

# TRACK - AVENGER DRILLING INSTRUCTIONS

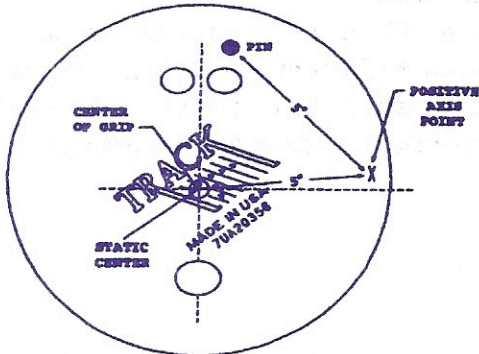


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## Important Specifications

Coverstock:	Protraction Plus
Radius of Gyration:	2.56
RG Differential:	.065
Hook Potential:	20
Flare Potential:	High

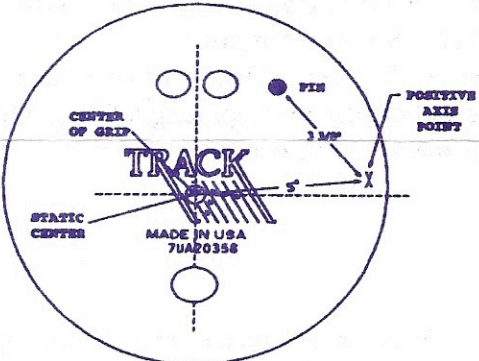
The following seven drilling layouts are basic drill patterns for today's high performance bowling balls. They include five drill patterns for "Semi-Rollers" and two drill patterns for "Full Rollers"



### Drilling 1

**Drill Pattern:** Label (5 x 5)

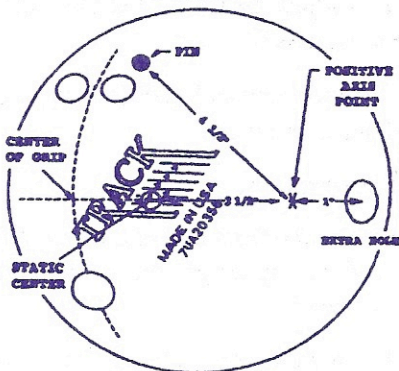
**Ball Reaction:** This pattern will create medium flare potential, give the most skid through the front part of the lane and a strong back end reaction. It will work better than the other patterns when the lanes begin to break down.



### Drilling 2

**Drill Pattern:** Label Leverage (3 3/8 x 5)

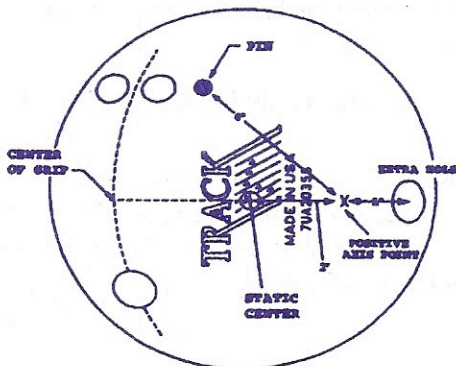
**Ball Reaction:** This pattern will generate the highest flare potential, create medium to strong skid through the front part of the lane and a big back end reaction.



### Drilling 3

**Drill Pattern:** (4 1/2 x 3 1/2, Extra Hole 1" beyond PAP)

**Ball Reaction:** This pattern will generate strong flare potential, create medium skid through the front part of the lane and the most dramatic reaction at the breakpoint.

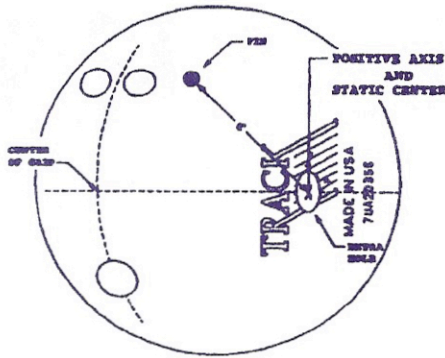


### Drilling 4

**Drill Pattern:** (4 x 2, Extra Hole 1" beyond PAP)

**Ball Reaction:** This pattern will generate high flare potential and create early to medium roll through the front part of the lane. This layout works well on heavy oil and promotes an even, very controllable reaction in the back end of the lane.

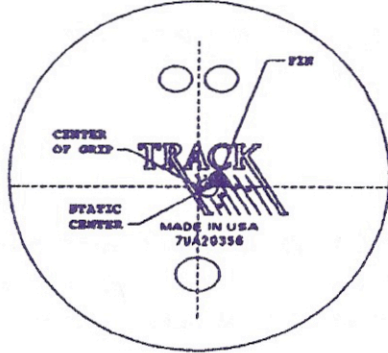




### Drilling 5

*Drill Pattern:* (4 x 0, Extra Hole on PAP)

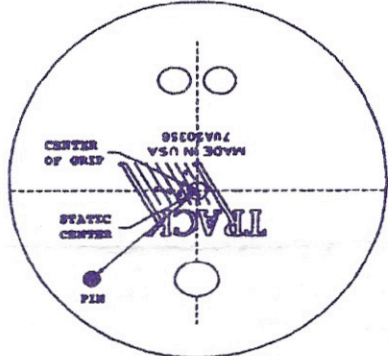
*Ball Reaction:* This pattern will generate high flare potential and create the earliest roll. This drill pattern is the most even reaction on the back end of the lane and will work the best on wet/dry lane conditions of all the drill patterns shown.



### Drilling 6

*Drill Pattern:* Full Roller - Label

*Ball Reaction:* This pattern will generate little to no flare potential and create good length through the front part of the lane. This layout basically takes the core out of play and ball reaction is determined by the aggressiveness of the coverstock material and the strength of the player's release.



### Drilling 7

*Drill Pattern:* Full Roller - Leverage (Pin at 7:30 o'clock position, 3 3/8 inches from center of grip)

*Ball Reaction:* This pattern will generate the most flare potential for Full Roller releases. This layout creates medium length through the front part of the lane and the most overall hook.

## THINGS TO REMEMBER

1. These are basic drillings and are recommended starting points. However, these balls can be drilled many different ways and could/should be fine tuned to meet the needs of each individual bowler. Do not hesitate to adjust the drill pattern to match the lane conditions and the bowler's personal characteristics such as ball speed, revolutions and axis rotation.
2. The illustrations of the drill patterns show the PIN, CG (center of gravity), Extra Hole placement and PAP (bowlers positive axis point). We used a PAP of approximately 5 inches straight over for the purposes of our illustrations.
3. Recognize that all illustrations shown are for right-handers. Reverse drill pattern for left-handers.
4. *Top Weight* - High top weight tends to make the ball skid further and store energy through the front end of the lane. We recommend high top weight for drier lanes or bowlers with below average ball speed, medium top weight for medium oil and medium ball speeds and low top weight for heavy oil or bowlers with above average ball speed.
5. *Extra Holes* - Extra holes are required in several drillings. We recommend placing the hole on the positive axis point or one inch past most of the time. **Be Careful!** Please consider the strength of the bowlers release and the drill pattern being used before selecting the extra hole position more than one inch past the bowlers positive axis point.
6. *Static Side Weight* - We recommend that all balls be drilled with approximately 1/2 ounce side weight to start. If bowler wants to reduce back end reaction, gradually remove the positive side weight.
7. *Surface* - The surface of today's balls play an extremely important role in matching the bowler's needs with the lane conditions where they bowl. To create the best ball reaction, do not hesitate to adjust the surface by sanding or polishing. To add control and move the breakpoint closer to the bowler, increase the friction of the ball by sanding. To delay the breakpoint and increase the flip potential in the back end of the lane, reduce the friction of the ball by polishing.