



Considerations of Palmar Angle and Hoof Angle on Breakover Position When Hoof Mapping using Distal Tip P3 as a Solar Reference Point

Considerations:

Look at the effect of Palmar Angle on the following relationships:

- 1) Hoof angle & coffin bone dorsal face angle (laminitic versus non-laminitic)
- 2) Distance between distal tip P3 and white line
- 3) Distance between white line to dorsal toe wall
- 4) Location of non-distorted pillars

Illustration 1

Flared, dished, lamellar wedge, stretched or disconnected laminae, laminitic hoof

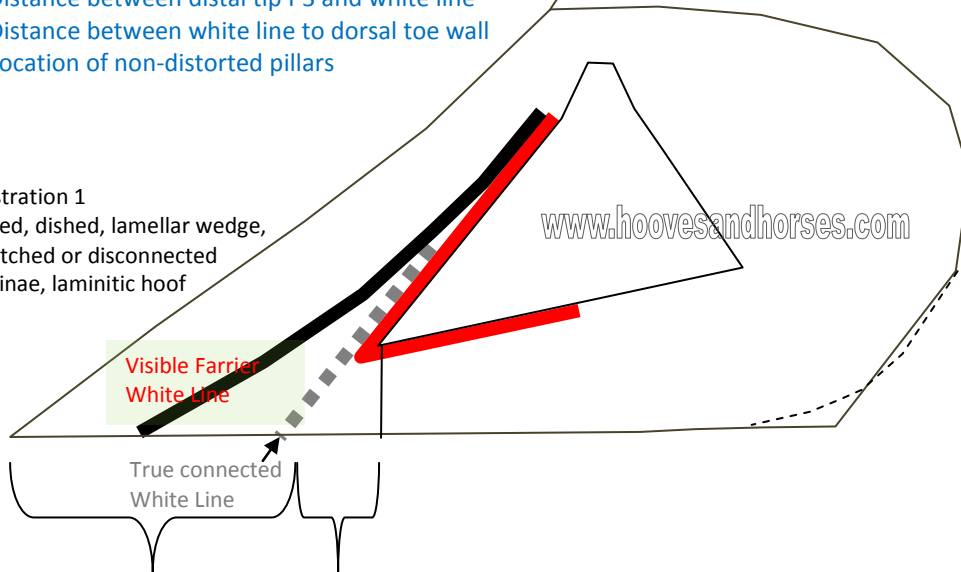


Illustration 2

Broken-back HPA/Low but positive PA, tightly connected white line, stable heels

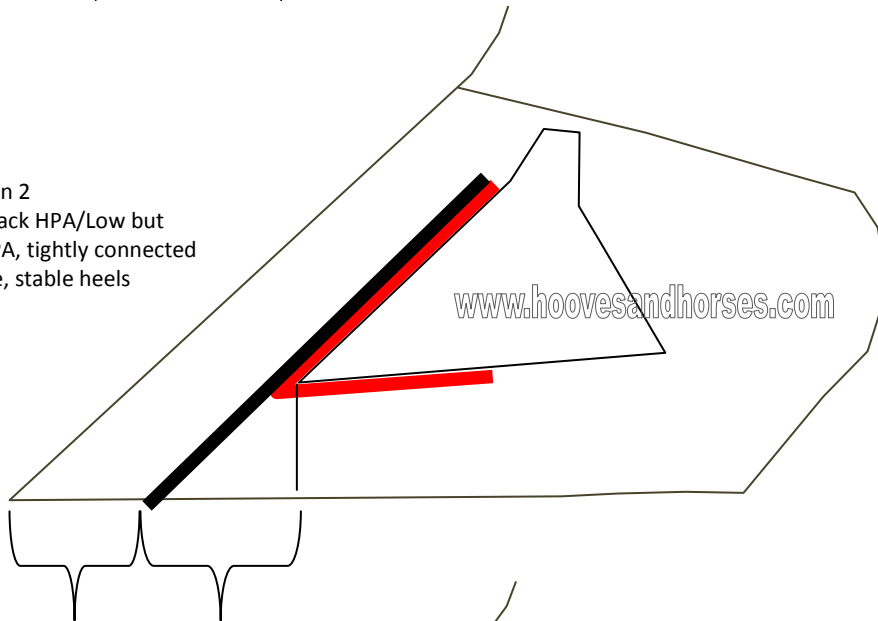


Illustration 3

Progressively broken-back HPA/Very low to 0 PA, tightly connected white line. Strong straight quarters with maintained heel integrity or weak quarters with heel collapse

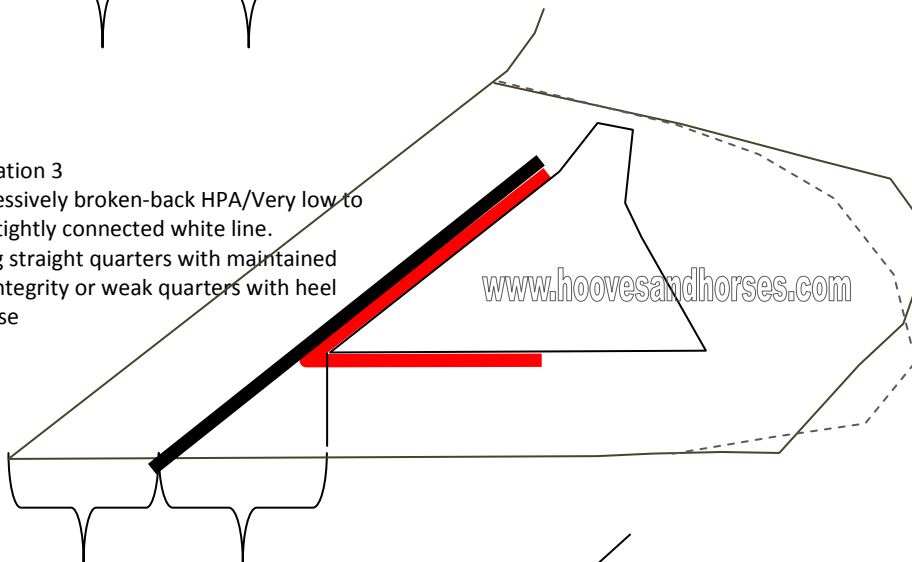


Illustration 4

Bull-nosed toe wear (toe drag) misrepresents the severity of true toe length/HA/capsule orientation and pillar location

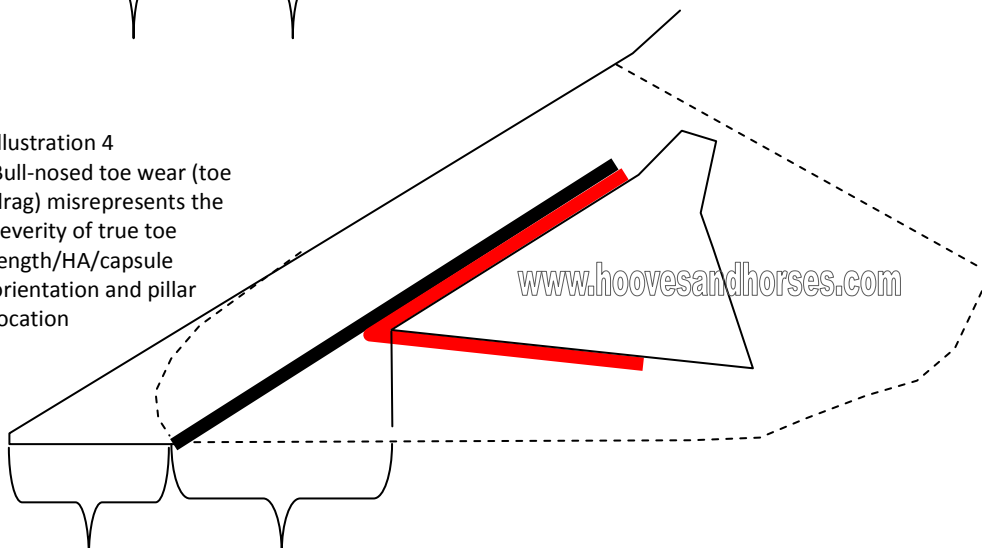


Illustration 1

The lamellar wedge creates a long Digital Breakover from the true white line to the toe wall. The material anterior to the true white line that comprised the lamellar wedge may appear sole-like in nature but is not sole composition. It is disorganized horn material that has filled in the stretched gap called the lamellar wedge. This flare causes excess leverage anterior to the true white line position that is not yet evident on the solar view, and usually presents with a positive PA or aligned PA in many of these laminitic hoof types. Breakover may average between 1/4"-1/2" ahead of distal tip of P3, dependent on coffin bone angle orientation in the hoof capsule...or place at the inner edge of the "true white line position" sole depth permitting if barefoot. The flared toe mechanics usually pulls the heels forward resulting in Long Toe, Under run/low heels.

Illustration 2

In a migrated hoof capsule the dorsal hoof wall is firmly attached to the laminae and the dorsal hoof wall aligns with the angle of the coffin bone dorsal face. Heel angle basically follows similar to Hoof Angle. There is no wall separation. (tightly attached laminae).

The Lower Palmar angle is a result of the broken back bony column alignment, so COR moves back caudally in relation to the hoof capsule. Note: distance between Tip of P3 to whiteline increases as Palmar angle drops.

Illustration 3

In this increasingly migrated hoof capsule COR moves back even more caudally in relation to the hoof capsule, as the broken bony column worsens, Palmar Angles drop more .

Note distance between Tip of P3 and white line has also increased.

Illustration 4

Note : the hoof angle further decreases in progressively migrated forward hoof capsules but the dorsal hoof wall angle still follows the angle of the dorsal face of the coffin bone. Heels underrun forward, following forward running hoof capsule. As bony column alignment becomes increasingly more broken back, the PA drops into a negative value and typically heels crush/collapse under load due to their unsupported forward position. Note the further increased distance between distal tip of P3 and white line/pillars.

Considerations:

Shoe must be set forward enough to accommodate pillar support. Too often shoes are set too far back in an attempt to improve breakover without consideration of the internal & external structures. The key is to first correct the trim (uniform sole depth) to correct HPA as the hoof in progress dictates, then support the difference with external assists to align HPA. Enhance flat shoes by offering a built-in breakover in the toe (different to a rockered toe) but be sure to place shoe to adequately support pillars. Setting breakover 1/4"-1/2" ahead of P3 in this case would leave the pillars hanging unsupported by the flat shoe. This is where roller shoes provide good pillar support while providing an adjustable breakover with belly set to post-trim/wedged COR.