

17. SINCLAIR COMPATIBLE JOYSTICKS

A joystick, in this context, means some form of hand held device used to give movement instructions to programs. Sinclair joysticks will have a LEFT, RIGHT, UP, DOWN and FIRE function. The hand held unit could consist of a lever which operates one of four switches when pushed forwards, pulled back or moved from side to side. An alternative small hand held unit with a compact arrangement of pushbuttons is shown in fig 12e. The outer four buttons give the movement commands and the central one is a fire button.

The Sinclair joysticks appear from software to be identical to the top row of keys on the Spectrum keyboard, both from BASIC and machine code programs. Joystick 1 will appear on input port 61438 and joystick 2 on port 63486. The functions of the joysticks correspond to the number keys as follows:

Key	Function
1	LEFT
2	RIGHT
3	DOWN
4	UP
5	FIRE

JOYSTICK 2

Key	Function
6	LEFT
7	RIGHT
8	DOWN
9	UP
0	FIRE

JOYSTICK 1

In order to add this control box to your Spectrum, the keyboard interface circuit of chapter 16 is required. Only the diodes D8 and D5 are used. The other diodes can be omitted.

The unit illustrated in fig 12e uses 5 push button switches for the control box. The internal arrangement of buttons soldered onto a piece of veroboard is shown in fig 12f. The exact arrangement and type of buttons is left to the constructor. Internally the control box (es) must be wired in accordance with fig 12c (for joystick 1) and fig 12d (for joystick 2). The connections to the keyboard interface are clearly shown on these diagrams. If you are able to obtain a ready made joystick control box which makes contacts as in fig 12c and fig 12d then this can be connected to the keyboard interface circuit instead of a completely homebrew circuit.

All that you need now is some software to use with your joysticks. Any Sinclair joystick compatible software can be used. There follows a program named 'APOLLO' to enable you to experiment with the joystick control. Joystick 2 or the keyboard keys 1 — 5 are used.

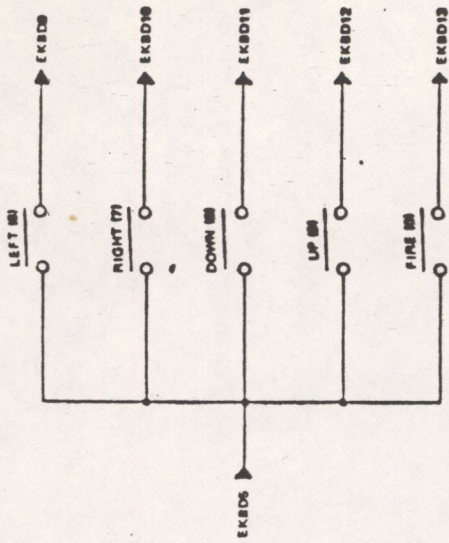


FIG 12c - JOYSTICK 1 CONNECTIONS

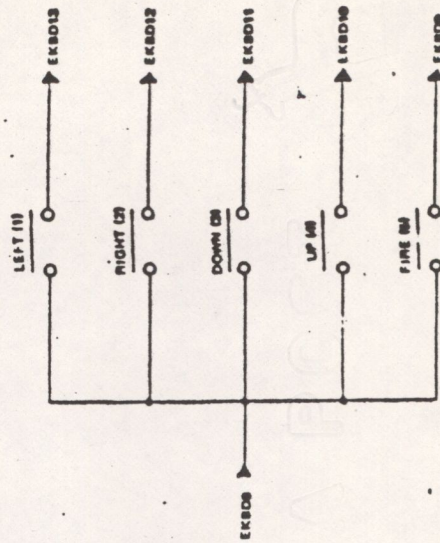


FIG 12d - JOYSTICK 2 CONNECTIONS