

Pro Shop Operator's Guide To AMF Ball Drilling Techniques



Includes
Simplified Drilling
Techniques

Simplified Drilling Techniques

For use without determining the bowler's Positive Axis Point.

The following drillings are for those times when a PAP is not available. These drillings give the bowler three different amounts of hook, with three distinctly different break points. Please note, to avoid tracking over the finger holes, keep the pin lined up with or slightly above the finger holes.

Key to drilling diagrams:

● = Pin (top of weightblock)

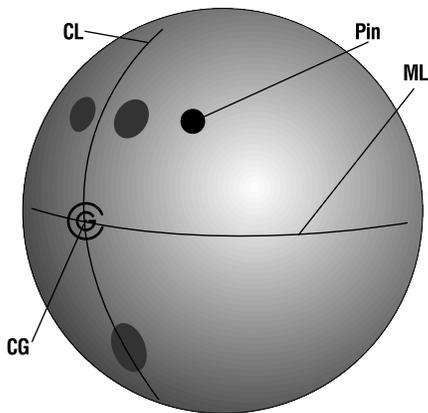
⊙ = Center of Gravity (CG)

● = Balance Hole

CL = Centerline of Grip

ML = Midline

Pin In = 0.2" from CG; Pin Medium = 2.4" from CG;
Pin Out = 4.5½" from CG



LABEL DRILLING

Purpose:

This drilling produces a good skid through the front part of the lane, with an even arcing backend reaction.

Procedure:

Place pin at 1:30 in relation to CG. Place CG at center of grip.
Use Pin Medium.

LENGTH/FORWARD ROLL DRILLING

Purpose:

This drilling is excellent when playing inside angles. It produces good skid through the front part of the lane, with a defined break point and a strong forward roll into the pins.

Procedure:

Place pin over ring finger at 10:30 in relation to CG. Place CG on midline 2" from center of grip. Place balance hole 4 1/2" from center of grip on midline.

Use Pin Medium or Pin Out.

MAXIMUM HOOK AND BACKEND DRILLING

Purpose:

This drilling will produce the most hook and strongest backend reaction. This technique works well from any angle when trying to create area on the lane.

Procedure:

Place pin at 12:00 in relation to CG. Place CG on midline 2" from center of grip. Place balance hole 4 1/2" from center of grip on midline.

Use Pin Medium.

AMF Advanced Drilling Techniques

For use when the bowler's Positive Axis Point can be determined.

This guide is designed to give the ball driller a choice of nine different drillings. These drillings are broken down into three different amounts of hook, each having three different backend reactions. We hope this system allows you and your customer to take advantage of AMF's leading edge technology.

General Guidelines.

1. When determining the PAP on a large flare potential ball, subtract $\frac{3}{4}$ " from bowler's horizontal axis coordinate when axis point is measured on a ball with 1" or less of flare. If the axis point is measured on a ball with 1" to 3" of flare, subtract $\frac{3}{8}$ " from bowler's horizontal axis coordinate to determine the correct axis coordinates. If the axis point is measured on a ball with more than 3" of flare, use that axis point for the PAP.
2. With all drillings, keep the pin $1\frac{1}{2}$ " on the grip side of the midplane and above a line drawn from the bowler's PAP through his ring finger hole to prevent the ball from rolling over the gripping holes.
3. On those drillings where CG does not fall on the midline, draw a line from Center of Grip through CG until line intersects midplane. Place balance hole at line's intersection with midplane or beyond as required by the drilling.
4. To gain control of the breakpoint, reduce side weight toward a limit of $\frac{3}{4}$ ounce negative side weight by use of a balance hole.

Key to drilling diagrams:

- = Pin (top of weightblock)
- ⊙ = Center of Gravity (CG)
- ☆ = Positive Axis Point (PAP)
- = Balance Hole
- CL = Centerline of Grip
- MP = Midplane
- ML = Midline

In these drillings, **HIGH RG** refers to a drilling creating a higher moment of inertia that produces a longer skid and a later breakpoint. **LOW RG** refers to a drilling creating a moment of inertia that produces earlier roll and more revs.

Pin In=0-2" from CG; Pin Medium=2-4" from CG;
Pin Out = 4-5 $\frac{1}{2}$ " from CG

•ALL LOW RG DRILLINGS PRODUCE MINIMAL TRACT FLARE WHICH CAUSES THE BALL TO ROLL EARLY•

LOW RG/ARC

Purpose:

This drilling produces the most even roll pattern of all suggested drillings. It should be used for maximum control of the break point on overreacting (wet-dry) lane conditions, or freshly oiled lanes with no carry down.

Procedure:

Place pin 1" to 1½" from PAP. Place CG approximately 4" to 5" from PAP. Balance hole may be placed up to 2½" beyond midplane to gain desired reaction.

Use Pin Medium or Pin Out.

LOW RG/FORWARD ROLL

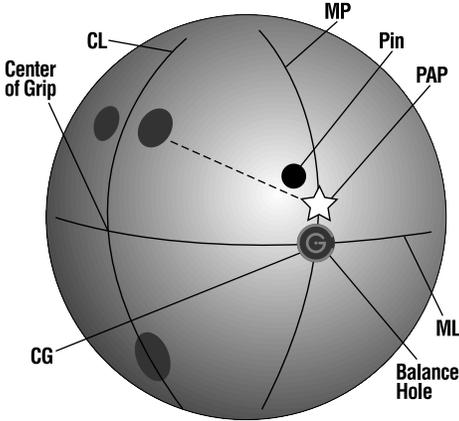
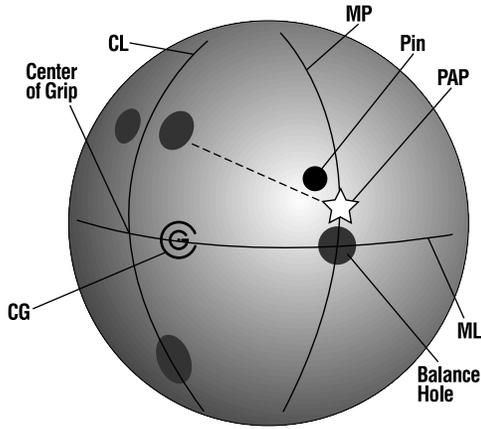
Purpose:

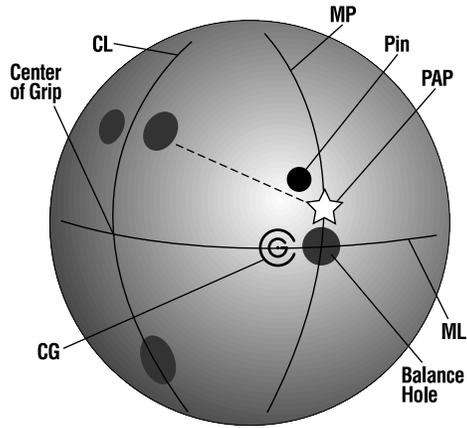
This drilling works well for players with a lower track. This technique works best when the lane is oiled heavily and the backends are medium to dry.

Procedure:

Place pin 1 to 1½" from PAP. Place CG on PAP. Place balance hole up to 2" beyond midplane to get desired reaction.

Use Pin In or Pin Medium with top weight of 3.3 oz. or less.





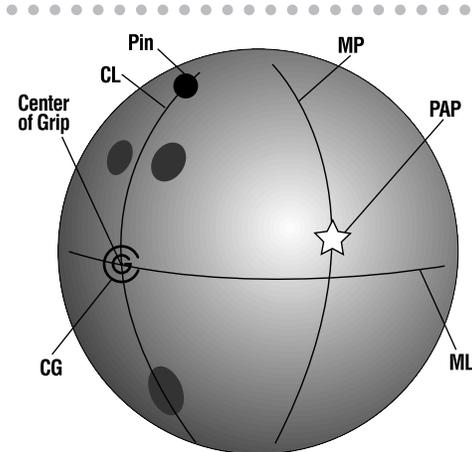
LOW RG/STRONG BACKEND

Purpose:

This drilling has the strongest backend reaction of any of the low RG drillings. This drilling combines moderate hook, heavy roll, and a good backend reaction.

Procedure:

Place pin 1" to 2" from PAP. Place CG 1½" from PAP on midline. Place balance hole up to 2" beyond midplane to gain desired reaction.
Use Pin In or Pin Medium with top weight of 3.3 oz. or less.



• ALL HIGH RG DRILLINGS INCREASE SKID IN FRONT PART OF LANE AND PRODUCE MINIMAL TRACK FLARE •

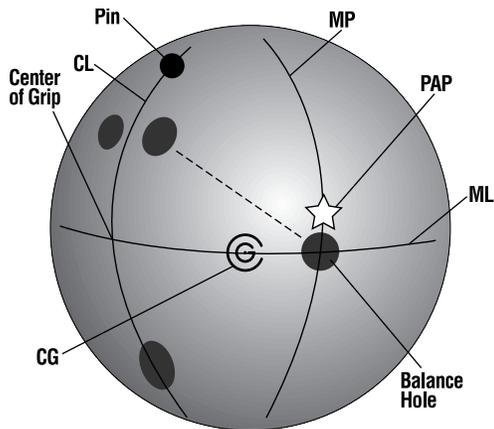
HIGH RG/ARC

Purpose:

This drilling produces small hook and works well when playing down the boards on overreacting hooking lanes.

Procedure:

Place pin 5 to 5½" from PAP, keeping pin above finger holes. Place CG at center of grip.
Use Pin Medium or Pin Out



HIGH RG/FORWARD ROLL

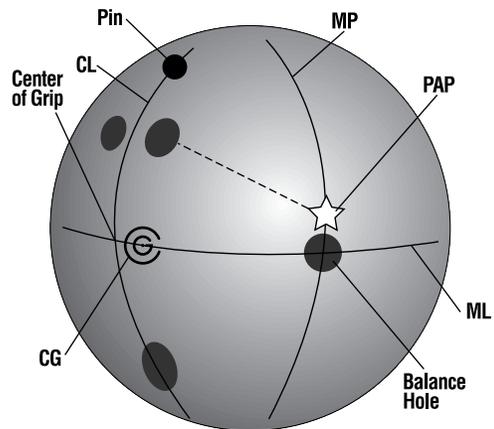
Purpose:

This drilling produces good skid with a defined break point, and heavy roll into the pins.

Procedure:

Place pin 5" to 5½" from PAP, keeping pin above finger holes. Place CG 1" to 2" from PAP. Place balance hole up to 1½" beyond midplane to obtain desired reaction.

Use Pin Medium or Pin Out.



HIGH RG/STRONG BACKEND

Purpose:

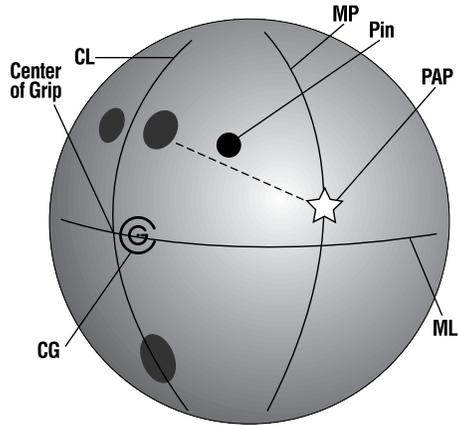
This drilling works best from inside angles.

Procedure:

Place pin 5" to 5½" from PAP, keeping pin above finger holes. Place CG 4½" from PAP on midline. Place balance hole up to 1½" beyond midplane to obtain desired reaction.

Use Pin Medium or Pin Out.

•ALL LEVERAGE DRILLINGS PRODUCE MAXIMUM HOOK AND FLARE•



LEVERAGE/ARC

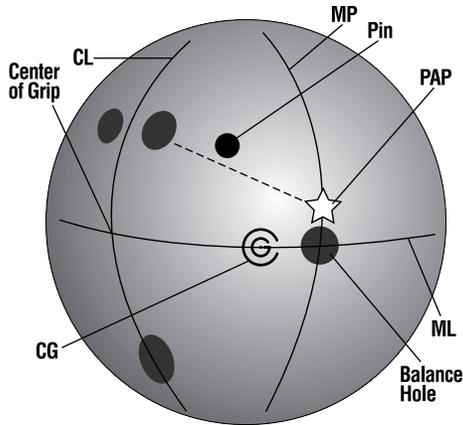
Purpose:

This drilling produces large hook with a controllable backend reaction. This technique works best when playing outside angles or when there is a track shot.

Procedure:

Place pin at 1:30 position in relation to CG, $3\frac{3}{8}$ " from PAP. CG should be on midline near center of grip.

Use Pin Medium.



LEVERAGE/FORWARD ROLL

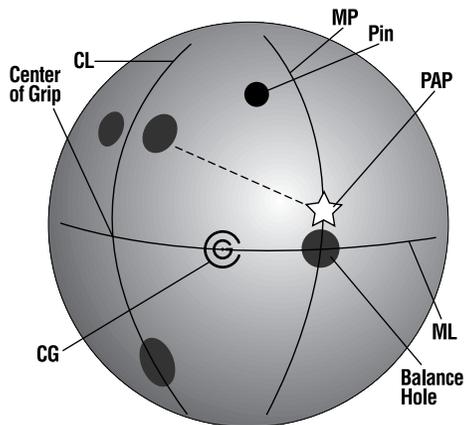
Purpose:

This drilling increases revolutions and overall hook. This technique works well on heavily oiled, blended lanes and gives the bowler a very defined break point, with heavy forward roll into the pins.

Procedure:

Place pin $3\frac{3}{8}$ " from PAP. Place CG 1" to 2" from PAP on midline. Place balance hole on midplane.

Use Pin Medium or Pin Out



LEVERAGE/STRONG BACKEND

Purpose:

This drilling produces the maximum hook and backend reaction of any of the advanced drillings. This technique works well from any angle when trying to create area.

Procedure:

Place pin $3\frac{3}{8}$ " from PAP. Place pin $1\frac{1}{2}$ " to 2" on grip side of midplane. Place CG $2\frac{1}{2}$ " to 3" from PAP. Place balance hole on midplane.
Use Pin Medium or Pin Out

CHOOSING THE CORRECT BALL FOR YOUR CUSTOMER

1. Radius of Gyration (RG) or spin-rate refers to a balls ability to rev up.

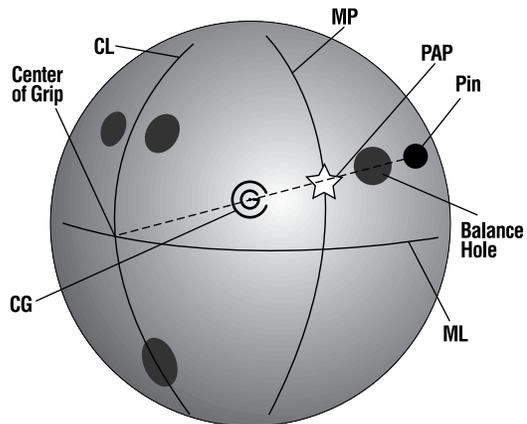
- Low RG
- Medium RG
- High RG

2. Coverstock is the only part of the ball that contacts the lane surface. The measurement for the amount of friction created between the coverstock and the lane surface is Coefficient of Friction (COF). This can greatly effect the amount the bowling ball will hook and perform.

- Mild Coverstock
- Medium Coverstock
- Very Aggressive

3. Track Flare Potential is a measurement of the balls axis migration from the point of the bowler's release to the pins. The higher the track flare, the earlier and more the ball will hook (oily lanes). Less flare creates better length and later hook (drier lanes).

- Small flare (0-3")
- Medium Flare (3"-5")
- Large Flare (5" plus)



FULL ROLLER LEVERAGE

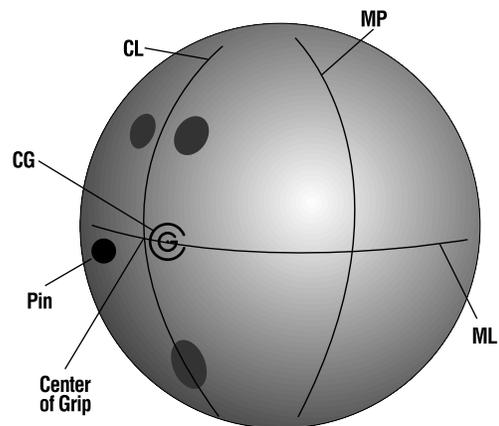
Purpose:

This drilling produces the most hook, flare and backend reaction for any full-roller.

Procedure:

Draw line from pin through CG. Place pin $3\frac{3}{8}$ " from P.A.P. on that line (center of grip will be $10\frac{1}{8}$ " from pin on line). Place balance hole halfway between pin and midplane. Pin will be $3\frac{3}{8}$ " beyond midplane.

Use Pin Medium or Pin Out with top weight of 3.3 oz. or less.



FULL ROLLER LABEL

Purpose:

This drilling produces an even arcing motion for a full-roller.

Procedure:

Place pin at 8:00 position in relation to CG. Place CG on midline $\frac{1}{2}$ " on positive side of centerline.

Use Pin In or Pin Medium.



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AMF Bowling Products

8100 AMF Drive, Richmond, VA 23111, 800/DIAL-AMF, 804/730-4000 Facsimile: 804/730-0652, www.amf.com

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