

# Road Runner\* Hall-Effect Joystick Calibration Procedure

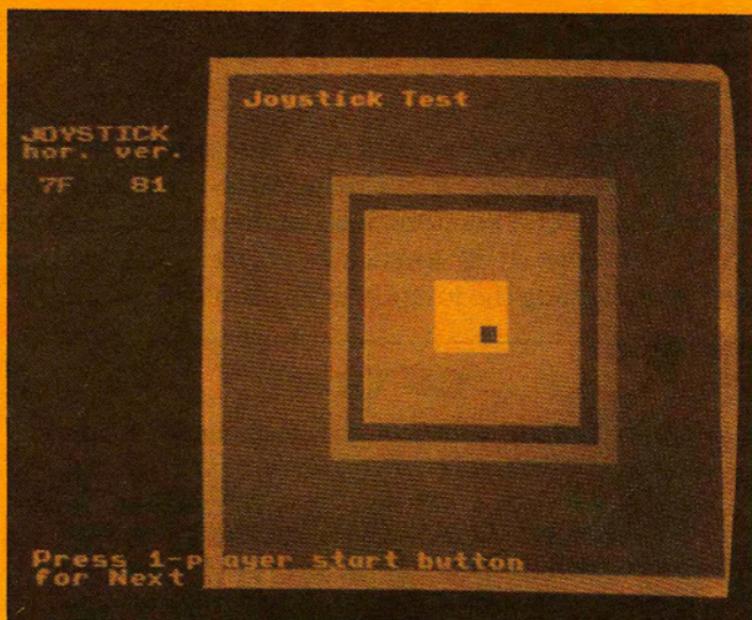
The Hall-effect joystick control provides your Road Runner game with more precise movement and speed control of the player's character. Therefore, it is important that the centering and the range of the joystick be correct. You can assure this by performing the joystick calibration procedure.

## CAUTION

Do *not* adjust either of the long metal spacer screws positioned perpendicular to the bottom of the joystick control or you can damage it. These screws should *only* be adjusted if you remove the Hall-Effect Joystick PCB. For instructions on how to adjust these screws, refer to "Reassembling the Joystick" in Chapter 3 of the *Road Runner Operators Manual*.

# Calibration Procedure

The joystick control is calibrated at the factory. However, if the joystick does not respond correctly, perform the following procedure first to ensure that the joystick is properly centered. After turning on the self-test switch located on the Audio Printed-Circuit Board (PCB) Assembly and then the game power, press the 1-player start button until the screen displays the Joystick Test. (See Figure 1.) The Joystick Test screen indicates the center position and range of the Hall-effect joystick.



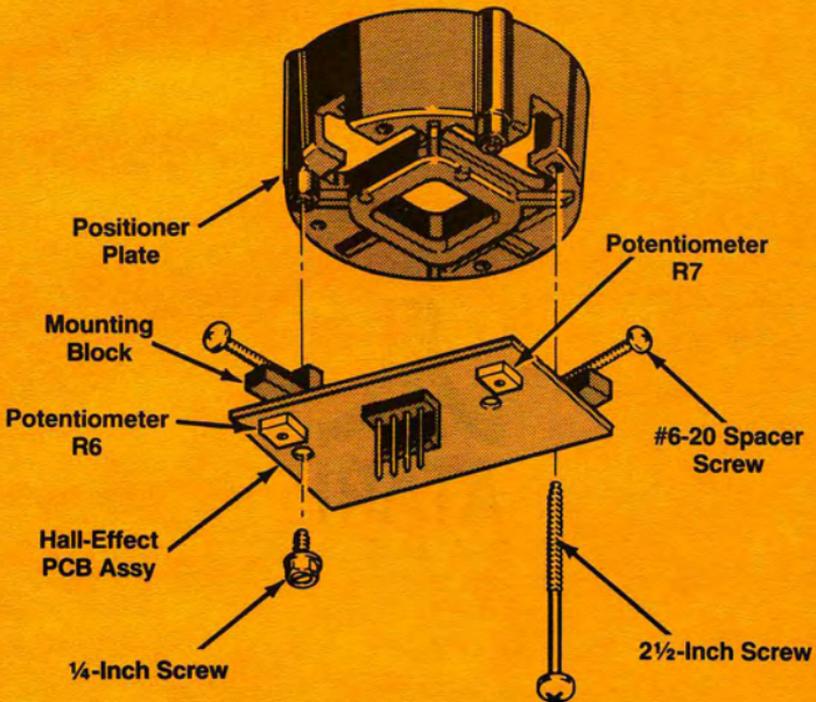
**Figure 1 Joystick Test Screen**

## Adjust Joystick Centering

Horizontal and vertical set-up values in hexadecimal are displayed in the top left-hand corner of the screen. Both values

should equal or be very close to 80 when the joystick is centered. If the joystick is not centered, calibrate it as follows:

1. Remove the control panel and turn it upside down so that it rests on the front edge of the cabinet with the bottom of the joystick control facing up.
2. Using a screwdriver, adjust the two potentiometers located in the lower corners of the Hall-Effect Joystick PCB Assembly so that both horizontal and vertical set-up values equal or are very close to 80. (See Figure 2.) The potentiometer in the left corner (R7) controls the horizontal value; the one in the right corner (R6) controls the vertical value. Turning the inset screw of the potentiometer clockwise increases the set-up value. To decrease the set-up value, turn the inset screw of the potentiometer counterclockwise.



**Figure 2 Hall-Effect Joystick PCB**

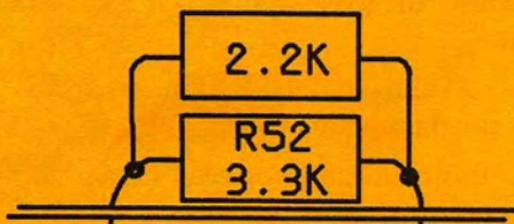
3. The area within the white box displayed on the screen is used for centering. A small, black square cursor should be in the center of the white box. When the cursor moves out of the white box, it becomes a + sign.
4. Move the joystick to one of the following ~~corners~~ <sup>POSITIONS</sup> of the green box: upper left, upper right, lower left, or lower right. Release the joystick so that it returns to the center position. 1A
5. If the + sign remains outside of the white box, adjust the joystick potentiometers.
6. Perform this procedure for each corner of the joystick until centering is achieved.

### Adjust Joystick Range

After centering the joystick, perform the following procedure to ensure that the joystick range is correct:

1. Move the joystick so that the + sign moves into the green area. If the + sign remains in the green area, the range of the joystick is correct. However, if the + sign extends beyond the green area, a hardware problem might exist. Contact your nearest Atari Customer Service office.
2. If the + sign does not have enough range to reach the green area, check the following:
  - a. After turning off the game power, locate the ~~ISI~~ <sup>TTL</sup> Main PCB Assembly in the upper right-hand corner of the cabinet behind the front access panel.
  - b. Check to see if the integrated circuit at location 14/15D is manufactured by Texas Instruments.
  - c. If the integrated circuit is a Texas Instruments one, remove the ~~ISI~~ <sup>TTL</sup> Main PCB Assembly from the cabinet. (For information on removing this assembly, refer to Chapter 2 in your *System I<sup>™</sup> Operators Manual*.)

- d. Then, solder a 2.2 k $\Omega$  resistor piggyback style across the 3.3 k $\Omega$  resistor at designator location R52 to correct the problem. (See Figure 3.) If this does not increase the joystick range, contact your nearest Atari Customer Service office.



**Figure 3 Installing Resistors  
Piggyback Style**

**NOTE**

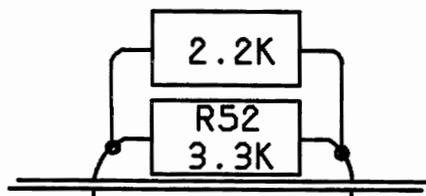
Installing a resistor piggyback style is necessary on TTL Main PCBs only. LSI Main PCBs, used in System I games built from June 1986 on, do *not* require this piggyback modification.

For technical assistance or to re-order these parts,  
call Atari Field Service at (408) 434-3950  
(Monday–Friday, 7:30 am–4:00 pm Pacific time)



Atari Games Corporation  
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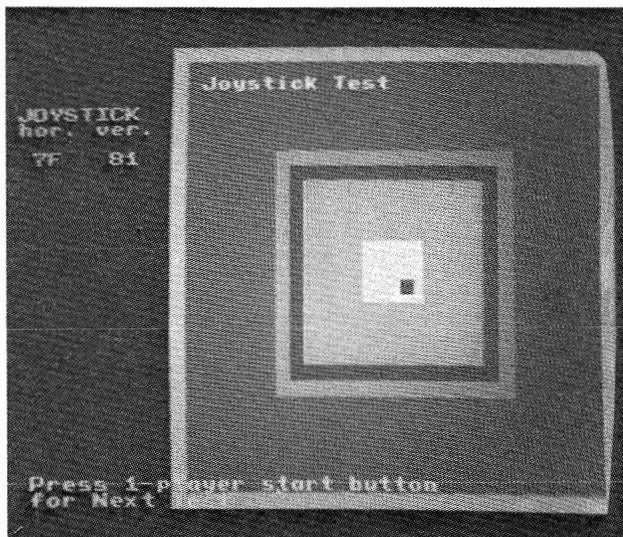


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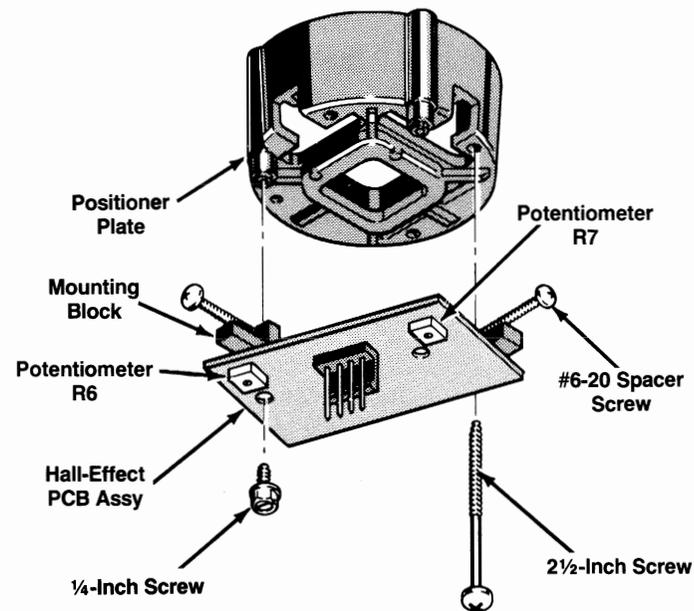


Figure 2 Hall-Effect Joystick PCB

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