



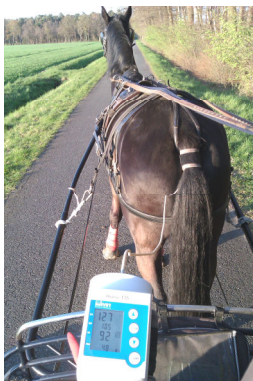
## ***Blood Pressure Measurement in Horses***

The HDO MDEquine makes it easy to obtain reliable blood pressure measurement in horses. A horse's blood pressure can be measured in the stable or paddock in less than 1 minute.

### **Reference Values for Horses:**

**Systolic 112 ± 14 mmHg      Diastolic 70 ± 14 mmHg**

### **Indications for blood pressure measurement in horses**



- Disease diagnosis and follow-up
- Assessment of treatment results
- Prepurchase examination
- Assessment of mating ability in senior mares
- Monitoring sedated patients
- Monitoring intensive care patients
- Monitoring arrhythmias
- Monitoring general herd diseases

#### **Diseases Associated with BP Changes**

- Founder (laminitis)
- Bleeding (epistaxis)
- Colic or Colicky Pain
- Broken Wind (cortisone)
- Renal Failure
- Cushings Syndrome
- Diabetes Mellitus
- General Herd Disease

#### **Circulatory Disorders from Sedatives**

- Xylazine
- Levomethadone (with neuroleptics)

#### **Monitoring (anesthesia, shock)**

Hypotension may lead to permanent organ damage or failure, and should be treated in early stages.

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#### **VET HDO® MDEquine**

**HDO® MDEquine  
 System includes:**

- MDEquine
- Special Equine Cuff
- MD Software for PC
- AC Power Supply
- HDO DVD

VET HDO® is a patented technology for animal blood pressure measurement



**Be Innovative**

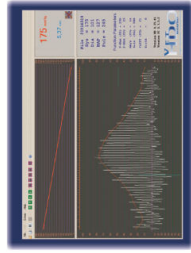
**High Definition Oscillometry**

Blood Pressure Measurement and much more!

[www.vetline-lc.com](http://www.vetline-lc.com)

- ▶ Puls adapted deflation rate (3-18mmHg)
- ▶ Realtime programming of valves
- ▶ Gain for highest sensitivity (70 – 1280)
- ▶ Realtime visualisation of blood pressure
- ▶ Beat by beat assessment of cardio-vascular situation

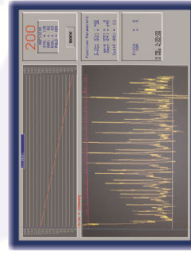
### New ways of cardio-vascular evaluation - Non invasively!



#### Visible assuredness of accuracy

Optimal representation of the arterial opening behaviour:

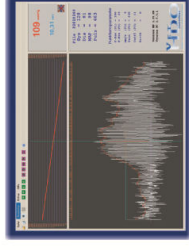
- pre-systolic waves followed by amplitudes with slightly increasing height: relaxation of the arterial wall
- further more dominant increase in height: initiation (SAP) and increase of blood flow. Due to turbulent flow, the amplitudes are further becoming higher up to a maximum, which is close to MAP.
- Decrease of amplitude size due to a change from turbulent to laminar flow – reaching DAP and finally a complete opening of the artery



#### Visible assessment of affected cardiac output

Height of the amplitudes represent Cardiac Output qualitatively

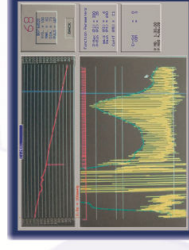
- High amplitudes followed by lower ones: affected cardiac output. The more dominant the more severe
- Difference in height in combination with Gain: more detailed reflection of CO impact



#### Visible proof of linearity

Red line in the top window should be linear = linear deflation

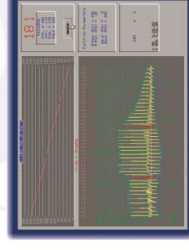
- linearity is a key prerequisite for accuracy
- loss of linearity: curve instead of linear line



#### Visible detection of artefacts

Artefacts are strong signals which are misleading and need to be detected

- Artefacts are clearly detectable on screen
- Visible control how the technology takes care of them



#### Visible assessment of arterial elasticity/compliance

Pre-systolic waves represent arterial situation

- low amplitudes: good elasticity
- high amplitudes: impaired elasticity
  - arterial vasoconstriction
  - arterial remodelling
  - arterial calcification
  - etc.

#### Visible analysis of rhythm, dysrhythmia

Distance from one amplitude to the next should be equal.

- Differences in distance: dysrhythmia
  - respiratory sinus arrhythmia (usually CO not affected, continuous increase and decrease of amplitude height)
  - extra beats (CO affected: also different height)
  - AV-block/sinus arrest/ etc. (CO affected: also different height)