

Brunswick® Monster® Bruiser™ - Reactive

Part Number

60-103921-93X

Coverstock

PowrKoil 18 - Reactive
Color: Black & Blue solid
Hardness: 75-77
Glow Engraving

Factory Finish

High Gloss Polish

Core Dynamics

RG Max: 2.543
RG Min: 2.500
RG Diff.: 0.043
Average RG: 3.5

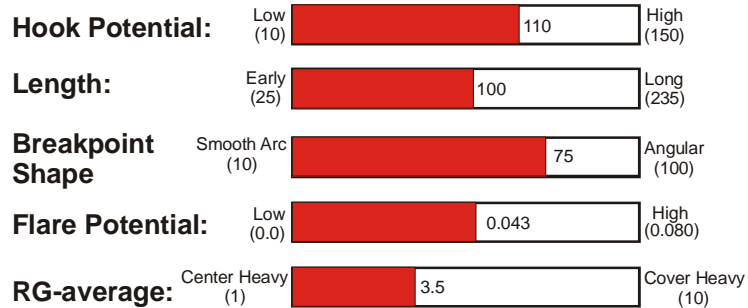
Performance

Hook Potential: 110
Length: 100
Typical Breakpoint Shape: 75

Available Weights

10-16 Pounds
(10-11 use a spherical offset core)

MONSTER BRUISER



Reaction Characteristics

The **Monster Bruiser** is one tough customer. Brunswick engineers have combined the steely heart of a Low RG Quantum core, with a thick-skin of PowrKoil™18 Reactive coverstock to create one pin-punishing brute. The shiny coverstock was designed to slice through the heads, while the Low RG dynamics deliver strong traction through the mid-lane for devastating back-end knockouts. The Monster Bruiser – made for bowlers who want to break out of their old game in a very bad way.

The **Monster Bruiser** uses a new Mushroom shaped core derived from the very popular **Quantum** family of high performance balls. Designed to match up to the slicker lane oils used today, the Bruiser features a high density inner core to produce a low average RG and medium flare potential ball. This strong core, in combination with the High Gloss PowrKoil18 coverstock allows the Bruiser to generate strong mid-lane recovery with a powerful but predictable back-end breakpoint, making it the strongest Reactive Monster ever. See your pro shop professional and lock one up for yourself soon.

Utility

- Out of the Box:** With its high gloss surface the **Monster Bruiser** matches up well on medium-oily to medium-dry lane conditions.
- When dulled:** The **Monster Bruiser's** hooking action will increase and its arc will become more even, creating a better match-up for oily lane conditions and for smoothing over/under reactions seen on wet/dry lane conditions.

Reaction Setup

The **Monster Bruiser** can be drilled using the standard drilling techniques developed for two-piece balls, see the included drilling instructions for reaction characteristics and layout details.

The **Monster Bruiser** 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.

Bring your **Monster Bruiser** back to its original Factory Finish with Brunswick's new **High Gloss Polish**. Available at you local proshop.

Brunswick's Monster-Series delivers the bowling industry's widest range of Proactive and Reactive ball reactions available at the mid-price point. At rock bottom prices to boot.

For the most up to date Product Line Information go to www.brunswickbowling.com

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).

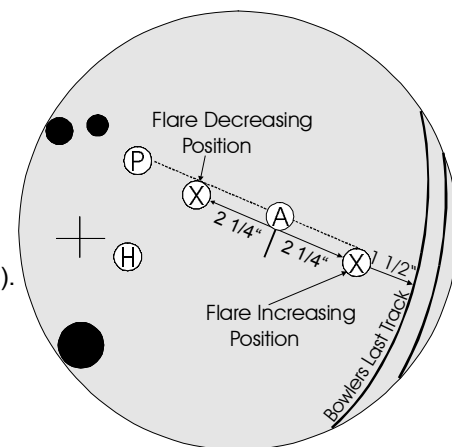
Brunswick is recommending a simplified **one-hole size / two-hole position** technique that covers the vast majority of ball reaction changes that can be accomplished by drilling an X-hole.

- 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.



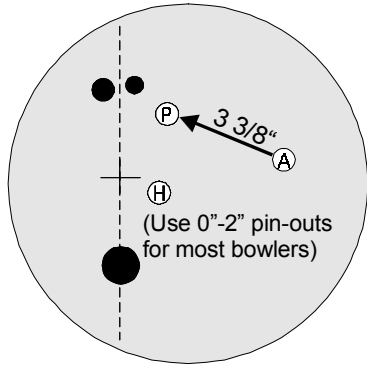
High-Differential Symmetric Core Layout Sheet

(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.

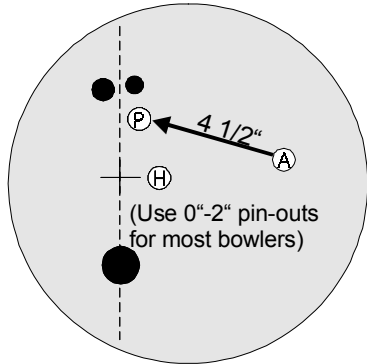
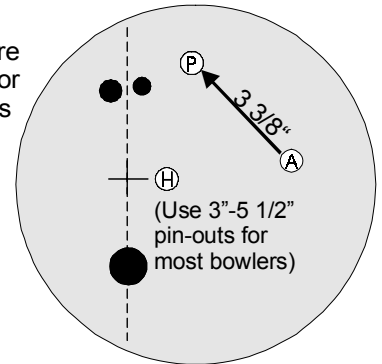
This layout may hook early and be inconsistent at the breakpoint for **High-RPM** players, use layout #2E instead.

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

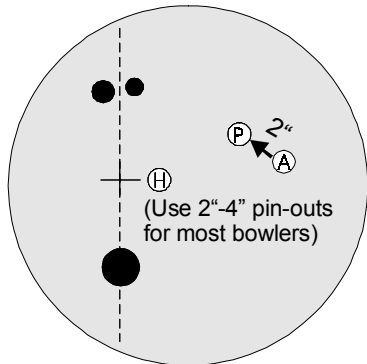
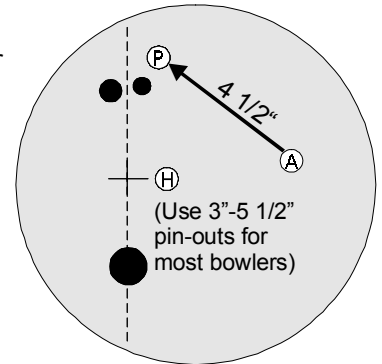
This layout may hit the finger holes for **High-Track** players, use layout #2L instead.

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.

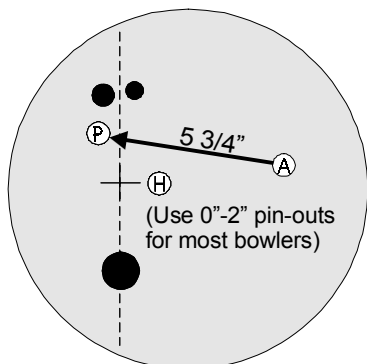
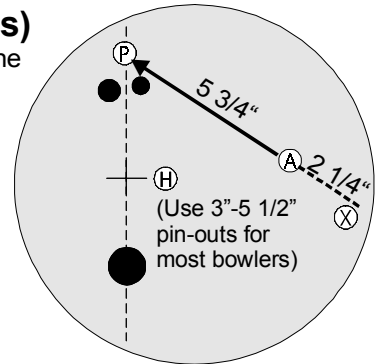
This layout may lack hitting power for **Medium-Low RPM** players.

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.

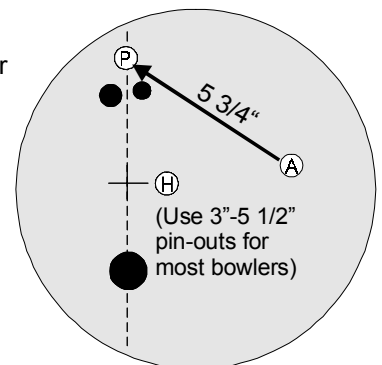
4L (Dry lanes)

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



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

Skid/Snap Reaction
Sharp Turn

	DRY LANE CONDITIONS				DRY TO MEDIUM LANE CONDITIONS					A R C	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																				
5																				
6																				
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19																				
LOW	HOOK POTENTIAL				HOOK POTENTIAL						HOOK POTENTIAL				HOOK POTENTIAL					HIGH
20																				
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	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										
Raging Inferno	140	60	70	Activator Particle	Factory Finish - High Gloss Polish	2.557	2.515	0.042	3.9	12-16
Inferno	115	105	80	Activator-Aggressive Reactive	Factory Finish - High Gloss Polish	2.513	2.463	0.050	2.6	12-16
Fuze Eliminator	125	80	60	Proactive - Low Load	Cerium Oxide - Trizact	2.546	2.493	0.053	3.5	12-16
Zone										
Time Zone	105	105	75	PowrKoil 18 - Reactive	Factory Finish - 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	Factory Finish - 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	Rubbing & Finishing Compound-Double Buff	2.577	2.536	0.041	4.5	10-16
Groove - Your first performance ball										
Power Groove Proactive Plum Pearl	75	145	70	Proacitve - Low Load	Cerium Oxide - Trizact	2.708	2.667	0.041	8.2	10-16
Power Groove Proactive Black Sparkle	115	70	60	Proacitve - 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	Rubbing & Finishing Compound-Double Buff	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	Rubbing & Finishing Compound-Double Buff	2.715	2.696	0.019	8.7	6,8,10-16
Favorite Characters	25	235	30	Polyester	Rubbing & Finishing Compound-Double Buff	2.715	2.696	0.019	8.7	6,8,10-16
Viz-a-Ball	25	235	30	Polyester	Rubbing & Finishing Compound-Double Buff	2.715	2.696	0.019	8.7	6,8,10-16

Updated June 2003