

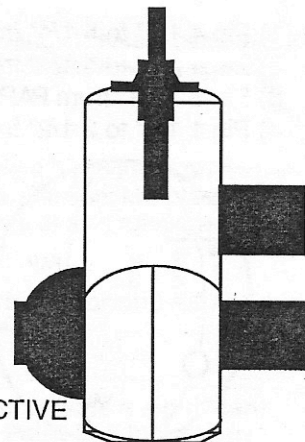
ANIMAL Untamed

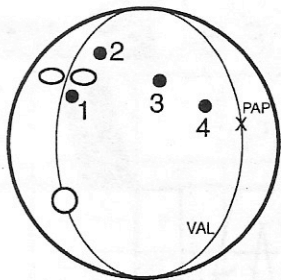
Drilling Instructions

Let your wild side out with the Animal Untamed. We've responded to countless customer requests for a reactive high performance ball by wrapping the extremely popular Mutant core in our Power Plus resin coverstock. The animal Untamed gives bowlers the versatility of high performance core technology coupled with a coverstock that can handle medium volume oil conditions...something that is not possible with today's increasingly aggressive particle coverstocks. Break out of your cage and into the winners' circle with the Animal Untamed.

ANIMAL UNTAMED SPECIFICATIONS

HOOK RATING (DULL-POLISHED):	33-25
LENGTH (1-10):	4
BACKEND (1-10):	9
CORE TECHNOLOGY:	MORPHEUS
CORE POWER RATING (1-10):	9.5
RADIUS OF GYRATION:	2.498
DIFFERENTIAL:	.053
INTERMEDIATE DIFFERENTIAL:	.012
DETERMINATOR SPIN TIME:	8.0 SECONDS
FLARE POTENTIAL (INCHES):	7.0
COVERSTOCK:	POWERPLUS REACTIVE
FACTORY FINISH:	MEGA-SMOOTH
RECOMMENDED POLISH:	MAGIC SHINE
RECOMMENDED SHAPE:	STRONG ARC



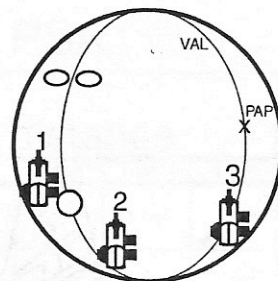


High Track

PAP 5 1/4 or more

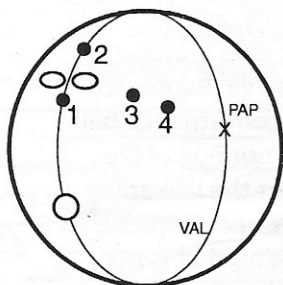
Pin Positions

- 1) Pin 4 1/2" to 5 1/4" from PAP (Pin below fingers).
- 2) Pin 4 1/2" to 5 1/4" from PAP (Pin above fingers).
- 3) Pin 3" to 4" from PAP.
- 4) Pin 1 1/4" to 2 1/2" from PAP



Mass Bias Placement

- 1) Near Track (6" to 7" from PAP).
- 2) Right of thumb (5" to 6" from PAP).
- 3) Near or past vertical axis line.

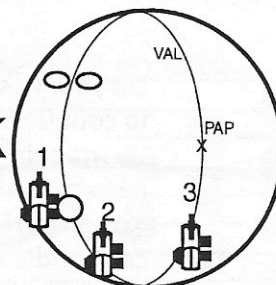


Medium Track

PAP 4 3/8" to 5 1/4"

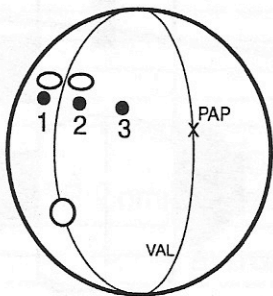
Pin Positions

- 1) Pin 4 1/2" to 5 1/4" from PAP (Pin below fingers).
- 2) Pin 4 1/2" to 5 1/4" from PAP (Pin above fingers).
- 3) Pin 3" to 4" from PAP.
- 4) Pin 1 1/4" to 2 1/2" from PAP



Mass Bias Placement

- 1) Near Track (6" to 7" from PAP).
- 2) Right of thumb (5" to 6" from PAP).
- 3) Near or past vertical axis line.

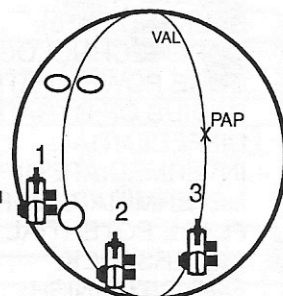


Low Track

PAP less than 4 3/8"

Pin Positions

- 1) Pin 4 1/2" to 5 1/4" from PAP.
- 2) Pin 4 1/2" to 5 1/4" from PAP.
- 3) Pin 3" to 4" from PAP.
- 4) Pin 1 1/4" to 2 1/2" from PAP



Mass Bias Placement

- 1) Near Track (6" to 7" from PAP).
- 2) Right of thumb (5" to 6" from PAP).
- 3) Near or past vertical axis line.

How to use Drilling Instructions.

1. Select pin position to determine the amount of flare and hook needed.
2. Select Mass Bias placement to determine the desired reaction shape (I.E. Arc, Flip, or Forward roll).
3. Use balance hole placement to fine tune total flare and length.
4. Adjust surface to control overall hook.

Pin position 1

(Pin approximately 5" from positive axis point below fingers) Pin position 1 produces medium length and flare. Pin placements below finger hole level will effectively shorten core height creating stronger mid lane roll. **Recommended lane condition: Medium to Heavy.**

Pin Position 2

(Pin approximately 5" from PAP with pin located above fingers) Pin position 2 maintains the same flare characteristics of pin position 1 creating medium length, but with delayed roll and stronger backend reaction. Pin placements above finger level remove mass from the side of the Morpheus core making it taller which increases the differential. **Recommended lane condition: Medium.**

Pin Position 3

(Pin 3" to 4" from PAP) 3" for High speed players and 4" for low speed players. Pin position 3 maximizes track flare which produces the earliest breakpoint possible. The increased track flare of pin position 3 causes the ball to lose speed sooner. **Recommended lane condition: Heavy Oil.**

Pin Position 4

(pin 1 1/4" to 2 1/2" from PAP) Pin position 4 places the Morpheus core in a much more stable position. This produces the most length and least amount of track flare of all recommended drillings. **Recommended lane condition: Light oil.**

Mass Bias placements

Due to the Morpheus core design mass bias placements are much more influential on the Phenom ball reaction than on standard symmetrical cores. Mass bias placement will determine the reaction shape (i.e. smooth arc vs angular).

Mass Bias Placement 1

- MB 6" to 7" from PAP (near track side of thumb) MB placement 1 delays roll and creates a smooth and continuous arcing motion on the backend. This placement is great for forward roll, and/or low ball speed players.

Mass Bias Placement 2

- MB 5" to 6" from PAP (approx 1" right of thumb for RH players) MB placement 2 produces an angular breakpoint. Low rev and forward roll players will find this placement very versatile. Caution: MB placement 2 can be too sensitive to friction for players with high rev-rates and/or higher degrees of axis rotation.

Mass Bias Placement 3

- MB near or beyond VAL. MB placement 3 loses axis rotation sooner, creating heavy forward roll and mid-lane reaction. Low track and high speed players will find this placement very useful.

Attention:

Due to the strong dynamic nature of the Morpheus core design, the Phenom retains a significant amount of Track flare when the pin is placed further from the Positive Axis Point (4-6 Inches). In order to reduce flare and increase length on the Phenom, pin placements must be closer to the bowler's positive axis point to stabilize core.

Balance Hole Placements:

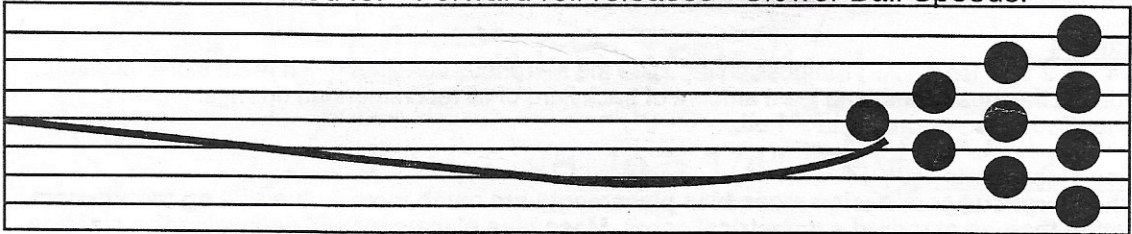
Balance holes can be placed from 0 to 2" inches down from the PAP on the vertical axis line to influence the loss of axis rotation (roll). Holes further from the PAP on the VAL will create shorter transition from skid to hook.

6 3/4" Pin Distance From PSA

Mass Bias Position	Ball Reaction	Pin to Positive Axis Point distance										Mass Bias to Positive Axis Point distance	
		1"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	4 1/2"	5"	5 1/2"		
1	Late Revs	6 3/4"	6 3/4"	6 3/4"	6 3/4"	6 3/4"	6 3/4"	6 3/4"	6 3/4"	6 3/4"	6 3/4"	6 3/4"	
2	Sharp Break Point	6 1/2"	6 1/4"	6 1/8"	6"	5 7/8"	5 3/4"	5 1/2"	5 3/8"	5 1/4"	5 1/8"		
3	Hook & Set	6 1/8"	5 7/8"	5 1/2"	5 1/4"	5"	4 3/4"	4 3/8"	4"	3 3/4"	3 1/2"		
4	Forward Roll	6"	5 1/2"	5 1/8"	4 3/4"	4 3/8"	4"	3 1/2"	3 1/8"	2 3/4"	2 3/8"		
5	Maximum Early Revs	5 3/4"	5 1/4"	4 3/4"	4 1/4"	3 3/4"	3 1/4"	2 3/4"	2 1/4"	1 3/4"	1 1/4"		

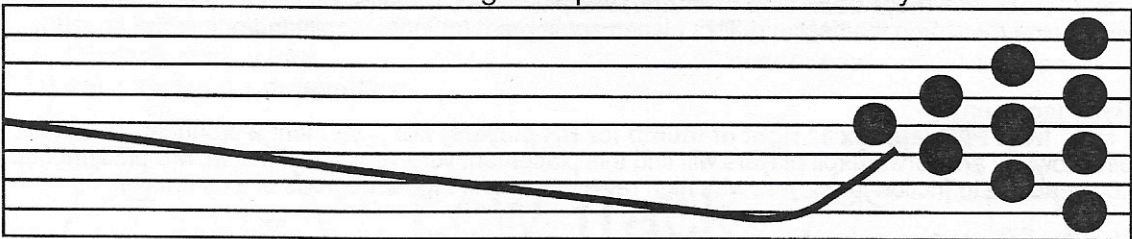
ARC MB Placement 1

Recommended for - Forward roll releases - Slower Ball Speeds.



Flip MB Placement 2

Recommended for - Light oil patterns - Low Rev Players.



Forward Roll MB Placement 3

Recommended for - Higher volumes of oil - Higher Ball Speeds.

