

INTERNATIONAL 3600 SYNTHESIZER

Constructing the case; and inter-unit wiring.

ei
PROJECT

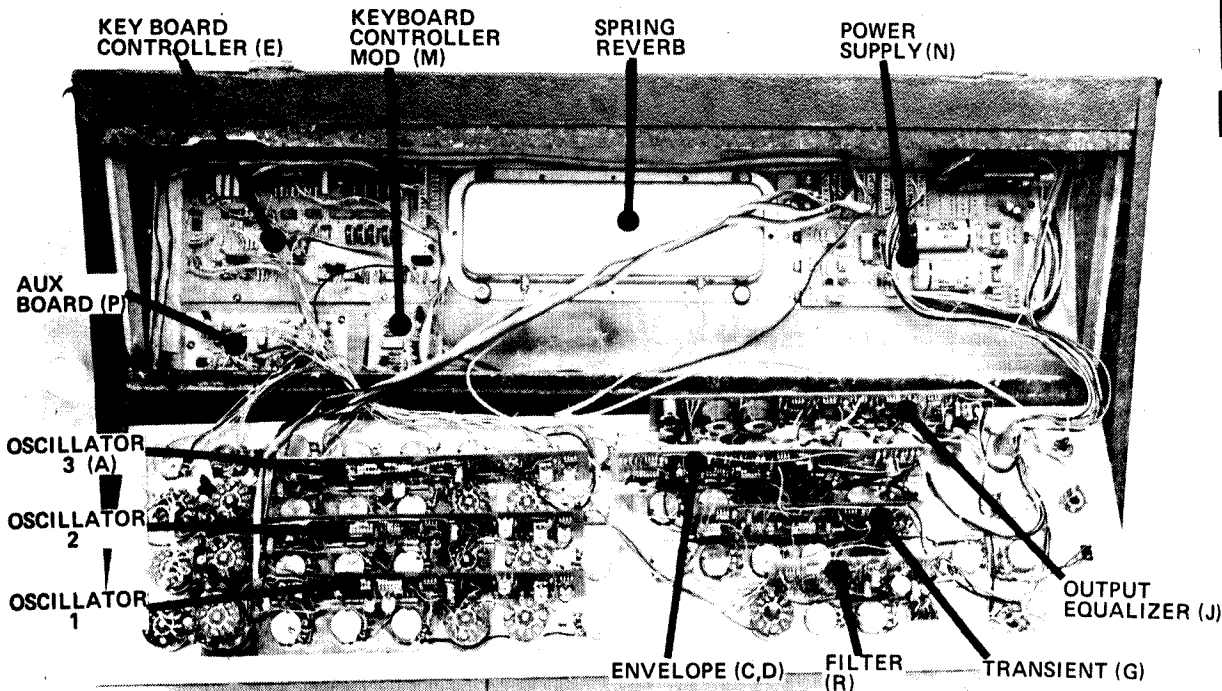


Fig. 1. Assembly of the modules within the box.

WE CONTINUE this month with details of the final four modules to be constructed. Details of cabinet assembly and interwiring of the synthesizer are also given.

TRANSIENT GENERATOR

Full details of the transient generator can be found in the February '74 issue of *Electronics Today International*. Note that a modification, published in July of 1974, reduced the value of R21 to 100 k.

In the 3600 synthesizer the exponential converter and the external trigger are not used. The following components are therefore not required.

R1, 2, 3, 5, 6, 9, 10 and 14.

Q1, Q3, D2, IC2.

C5, C6, RV3, RV4, SW1 and SW3.

Link points 13 and 14 together and take the trigger from the keyboard to point 5. It will be found that triggering reliability is improved by increasing C3 to 0.0068 μ F.

The mounting bracket will need to

be trimmed slightly in order to clear the level potentiometer of oscillator 2.

ENVELOPE CONTROL

This module was described in the January '74 issue and a modification was published in July of '74.

In the 3600 unit the external trigger is not used and R17, 18, Q3 and SW2 are therefore deleted. The trigger from the keyboard now goes directly to the hole number 13.

Increasing the value of C7 to 0.0068 μ F makes triggering more reliable. The mounting bracket of this unit will also have to be trimmed in order to clear the level potentiometer of oscillator 3.

OUTPUT-EQUALIZER

This module was described in the April 1974 issue. In the 3600 unit the joystick and exponential converter are not used and the following components are therefore deleted.

IC7-10, Q1, Q2, RV10-15.

R23-32 and C18-22.

Note that the positions of front panel controls have been changed and connection details are now given in Fig 2 & 3. A different mounting bracket is also used being now the same as that used for the envelope control.

POWER SUPPLY

This module was described in the December '73 issue and modifications were published in the January and July '74 issues. For the 3600 unit only nine outlets are required.

KEYBOARD

The keyboard described for the 4600 cannot be used in the 3600 because of lack of space. A Kimber Allen keyboard was used in our prototype and these are available from JAYCAR Pty Ltd.

CONSTRUCTION

The general assembly of the box can be seen from the photographs and from Fig. 7. The individual pieces are shown in Fig. 8. Note that the

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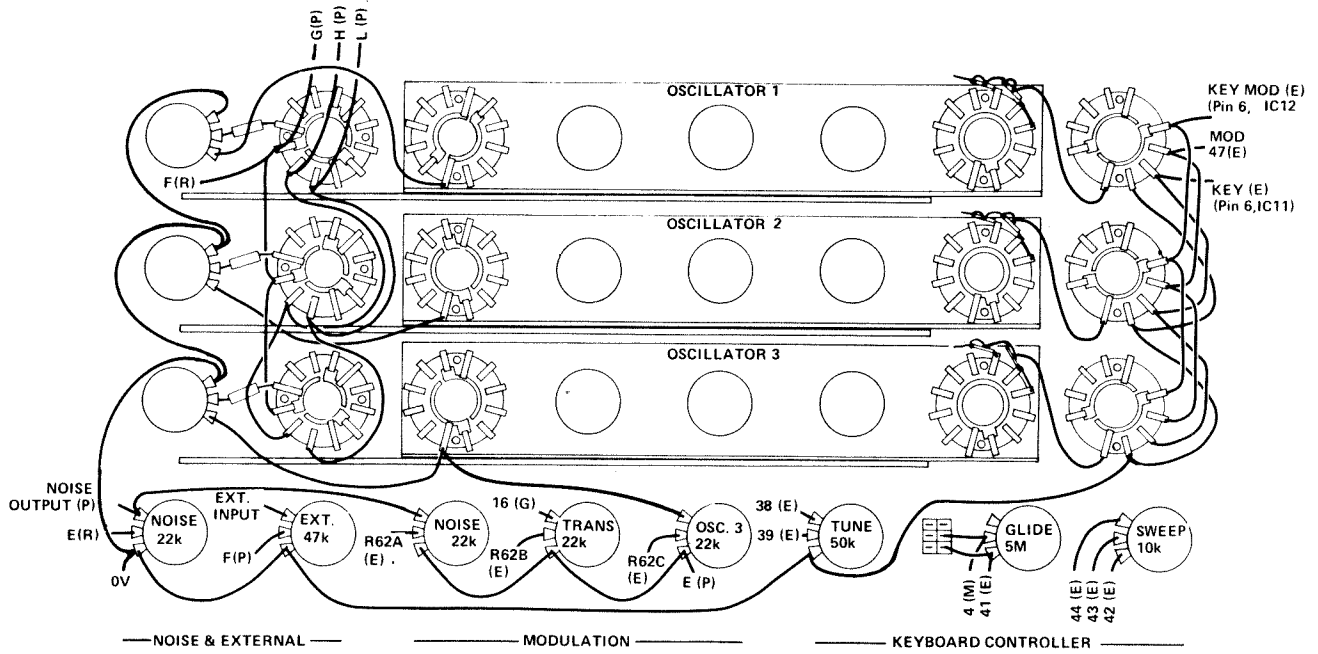


Fig. 2. Front panel interconnections – oscillator section.

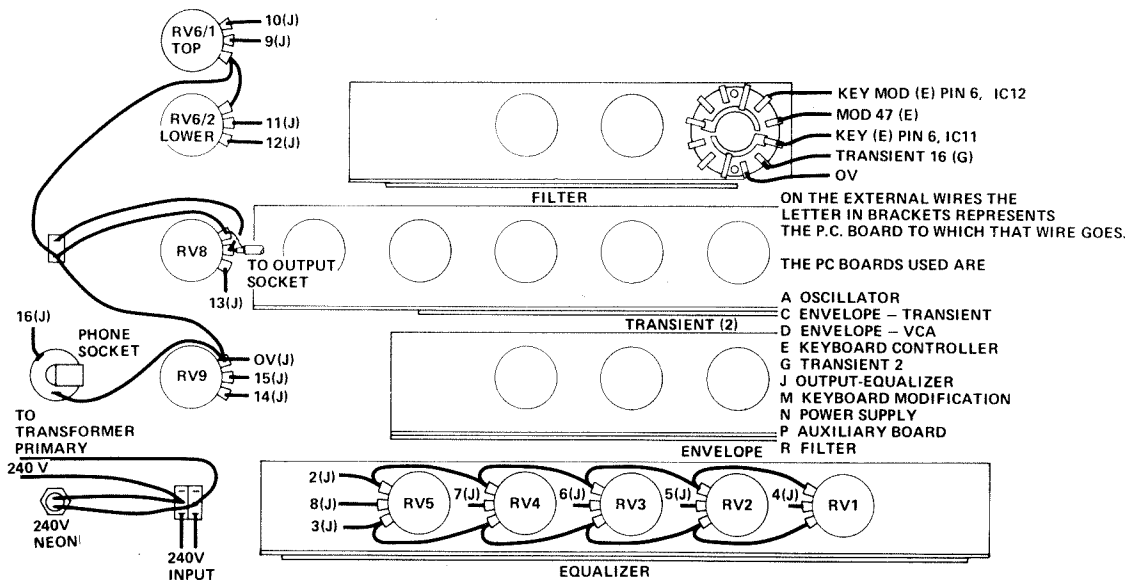
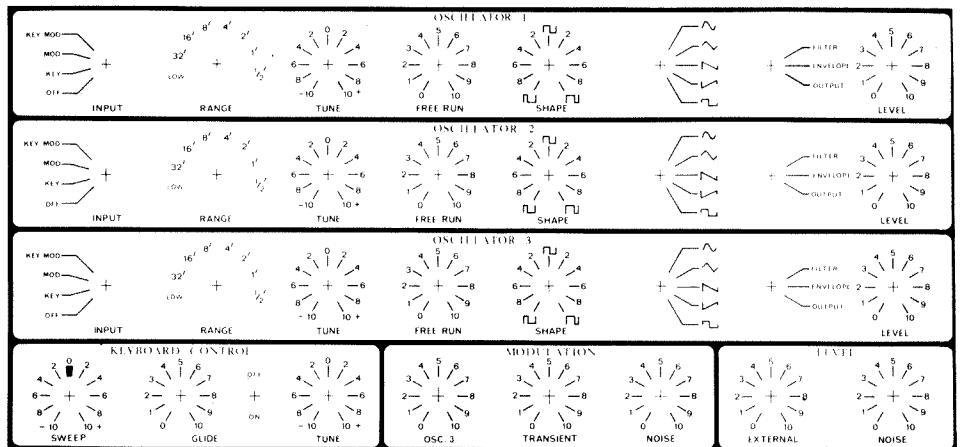
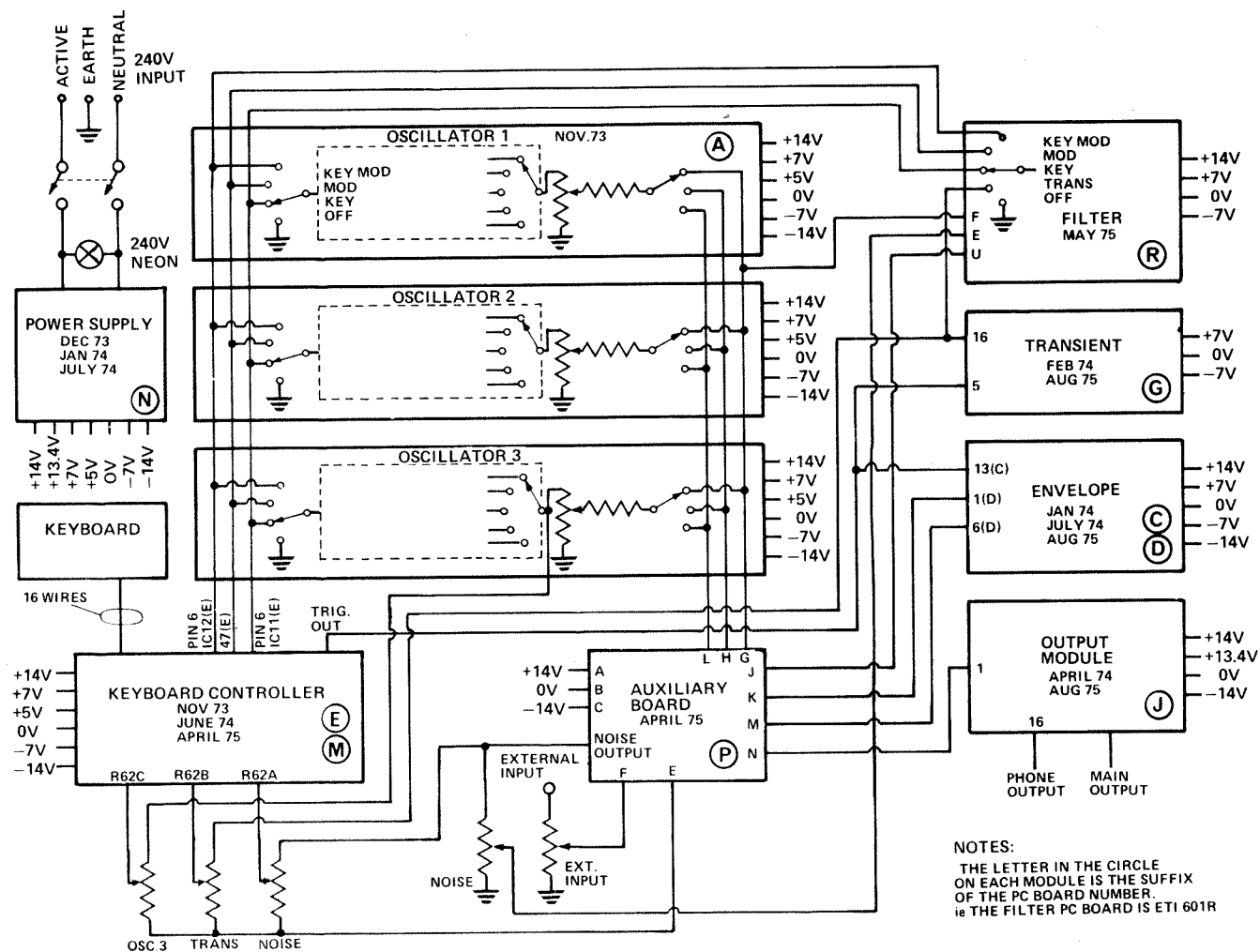


Fig. 3. Front panel interconnections – filter section.

dimensions given are for a timber thickness of 12 mm and for construction using all butt joints. Allowances will have to be made if other timber thicknesses or mitred joints are used. It is advisable to use small pieces of wood to strengthen corners.

We hinged the lid using dismantable hinges, so that the lid could be detached, and used suitcase-type catches on each side, towards the front, to hold the box closed. A handle is mounted on the front for carrying the unit. It is recommended that a strip of foam plastic be glued onto the lid to ensure a dust-proof seal when the unit





NOTES:
 THE LETTER IN THE CIRCLE
 ON EACH MODULE IS THE SUFFIX
 OF THE PC BOARD NUMBER.
 ie THE FILTER PC BOARD IS ETI 601R

Fig. 4. Overall interconnection diagram.

is closed. The box may be covered with vinyl or veneered as required. Note however that the keyboard should be installed before the keyboard panels (pieces 7 and 8) are covered.

The small panel containing the mains-cord socket, the external-input socket and the output-socket can now be assembled, wired and mounted in place. Note that the wires to the input and output sockets should be in shielded cable.

The keyboard may now be wired up

and installed as follows. The aluminium frame of the Kimber Allen keyboard extends beyond the ends of the keys. Use this portion to mount the keyboard by placing two pieces of wood on top of the ends of the frame. These pieces of wood should be of such thickness that the keyboard is held at the correct height when finally assembled. The keyboard is held in position by long self tapping screws which pass through the keyboard panels (7 and 8), through the pieces of packing wood and screw into the end

frame. After checking alignment, and that the keyboard functions correctly, the keyboard panels may be covered or veneered as for the rest of the box.

The power supply, keyboard controller, auxiliary board and the spring reverb are all mounted inside the box on the base. The photo shows the relative positions of these modules. They should be installed fitted with wires that are long enough to reach their destination. The other modules and their associated potentiometers and switches can now be mounted on the front panel. Interconnections can now be made using the diagrams in Figures 2,3 and 4 as a guide.

A solid earth is required if noise is to be minimized. This is easiest done by earthing each module to the front panel. Solder the earth wire onto the back of a potentiometer (after filing off the plating). A solid-earth wire between the auxiliary board and the front panel is also necessary.

Finally, due to the size of the range switch on oscillator 1, it will probably be necessary to cut a section out of the front panel upper-support to provide clearance.

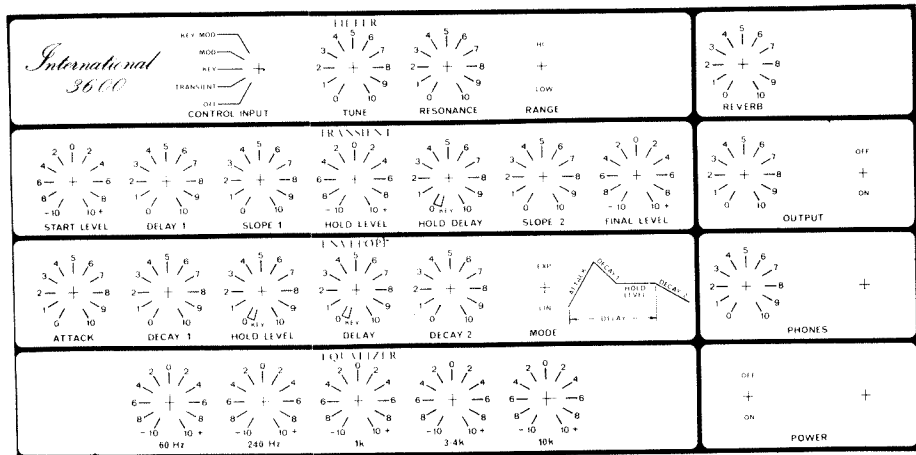


Fig. 5. Front panel artwork.

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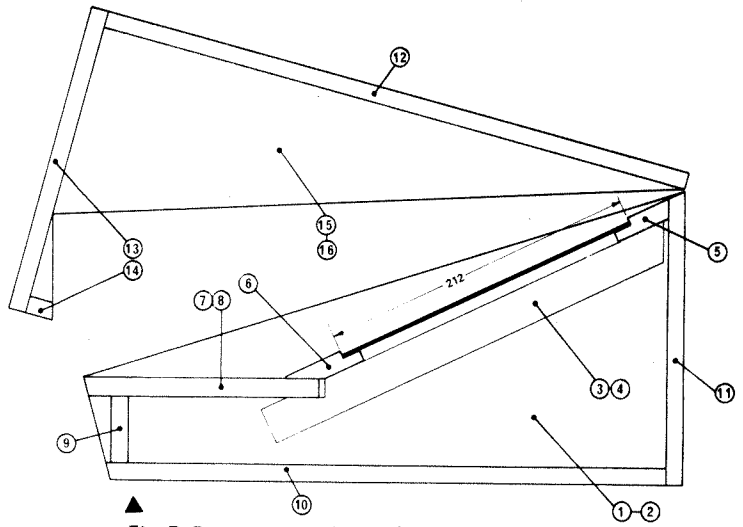
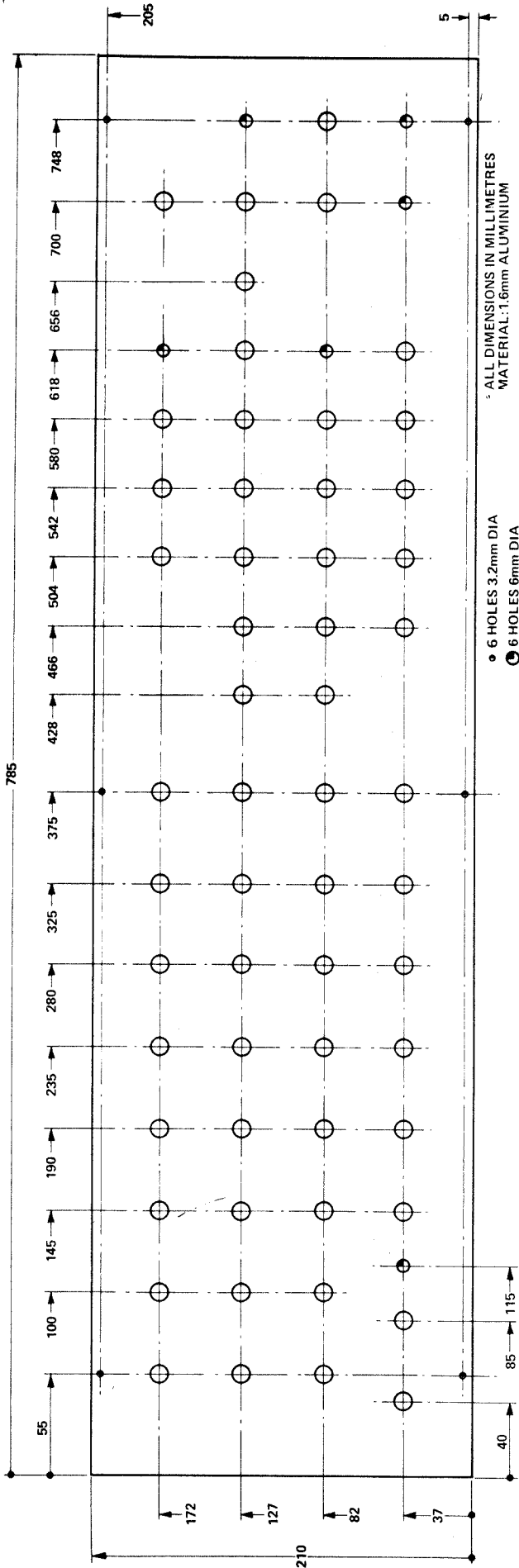


Fig. 6. Front panel drilling details.

