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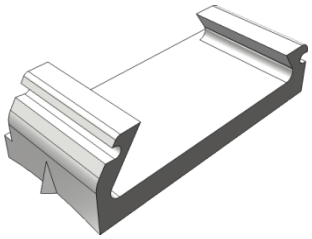
Hoof Inertial Measurement Unit (Hoof IMU)
Hoof Module Attachment (v3.2)

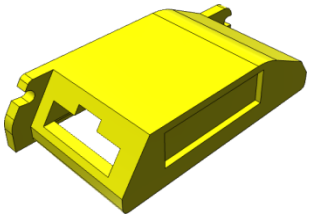
The Hoof Inertial Measurement Unit, Hoof IMU, is mounted on the hoof of a horse to measure hoof inertial components for the calculation of ground penetration and slippage. It is comprised of three parts; a Mount which is bonded to the toe face of the hoof, a Module which slides into the Mount, and an Elastic Ring (not shown) which retains the Module in the Mount. The Module can either be a Recorder, used for measurements during track tests, or a Blank, used as a placeholder when the Recorder is not being used.

This guide describes the attachment of the Mount to a horse hoof.

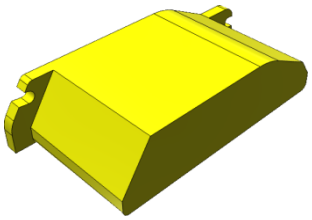
Equipment



Mount
(rear view)

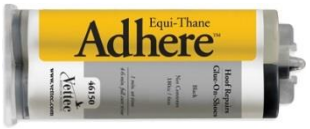


Recorder Module
(rear view)



Blank Module
(rear view)

Elastic Ring: O-Ring
Size BS019 or BS020
(supplier)



Vettec Equi-Thane Adhere 180cc (supplier)

Mixing Tips (supplier)

Dispensing Gun
(supplier)

Disposable Paddles
(supplier)

Hoof Gauge (supplier)

Isopropyl Alcohol (IPA)
(supplier)

Sanding Block

P80 Sanding Paper (supplier)

Disposable Gloves (supplier)

Marking Pen (coloured)

Attachment Procedure

The Mount and Module are attached to the left front horse hoof using the following procedure:

1. Measure the hoof angle.

2. Insert a Blank Module into the Mount and secure with an Elastic Ring.

3. Lightly sand a Mount-sized area of the upper portion of the hoof leading face surface until smooth and clean.

4. Thoroughly clean the sanded hoof area using Isopropyl Alcohol (IPA). It is recommended to spray IPA on paper towel facing away from the horse, then use the towel to clean the surface. Also clean the hoof face of the Mount.

5. With the horse standing on a level surface, mark a point on the visual estimate of the hoof median centerline at the toe. This may be aided by an observer standing in front of the horse sighting along the median plane.

6. Mark an inclined vertical alignment line up the hoof toe face using a vertical sprit level.

7. Prepare the Adhere adhesive dispensing gun. If new, cut the cartridge outlet tip at the marked line. If used previously, remove and clean the cartridge outlets cap. Insert the cartridge into the dispensing gun. Attach a mixing tip by pressing and turning clockwise.

Note: The following steps need to occur quickly as the initial set time of Adhere is around 1 minute. Gloves should been worn when working with Adhere adhesive.

8. Dispense and waste a small quantity of Adhere (onto a piece of paper towel) to equalise both cartridge sides. Dispense approximately 2cc of Adhere onto the hoof face of the Mount. Immediately release the dispensing gun pressure, remove and discard the used mixing tip, and recap the Adhere cartridge.

9. Using a paddle, distribute the Adhere roughly flat across the hoof face of the Mount.

10. Press the Mount to the upper portion of the hoof toe face with the narrow Mount end down, and the protruding alignment marks on each end of the Mount aligned with the alignment line previously marked on the hoof.

11. Using the (square corner) of the paddle, remove all excess Adhere from the sides of the Mount. Fillet or remove excess Adhere from the ends of the Mount

12. Hold the Mount in position for 1-2 minutes till the Adhere is firm. Allow at least 6 minutes to allow the Adhere to reach full cure.

Note: Leave a Blank Module in the Mount at all times unless using a Recorder Module.

13. To remove the Mount, remove any Modules, position a flat-faced block against the side of the Mount and strike the block to shear the Mount away from the Adhere. Adhere remaining on the hoof can be removed with a rasp.

Procedure Illustrations

Step 3. Sand to prepare/clean hoof.

Step 6. Mark an (inclined) vertical line on the hoof toe face median centerline.

Step 9. Distribute Adhere on Mount hoof face.

Steps 10, 11. Apply Mount to hoof using alignment marks, remove excess Adhere.