



AMF BOWLING, INC.
8800 AMF Drive, Richmond, Virginia 23111 U.S.A.
Mailing Address: P.O. Box 15060, Richmond, Virginia 23227 U.S.A. 804/730-4000

AMF SUMO: Revised Pro Tour Drillings

The AMF "SUMO" is designed to produce the entire spectrum of ball reactions necessary to perform successfully on all conditions encountered on the PBA Tour. An extensive development program and additional experimentation on regional and national PBA Tour conditions, has resulted in the following drilling recommendations for the AMF "SUMO".

General Rules

- 1). Place the pin on or above a line drawn from the Positive Axis Point (PAP) to the ring finger hole
- 2). Drill all balls with 1/2 to 3/4 oz. finger weight. Reduce the amount of top weight in the ball (top weight undrilled) to achieve earlier roll or more even ball reaction.
- 3). Rules 1 & 2 above will prevent the bowler's ball track from interfering with any gripping holes. Many other of the new balls have had this problem, BUT AMF's extensive research program has included steps to prevent these problems.
- 4). The key factors in achieving all ball reactions is the distance from the Pin to the Positive Axis Point (PAP), the placement of the Center of Gravity (CG) and the placement of the weight hole (if necessary).
- 5). The ball track on the AMF "SUMO" will show 'flair'. This feature is designed into the ball. The SUMO's flair is caused by the increase in the moment of inertia of the ball (around the axis of rotation) as it travels down the lane. The increase in the moment of inertia counteracts the decrease in the ball speed as the ball travels down the lane. This allows the AMF "SUMO" to hit harder throughout the entire path of the ball.

*Can we
make the
 $V_1 = V_2$
more flare
balls*

obviously

Basic SUMO Drillings

To have an overall spectrum of ball reactions from the AMF "SUMO", a player should drill the following balls:

1. PT IIIA: 0 to 3/4 oz. positive side weight
2. PT IIIC: Desired side weight
3. PT I: Desired side weight
4. PT IA: Desired side weight



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Basic SUMO Drillings (con't):

15° f.p.? 'no Flare'

Balls drilled with drillings PT IIIA, PT IIIB, or PT IIIC will stay on their axis (of rotation) throughout the entire path of the ball and then hook sharply as well as 'open up the lane'.

If PT III drillings are too reactive, use balls with drillings PT I or PT IA. These drillings will skid to the break point and roll more forward at the backend than drillings PT IIIA, B, or C.

Remember: PT I and PT IA drillings will flip less and roll more even than all PT III drillings. PT I and PT IA will therefore roll more even and create less area, but be more controllable than PT III drillings.

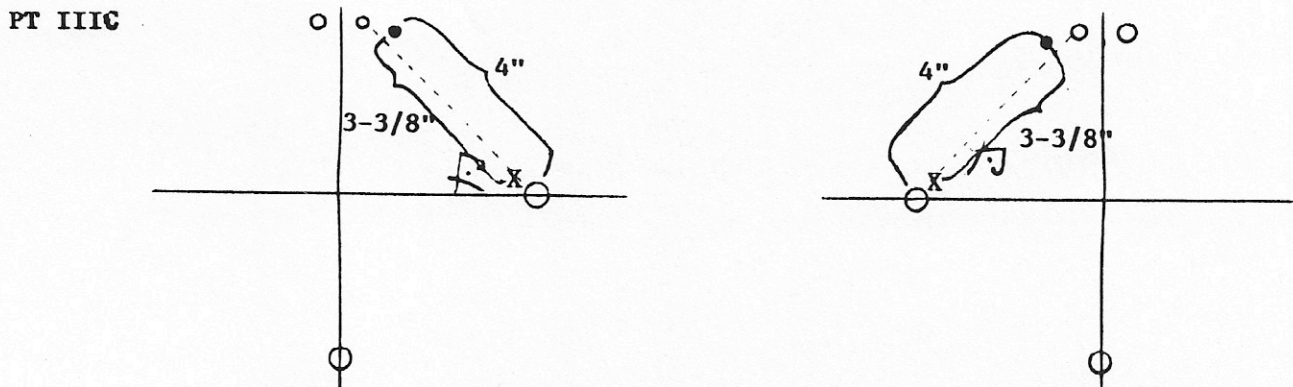
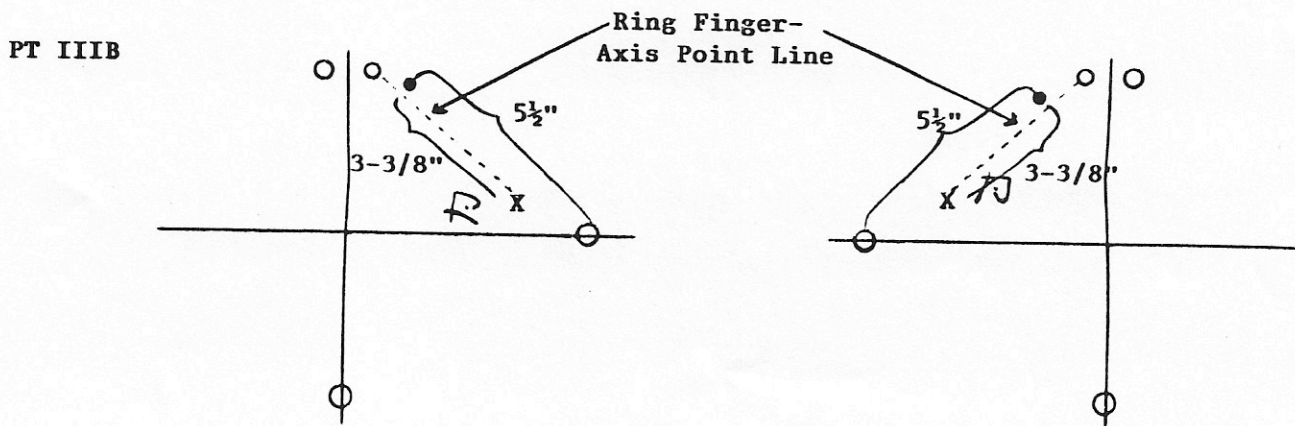
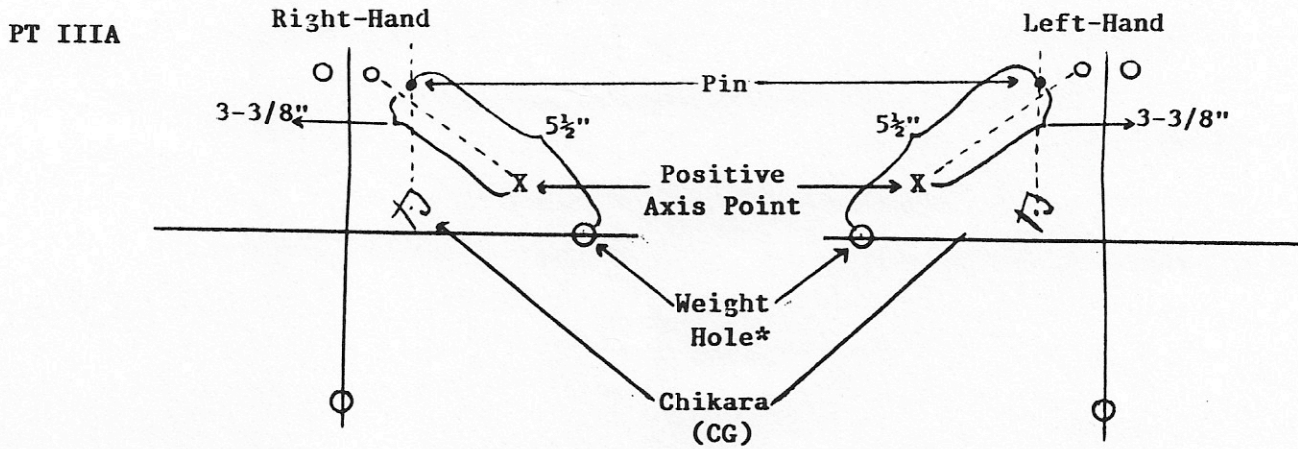
All PT III drillings have more side roll, while drillings PT I and PT IA have more forward roll. PT III drillings with positive side weight will flip and continue to hook on the backend. PT III drillings with negative side weight will flip and 'set' on the backend.



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Basic Drilling Layouts for Pro Tour Drillings of AMF "SUMO"



* All Weight Holes Pitched Zero-Zero except PT IIIA where it is pitched 1 1/4" toward bottom of ball.



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Basic Pro Tour Drillings (con't):

Comments Concerning PT III

PT IIIA will provide maximum skid and maximum flip. Place the Chikara (CG) 1/2 to 1 inch above the midline of the grip. Place the Pin at a 12 O'Clock position in relation to the Chikara (CG) [for right and left-handers] at a distance of 3-3/8 inches from the Positive Axis point. Drill the finger holes only 1 1/2 inches deep to retain maximum top weight (least bottom weight). Place weight hole 5 1/2 inches from the Pin on the midline of the grip, pitched 1/4 inches toward the bottom of the ball.

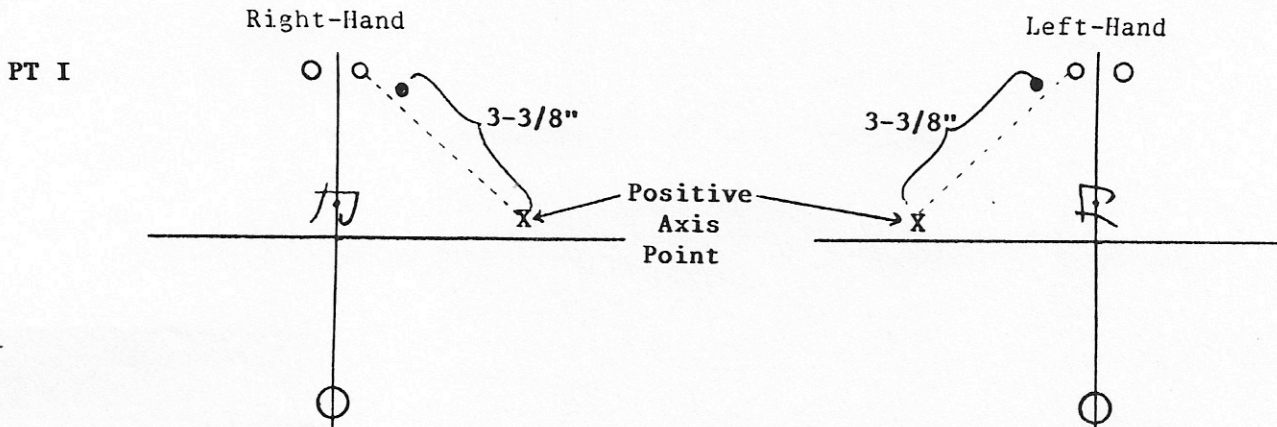
On drillings PT IIIIB or C, place the Chikara (CG) 1/2 to 1 inch above the midline of the grip (ball should have 1/2 to 3/4 oz. finger weight before drilling weight hole). Place the Pin at a 10:30 position in relation to the Chikara (CG) [for right-handed bowlers]. After drilling, place the weight hole in the appropriate position:

For Drilling PT IIIIB: Place weight hole 5 1/2 inches from Pin at intersection with midline of grip, pitched zero-zero.

For Drilling PT IIIC: Place weight hole 4 inches from Pin at intersection with midline of grip, Pitched zero-zero.

On PT III drillings, use side weight to control the sharpness of the break point. PT IIIA will react more than PT IIIIB, and PT IIIIB will react more than PT IIIC. Positive side weight on PT III drillings will cause the ball to flip and continue to hook. Negative side weight will cause the ball to flip and set.

PT I and PT IA:





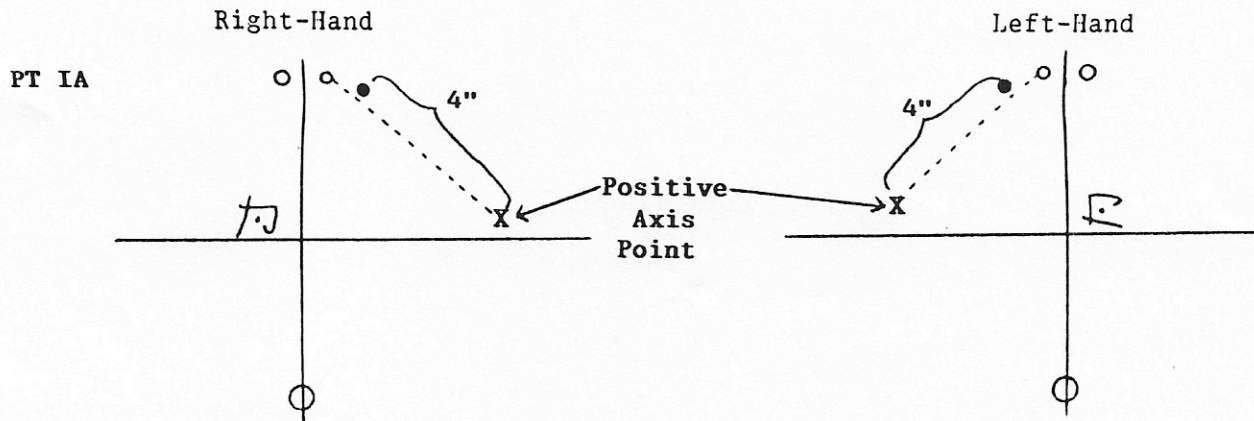
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Basic Pro Tour Drillings (con't):

Comments Concerning PT I

Place the Chikara (CG) 1/2 to 1 inch above the midline of the grip (ball should have 1/2 to 3/4 oz. finger weight after drilling the grip). Place the Pin at a 1:30 position in relation to the Chikara (CG) [for right-handed bowlers]. Use a weight hole in the Positive Axis Point (PAP) or Negative Axis Point (NAP) to fine tune the ball reaction, if necessary.

The PT I drilling is less reactive than the PT III drillings, but more reactive than PT IA illustrated below.



Comments Concerning PT IA

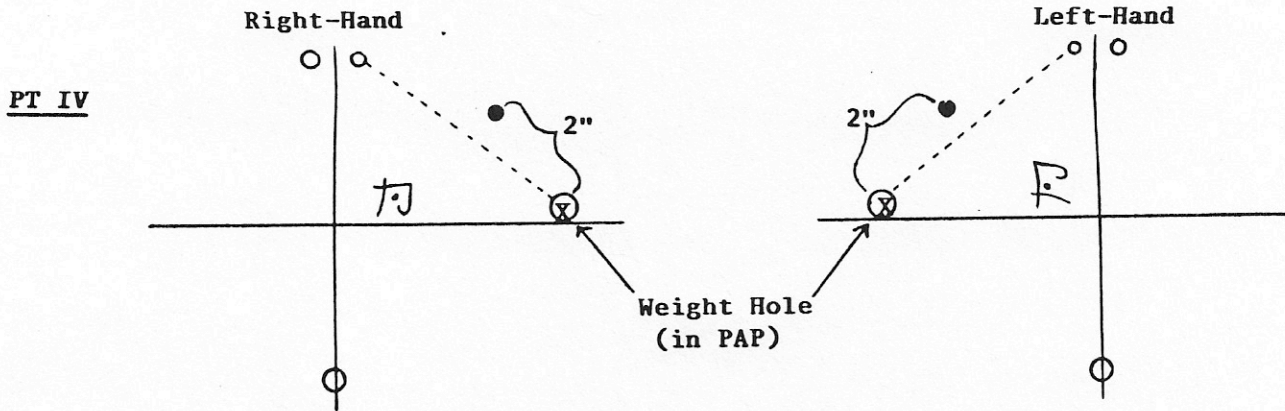
Place the Chikara (CG) 1/2 to 1 inch above the midline of the grip (ball should have 1/2 to 3/4 oz. finger weight after drilling the grip). Place the Pin at a 1:30 position in relation to the Chikara (CG) [for right-handed bowlers]. Place the weight hole at the Negative Axis Point (NAP) to make the ball slightly more reactive, if necessary.

The PT IA drilling is the least reactive of the five basic drillings.



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Drilling for Traditional Two-Piece Ball Reaction:



Comments Concerning PT IV

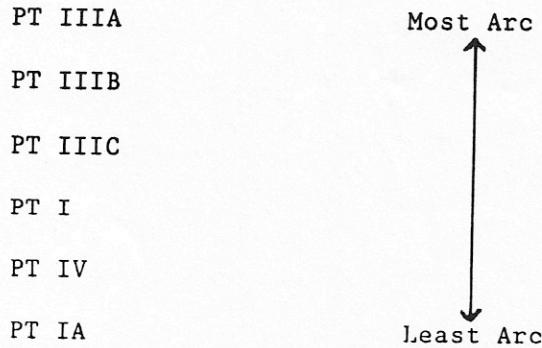
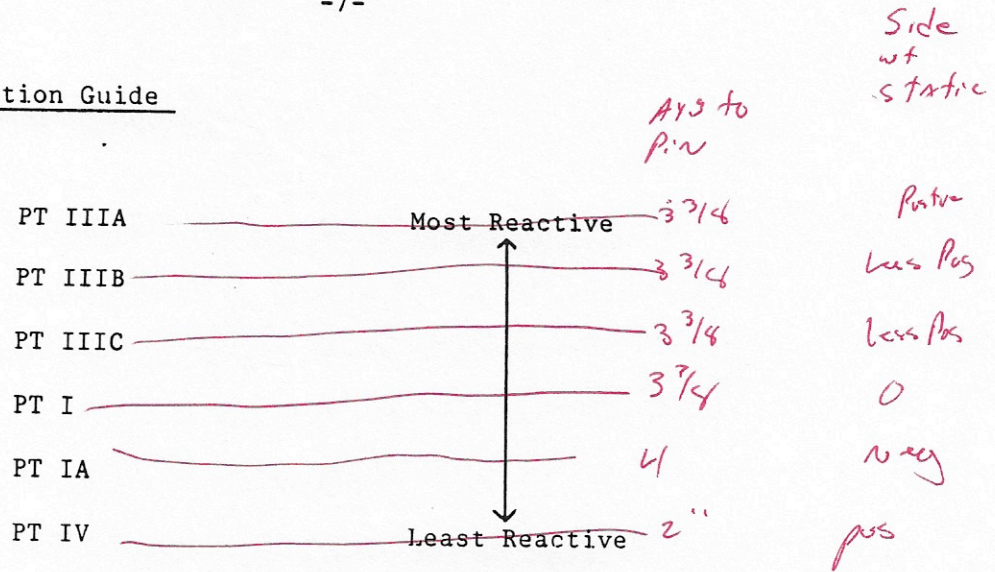
Place the Chikara (CG) 1/2 to 1 inch above the midline of the grip (ball should have 1/2 to 3/4 oz. finger weight before drilling weight hole). Place the Pin at a 1:30 position in relation to the Chikara (CG) [for right-handed bowlers]. Place weight hole at the Positive Axis Point (PAP) to give the ball legal side weight, if necessary. Use appropriate side weight to fine tune the ball reaction.

The PT IV drilling will have a lower moment of inertia than the five basic SUMO drillings. This drilling will therefore roll earlier and flip less than the basic drillings. It may be used by players who 'hit' the ball extremely hard and are concerned about overreaction. It may also be used by all players on violently overreactive backends for control.



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SUMO Ball Reaction Guide

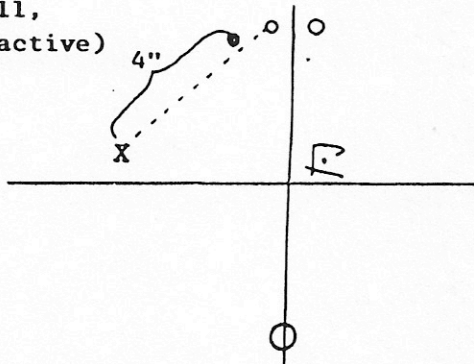




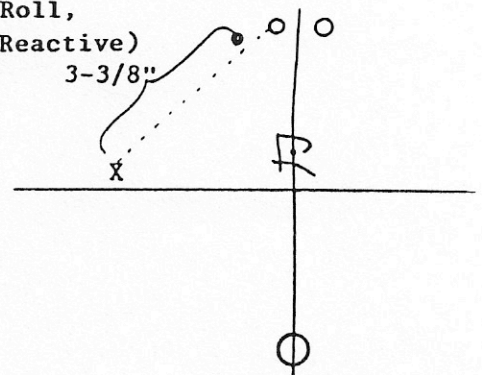
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AMF SUMO: Pro Tour Drilling Layouts—LEFT-HANDED

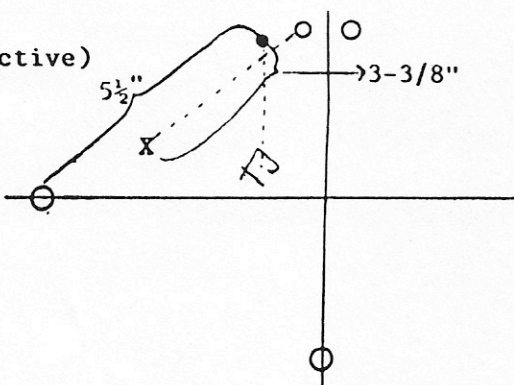
PT IA
 (Forward Roll,
 Least Reactive)



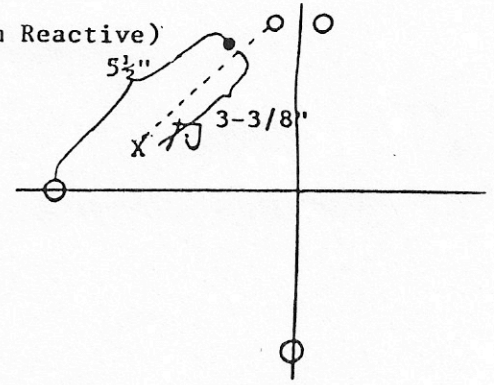
PT I
 (Forward Roll,
 Medium Reactive)



PT IIIA
 (Flip,
 Most Reactive)

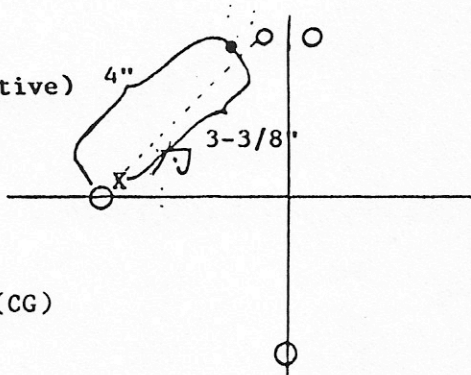


PT IIIB
 (Flip,
 Medium Reactive)

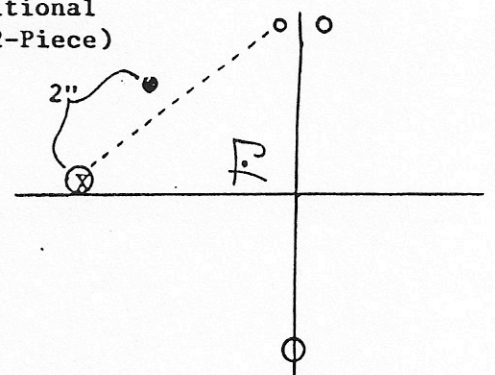


All PT III Drillings with: Positive Side will Flip & Hook
 Negative Side will Flip & Set

PT IIIC
 (Flip,
 Least Reactive)



PT IV
 (Traditional
 2-Piece)



KEY:

-CHIKARA (CG)

-Pin

X -Positive Axis Point (PAP)

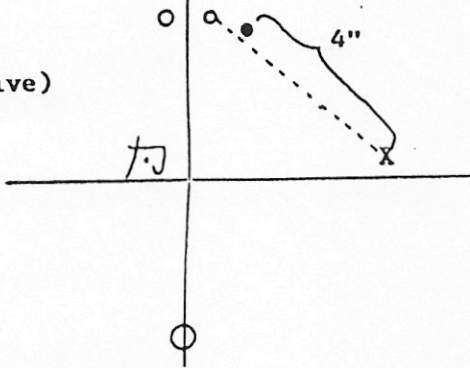
-Weight Hole



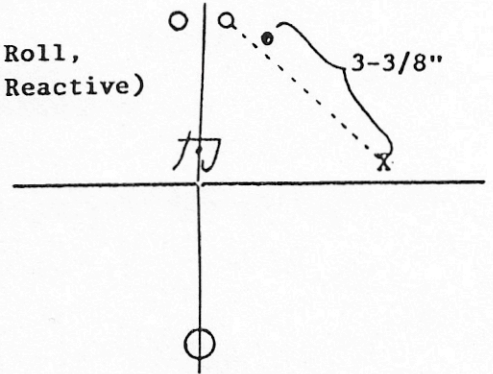
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AMF SUMO: Pro Tour Drilling Layouts-- RIGHT-HANDED

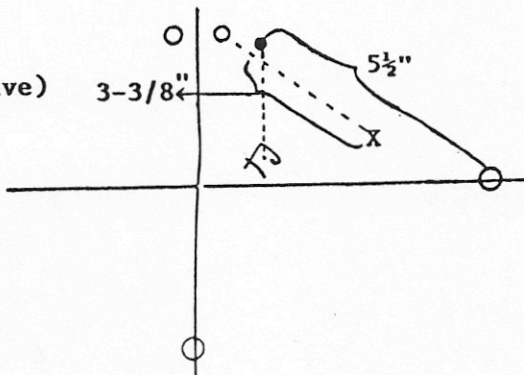
PT IA
 (Forward Roll,
 Least Reactive)



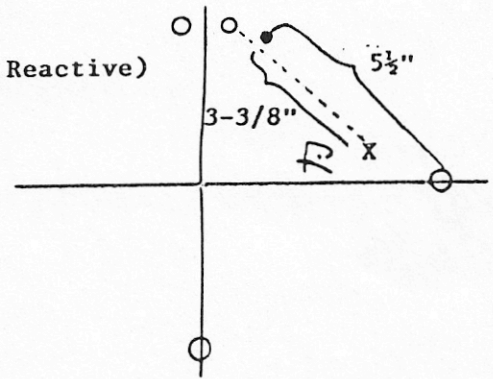
PT I
 (Forward Roll,
 Medium Reactive)



PT IIIA
 (Flip,
 Most Reactive)

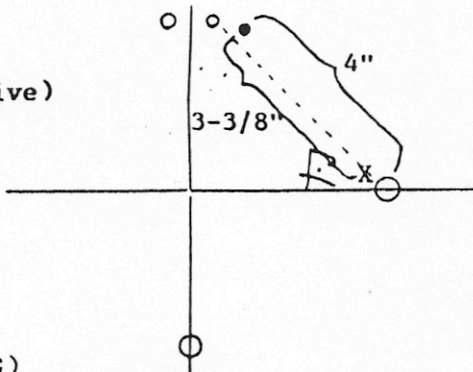


PT IIIB
 (Flip,
 Medium Reactive)

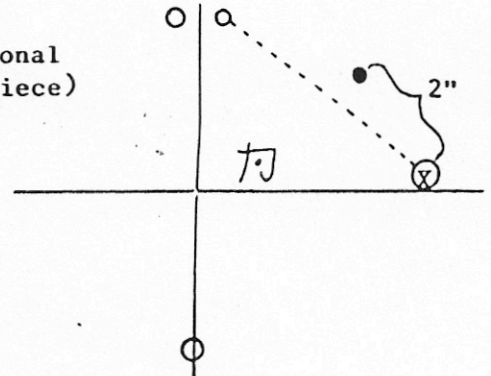


All PT III Drillings with: Positive Side will Flip & Hook
 Negative Side will Flip & Set

PT IIIC
 (Flip,
 Least Reactive)



PT IV
 (Traditional
 2-Piece)



KEY:

- CHIKARA (CG)
- Pin
- Positive Axis Point (PAP)
- Weight Hole