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MP12 Circuit variations

Input transformers

Look at the MP12 Input Transformer Options document.

RL1, CL1, RZ1 and CZ1 values depend on the input transformer choice.

Output transformers

Look at the MP12 Output Transformer Options document.

RZ2 and CZ2 values depend on the output transformer choice.

RL2 should be omitted if the micpre is going to drive a vintage low impedance devices (Zin< 1K).

Discrete operational amplifier (DOA)

The MP12 works with many DOA's that are pin compatible with the API 2520.

The DOA selection depends on the input transformer ratio.

With low ratio transformers (1:1 to 1:5), the best results in terms of noise will be obtained with DOA's that are optimized for low impedance sources like SK99.

With high ratio transformers (1:4 and above), the best results in terms of noise will be obtained with DOA's that are optimized for high impedance sources like SK25.

The above DOA's are available as options in our kits but the MP12 can work with many others like API2520, Millennia MM-99, Forssell JFET-992, SCA SC25, JML99v, John Hardy 990C, ...

Warning : The working voltage of these DOA's are different ! Make sure you set-up the the supply voltages to the correct values before inserting the DOA's on the PCB.

Output coupling

The output coupling can be chosen direct or through a capacitor with JMP4.

JMP4 inserted : Direct coupling
JMP4 removed : Capacitor coupling

Some DOA's like JLM99V do require capacitor coupling because of their large output offset voltage.

For other DOA's, where the output offset voltage can be nulled, it is more usual to use direct coupling but the choice is yours.

Offset voltage nulling

The MP12 allows you to null the output voltage offset by the use of a trimmer potentiometer P3 and jumper JMP3.

With no jumper inserted, the trimmer action is cancelled.
With a jumper inserted in the + position a positive voltage is injected in the minus input, lowering the output voltage.
With a jumper inserted in the - position a negative voltage is injected in the minus input, rising the output voltage.

The trimmer output voltage nulling will not work with DOA's having a large output offset voltage like JLM99V. Use capacitor coupling.

Servo offset voltage nulling

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The MP12 offers the possibility to use a servo circuit to null the output offset voltage in the form of U1. The low pass frequency of the filter is chosen extremely low (0.6Hz), in order not to impact the audio signal.

But some people do not like the sound of it and it is up to you. To cancel the servo circuit, simply remove U1 (OP07) from its socket.

The servo circuit will not work with DOA's having a large output offset voltage like JLM99V. Use capacitor coupling.