A Future FOR THE Sport

DATA ACQUISITION DEVICES REPORT

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DATA ACQUISITION DEVICES

This year, two companies have developed new technologies designed to measure a bowler's release and bowling ball motion. These devices use lightweight accelerometers and gyroscopes installed inside the bowling ball to collect data and measure its movement throughout the delivery.

When initially approached about approving these sensors, USBC's position was that metal components could not be permitted inside bowling balls. The prohibition on metal has been part of USBC's equipment specifications for many years, with the primary purpose of preventing manipulation of a bowling ball's core and weight properties to maintain a fair playing field.

As with all equipment-related decisions, USBC relies on testing and data to evaluate potential changes to its specifications.

Below are the results from two sensors tested this year. Both devices weigh a fraction of an ounce, depending on their size and construction. Testing demonstrated that installing these sensors resulted in little to no change in the bowling ball's core characteristics or static weight properties.

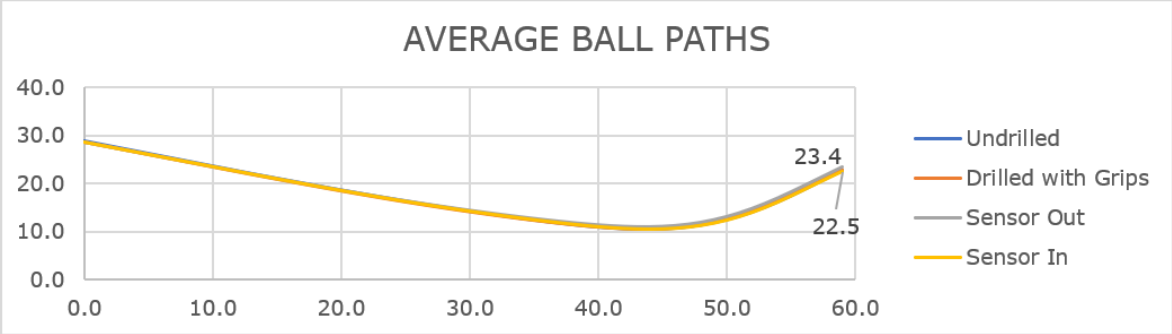
Sensor One Data

State	Ball Weight	RG-X	RG-Y	RG-Z	Total Diff	Int. Diff.	Side	Finger	Top
Drilled Ball	13.776	2.536	2.585	2.577	0.050	0.008	2.08	1.23	0.63
With Sensor	13.782	2.535	2.586	2.577	0.050	0.008	2.15	1.25	0.78

Sensor Two Data

State	Ball Weight	RG-X	RG-Y	RG-Z	Total Diff	Int. Diff.	Side	Finger	Top
Undrilled	15.19	2.482	2.529	2.529	0.047	0.000	0	0	2.4
Drilled	15.00	2.489	2.529	2.527	0.040	0.002	0.95	-0.45	0.5
Sensor Out	15.01	2.488	2.528	2.527	0.040	0.001	0.875	-0.3	0.65
Sensor In	15.02	2.488	2.527	2.527	0.040	0.000	0.95	-0.25	0.75

Ball-Motion Testing



Additionally, ball-motion testing indicated that installing these sensors had no significant impact on bowling ball performance.

Based on these findings, USBC has determined that a limited exception to the prohibition on metal components is appropriate for data acquisition devices used specifically to collect performance data.

This exception does not change the longstanding prohibition against adding metal weights or other materials intended to alter a bowling ball's performance characteristics.

Summary

The following guidelines will be added to the USBC Equipment Specifications Manual to establish the conditions under which these devices may be used.

Data Acquisition Devices

Data acquisition devices shall be permitted provided such devices are:

1. Less than 0.5 ounces total weight including the sensor and mounting accessories.
2. Installed in an existing gripping hole or interchangeable gripping device.
3. The ball remains within static balance tolerance with the device and/or mounting accessories installed.
4. No more than one sensor may be added to a ball at the same time.

These guidelines will help ensure that bowlers can confidently use approved data acquisition devices without significantly affecting their bowling ball's performance, while maintaining the integrity and fairness of competition.