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Apple IIe
for IIe

JOYSTICK IIe
OPERATIONS MANUAL



MODEL NO. A2M2002

THE JOYSTICK //e FOR YOUR APPLE //e

Here is your new Apple //e Joystick! Be sure to read the instructions here on **INSTALLING YOUR JOYSTICK //e**. If you want to create programs involving the Joystick //e be sure to read the instructions on **PROGRAMMING YOUR JOYSTICK //E**.

The Joystick //e is a precision input device which allows you to send continuous information to the Apple //e in the form of x-y coordinates. Programs can be written so that movement of the Joystick //e is tracked by the cursor on the screen, giving continuous and immediate feedback on your steering activity.

The Joystick //e contains two potentiometers, one which reads the x-axis and one which reads the y-axis. The Apple reads the resistance of the potentiometer and converts it to a numerical value ranging between 0 and 255 on both axis. Mounted in the top cover are two push buttons. The push buttons are used in the same way as the push buttons on a game paddle. The button nearest the Apple logo is switch (0), the other switch (1).

JOYSTICK //e ADJUSTMENTS

TRIM ADJUSTMENTS TO APPROXIMATELY CENTER THE CURSOR ON THE SCREEN

1. Once in the game mode, it is possible to adjust the cursor position on the screen by simply rotating the thumbwheels on the underside of the Joystick //e.

TRIM ADJUSTMENTS TO ACCURATELY CENTER THE CURSOR ON THE SCREEN

1. Type in and run the sample program listed under PROGRAMMING YOUR JOYSTICK //e.
2. With the stick in the center of your Joystick //e adjust the thumbwheels on the underside of the Joystick //e until both numbers on the screen read 128.

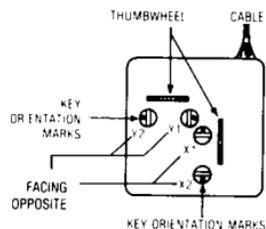


FIGURE 1.

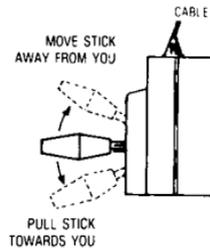


FIGURE 2.

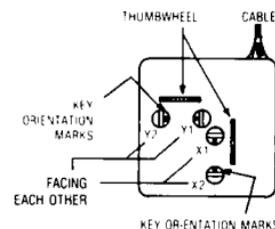


FIGURE 3.

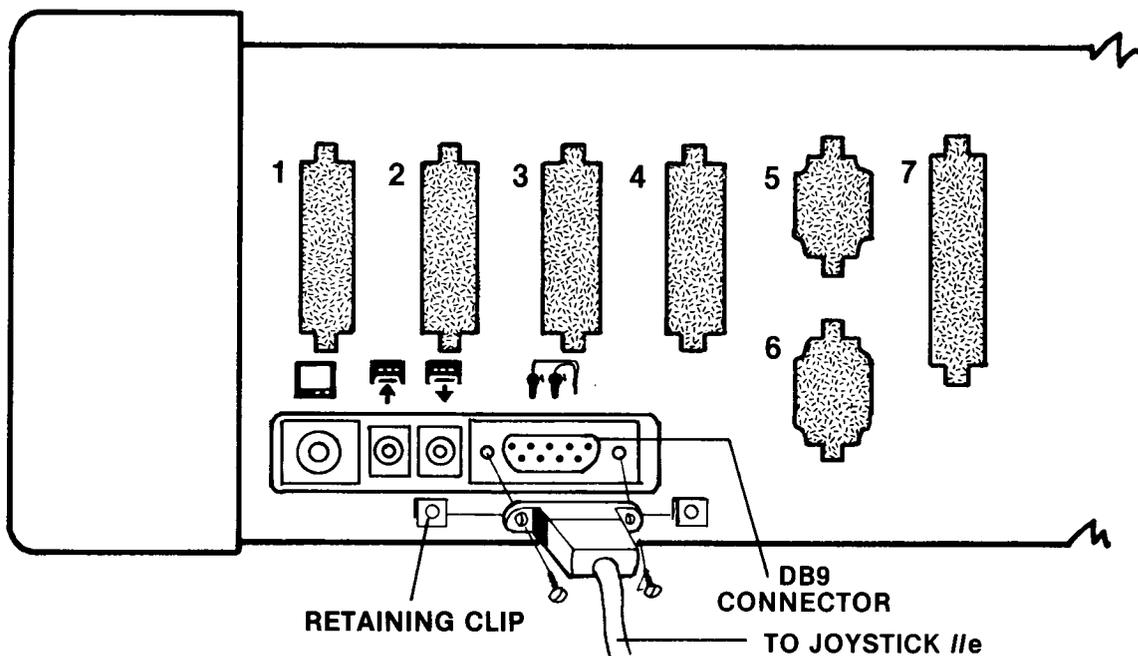
SELF CENTERING ADJUSTMENTS FOR THE JOYSTICK //e (Read Carefully)

1. To disable the centering, first check to insure that key marks are facing opposite each other. See Figure 1.
2. Holding the Joystick //e upside down as in Figure 1, **pull the stick towards you (Fig. 2)** as far as possible. Hold stick and rotate key orientated mark **X1** 180 degrees. **Push stick away from you. (Fig. 2)** and rotate key mark **X2** 180 degrees. Both **X1** and **X2** key marks are now facing each other. Pull stick to the left and rotate **Y1** 180 degrees. Pull stick to the right and rotate **Y2** 180 degrees. All key marks should be facing each other. See Figure 3. Note: If the stick is not in the proper position as the key orientation marks are rotated, the Joystick will have limited travel. If this happens, simply start the adjustment procedure again from beginning (paragraph 1).
3. To return to the centering mode, rotate key marks so that they are in the same position as in Figure 1. There is no need to hold the stick.
4. You may wish to use any combination of centered or uncentered by rotation of the appropriate key marks.

INSTALLING YOUR JOYSTICK //e

(See Illustration)

Plug in Joystick //e connector into your game paddle port on the rear side of your Apple //e. This port is the DB9 connector shown in illustration.



PROGRAMMING YOUR JOYSTICK //e

BASIC for the Apple treats each axis of the Joystick //e as if it were a game paddle. A BASIC request for "PDL (0)" will result in a reading of the x-axis position of the joystick. A BASIC request for "PDL (1)" will result in a reading of the y-axis position of the Joystick.

For the programmer, a sample test APPLESOFT BASIC program is listed below.

```
10 HOME
20 VTAB 6: PRINT "PDL(0)": VTAB 6: HTAB 10
30 PRINT "PDL(1)"
40 VTAB 8: PRINT " "
50 IF PEEK (- 16287) > 127 THEN INVERSE
60 VTAB 8: PRINT PDL (0)
70 NORMAL
80 VTAB 8: HTAB 10: PRINT " "
90 IF PEEK (- 16286) > 127 THEN INVERSE
100 VTAB 8: HTAB 10: PRINT PDL (1)
110 NORMAL
120 GOTO 40
```

PDL (0) and PDL (1) will read and display a number corresponding to the current position of the potentiometer of Joystick //e x and y axis. PEEK (- 16287) switch (0) and PEEK (- 16286) switch (1) will read a random number greater than 127 if either firing button is activated. If this occurs, the corresponding potentiometer reading will be inverted.

RADIO AND TELEVISION INTERFERENCE

The equipment described in this manual generates and uses radio frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference to radio and television.

This equipment has been tested and complies with the limits for Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules. These rules are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that the interference will not occur in a particular installation.

You can determine whether your computer is causing interference by turning it off. If the interference stops, it was probably caused by the computer. If your computer does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures:

- Turn the TV or radio antenna until the interference stops.
- Move the computer to one side or the other of the TV or radio.
- Move the computer farther away from the TV or radio.
- Plug the computer into an outlet that is on a different circuit from the TV or radio. (That is, make certain the computer and the TV or radio are on circuits controlled by different circuit breakers or fuses.)

If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find the following booklet prepared by the Federal Communications Commission helpful: "HOW TO IDENTIFY AND RESOLVE RADIO-TV INTERFERENCE PROBLEMS". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402. Stock number 004-000-00345-4.