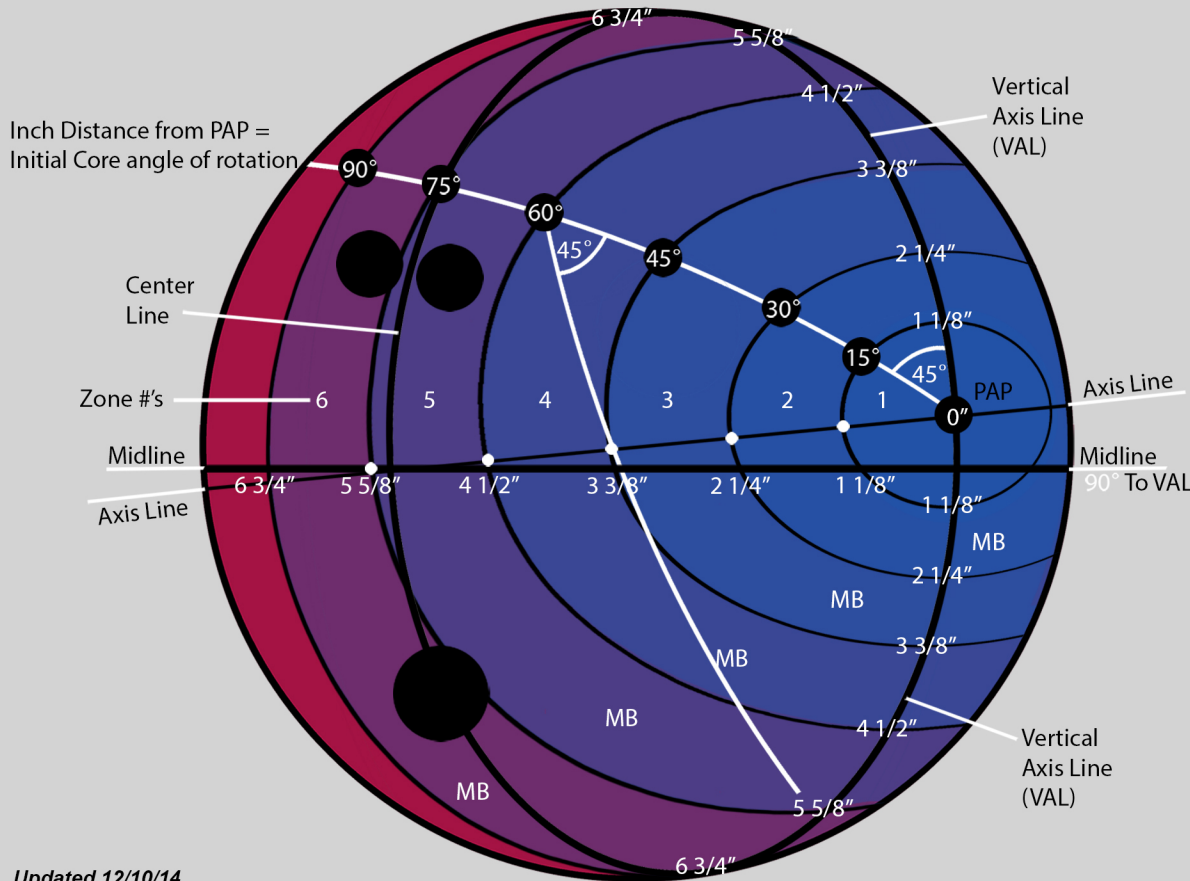




Ball Drilling/Reaction Gradient Guide

PIN ● = Top of Core CG ● = Center of Gravity (Heavy spot) MB = Mass Bias Bowlers Axis Point (PAP) 5 1/2" over and 1/2" up



Updated 12/10/14

Pin placement:

Zones 1/6 = low flare and weaker reaction

Zones 2/5 = medium flare and medium strength reaction

Zones 3/4 = high flare and strong reaction

As you move the PIN from 0" to 6 3/4" to your PAP, or from zone 1 to zone 6 with your pin placement, you raise the RG of the core. As you get closer to zone 1, the RG is lowered.

Moving the PIN to your PAP results in the ball revving up the quickest. Moving the pin to 6 3/4" from your PAP will result in the ball revving the slowest.

Decreasing the angle from the PIN to your VAL (not to go less than 5 degrees) and/or raising the PIN, CG and/or ending CG closer to your upper VAL line will make the ball roll later. Placing the PIN, CG and/or ending CG within zones 2 thru 5, will result in a more defined breakpoint when encountering dry boards.

Lowering the PIN, starting CG and/or ending CG closer to or below your midline, or increasing their angles to your VAL will make the ball roll earlier and result in a smoother transition when encountering dry boards.

The angle between the PIN and CG (for symmetrical balls), in relationship to the line from your PIN to PAP (as shown at 45 degrees in zone #4 on this chart) is called the secondary core angle. Or, from the PIN and MB (for intermediate Diff. balls).

In symmetrical balls with no MB markings, you can disregard the core angle, (i.e. 45 degrees and the MB markings on the chart) and just use the standard method of referring to the PIN and CG in inch distances to your PAP.

Reducing the secondary core angle, or moving the starting CG closer to your PAP than the PIN, will make the ball hook more on the backend. When increasing the angle, or moving the starting CG farther away from the PAP than the PIN, the ball hook less on the backend.

Moving the ending CG to your PAP will delay the roll of the ball and produce a stronger, more even, late hook on the backend. As the ending CG is moved farther from your PAP, from zone 1 to zones 3-4, the ball will start to pick up sooner in the midlane, resulting in an earlier, stronger hook/arc. As the ending CG moves from zone 4 to zone 6, the ending mass rolls more end over end, resulting in a hook set type of reaction on the backend. The ending CG, when at 45 degrees, gives you the perfect balance of skid, roll and hook.

When the ending CG, PIN and/or starting CG are rotating in conjunction with each other, ball reaction is amplified.

Holes on the positive side of the ball will make the ball start hooking sooner. Holes on the neg. side of the ball will make the ball hook later.