

SECTION 8

GAME CONTROLLERS

The following pages contain descriptions, schematics, and test procedures for the four game controllers used with the Atari 400/800 Computer Consoles.

JOYSTICK (X-Y CONTROLLER)

Inside each joystick is a small PC board that has 5 calculator-type keypads mounted on it. Four of these are positioned beneath the stick in square shaped pattern, and the fifth is located beneath the pushbutton (See Figure 8-1). When the stick is pushed forward, the bottom surface of the stick presses against the forward keypad, causing it to "make", thus completing the circuit connected to it. In the same way, pushing the stick back, left and right causes the respective keypad underneath that position to close and complete the circuit.

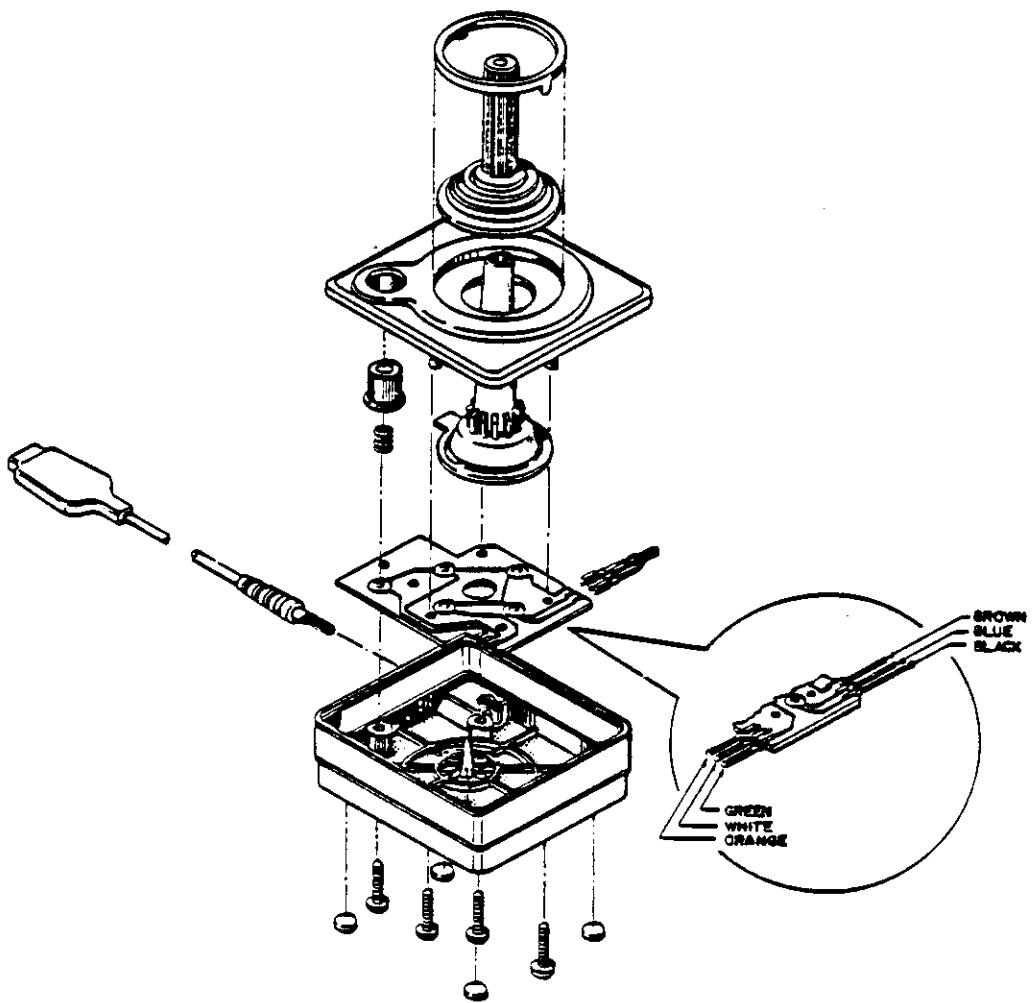


Figure 8-1. Joystick (X-Y Controller)

If the stick is pushed forward and to the right at the same time (that is, in a northeast direction), both the forward and right keypad close simultaneously, which causes the POKEY to see two switch closures happening at once (See Figure 8-2). The result is that the object being controlled on the screen moves diagonally. With the four keypads, 8 different directions can be attained. The pushbutton determines whether the keypad beneath it is either open or closed. (Earlier models were spring loaded.)

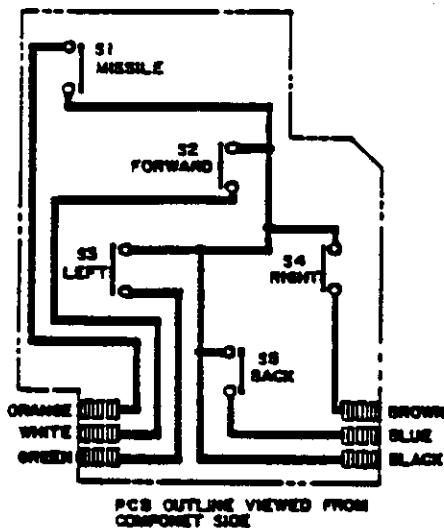


Figure 8-2. Joystick Schematic

JOYSTICK (X-Y CONTROLLER) CHECK

Equipment Needed

- 1) T.V. Set
- 2) Known good console
- 3) Star RaiderTM cartridge

Procedure

- 1) Check for cosmetic damage.
- 2) Plug in cartridge and plug controller to be tested in the left player port.
- 3) Press **RESET**.
- 4) Play game.
- 5) Move the joystick in the eight possible directions.
- 6) Test is now completed.

GAME PADDLE

Each game paddle consists of 1 Megaohm potentiometer that, when varied, causes different values to be seen and acted upon by the POKEY. Also contained in the paddle is a simple spring loaded push-to-make pushbutton switch (See Figure 8-3). There are two game paddles connected to each I/O plug.

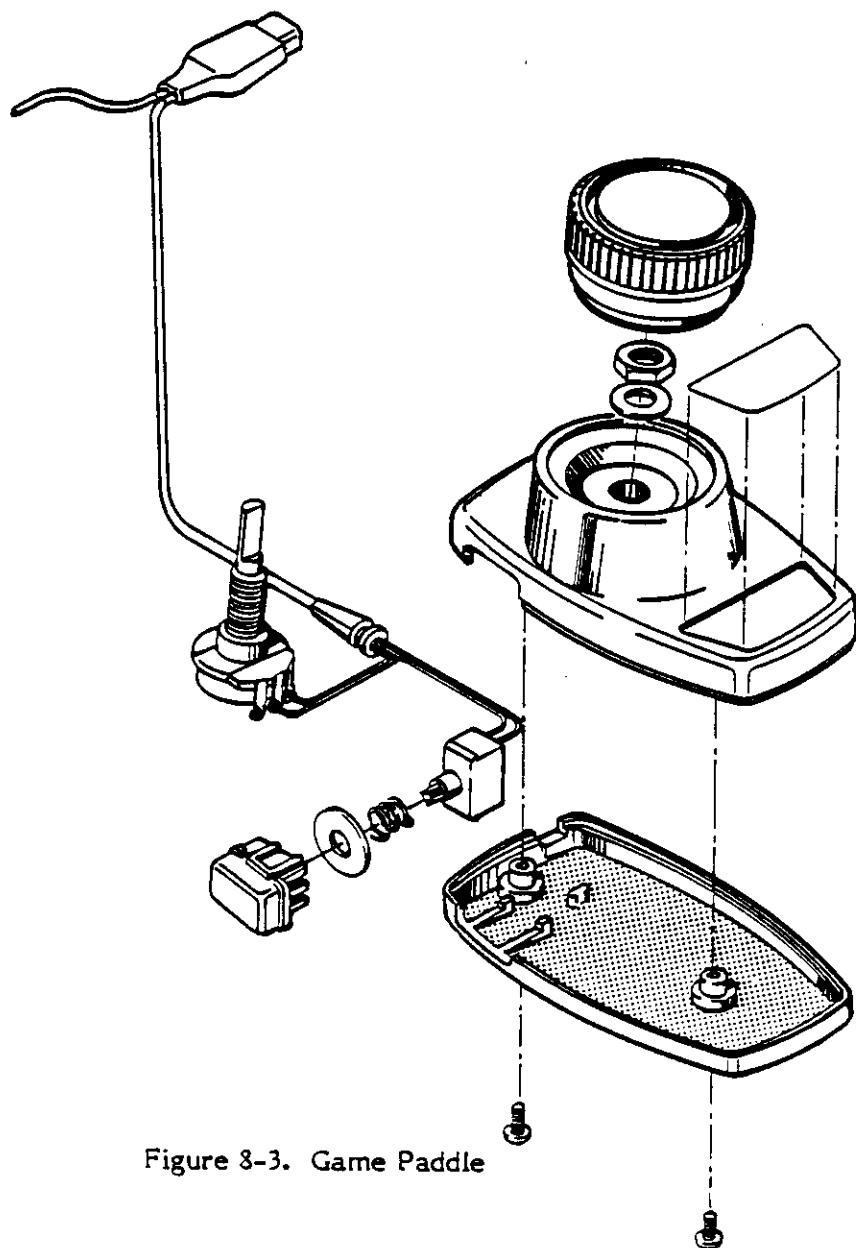


Figure 8-3. Game Paddle

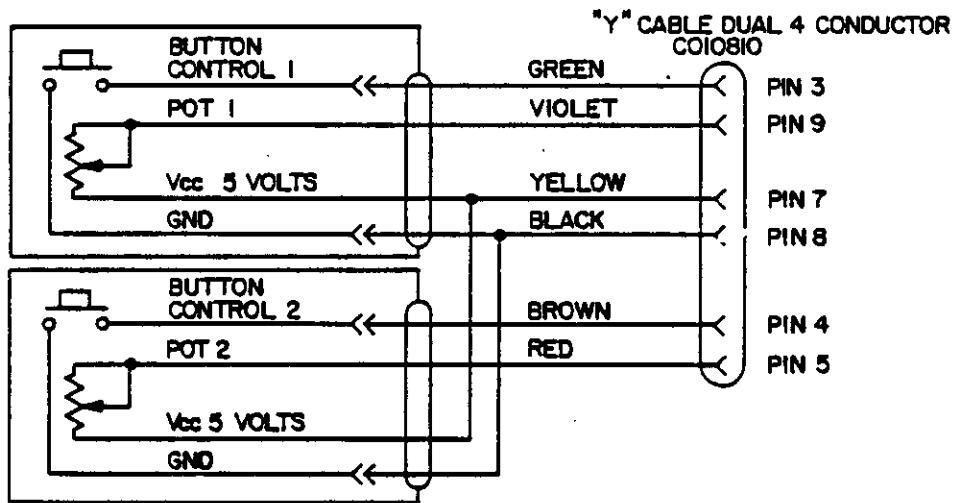


Figure 8-4. Game Paddle Schematic

GAME PADDLE CONTROLLER CHECK

Equipment Needed

- 1) T.V. set
- 2) Known good console
- 3) Super BreakoutTM cartridge

Procedure

- 1) Check for cosmetic damage.
- 2) Plug in cartridge and plug controllers to be tested into the left player port.
- 3) Press **RESET**.
- 4) Press the button on one of the controllers. A ball should be served.
5. By turning the knob the paddle should move under the ball.
- 6) Repeat steps 3, 4, & 5 for the other controller.