



HAMM COMPACTION METER (HCM)

OVERVIEW:

- ◇ Available on the **3000, H CompactLine, H, HD CompactLine, HD+, DV+ 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 and H 13i 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

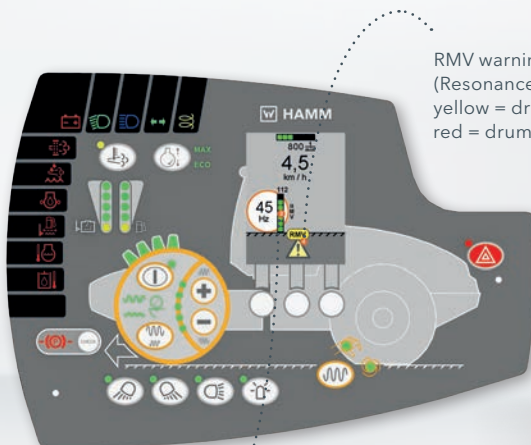
ADVANTAGES:

- ◇ 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



Display unit
For the current
HMV value


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



Acceleration sensor

BASIC REQUIREMENTS FOR CONTINUOUS COMPACTION CONTROL MEASUREMENTS:

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



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 |