



**Purpose:** To determine the radius of gyration (RG) of a bowling pin.

**Materials:**

- Bowling pin to be tested
- Bowling Pin RG Swing with electric eye counter and timing mechanism
- “RG0” Program installed on a computer

**Procedure:**

1. Using SOP-PIN-1 find the total weight of the bowling pin.
2. Using SOP-PIN-2, locate and mark the CG on the bowling pin.
3. Supply power to the electric eye counter and timing mechanism. Wait for the display to stabilize.
4. Open the cabinet door on the housing for the Bowling Pin RG Swing.
5. Place the bowling pin in the Bowling Pin RG Swing cradle with the manufacturer’s label facing upwards.
6. Adjust the bowling pin in the cradle so the CG marking on the bowling pin is aligned under the red mark on the top of the cradle.
7. Push the “R” button on the timing mechanism to reset the timer and counter to “0”.
8. Set the bowling pin in motion by rotating the head of the bowling pin approximately 20 degrees clockwise on a horizontal plane (use the right, front corner of the cabinet housing the Bowling Pin RG Swing as the reference for how far to rotate the head of the bowling pin). Be sure there is as little wobble as possible in the bowling pin as it oscillates. If excess wobble is present, stop the test and reset the bowling pin in motion.
9. Close the cabinet door on the housing for the Bowling Pin RG Swing.
10. Allow the bowling pin to oscillate. The timer will stop once the counter reaches 26.
11. Record the time in seconds on a notepad.
12. Without stopping the bowling pin from oscillating, wait for the counter to reach 29. Once the counter reaches 29 push the “R” button on the timing mechanism.



13. Repeat steps 10-11. A total of two readings should be taken on the bowling pin.
14. Select the icon for the “rg0” program and open the program.
15. Enter the test information for the particular pin in the green window on the left hand side of the “rg0” program.
16. In the bottom window of the “rg0” program enter in the total weight of the bowling pin found in step 1.
17. Enter each time recorded in step 11 for both test runs in the bottom window of the “rg0” program for the bowling pin.
18. The RG of the bowling pin has been saved and is displayed on the far right of the bottom window of the “rg0” program.