



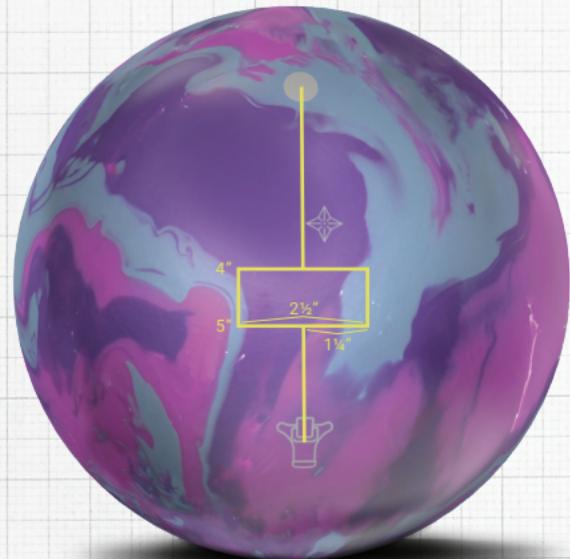
# TRANSFORMER

## DRILLING GUIDE



THE FIRST EVER HIGH PERFORMANCE

# HOW TO FIND THE WING



1. Draw a line from the center of the pin to the PSA
2. Measure 4 inches and 5 inches from the pin on this line, this is the top and bottom of the wing
3. At 4 and 5 inches, draw a perpendicular line 1.25 inches on both sides of the center line (2.5 inches wide in total)
4. Connect the lines at the sides, and you have your Morph-Wing Rectangle

**What does drilling into the wing do?** Increases the intermediate differential which increases asymmetry in the exact same way that drilling into the PSA would on a traditional design. This results in a stronger earlier motion that gives players a smoother more forward roll off the breakpoint. With this design, players now have multiple options to manipulate ball reaction even further. Players can decide to drill into the wing, or drill into the PSA to allow for different amounts of torque induced precession to further enhance how their ball reacts at the end of the pattern.

## VLS LAYOUTS



### Longer Pin Buffer: Hit Wing

Best for speed-dominant players that have shallower launch angles. Hitting the wing increases the dynamics of the ball and inhibits torque induced precession which makes it earlier and stronger. This helps the ball lose rotation faster, hook earlier, and transition smoother off the end of the pattern.



### Shorter Pin Buffer: Missed Wing

Best for rev-dominant players or players with less rotation. Missing the wing increases torque induced precession's effect and allows the ball to retain axis rotation longer. This makes the ball cleaner and more continuous off the end of the pattern and pindeck. Better as the lanes transition or on the burn.

## 2LS LAYOUTS



### Missed Wing Above 1-3" Pin-To-COG Distance

Ideal for rev-dominant, lower-rotation players. Reduces post-drill dynamics, pushing the ball longer and creating a quicker response to friction. Missing the wing increases torque-induced precession, helping the ball retain axis rotation.



### Hit Wing 4-5" Pin-To-COG Distance

Ideal for speed-dominant players. Increases post-drill dynamics, making the ball read earlier with a smoother, more controlled motion. Best on the fresh, since hitting the wing reduces torque-induced precession.



### Miss Wing Below 6"+ Pin-To-COG Distance

A balanced option. Increases dynamics while preserving the wing and torque-induced precession. Produces a motion that blends the midlane with more continuation than traditional weight block designs using similar distances.



## THINGS TO CONSIDER

Final drilled hole position of “pin up” and “pin down” drillings are relative to your PAP, span, and pitches. Adjustments may need to be made to the Pin-To-PAP, PSA-To-PAP, & Pin Buffer distances by the PSO to ensure the holes are drilled inside or outside the referenced box for the desired ball reaction.

## WARRANTY REMINDER

Don't sacrifice the integrity of the ball just to hit the wing. This includes but is not limited to: drilling half way into a pin, using an unrecommended layout, etc. For more information on warranties, visit [www.stormbowl-ing.com/spi-support](http://www.stormbowl-ing.com/spi-support)



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