

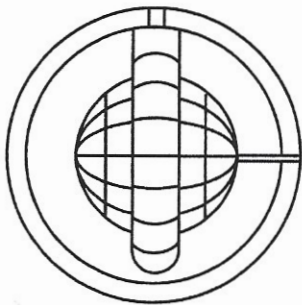
FIRST STRIKE TECHNOLOGY.

Brunswick® introduces the Phantom, the first bowling ball with a built-in programmable reaction guidance system. It's easy to arm, but it's like nothing you've ever drilled before.

Phantom's revolutionary StealthCore™ design always maintains its preferred axis of rotation, even after drilling.

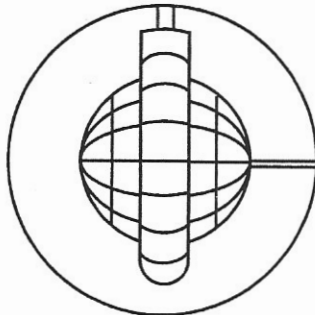
Combining this information with each bowler's personal track and axis, you can give every bowler something they've never had before: unparalleled ball consistency and reaction predictability.

There are three different StealthCore designs to choose from:



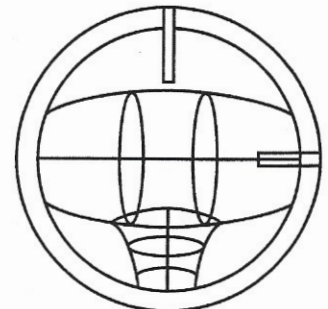
The Navy Phantom's StealthCore I concentrates more weight into the inner core, for extremely low moments of inertia — and quick, decisive action.

STEALTHCORE I™



Engineered in a two-piece design, StealthCore II also has low moments of inertia. This Jet Phantom is our "midrange bomber."

STEALTHCORE II™



StealthCore III has more weight near the surface, for high moments of inertia. That's why the Crimson Phantom delivers straight-ahead action, for a devastating and consistent ground strike on adversely hooking lanes.

STEALTHCORE III™

Each StealthCore is centered in the Phantom, but its design and shape still provide top weight for drilling. And the Phantom's unique dual pin locating system allows you to precisely position the dynamic mass of the core with respect to each bowler's unique track and axis.

The first pin is the riser pin; the second is a smaller locating pin.

This dual pin system gives you a "window" inside the Phantom, so you know exactly how the core is positioned inside every ball. And by using these two pins, the StealthCore can be positioned in line or precisely offset from each bowler's personal axis or track. This is what

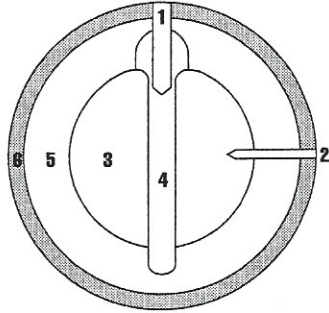
determines the reaction characteristics for each drilling technique and for each individual bowler.

The distribution of weight in the ball also determines how quickly each Phantom reacts. STEALTHCORE I (Navy) has more weight concentrated into the center of the ball for the quickest reaction of any Phantom. Like the Navy Phantom, STEALTHCORE II (Jet) also has "low moments," for quick reactions. However, its weight distribution is more balanced, for less dramatic reactions than STEALTHCORE I. STEALTHCORE III (Crimson) has more weight near the surface, for the least reaction.

STEALTHCORE I

— FRONT VIEW

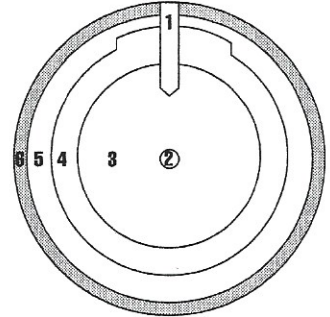
1. Riser Pin (*Label Area*)
2. Small Locating Pin
3. Core Sphere
4. Core Ring
5. Outer Core
6. Urethane Shell



STEALTHCORE I CROSS SECTION

— SIDE VIEW

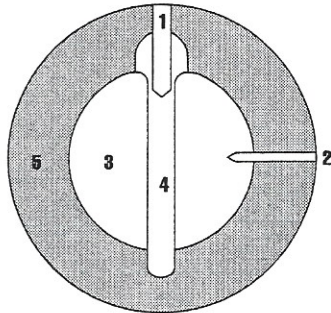
1. Riser Pin (*Label Area*)
2. Small Locating Pin
3. Core Sphere
4. Core Ring
5. Outer Core
6. Urethane Shell



STEALTHCORE II CROSS SECTION

— FRONT VIEW

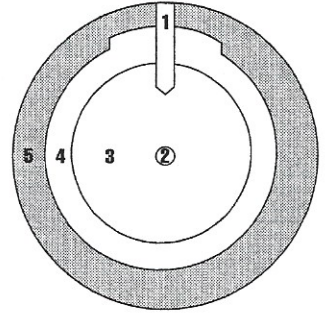
1. Riser Pin (*Label Area*)
2. Small Locating Pin
3. Core Sphere
4. Core Ring
5. Urethane Shell



STEALTHCORE II CROSS SECTION

— SIDE VIEW

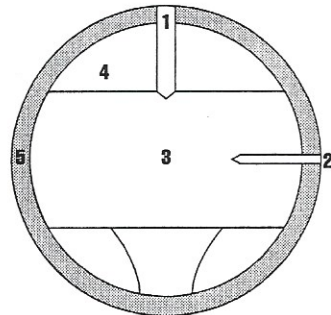
1. Riser Pin (*Label Area*)
2. Small Locating Pin
3. Core Sphere
4. Core Ring
5. Urethane Shell



STEALTHCORE III CROSS SECTION

— FRONT VIEW

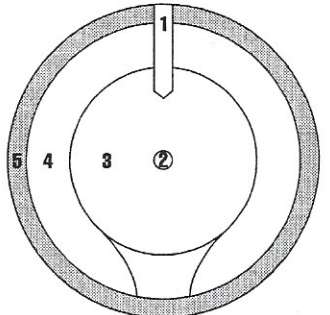
1. Riser Pin (*Label Area*)
2. Small Locating Pin
3. Core Mallet Shape
4. Outer Core
5. Urethane Shell



STEALTHCORE III CROSS SECTION

— SIDE VIEW

1. Riser Pin (*Label Area*)
2. Small Locating Pin
3. Core Mallet Shape
4. Outer Core
5. Urethane Shell



There are four basic drilling patterns that determine the boundaries of reactions attainable for StealthCore I and II, plus three corresponding patterns for StealthCore III. Those reactions are:

		POTENTIAL FOR HOOK							
		HIGH							LOW
— NAVY — STEALTHCORE I									
— JET — STEALTHCORE II									
— CRIMSON — STEALTHCORE III									

ARMING THE PHANTOM.

Here are the four basic drilling patterns that define the reactions possible using the Phantom series. (*Layout Pattern 2 is suggested only for StealthCore I and II.*)

DRILLING LAYOUT PATTERN 1

STABLE

— Minimum Back-End Reaction

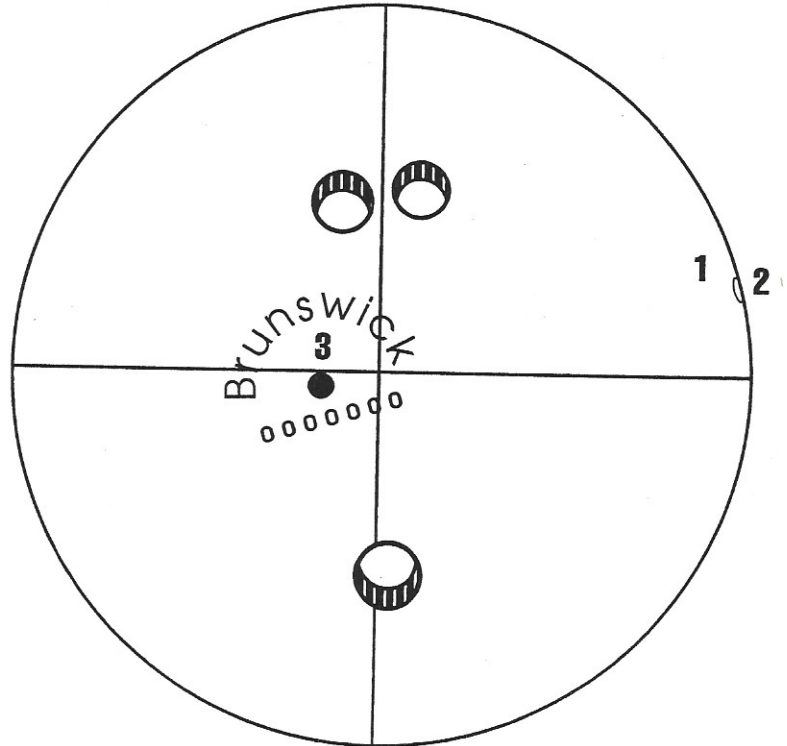
LAYOUT. In this layout the small locating pin is placed on the bowler's axis (*determined from a previous ball*), while the riser pin is positioned in the area of the center of the grip.

DRILLING. First, lock the bowler's personal axis numbers into the Phantom Commander. (*An example would be a bowler with an axis 5 3/4" to the right of the grip and 7/8" above the finger/thumb dividing line.*) Next, place the point of the small Commander attachment on the Phantom's small locating pin. This will place the bowler's axis of rotation directly on the small pin. Now roll the Commander up or down, placing the riser pin near the center of the grip. Mark the center of the grip, using the crosshairs created by the Commander and the quarter scale. And now you're ready to drill.

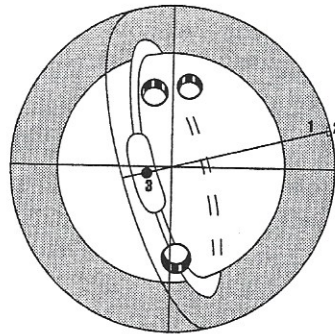
In this layout, the position of the riser pin is not crucial. To keep the ball within specifications for finger or thumb weight, position the riser pin near the center of the grip.

REACTION. In this drilling position each StealthCore rolls on its preferential axis. It provides a narrow track and the minimum back-end reaction of any Phantom ball design.

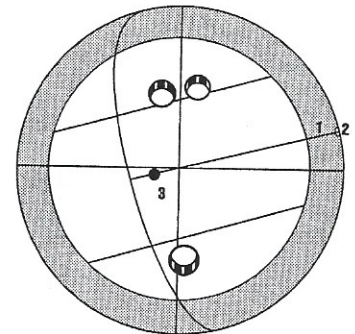
Bowlers with a low track may find this layout provides excess negative side weight. In this case a balance hole should be placed exactly opposite the small locating pin, to bring the ball within ABC specifications. Bowlers with a high track may find the entire track to be slightly larger, causing the track to clip the thumbhole as the ball rolls. In this case a balance hole should be placed exactly opposite the small locating pin, using a small bit drilled deep. Size the hole to bring the ball between 3/4 and 1 ounce of positive side weight, to keep the track off the thumbhole.



1. Bowler's Axis
2. Small Pin
3. Riser Pin (*Label Area*)



Cutaway view of StealthCore I and StealthCore II



Cutaway view of StealthCore III

DRILLING LAYOUT PATTERN 2

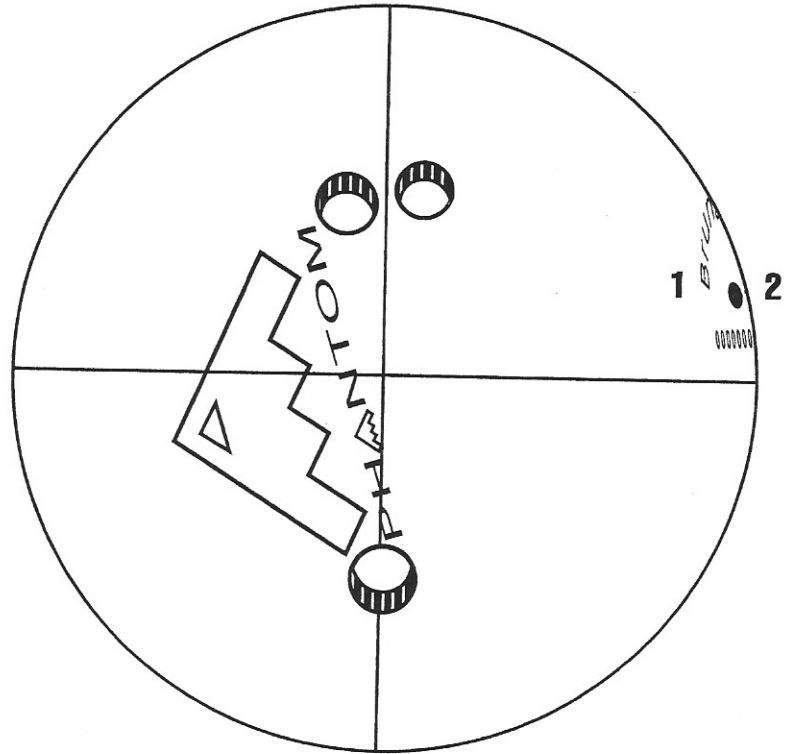
STABLE

— Medium Back-End Reaction (*STEALTHCORE I AND II only*)

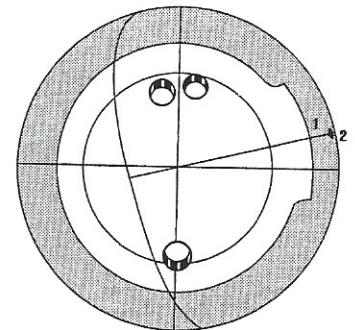
LAYOUT. This layout places the riser pin on the bowler's axis. The position of the small locating pin will not affect the reaction in this layout. For this pattern it is also recommended to use a ball that has less than 2 1/2 ounces of top weight. If an extra hole is required to be within ABC specifications, it can be drilled directly into the riser pin or past the riser pin, if it is desired to remove the bottom weight after drilling.

DRILLING. First, lock the bowler's personal axis numbers into the Phantom Commander. Place the point of the small Commander attachment directly on the riser pin; this will place the bowler's axis on the riser pin. Adjust the Commander to place the center of the grip where desired (*a popular choice to place the grip is directly around the Phantom logo*). Now, mark the grip center and drill.

REACTION. In this layout the roll is stable and provides a narrow track, with slightly more back-end reaction than Drilling Layout 1. That's because the ball will roll sooner with the weight block on the axis. This pattern is not recommended for players who track within 1/2" of the thumbhole, as there is a good chance it will hit the thumbhole. High track bowlers looking for this reaction are advised to use Drilling Layout 1, keeping the surface of the ball slightly dull.



1. Bowler's Axis
2. Riser Pin (*Label Area*)



Cutaway view of StealthCore I and StealthCore II

DRILLING LAYOUT PATTERN 3

45° CLOCKWISE CORE TWIST

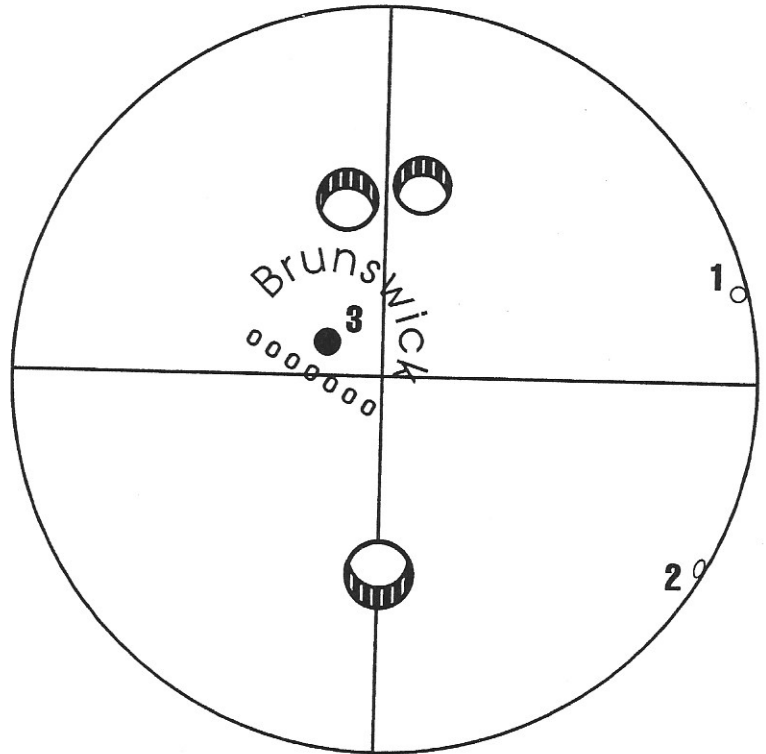
— Strong Flare and Back-End Reaction

LAYOUT. In Layout 3 the small pin is placed 3 3/8" below the bowler's axis, and the riser pin is positioned toward the center of the grip. This places the dynamic weight of the core at a 45° twist to the track.

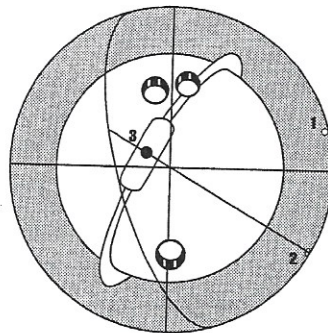
DRILLING. Lock the bowler's personal axis numbers into the Phantom Commander. To position the small locating pin exactly 3 3/8" below the bowler's axis, place the lower end of the Commander's ruler attachment on the small locating pin. In previous layout patterns we placed the upper end of the attachment on the locating pin. However, the attachment is 3 3/8" long, and by placing the lower end on the small pin the top will mark the bowler's axis. Rotate the head of the Commander to place the riser pin close to the center of the grip. Mark the center and drill.

REACTION. With this layout the initial axis of rotation out of the bowler's hand and the ball's preferred axis of rotation (around the small pin) are not the same. As the ball rolls, the preferred axis will assert itself, causing the track to flare and producing a strong back-end reaction. Due to the unique dynamics of the StealthCore design, it is possible to predict that the narrow point of the flare will be where the line connecting the two locating pins meets the track. This layout automatically places the flare's narrow point near the fingers, causing the flare to miss the fingerholes.

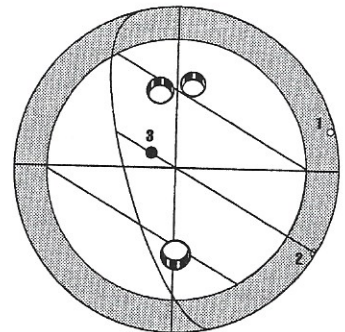
This layout can be used by both low- and high-track players, as it provides a strong leverage-style reaction without the need for an extra balance hole for most players. Bowlers with a low track may find this layout provides excess negative side weight. In this case a balance hole should be placed opposite the small locating pin to bring the ball within ABC specifications. If desired, the reaction can be further strengthened with the use of a small diameter, deep balance hole. It should be drilled into the small locating pin or directly opposite the small locating pin (*be careful to keep the ball within ABC specifications*).



1. Bowler's Axis
2. Small Pin (3 3/8" below axis)
3. Riser Pin (Label Area)



Cutaway view of StealthCore I and StealthCore II



Cutaway view of StealthCore III

DRILLING LAYOUT PATTERN 4

45° POSITIVE CORE TIP

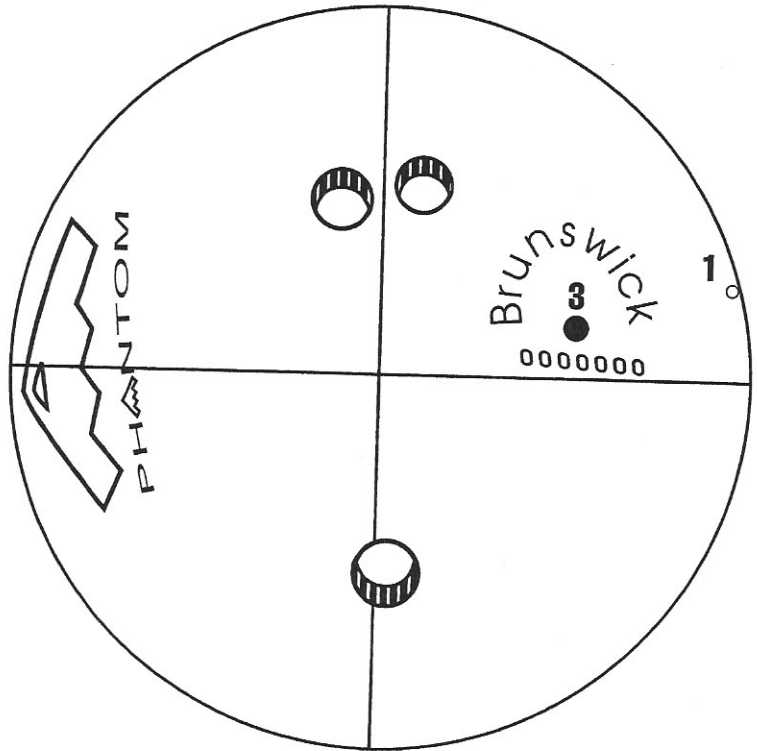
— Strong Flare and Reaction

LAYOUT. Here the riser pin is located $3\frac{3}{8}$ " in from the bowler's axis and the small locating pin is $3\frac{3}{8}$ " past the axis. This places the dynamic mass at a 45° tip to the bowler's track.

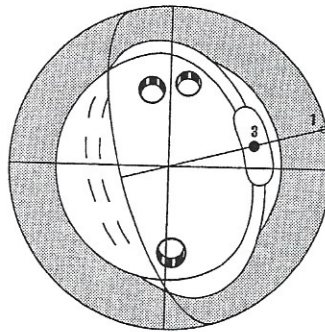
DRILLING. First, find the center point between the small pin and the riser pin. Treat this point as the bowler's axis. Now, lock the bowler's personal axis numbers into the Phantom Commander. Place the tip of the Commander's ruler attachment on the marked halfway point and rotate the Commander top to mark the center of the grip. **NOTE:** Keep the riser pin/label area near the fingers to avoid rolling over the fingerholes, as this layout will create a flare in the track. Mark the center of the grip and you're ready to drill.

REACTION. With this layout the initial axis of rotation out of the bowler's hand and the ball's preferred axis of rotation (around the small pin) are not the same. As the ball rolls, the preferred axis will assert itself, causing a flare and a strong back-end reaction. Due to the unique dynamics of the StealthCore design, it is possible to predict that the narrow point of the flare will be where the line connecting the two locating pins meets the track.

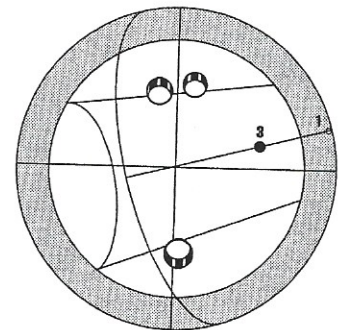
The narrow point of the flare will be on a line connecting the two locating pins. For high track players it is necessary to move this narrow point toward the fingerholes causing the flare to miss the holes. To move this narrow point near the fingerholes, roll the riser pin toward the fingers, drilling the fingerholes deep to stay within ABC balance specifications. If an extra hole is needed to meet positive side weight specs, or it is desired to strengthen the reaction, a balance hole can be drilled on the small locating pin.



1. Bowler's Axis
2. Small Pin (Around bottom of ball)
3. Riser Pin (Label area— $3\frac{3}{8}$ " in from axis)



Cutaway view of StealthCore I and StealthCore II



Cutaway view of StealthCore III