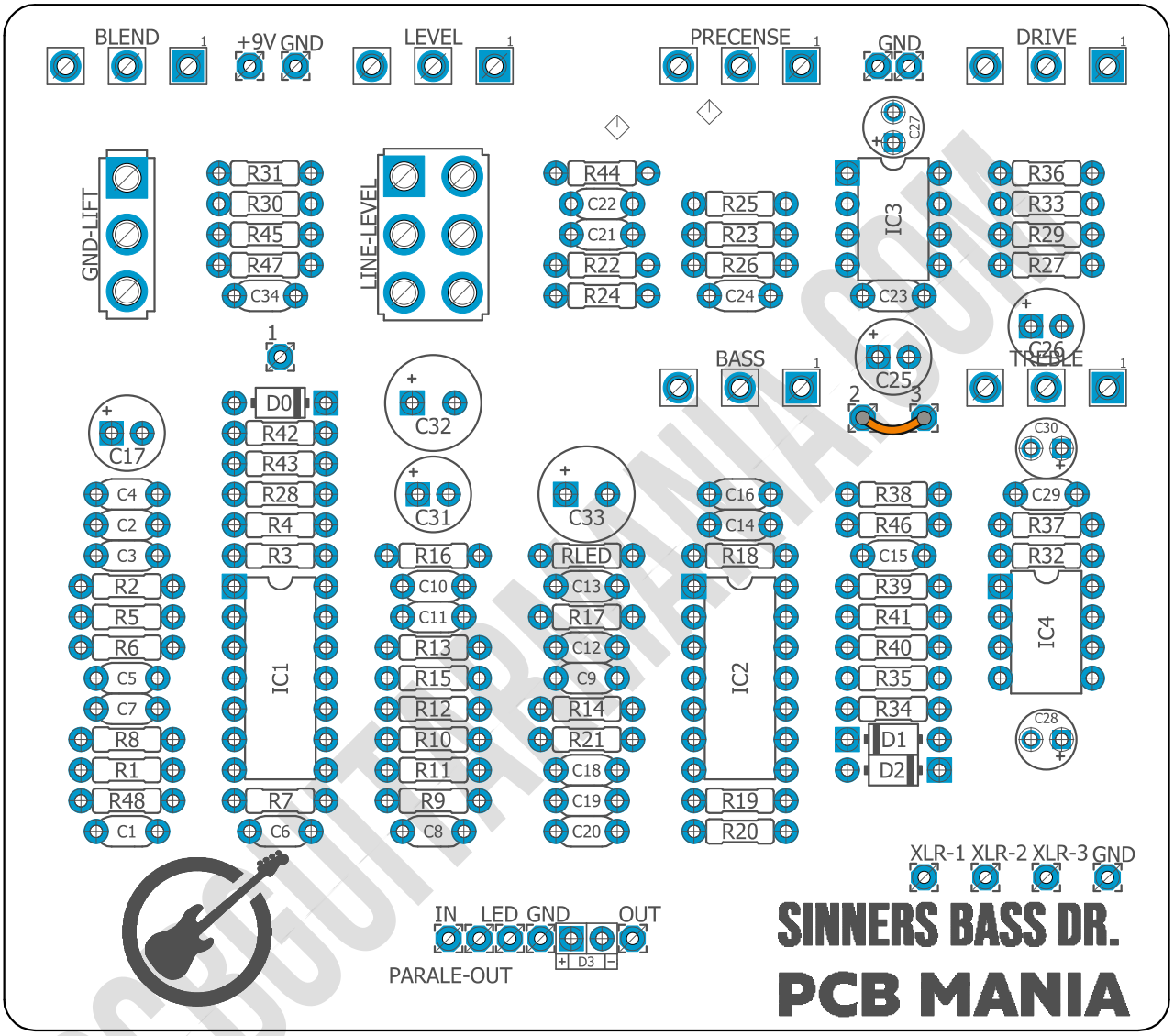
1. Resistors & diodes
2. Capacitors, starting with the smaller ones and the ceramic ones.
3. Electrolytic capacitors (always check the polarity)
4. Transistors
5. Wires
6. Potentiometers and switches
7. Off-board wiring

XLR - 3 PIN XLR MALE PANEL MOUNT CHASSIS SOCKET*

- https://www.taydaelectronics.com/chasis-3-pin-xlr-male-plug-connector.html
- https://www.musikding.de/Hicon-HI-X3DM-XLR-jack-male

Important

The 1.0 and 1.1v versions need a jumper from pin2 to pin3; that's unnecessary in the following versions.

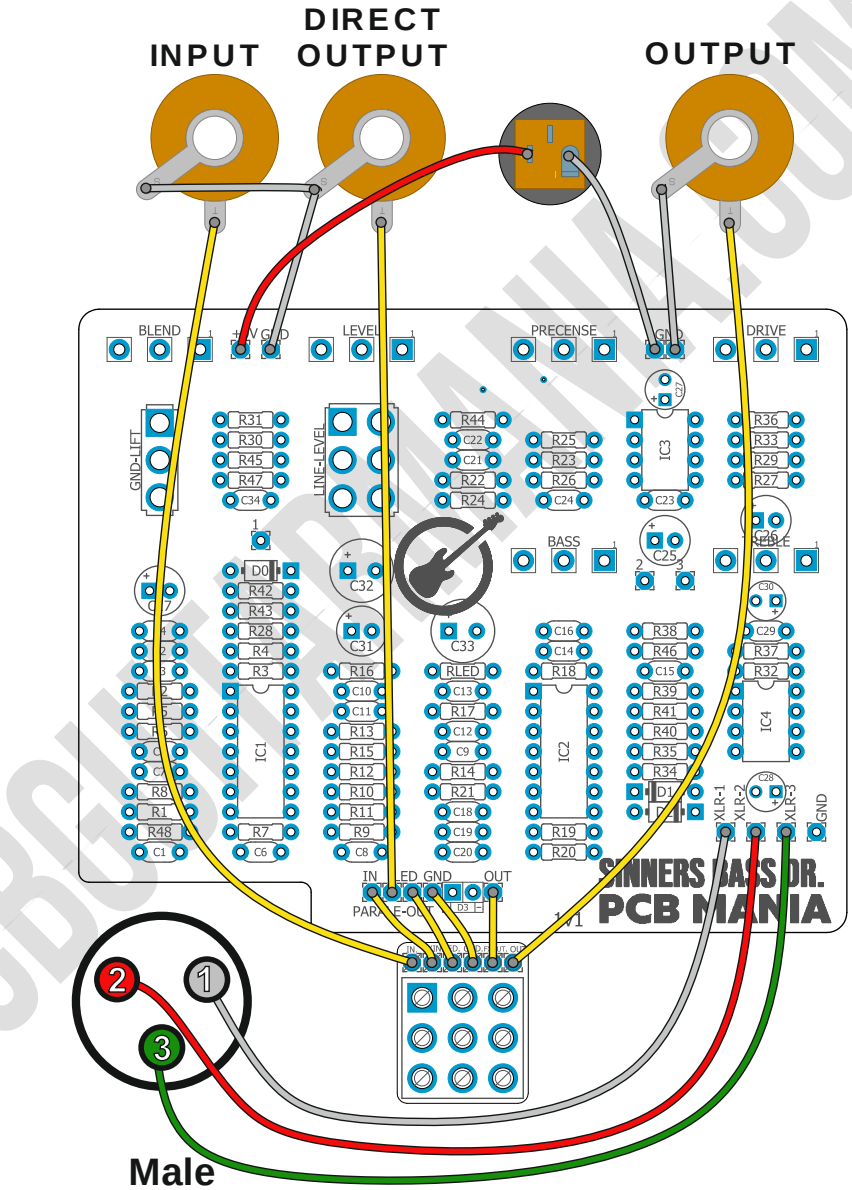


Wiring diagram with Parallel output with bypass

All our projects include a free 3PDT Board to make the wiring easier and tidier. Also, all of our PCBs feature the status LED on board.

The pad named “Ctrl” or “LED” is the one that controls the status of the led; wire it to the “LED” pad on the 3PDT board or in the control slug of your 3PDT.

This board has been designed to match our EZ 3PDT PCB; check it here to access our Pedal Wiring Guide.



Pin 1: Ground/Shield
Pin 2: Positive/Hot
Pin 3: Negative/Cold

Rear view.
(The side with cup terminals for soldering)

Wiring diagram with Parallel output always on

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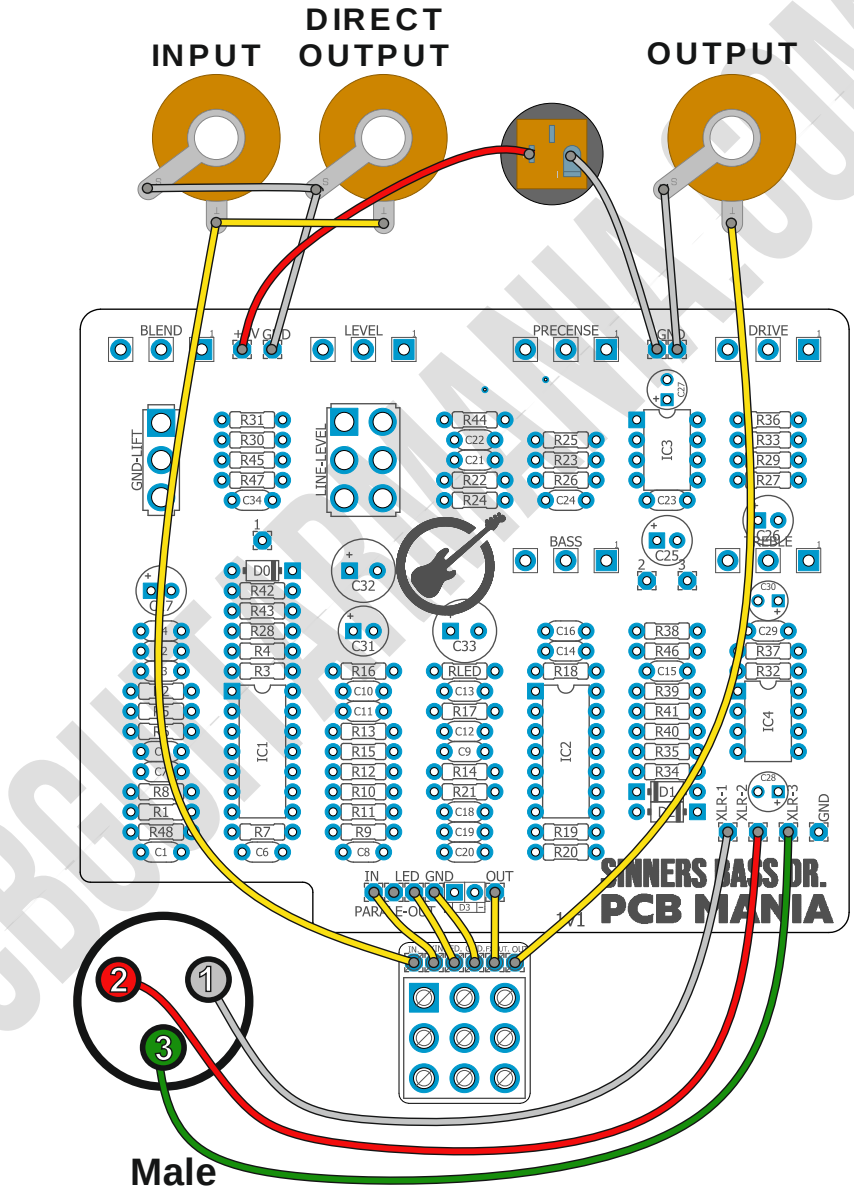

Pin 1: Ground/Shield
Pin 2: Positive/Hot
Pin 3: Negative/Cold

Rear view.
(The side with cup terminals for soldering)

Drill Template

This Project has been planned to fit into a 1790NS enclosure type.

Check the Attached “Drilling templates” to drill the box properly. The files are on Scale 1:1, ready to print on an A4 page.

Licensing and Usage

We really appreciate your trust and support in buying this PCB, as well as your will to dive into the DIY electronics world. For us, that's why you can make this project work properly and enjoy not only the building process but also experiment and play with it on your rig.

We try to reply to every question we receive on our email or our social media. Still, we try to encourage all our customers to join our PCB Guitar Mania – Builders Group on Facebook to post all your doubts, issues, suggestions, or requests, share your builds, and have some feedback from other fellow builders and us!

We tested all our projects following this same guide on their standard configurations. Although, not all of the variations and mods have necessarily been checked. These are suggestions based on the schematic analysis and the experiences and opinions of others. Feel free to share with us your views and recommendations regarding the mods your personal experimentation.

These boards may be used for commercial endeavors in any quantity unless expressly noted. No attribution is necessary, though accreditation or a link back is always much appreciated.

If you are a builder planning to make your own run of pedals, we also offer the service of custom-made boards with your brand and logo, design according to your specifications.

The only usage restrictions are that, first, you cannot resell the PCB as part of a kit without prior arrangement with us, and second, you cannot scratch off the silkscreen or other way of trying to hide our logos and the source of the PCBs. Like it's written above, if you want to have your designs with your brand and logo, we could undoubtedly reach an agreement.

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