CH products ™

JOYSTICK

for Apple II
Apple II+
Apple IIE
Apple IIC

OPERATIONS MANUAL

MACH II & MACH III JOYSTICKS
for the Apple II, II+, IIE and IIC Personal Computers

All CH PRODUCTS JOYSTICKS provide you with the ultimate computer control that precisely translates the position of the control stick into X-Y coordinates on the screen. These precision controls contain two linear potentiometers, one which reads the X-axis and is accessed by Applesoft using PDL (0) the other which reads the Y-axis and is accessed by Applesoft using PDL (1). The MACH II JOYSTICK has 2 pushbutton switches while the MACH III JOYSTICK has 3 pushbutton switches. The orange pushbutton(s) and the brown pushbutton are read using Peek (-16287) and Peek (-16286) commands respectively.

INSTALLATION

A. 16 Pin Connector (Apple II, II+, or IIE) Plug the 16-pin connector into the Game I/O socket located inside your computer on the logic board. Pin 1 must match up to Pin 1 on the game I/O. Pin 1 is marked with a small white dot on the logic board.

B. 9 Pin D Shell Connector (Apple IIE or IIC) The 9-pin D shell connector plugs into the outside of your computer on the DB9 connector.
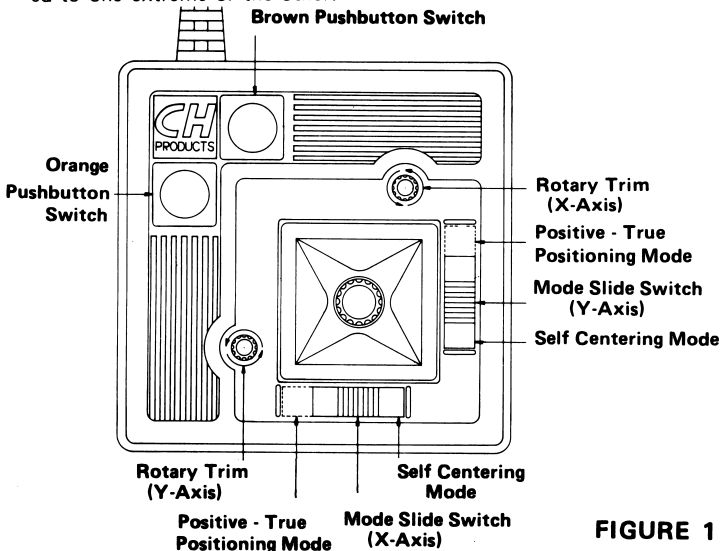
ROTARY TRIM ADJUSTMENTS

Because all computers and their software are not created equal, each axis (X and Y) provide independent rotary trims to enable the operator to adjust cursor positioning. This feature is most useful while in the "self-centering" mode of operation, to adjust the cursors return to center location. Rotating the X and Y axis trims clockwise moves the cursor to the right and bottom of the screen. Counter clockwise rotation will move the cursor to the left and top respectively.

SELF-CENTERING ADJUSTMENTS

All CH Products Joysticks are designed to take full advantage of the software developed specifically for your microcomputer by providing you with optional self-centering or positive-true-positioning modes of operation.

To change modes of operation simply push the mode slide switch to the desired mode as indicated in figure 1.

Note: For correct operation the mode slide switch should be positioned to one extreme or the other.

FIGURE 1

CH PRODUCTS
NINETY-DAY WARRANTY

CH Products JOYSTICKS are warranteed to the original purchaser to be free from defects in materials and workmanship for a period of ninety days from the date of purchase. During the warranty period CH Products will, at its option, repair or replace, at no charge, any component which is determined to be defective.

To obtain warranty services send the JOYSTICK, postage prepaid, with a check for $2.00 to cover shipping and handling, together with a dated proof of purchase to:

> CH Products
> Customer Service
> 1558 Osage Street
> San Marcos, California 92069

The warranty does not apply if, in the opinion of CH Products, the JOYSTICK has been damaged by accident, abuse, improper usage, or as a result of service or modification by other than CH Products.

"NO OTHER WARRANTIES ARE EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. CH PRODUCTS IS NOT RESPONSIBLE FOR CONSEQUENTIAL DAMAGES." Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.