

PROPORTIONAL HOOF BALANCE™ TOOL USER'S GUIDE

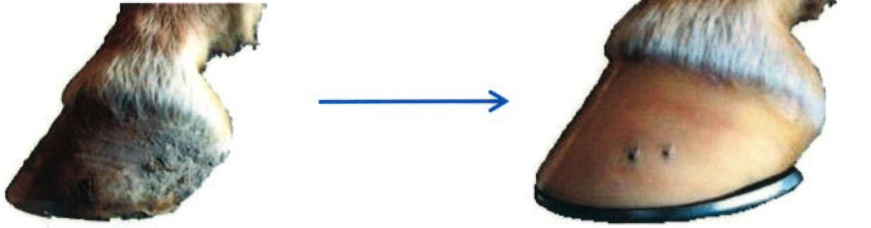
When used according to this User's Guide, the Proportional Hoof Balance™ Tool consistently and accurately identifies: Coffin Bone Position, Enrollment Zone, Proper Toe & Heel Length, and Proper Shoe Length & Nail Zone.

(All images, concepts and content are the property of Scott Lampert, APF)

V: 1.3; 07.13.2015

The PROPORTIONAL HOOF BALANCE™ TOOL is based on the Golden Ratio, also known as Natural Proportions, and equates to the Ratio: 1:1.618. This ratio is often represented by the 1/3 – 2/3 Principle in many published articles. Natural Proportions work throughout the entire horse body, including the feet. Using the Proportional Hoof Balance™ Tool provides a consistent and accurate method of identifying key factors critical to balancing, trimming, and shoeing hooves.

From Unbalanced.....to.....Proportional Balance



THE PROPORTIONAL HOOF BALANCE™ TOOL

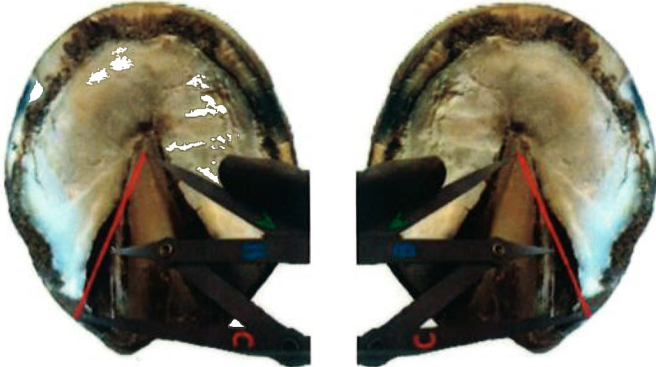


The arms of the tool are labeled A, B, and C and represent the Golden Ratio proportion of 1:1.618. The distance from A-B is 1.618 and the distance from B-C is 1. Remember this is a proportion, not numeric values. So, for any distance X (measured from B-C), the distance from A-B will be X*1.618.

STEP 1 PROPORTIONAL LENGTH: Establishing the Proportional Length (PL) for each foot is the critical measurement to be used for this protocol. The Proportional Length (PL) is the distance measured from the Apex of the trimmed frog to the outer wall in a straight line parallel with the bar. *The PL of the Medial Bar should be the same length as the PL of the Lateral Bar.* Once the PL for a foot has been determined, maintain this setting on the PHB™ Tool for all other measures for that foot.

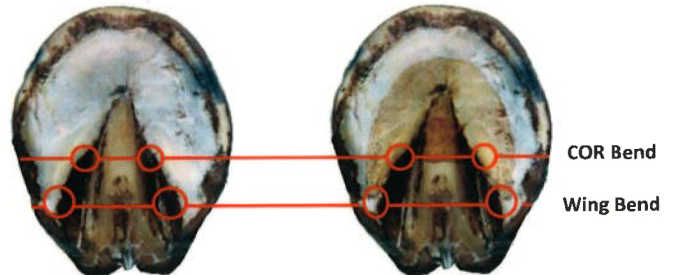
Lateral PL

Medial PL



STEP 2 BAR BEND LANDMARKS: Two critically important bends in the bar of the foot must be identified when using the Proportional Hoof Balance™ Protocol: the **Center of Rotation (COR) Bend** and the **Wing Bend**. After determining the PL for a foot and with Tip A at the apex of the frog, place Tip C at the midline of the central sulcus. **The COR point on the frog will be located where Tip B touches the center of the frog, ± 3mm.** A line drawn through the COR point on the frog perpendicular to the midline of the central sulcus and across to each outer hoof wall defines the COR Bend Line.

The **Wing Bend** in the bars can often be located next to or by the seat of the corn. **Draw a line from the medial to lateral hoof walls connecting the points in the seat of the corn closest to the heel in order to determine the Wing Bend, ± 3mm.** The Wing Bend line is also very commonly perpendicular to a midline drawn through the central sulcus.

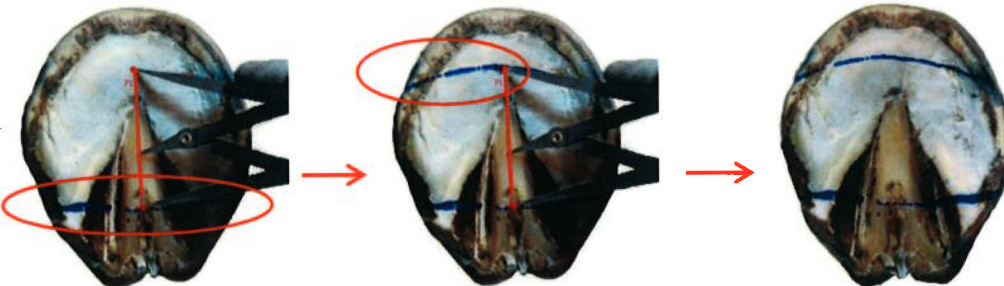


STEP 3: THE ENROLLMENT ZONE: DETERMINING THE COFFIN BONE ENROLLMENT ARC - This arc defines the line beyond which the enrollment zone should go no further toward the heel. Identify and draw in the Coffin Bone Enrollment Arc following the steps below and using the PL, COR and Wing Bend Line Landmarks.

3A

3B

3C

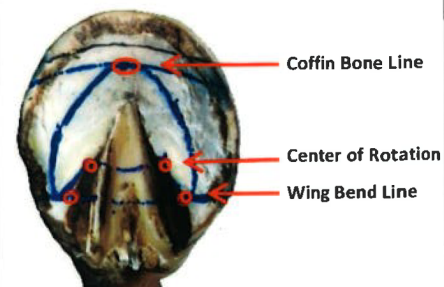


3A: Create the Wing Bend Line by connecting the medial and lateral Wing Bend markers.

3B: Maintaining the PL measurement, place the tip of Arm C in the center of the frog on the Wing Bend Line. Identify and label the tip of the Coffin Bone, ± 3 mm, by placing the Tip of arm A above the tip of the trimmed frog.

3C: Continuing to hold the Tip of Arm C in the center of the frog on the Wing Bend Line, identify and label the Coffin Bone Enrollment Arc by pivoting the tip of Arm A along the sole of the foot.

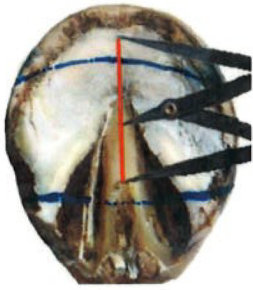
FYI: Using the Landmarks identified in Steps 1, 2 & 3, the **COFFIN BONE POSITION: TIP & WINGS** can be identified within ± 3 mm. By establishing these landmarks, it is very easy to draw a close representation of the coffin bone.



STEP 4: THE ENROLLMENT ZONE: DETERMINING THE TOE ENROLLMENT ARC - This arc illustrates the point behind which the Toe Enrollment must start. Identify and draw in the Toe Enrollment Arc following the steps below and using the PL and the COR Landmarks.

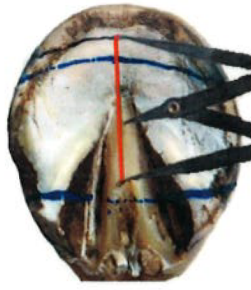
FYI: The Enrollment Zone is the area between the Toe Enrollment Arc and the Coffin Bone Enrollment Arc. This region is circled below. The Enrollment Zone is used by the farrier to determine the amount of pitch or enrollment needed to balance the limb.

4A



4A: Maintaining the PL Measurement, place the tip of Arm C in the center of the frog on the COR Line. Identify and label the center point of the Toe Enrollment Arc, ± 3 mm, by placing the Tip of Arm A above the Coffin Bone Enrollment Arc.

4B



4B: Continuing to hold the Tip of Arm C in the center of the frog on the COR Line, identify and label the Toe Enrollment Arc by pivoting the tip of Arm A along the sole above the Coffin Bone Enrollment Arc and to the lateral and medial hoof walls.



STEP 5 PROPER TOE LENGTH

FYI: Using the Enrollment Zone and the Proportional Toe Length, the hoof can now be trimmed to the appropriate Enrollment Pitch and Angle.

5A

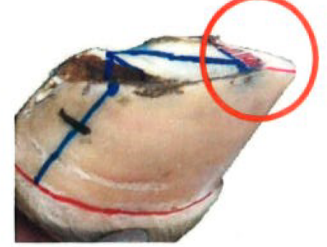


5A: Maintaining the PL Measurement, place the tip of Arm C at the bottom of the Coronary Groove.

5B



5B: The Tip of Arm A placed in the center of the foot will identify the Proper Toe Length.



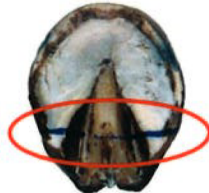
STEP 6 PROPER HEEL LENGTH.

FYI The goal for trimming the hoof is to maintain as much Vertical Depth to the hoof wall while incorporating correct Heel Length and Toe Length.

6A



6B



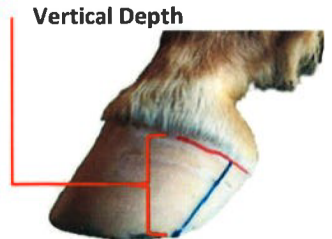
6C



6D



6A. Using a marker, identify the bottom of the coronary band. **6B.** Extend the Wing Bend Line to the outer medial and lateral walls. **6C.** Where the Wing Bend Line exits follow that tubule at the angle of the tubule up to the bottom of the coronary band. **NOTE: Make sure to follow the direction of the tubule. Do NOT just draw a vertical line.** **6D.** Place the Tip of Arm B at the intersection of the bottom of the coronary band and the top of the external Wing Band Line. Then, place the Tip of Arm C on the extended Wing Bend Line and draw a mark to identify the Proper Heel Length.



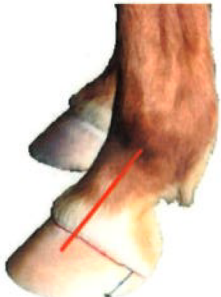
STEP 7 PROPER SHOE LENGTH:

STEP 8 PROPER NAILING ZONE

7A. Following the angle and center of the pastern, use your PHB™ Tool and place the Tip of Arm A at approximately 1 inch "2.5 cm" below the coronary band (Bottom of P2, Short Pastern Bone) and the Tip of Arm C at the top of P1 (Long Pastern Bone), as shown below. **7B.** P1 and P2 are the only two bones that truly leverage the hoof capsule; therefore their combined length should equal the length of the shoe whose main purpose is to provide support. The measurement of the Proper Shoe Length is made in a straight line from the heel to the toe as shown below. Any greater shoe length will create leverage in the hoof/limb; any shorter shoe length will fail to support the leverage/load.

The safest nailing area is located no further past where your enrollment zone arc intersects the white line, and no further back than a straight line through the COR Bar Bends. This area of the hoof has the least amount of hoof capsule bend, flex and torsion reducing the amount of possible insult in and around the nails.

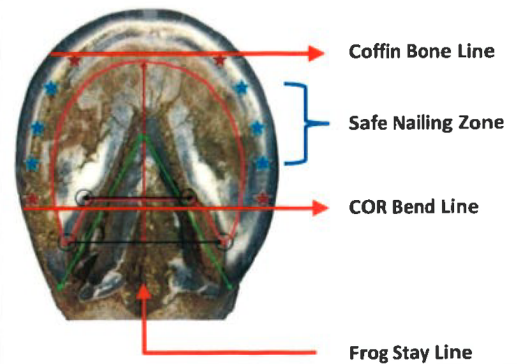
7A



7A



7B



Note: The radiograph above is for instructional purposes only. It is not an image of the above limb.