

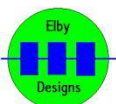


## ASM317 – State Variable Filter

### Construction Guide

Revision 1.0

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# ASM317 – State Variable Filter

Construction of the [ASM317](#) requires the assembly of 4 separate boards:-

Column 1 - Panther Support 5 PCB ([3D Model](#))

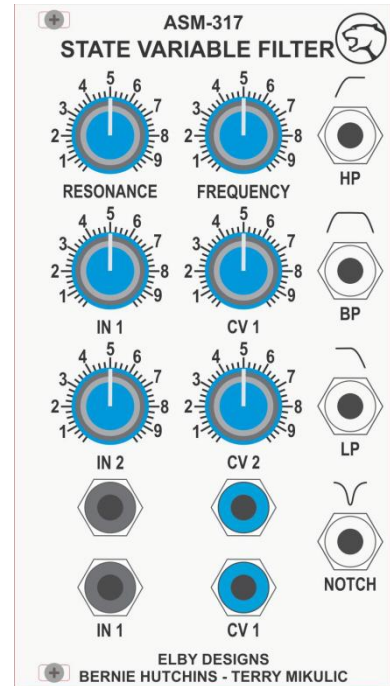
Column 2 – Panther Support 5 PCB ([3D Model](#))

Column 3 – Panther Jack Board ([3D Model](#))

Back Board – ASM317 PCB ([3D Model](#))

Constructors should refer to the [PCB Overlay](#) for any specific comments regarding the board assemblies, the [Bill of Materials](#) for the current value of all components and [General Construction Notes](#) for general PCB assembly guidelines.

1. Prepare the 4x jack sub-assemblies ([3D Model](#))
2. Fit all components to the boards following normal assembly guidelines except for the 4x jack sub-assemblies. Please refer to the notes below regarding the 'Offset Circuits' and 'SEM Modification' to decide if the associated components will be fitted or not
3. Locate the 2x jack sub-assemblies on to the Column 1 sub-assembly
4. Offer up to the front panel and securing using the supplied nuts and washers
5. Solder the 2x jack sub-assemblies
6. Repeat steps (3) to (5) for Column 2
7. Offer up the Column 3 sub-assembly and secure using the supplied nuts
8. Mount the ASM317 sub-assembly ensuring correct alignment of the IDC connectors



## SEM Modification

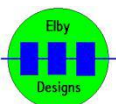
Additional parts (R128, R129, R130, D101 and D102) are included in your kit to allow you to add a feedback stage in the Q control circuitry. This modification was added by Gene Stopp in his ASM-1 design. For an original ENS-76 build, simply omit these components.

## CV Rejection

P101 and P102 are included to allow CV rejection adjustment to the 2x OTA's. In most cases this calibration is not needed and the trimpots and their associated resistors R106 and R111, can be omitted. If you prefer to fit them 'just in case' then the trimpots should initially be set to their mid-position

## Calibration

1. Set [IN1], [CV1] and [RESONANCE] to maximum, [IN2] and [CV2] to minimum, and [FREQUENCY] to '2'
2. Apply a 5VAC 0.3Hz square wave signal to [IN1]
3. Monitor the [BP] output. The filter should be ringing in the region of 200Hz.
4. Apply 0VDC to [CV1]
5. Note the frequency of the ringing



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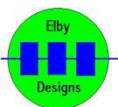
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6. Apply 1.0VDC to [CV1]
7. The new ringing frequency should now be double that of the reading in (5)
8. Adjust P201, if needed, to bring the ringing frequency closer to 2:1
9. Repeat steps (4) to (8) until the desired 2:1 scale is achieved.

Note that the adjustment of P201 will affect both measurements so you will need to 'slowly bring the frequency scaling in to range' otherwise you could end up chasing your tail!



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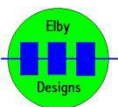
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## CV OFFSET:-

The CV Rejection trimpots are adjusted so that when the [FREQUENCY] control is adjusted through its full range, the deflection at the [LP] output is a minimum. Set both at their mid-points to start with, then alternately adjust them until the deflection is a minimum.



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