

Part Number

60-103998-93X

Coverstock

Particle Medium-Load

Color: Sapphire Blue

Hardness: 76-78

Glow Engraving

Factory Finish

400-grit wet sand

Core Dynamics

RG Max: 2.600

RG Int: 2.585

RG Min: 2.553

RG Diff: 0.047

RG Asy: 0.015

Average RG: 5.5

Performance

Hook Potential: 150

Length: 45

Typical Breakpoint Shape: 50

Available Weights

12-16 Pounds

WARP ZONE



Hook Potential: Low (10) 150 High (150)

Length: Early (25) 45 Long (235)

Breakpoint Shape: Smooth Arc (10) 50 Angular (100)

Flare Potential: Low (0.0) 0.047 High (0.080)

RG-average: Center Heavy (1) 5.5 Cover Heavy (10)

Reaction Characteristics

Warp Zone, the second ball in the Zone-Asymmetric series expands on and complements the original Time Zone by using a medium-load particle coverstock over the Time Zone core. The medium-load particle coverstock increases traction in the oil and improves control on dry boards. This complementary ball reaction creates a better match up on heavy oil and over/under lane conditions. Bowlers with faster ball speeds and/or large amounts of axis tilt (low track, spinner release) will benefit from the **Warp Zones** increased traction in the oil.

When drilling the **Warp Zone**, placement of the Riser Pin and the PSA locator (relative to the bowler's axis) influences the amount of track flare created, contributing to the on lane ball reaction. The unique "ellipse" engraving* around the riser pin on the **Warp Zone** allows the bowler to easily see the orientation of the core and the PSA when looking at their ball, making it easier to identify the choice of layout.

Utility

- Out of the box:** The Warp Zone is an ideal heavy oil ball. The medium-load particle coverstock increases traction and hooking action in the oil, reducing skid and maximizing playability in heavy oil.
- When shined:** Using Brunswick's **Factory Finish High Gloss Polish** the total hooking action of the Warp Zone can be reduced and the arc made more skid/snap. Changing the surface finish in this way allows the Warp Zone to be used to smooth the over/under reactions seen with Reactive coverstock balls on wet/dry lane conditions.

Reaction Setup

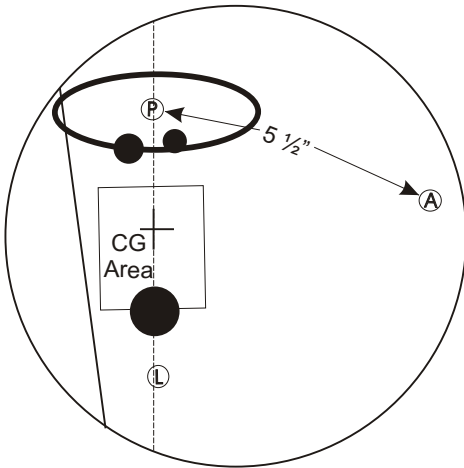
There are additional layout considerations for a ball with a significant Preferential Spin Axis (PSA) such as the **Warp Zone**. The distance from the riser pin still determines the overall strength of the layout the same way it does in symmetric core balls that have an insignificant PSA. In the **Warp Zone**, placement of the PSA locator relative to the riser pin and the bowler's axis can be used to modify the reaction created by a given riser pin position. See the attached sample layouts for the most popular drilling options.

WARNING – Both the Warp Zone & Time Zone have a large amount of asymmetry designed into the core. Do not place the PSA locator pin on the negative side of the ball, you could hit every hole on the ball!

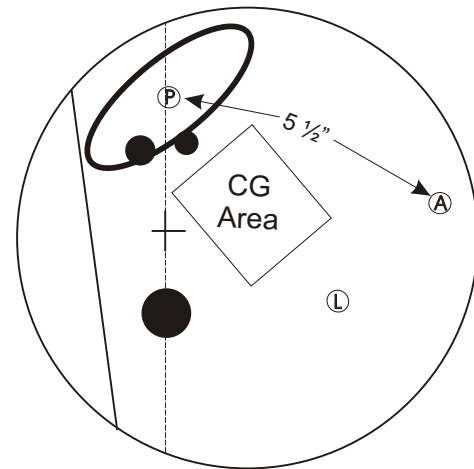
The **Warp Zone** is finished with a dull 400-grit surface finish which increases its hooking action in the oil. Dull surface finishes can sometimes hook too early resulting in reduced backend reaction and hitting power. To increase length, polish the surface with Brunswick's **Factory Finish High Gloss Polish**.

* The engraved ellipse is a drilling aid that marks the general orientation of the core inside the ball and is only approximately centered around the riser pin.

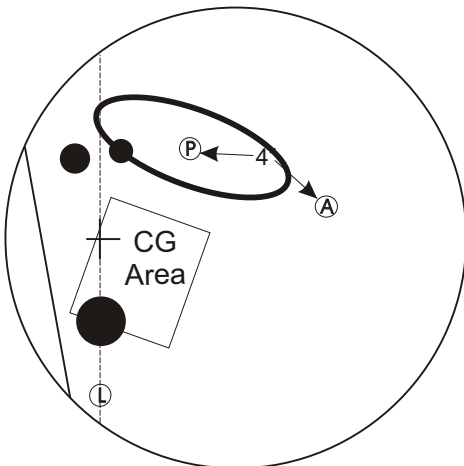
WARP ZONE Basic Drilling Instructions



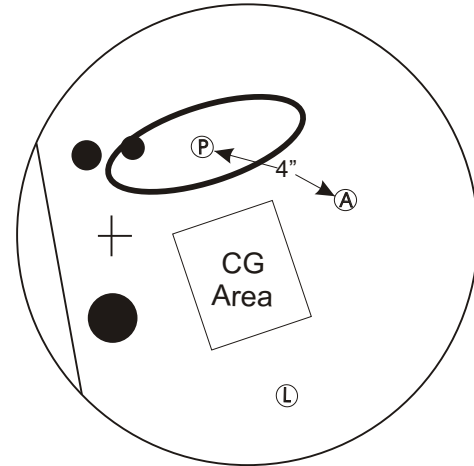
Lane Condition - Dry
Pin - Near span-line above the fingers
Locator Pin - Near span-line by thumb
Reaction - Most length with the least hook for drier lanes



Lane Condition - Medium to Dry
Pin - Near span-line above the fingers
Locator Pin - Between the thumb and axis
Reaction - Most Skid/Snap reaction possible



Lane Condition - Medium
Pin - Outside ring finger
Locator Pin - On span-line below thumb
Reaction - Aggressive mid-lane with delayed hook for use on a wide variety of lane conditions



Lane Condition - Medium to Oily
Pin - Outside of ring finger
Locator Pin - Between thumb and axis
Reaction - Earliest, most aggressive reaction for strong recovery on oilier lanes

Note: If a X-hole is necessary to make the ball ABC legal, place it above or below the axis on a line drawn from the grip center through the CG.

Time Zone balls come with four surface markings on the ball for layout use:

1. "P" is a solid yellow Riser Pin that marks the Top of the Core
2. "L" is a small clear pin that marks the Preferred Spin Axis of the ball
3. "H" is a punch mark that indicates the Heavy Spot or CG of the ball
4. The engraved ellipse shows the shape and position of the Time Zone core*

- The "P", "H" and "L" will tend to be in a straight line with "H" between "P" and "L".
- "H" can fall left or right of the line connecting "P" and "L" and not change the performance of the Time Zone.
- "P" and "L" will be close to 6-3/4" apart.
- For left-handed bowlers use the mirror images of the Basic Layouts.

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



"Out of the Box" Ball Comparison Chart - 2003/2004

Skid/Snap Reaction
Sharp Turn

	DRY LANE CONDITIONS				DRY TO MEDIUM LANE CONDITIONS					MEDIUM TO OILY CONDITIONS				OILY LANE CONDITIONS					
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	
1																			
2																			
3																			
4																			
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LOW	HOOK POTENTIAL				HOOK POTENTIAL					HOOK POTENTIAL				HOOK POTENTIAL					HIGH
20																			
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40																			
	DRY LANE CONDITIONS				DRY TO MEDIUM LANE CONDITIONS					MEDIUM TO OILY CONDITIONS				OILY LANE CONDITIONS					

Even Reaction
Smooth Turn

Brunswick Ball Brands

High Performance - Cutting edge Coverstock and Core technologies for a wide variety of lane conditions

Zone - Bowling's most successful brand name combined with Preferential Spin Axis core technology

Monster - Mid-Price - Close to the best for less. More bang for the buck. The Bowling Industry's widest range of Reactive and Proactive reactions at the mid-price point.

Groove - Your first performance ball - Plastic slips, Groove grips. Ready to start hooking the ball?
Move up from Plastic to Proactive, Reactive and Urethane coverstock technology. Get in the Groove!

Polyester: Target Zone, Kids Favorite Characters and Viz-A-Ball. Glow-in-the-Dark patterns and colors. 360 degree Limited Edition Graphics. Minnie, Mickey, Snoopy and more.



"Out of the Box" Ball Specification List - 2003/2004

Balls	Hook Potential	Length	Typical Breakpoint Shape	Coverstock	Factory Finish	Mass Distribution Numbers				Available Weights
						RG-max	RG-min	RG-diff	RG-avg..	
High Performance										
Blazing Inferno	110	115	90	Activator-Coverstock	High Gloss Polish*	2.564	2.531	0.033	4.3	12-16
Raging Inferno	140	60	70	Activator Particle	High Gloss Polish*	2.557	2.515	0.042	3.9	12-16
Inferno	115	105	80	Activator-Coverstock	High Gloss Polish*	2.513	2.463	0.050	2.6	12-16
Fuze Eliminator	125	80	60	Proactive - Low Load	High Gloss Polish*	2.546	2.493	0.053	3.5	12-16
Zone - Bowlings most popular brand combined with Preferential Spin Axis technology										
Warp Zone	150	45	50	Particle - Medium Load	400-grit wet sand	2.600	2.553	0.047	5.5	12-16
Time Zone	105	105	75	PowrKoil 18 - Reactive	High Gloss Polish*	2.580	2.536	0.044	4.6	12-16
Monster - Mid Price Series										
Bruiser Reactive	110	100	75	PowrKoil 18 - Reactive	High Gloss Polish*	2.543	2.500	0.043	3.5	10-16
Swamp Monster Proactive	150	35	35	Proactive - Ultra High Load	35-Micron Trizact	2.587	2.546	0.041	4.8	10-16
SmashR Reactive	115	90	65	PowrKoil 18 - Reactive	800-Grit Wet Sand	2.577	2.536	0.041	4.5	10-16
Frenzy Reactive	90	125	85	N'Control PowerStock - Reactive	High Gloss Polish*	2.577	2.536	0.041	4.5	10-16
SlayR Reactive	70	165	90	PowrKoil LS	High Gloss Polish*	2.543	2.500	0.043	3.5	10-16
Groove - Your first performance ball										
Power Groove Proactive Plum Pearl	75	145	70	Proactive - Low Load	Cerium Oxide - Trizact	2.708	2.667	0.041	8.2	10-16
Power Groove Proactive Black Sparkle	115	70	60	Proactive - Low Load	400-Grit Wet Sand	2.708	2.667	0.041	8.2	10-16
Power Groove Reactive - All Colors	70	155	75	PowrKoil 17 - Reactive	High Gloss Polish*	2.704	2.663	0.041	8.0	10-16
Groove Urethane	50	210	40	Urethane	Polished or 320 Grit Wet Sand	2.703	2.684	0.019	8.3	10-16
Polyester - Awesome designs - Favorite Characters - 360 degree limited edition graphics										
Target Zones	25	235	30	Polyester	High Gloss Polish*	2.715	2.696	0.019	8.7	6,8,10-16
Favorite Characters	25	235	30	Polyester	High Gloss Polish*	2.715	2.696	0.019	8.7	6,8,10-16
Viz-a-Ball	25	235	30	Polyester	High Gloss Polish*	2.715	2.696	0.019	8.7	6,8,10-16

*Evenly wet sand to a 400-grit finish then apply Brunswick's Factory Finish "High Gloss Polish"

Updated October, 2003