



String Pinsetter Approval: SOP-[String Pin]-[1]

## String Pinsetter Approval

<u>Rev</u>	<u>Date</u>	<u>Staff Member</u>	<u>Purpose</u>
Origination date:10-20-2022		Originator: Tom Frenzel	



**Purpose:** To approve new string pinsetter designs

**Materials:**

- Measuring Tape (6' or longer)
- Stopwatch
- Pit End Gauge
- Gutter Gauge
- String Pinsetter (installed on regulation pair)
- Access to ball tracking system

**Procedure:**

**General Measurements**

1. Use stopwatch to ensure a minimum of four second duration occurs between the breaking of the ball detect beam and the cycling of the pinsetter. Collect an average of three measurements.
2. Use the standard gutter gauge to measure the depth of the pit floor at the tail plank to ensure the floor is 4 ¾" or lower than the surface of the pin deck.
3. Use the measuring tape to ensure the nearest portion of the ball cushion is at least 35" beyond the end of the lane.
4. Use the measuring tape to ensure the pin curtain or other pin arresting device is between 14 and 18" beyond the end of the lane.
5. Measure the length of slack for each pin by pulling each pin out from the pinsetter until it reaches its maximum extension. Measure the length of slack from the edge of the pins stabilization ring to the head of the pin. Ensure each string has at least 54 inches of slack and that all strings lengths are approximately the same.
6. Measure the thickness of the kickback walls on both sides of the pin area to ensure both are at least 2 ¾" wide.



## **Pin verification**

Ensure pins in use are approved pins and meet the hole drilling requirements for string pins:

- Top hole not to exceed 0.281” in diameter.
- Side hole not to exceed 0.687” in diameter.
- Holes not to extend past intersection.
- Side hole extension not to exceed 0.281” in diameter.

## **Pin Rebound Testing**

We define a pin rebound as an event where a pin is struck by the ball, enters the pit, and then bounces off other materials, and/or is pulled by the string back onto the pin deck.

To evaluate whether pins will rebound out of the pit, a series of shots must be thrown on a regulation lane with a pit that measures within specifications with pins that meet specifications. The shots must be delivered such that they have a launch speed of 19 MPH or greater.

1. Set the 2, 7, 8, and 10 pin combination.
2. Throw shots at the 10 pin until the pin has been hit 100 times.
3. On the tracking work sheet, denote whether the pins rebounded and which zone the pin was hit in.
4. Set the 4, 6, 7, and 10 pin combination.
5. Throw shots at the 6 and 10 pin until the pins have been hit 100 times.
6. On the tracking work sheet, denote whether the pins rebounded and which zone the pin was hit in.
7. The total number of observed rebounds may not exceed 4 / 100 for either pin combination.