

# Humble Overdrive

## Based on:

Dumble Overdrive Special 124  
Skyline

## Effect type:

Classic Overdrive

## Build difficult:

Advanced

## Amount of parts:

High, total 107 components

## Technology:

Dual Op Amp

## Power consumption:

9V

## Enclosure type:

1790NC

## Get your board at:

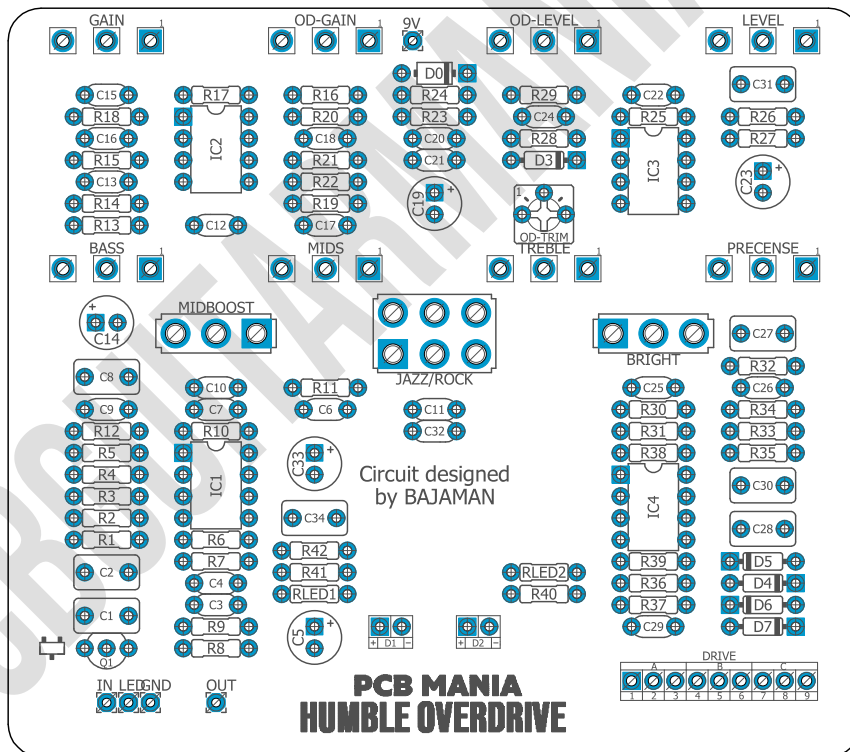
[Humble Overdrive](#)

## Get your kit at:

[Das Musikding \(Europe\)](#)

## Project overview:

Someone once asked Gandhi - what is the secret to a great tone? He replied with a single word 'humble'. After years of trying to decode his cryptic message, we came up with the Humble Overdrive, and boy, oh boy, it's a secret we want to share with you!



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## Introduction

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The Humble Overdrive is a circuit designed by Bajaman at the Free Stompboxes forum. To add to the mystery of this special unit, it is a DIY only preamp that you won't find on any of the mass production lines. It comes equipped with 3 switches - BRIGHT, MID BOOST and JAZZ/ROCK. The BRIGHT switch turns up the high frequencies a little bit, adding some sparkle to your sound. MID BOOST works the same way as the BRIGHT switch, but it affects the midrange, so it's a very useful tool in dense mixes, when you want to cut through. With JAZZ/ROCK selector you can choose what gets emphasised - the lower frequencies that work well in jazz style, or the upper part of the frequency spectrum that is useful in more popular genres.

If there is something contrary to Humble Overdrive's name, it's the knob selection. Humble Overdrive comes with 8 potentiometers allowing for the ultimate tone shaping experience. On-board we have: LEVEL, OD-LEVEL, OD-GAIN, GAIN, PRESENCE, TREBLE, MIDS and BASS. Since the pedal has 2 channels, there are 2 volume controls for each channel - LEVEL and OD-LEVEL. The same goes with the saturation control - GAIN and OD-GAIN for their respective channels. As for the EQ section, we have a separate knob for each frequency section and the TREBLE, MIDS, and BASS naming is pretty self-explanatory. What is worth mentioning here is that this part of the EQ section comes uniquely before the overdrive section, so the changes done to it will also affect the character of the drive. Last, but not least is the PRESENCE pot. This is a filter placed right after the overdrive section and it affects the mids and high frequencies. Many people like to think of PRESENCE as a blanket-over-the-cab control - you can decide if you like your tone a little warmer (hence the blanket) or with more in your face character.

Have you ever caught yourself listening to legends like John Mayer or Robben Ford and wishing you could achieve their fantastic tones? We all did at one point, so stop hesitating and give this pedal a chance because you won't be disappointed. It doesn't matter if you play a strat or a les paul - it goes extremely well with everything, just like the classic amp it's based on. Remember - stay humble.

## Controls

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Potentiometers:

- Bass
- Gain
- Level
- MIDS
- OD-Gain
- OD-Level
- Presence
- Treble
- Bright
- Jazz/Rock A
- Jazz/Rock B
- Drive A
- Drive B

Switches

- MIDBoost

# Bill of materials

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| Resistors |       |
|-----------|-------|
| Part      | Value |
| R1        | 1M5   |
| R2        | 1M    |
| R3        | 100K  |
| R4        | 1M    |
| R5        | 3K3   |
| R6        | 2K2   |
| R7        | 12K   |
| R8        | 470r  |
| R9        | 100K  |
| R10       | 15K   |
| R11       | 470K  |
| R12       | 1K    |
| R13       | 12K   |
| R14       | 22K   |
| R15       | 470R  |
| R16       | 100K  |
| R17       | 2K2   |
| R18       | 100K  |
| R19       | 6K8   |
| R20       | 12K   |
| R21       | 1K    |
| R22       | 1K    |
| R23       | 10K   |
| R24       | 18K   |
| R25       | 12K   |
| R26       | 1K    |
| R27       | 1K    |
| R28       | 2K2   |
| R29       | 15K   |
| R30       | 100K  |
| R31       | 100K  |
| R32       | 1K2   |
| R33       | 1K    |
| R34       | 150R  |
| R35       | 2K7   |
| R36       | 1K    |
| R37       | 22K   |

|       |     |
|-------|-----|
| R38   | 2K2 |
| R39   | 1M  |
| R40   | 1K  |
| R41   | 10K |
| R42   | 10K |
| RLED1 | 4K6 |
| RLED2 | 4K7 |

| Capacitors |       |
|------------|-------|
| Part       | Value |
| C1         | 1u    |
| C2         | 1u    |
| C3         | 330p  |
| C4         | 3n9   |
| C6         | 100n  |
| C7         | 22n   |
| C8         | 1u    |
| C9         | 10n   |
| C10        | 3n3   |
| C11        | 47n   |
| C12        | 3n3   |
| C13        | 4n7   |
| C15        | 1n8   |
| C16        | 220p  |
| C17        | 150p  |
| C18        | 2n2   |
| C20        | 100n  |
| C21        | 150p  |
| C22        | 2n2   |
| C24        | 47n   |
| C25        | 220n  |
| C26        | 1n    |
| C27        | 1u    |
| C28        | 1u    |
| C29        | 220p  |
| C30        | 1u    |
| C31        | 1u    |
| C32        | 100n  |

|            |    |
|------------|----|
| <b>C34</b> | 1u |
|------------|----|

| Electrolytics Capacitors |       |
|--------------------------|-------|
| Part                     | Value |
| <b>C5</b>                | 22u   |
| <b>C14</b>               | 47u   |
| <b>C19</b>               | 2u2   |
| <b>C23</b>               | 2u2   |
| <b>C33</b>               | 47u   |

| Potentiometers  |        |
|-----------------|--------|
| Part            | Value  |
| <b>BASS</b>     | 50K B  |
| <b>GAIN</b>     | 100K B |
| <b>LEVEL</b>    | 100K B |
| <b>MIDS</b>     | 25K B  |
| <b>OD-GAIN</b>  | 25K B  |
| <b>OD-LEVEL</b> | 10K B  |
| <b>PRECENSE</b> | 1K B   |
| <b>TREBLE</b>   | 25K B  |

| Trim pots      |       |
|----------------|-------|
| Part           | Value |
| <b>OD-TRIM</b> | 500K  |

| IC         |       |
|------------|-------|
| Part       | Value |
| <b>IC1</b> | TL072 |
| <b>IC2</b> | TL072 |
| <b>IC3</b> | TL072 |
| <b>IC4</b> | TL062 |

| Transistors |       |
|-------------|-------|
| Part        | Value |
| <b>Q1</b>   | J201  |

| Switches           |                         |
|--------------------|-------------------------|
| Part               | Value                   |
| <b>MIDBoost</b>    | SPDT (On/On)            |
| <b>Bright</b>      | SPDT (On/On)            |
| <b>Jazz/Rock A</b> | DPDT (On/On)            |
| <b>Jazz/Rock B</b> | DPDT (On/On)            |
| <b>Drive A</b>     | Footswitch 3PDT (On/On) |
| <b>Drive B</b>     | Footswitch 3PDT (On/On) |

| Diodes    |             |
|-----------|-------------|
| Part      | Value       |
| <b>D0</b> | 1n5817      |
| <b>D1</b> | 3mm red LED |
| <b>D2</b> | 3mm red LED |
| <b>D3</b> | 1N4148      |
| <b>D4</b> | 1N4148      |
| <b>D5</b> | 1N4148      |
| <b>D6</b> | 1N4148      |
| <b>D7</b> | 1N4148      |

# Shopping list

| Resistors |       |  |
|-----------|-------|--|
| Qty       | Value | Parts                                  |
| 6         | 100K  | R3, R9, R16, R18, R30, R31             |
| 3         | 10K   | R23, R41, R42                          |
| 4         | 12K   | R7, R13, R20, R25                      |
| 1         | 150R  | R34                                    |
| 2         | 15K   | R10, R29                               |
| 1         | 18K   | R24                                    |
| 8         | 1K    | R12, R21, R22, R26, R27, R33, R36, R40 |
| 1         | 1K2   | R32                                    |
| 3         | 1M    | R2, R4, R39                            |
| 1         | 1M5   | R1                                     |
| 2         | 22K   | R14, R37                               |
| 4         | 2K2   | R6, R17, R28, R38                      |
| 1         | 2K7   | R35                                    |
| 1         | 3K3   | R5                                     |
| 1         | 470K  | R11                                    |
| 1         | 470R  | R15                                    |
| 1         | 470r  | R8                                     |
| 1         | 4K6   | RLED1                                  |
| 1         | 4K7   | RLED2                                  |
| 1         | 6K8   | R19                                    |

| Capacitors |       |                                     |
|------------|-------|-------------------------------------|
| Qty        | Value | Parts                               |
| 3          | 100n  | C6, C20, C32                        |
| 1          | 10n   | C9                                  |
| 2          | 150p  | C17, C21                            |
| 1          | 1n    | C26                                 |
| 1          | 1n8   | C15                                 |
| 8          | 1u    | C1, C2, C8, C27, C28, C30, C31, C34 |
| 1          | 220n  | C25                                 |
| 2          | 220p  | C16, C29                            |
| 1          | 22n   | C7                                  |

|   |      |          |
|---|------|----------|
| 2 | 2n2  | C18, C22 |
| 1 | 330p | C3       |
| 2 | 3n3  | C10, C12 |
| 1 | 3n9  | C4       |
| 2 | 47n  | C11, C24 |
| 1 | 4n7  | C13      |

| Electrolytics Capacitors |       |          |
|--------------------------|-------|----------|
| Qty                      | Value | Parts    |
| 1                        | 22u   | C5       |
| 2                        | 2u2   | C19, C23 |
| 2                        | 47u   | C14, C33 |

| Potentiometers |        |                       |
|----------------|--------|-----------------------|
| Qty            | Value  | Parts                 |
| 2              | 100K B | GAIN, LEVEL           |
| 1              | 10K B  | OD-LEVEL              |
| 1              | 1K B   | PRECENSE              |
| 3              | 25K B  | MIDS, OD-GAIN, TREBLE |
| 1              | 50K B  | BASS                  |

| Trim pots |       |         |
|-----------|-------|---------|
| Qty       | Value | Parts   |
| 1         | 500K  | OD-TRIM |

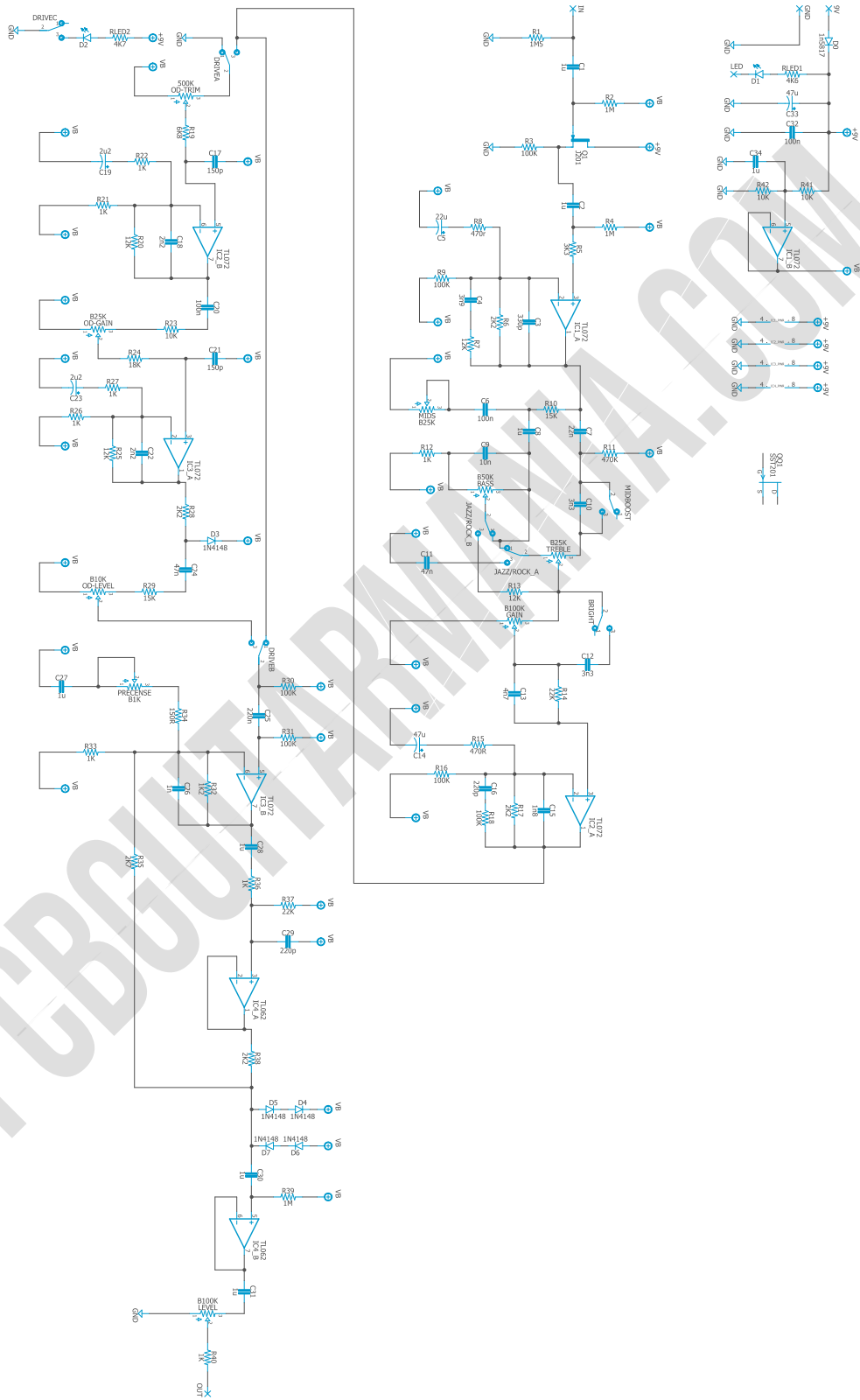
| IC  |       |               |
|-----|-------|---------------|
| Qty | Value | Parts         |
| 1   | TL062 | IC4           |
| 3   | TL072 | IC1, IC2, IC3 |

| Transistors |       |       |
|-------------|-------|-------|
| Qty         | Value | Parts |
| 1           | J201  | Q1    |

| Switches |                         |                        |
|----------|-------------------------|------------------------|
| Qty      | Value                   | Parts                  |
| 2        | SPDT (On/On)            | MIDBOOST, BRIGHT       |
| 2        | DPDT (On/On)            | JAZZ/ROCKA, JAZZ/ROCKB |
| 2        | Footswitch 3PDT (On/On) | DRIVEA, DRIVEB         |

| Diodes |             |                    |
|--------|-------------|--------------------|
| Qty    | Value       | Parts              |
| 5      | 1N4148      | D3, D4, D5, D6, D7 |
| 1      | 1n5817      | D0                 |
| 1      | 4K6         | RLED1              |
| 1      | 4K7         | RLED2              |
| 2      | 3mm red LED | D1, D2             |

# Schematic



# Components Recommendations

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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

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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

## Wiring Diagram

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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](#).

# Drill Template

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This Project has been planned to fit into a 1790NC 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

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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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