A WIRTGEN GROUP COMPANY

HAMM

HAMM COMPACTION METER (HCM)

OVERVIEW:

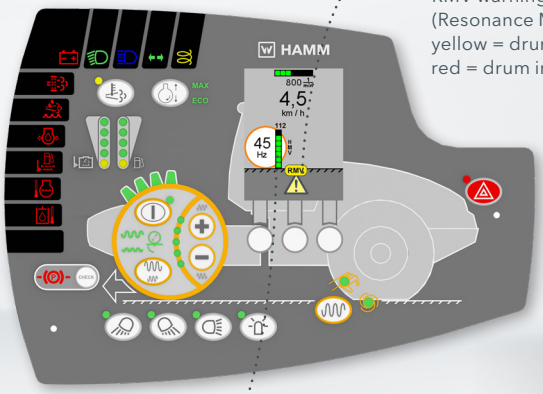
- Available on the 3000, H CompactLine, HC CompactLine, H, HC, HD CompactLine, HD+, DV+, HX series
- Module for measuring and displaying the rigidity of the substrate
- HAMM Compaction Meter, VIO: Option to measure the compaction in the vibration and oscillation mode; available for H 7i VIO, HC 70i VIO, H 13i VIO and HC 130(i) VIO.
- Automatic activation for dynamic compaction
- Measurement via the acceleration sensor on the vibrating drum
  > Recording the drum acceleration
  > Evaluating the proportion of the soil reaction
  > Continuous calculation of a relative rigidity value
  > Display as a HAMM Measurement Value (HMV)
  > Calibration for continuous compaction control, e.g. via static or dynamic load plate

ADVANTAGES:

- No risk of over-compaction
- Fast localisation of positions with high demand for compaction or material that cannot be compacted
- Reduction in overrunning and therefore in the work time thanks to the detection of sufficiently compacted positions = cost reduction
- Reduced particle crushing, no re-loosening
- Maximum, efficient and homogeneous compaction

COMPONENTS ON THE EXAMPLE OF THE H SERIES:

Computer unit in the central electrical system



RMV warning indicator
(Resonance Meter Value:
yellow = drum about to jump position;
red = drum in jump operation)

Display unit
For the current
HMV value

Acceleration sensor

HAMM

BASIC REQUIREMENTS FOR CONTINUOUS COMPACTION CONTROL MEASUREMENTS:

- Homogeneous and identical material
- Constant water content
- Constant working speed
- Constant amplitude
- Constant frequency
- Constant dumping height
- Measurement only in one direction of travel

⚠ Changing a parameter causes the measured values to be changed.

INTERPRETATION OF THE HMV VALUES:

Increasing values	Material can also be compacted
Constant values	Maximum compaction is reached (using this roller) **Recommendation:** Switchover to small amplitude or oscillation, or stop compaction ⚠ Additional passes may result in re-loosening and destruction of the material
Decreasing values	Re-loosening of the material **Possible cause:** Material cannot be compacted (e.g. proportion of water is too high) Low values as an indicator of less compacted positions
Jump operation	⚠ Switchover to small amplitude or to the oscillation and/or stop compaction ⚠ **Possible damage to the machine in jump operation**

TIPS AND GUIDE VALUES:

Types of ground	Compaction	Recommended range for HMV values	Rigidity (asphalt) and/or load-bearing capacity (earthworks)
Silty / clayey soils with **excessive** water content	Big amplitude Maximum frequency Speed: 2–2.5 km/h	0 - 5	Low
Silty / clayey soils with **correct** water content	Big amplitude Maximum frequency Speed: 2–2.5 km/h	5 - 15	Low
Sandy / gravelly soils	Small amplitude Reduction in frequency by 5–8 Hz (only possible with Hammtronic!) Speed: 2.5–3 km/h	15 - 30	Medium
Frost protection / base course material / hydraulically bound support layer	Small amplitude Reduction in frequency by 5–8 Hz (only possible with Hammtronic!) Speed: 2.5–3.5 km/h	30 - 50	High
Rock	Small amplitude Reduction in frequency by 5–8 Hz (only possible with Hammtronic!) Speed: 2.5–3.5 km/h	50 - 100	Very high

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