

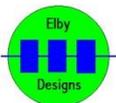


ED720 ES VCO

Construction Guide

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ED720 - ES VCO

Construction of the ED720 requires the assembly of 3 boards:-

Column 1 - ASM325 Column 1 PCB ([3D Model](#)) ([PCB Overlay](#))

Column 2 - ED720 Column 2 PCB ([3D Model](#)) ([PCB Overlay](#))

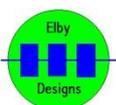
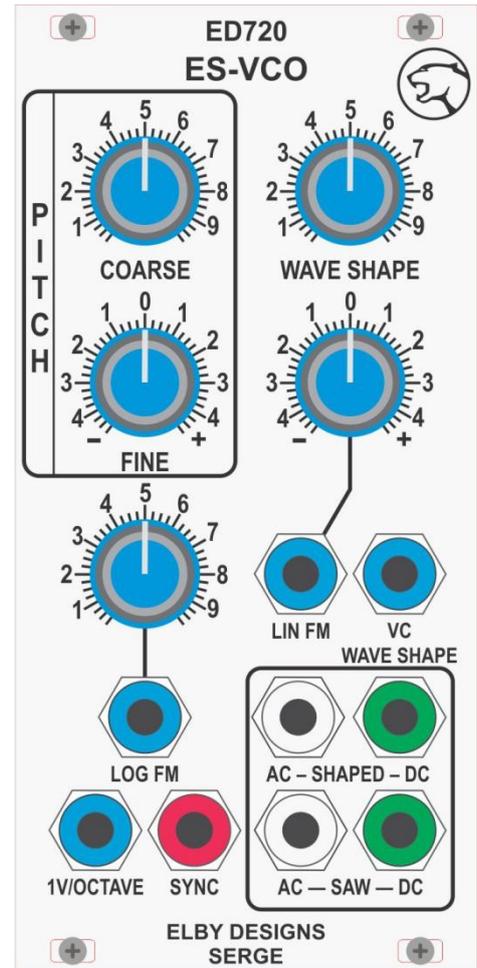
BackBoard - ASM325 Back PCB ([3D Model](#)) ([PCB Overlay](#))

Constructors should refer to the PCB Overlays 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. You are advised to check all of these documents on our website to ensure you have the latest copy.

1. Assemble all 5x Jack Carrier Board assemblies ([3D Model](#))
2. Fit all components to the boards following normal assembly guidelines except for all the jack sub-assemblies
3. Mount the 2x jack sub-assemblies to the Column 1 PCB but do not solder
4. Offer the assembly up to the front panel and secure the using the supplied nuts
5. Solder the jack sub-assemblies in to place
6. Mount the 3x jack sub-assemblies to the Column 2 PCB but do not solder
7. Offer the assembly up to the front panel and secure using the supplied nuts
8. Solder the jack-sub-assemblies in to place
9. Install the BackBoard ensuring the correct alignment of the IDC connectors

Installing the TEMPCO

- Fit an 8-way DIP socket in to the position designated Q201 and insert the LS312.
- Form the legs of the 1K TEMPCO resistor so that it sits over, and makes contact with, the LS312. If desired, you can add some thermal compound to improve the bonding between the IC and the TEMPCO.



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Calibration

The first stage is to set the reference drive current

1. Remove the jumper on JP100
2. Remove the jumper on JP101
3. Apply 0V to [1V/OCTAVE] (J102)
4. Monitor TP4 (or [SAW] output if available)
5. Adjust P201 for a frequency of 880Hz. This is not a critical adjustment, it simply allows multiple VCO's to be set to the same 'initial operating' conditions

The next stage is to calibrate the Volt/Octave response of the module

1. Fit jumper JP101
2. Apply a voltage of 0.0V to [1V/Octave] (J102)
3. Adjust the frequency at TP3 (or [SAW] output) to 110Hz using [COARSE] and [FINE]
4. Apply a voltage of 5.0V to [1V/Octave] (J102)
5. Adjust P102 for a frequency equal to 3520Hz. initial adjustments should be no more than 50Hz, reducing this step size as you get closer to 3520Hz
6. Repeat steps (2) to (5) until a 5-octave transpose is achieved

The last stage is to 'tune' the VCO so that it can be used with 1V/Octave controllers such as a MIDI-CV.

1. Fit jumper JP100
2. Set [FINE] to its mid-position '0'
3. Set [COARSE] to minimum
4. Apply a voltage of 5.0V to [1V/OCTAVE] (J102)
5. Adjust P101 for a frequency of 256Hz

An alternate procedure is to connect the CV output of, say, your MIDI Controller and play Middle C (C4, MIDI Note = 60). Set the [COARSE] and [FINE] pots to your preferred default position and then adjust P100 for an output of 261.63Hz

The final stage is to set the WAVE SHAPE adjustment range

1. Monitor [SHAPE DC]
2. Set [WAVE SHAPE] to minimum
3. Adjust for the purest SINE shape

