

## Specifications - Power Groove™ Reactive - Ice Blue Pearl

### Part Number

60-103661-93X

### Coverstock

PowrKoil 17 Reactive

Color: Ice Blue Pearl

Hardness: 76-78

### Factory Finish

Rubbing and Finishing compound double buff

### Core Dynamics

RG Max: 2.704

RG Min: 2.663

RG Diff: 0.041

RG Avg: 8.0

### Performance

Hook Potential: 70

Length: 155

Breakpoint Shape: 75

### Available Weights

10-16 Pounds

(10-11 use a spherical offset core, no riser pin)



## Reaction Characteristics

**Plastic slips. The Groove grips.** And grip is exactly what you need to improve your game. When you're ready to step up from plastic, get in the Groove.

Ready to start hooking the ball? Move up from Plastic to Reactive coverstock technology. Compared to Plastic, Reactive coverstock technology increases traction and hooking action in the oil, and Reactive coverstocks can be sanded or shined to create large differences in hook potential. Reactive coverstocks also respond more aggressively to dry lane surfaces than Urethane coverstocks, increasing backend hooking action and hitting power.

**Coverstock:** The Blue Ice features Brunswick's popular PowrKoil 17 Reactive coverstock. First used on the Sapphire Zone, PowrKoil 17 is the strongest Reactive coverstock ever used on a Groove class ball.

**Core:** The Blue Ice introduces Brunswick's new DISC (Differential Increasing Side Cylinders) core technology which provides:

- The largest track flare potential of any ball in its class
- Consistent track flare potentials at all weights from 12-16 pounds
- Larger, more consistent pin-out distances at all weights from 12-16 pounds
- A more driller friendly design. The precise geometric placement of high density side cylinders maximizes the increase in Track Flare Potential while maintaining perfect dynamic symmetry for easy drilling.

## Reaction Setup

Your Power Groove Blue Ice can be drilled using the standard drilling techniques developed for two-piece balls, see the included drilling instructions for reaction characteristics and layout details.

Your Power Groove Blue Ice is finished with a high gloss surface which enhances its appearance **and** reduces hooking action in the oil. High gloss finishes can sometimes cause over/under reactions, too little hooking action in the oil, then too much hooking action off the dry, which can be hard to control. To increase hooking action and smooth out the ball reaction dull the surface, first with a fine 800-1000 grit abrasive. If more hooking action and a smoother reaction is desired dull the surface of the ball with a coarse 320-400 grit abrasive.

# High-Differential Symmetric Core Bowling Balls (12-16 pounds)

Brunswick's ball drilling instructions include eight layouts; one group of four **earlier rolling reactions** (1E-4E), and one group of four **later rolling reactions** (1L-4L). Both groups contain layouts that adjust performance from **high flare and hook potential** to **low flare and hook potential**. Not every layout is appropriate for all types of releases. Brunswick separates bowler's release characteristics by RPM rate and Track position.

- **High-RPM players** and **Medium-Low RPM players**. High RPM players rev the ball at rates greater than 300 RPM. On the men's tour, rev rates range from approximately 250-450 RPM. Most of the men's tour players you see on TV would be considered High RPM players. High RPM players can be sensitive to "over-flaring" which can make the ball hook early and be inconsistent at the breakpoint. Brunswick recommends low to medium flare layouts for High-RPM rate players
- **High-Track players** and **Medium-Low Track players**. High Track players have tracks within 1" of the thumb and finger holes and will usually have a horizontal axis measurement near 6" from grip center. Medium-Low track players have tracks that are greater than 1" from the thumb and finger holes and typically have horizontal axis measurements that are from 3 1/2" – 5".

After determining your bowler type and ball reaction needs, see the table below for recommended layouts. The Symmetric Core Layout sheet is divided into two columns for "**Earlier Rolling**" and "**Later Rolling**" Reactions.

- **Earlier Rolling Reactions** match up best to oilier and wet/dry lane conditions, or for players who have problems with the ball going too long before changing direction. These will typically be players who have high ball speeds and/or medium-low RPM rates
- **Later Rolling Reactions** match up best to shorter patterns and drier lane conditions, or for players who have problems with the ball hooking or changing direction too early. These will typically be players who have medium-slow ball speeds and/or high RPM rates.

<u>Track</u>	<u>RPM rate</u>	<u>Earlier Rolling Layouts</u>	<u>Later Rolling Layouts</u>
High	High	3E	2L,3L,4L
High	Medium-Low	No early rolling reactions	1L,2L,3L,4L,
Medium-Low	High	2E,3E,4E	2L,3L,4L
Medium-Low	Medium-Low	1E,2E,4E	1L,2L,3L,4L

Brunswick recommends positioning the Heavy-Spot / CG to end up with 3/4 -1oz. of positive side weight and a small amount of finger/thumb weight (less than 1/4 oz.) after drilling. This leaves the driller plenty of room to modify the ball reaction with an X-hole, yet doesn't require that an X-hole be used to make the ball ABC legal.

## Fine Tuning Ball Reactions with an X-Hole

**X-Holes** can be used to **increase** or **decrease** track flare.

- **Increasing track flare** in an existing ball will tend to make the ball more aggressive, hook more, hook earlier and react stronger to the dry areas of the lane.
- **Decreasing track flare** in an existing ball will tend to make the ball less aggressive, go longer, hook less and react smoother to the dry areas of the lane (less over reaction).

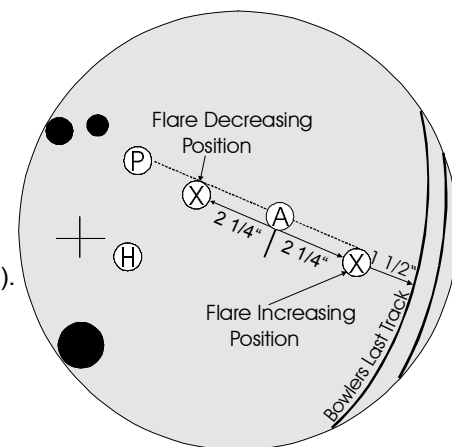
Brunswick is recommending a simplified **one-hole size / two-hole position** technique that covers the vast majority of ball reaction changes that can be accomplished by drilling an X-hole.

- Use a **1" drill bit, 3" deep**, to both increase or decrease track flare.

**Note:** Larger and deeper X-holes result in only slightly greater increases or decreases in track flare. The one-hole size technique has the added advantage of avoiding problems with illegal static weights. As long as the ball was originally laid out with at least 3/4 oz. of positive side weight and a small amount of finger/thumb weight, the 1" X 3" hole using either of Brunswick's recommended X-hole positions will keep you out of static weight trouble.

Brunswick recommends using a position 2 1/4" **past** the bowlers axis to increase flare, and using a position 2 1/4" **back toward the pin** to decrease flare. Using the line connecting the bowlers "axis" and the "pin" as a reference line (see diagram). The X-holes should be on or slightly below the reference line (holes on the line will sometimes drop the narrow point of the track and cause the track to flare over the finger holes).

**Warning:** Drilling a "flare increasing" hole can result in the track flaring over the X-hole. After checking the position of the bowlers last track, make sure the "flare increasing hole" is at least 1 1/2" from the bowlers last track (see diagram above). If necessary shorten the distance from axis in order to keep the "flare increasing hole" at least 1 1/2" from the bowlers last track.



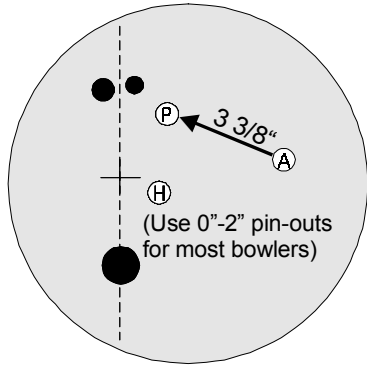
## High-Differential Symmetric Core Layout Sheet

(RGdiff. 0.040 and above )

### Earlier Rolling Reactions

### High Flare High Hook Potential

### Later Rolling Reactions



#### 1E (Heavy Oil)

Maximum hook potential for **Medium-Low RPM** players.

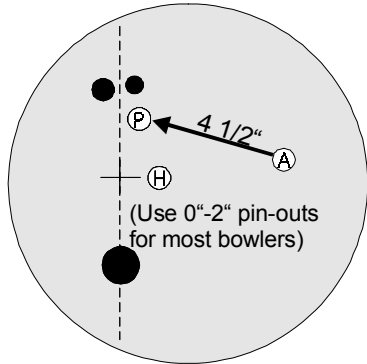
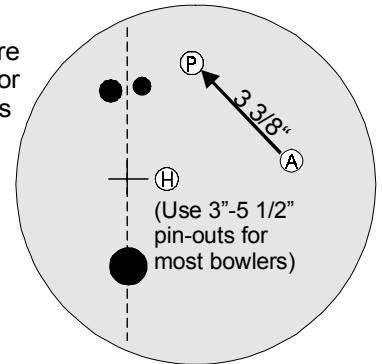
This layout may hook early and be inconsistent at the breakpoint for **High-RPM** players, use layout #2E instead.

This layout may hit the finger holes for **High-Track** players, use layout #1L instead.

#### 1L (Heavy Oil)

Maximum hook potential with less mid-lane and more backend than layout #1E for **Medium-Low RPM** players

This layout may hook early and be inconsistent at the breakpoint for **High-RPM** players, use layout #2L instead.



#### 2E (Medium Oil)

Maximum hook potential for **High-RPM** players

Medium hook potential for **Medium-Low** RPM players

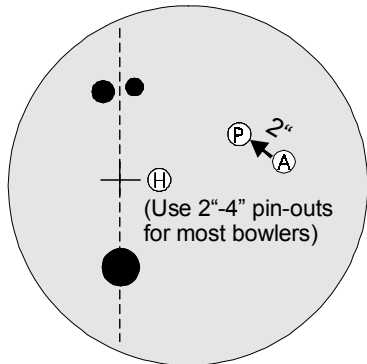
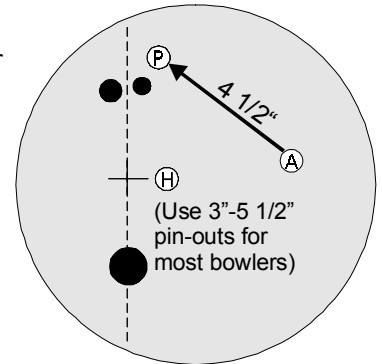
This layout may hit the finger holes for **High-Track** players, use layout #2L instead.

#### 2L (Medium Oil)

Maximum hook potential for **High-RPM** players.

Medium hook potential for **Medium-Low** RPM players

Less mid-lane and more backend than layout #2E.



#### 3E (Oily Wet/Dry's)

Pin between axis and leverage for medium hook potential and early roll.

Helps moderate over reactions.

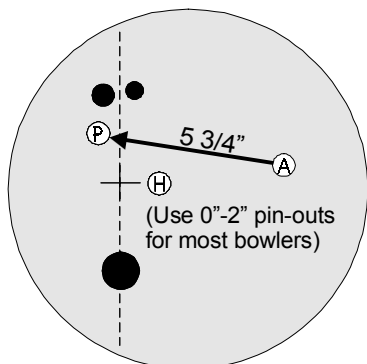
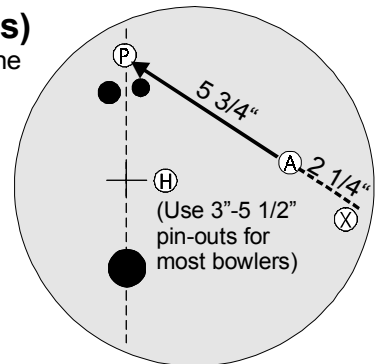
This layout may lack hitting power for **Medium-Low** RPM players.

#### 3L (Hooking heads)

High RG pin position with the pin above the fingers for length. X-hole positioned for increased flare.

Moderate hook potential with skid/snap arc to fight early hook in the heads.

Lower hook potential than layout #2L.



#### 4E (Hooking Wet/Dry's)

Smooth reaction for moderating wet/dry lane conditions

Lower hook potential than layout #3E.

This layout may hit the finger holes for **High-Track** players, use layout #4L instead.

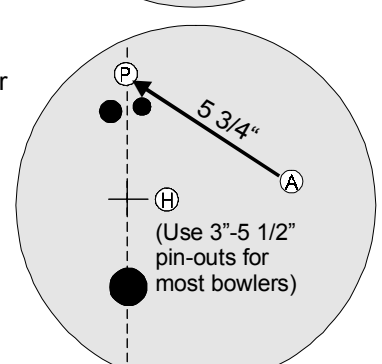
#### 4L (Dry lanes)

Minimum hook potential for dry lanes and moderating over reactions.

High RG pin position with the pin above the fingers for length

### Low Flare

### Low Hook Potential



Note: Finger, thumb and X-holes must have at least a moderate bevel and the riser Pin (P) must be at least one inch from any drilled hole to comply with the Brunswick warranty