

Vibration assessment Husquarna 250FE

Conceptual explanation of the use of the Wizard Stickers

By mounting the Wizard Stickers on precisely defined areas of the motorcycle, the vibrations are significantly reduced. Depending on the kinematics of the component, the vibrations according to ISO 10816 are reduced by up to 18%. On far-reaching components such as handlebar grip and footrest the vibrations occurring are halved.

The performance of the motorcycle is significantly increased,

- better traction
- more driving dynamics
- direct handling
- performance increase
- wear reduction
- more direct response of the engine
- displacement of the torque curve

The vibration assessment aims at a reliable and safe operation of a machine and thus at the evaluation of the machine operating state by means of vibration measurements. It is therefore not discussed on a local diagnosis / analysis of machine components. Concepts for diagnostic condition monitoring of components such as rolling bearings and gearboxes are described separately below.

One of the most important methods in diagnostic / analytical machine monitoring is the recording of vibrations with accelerometers and a subsequent frequency analysis. This is because machines consist of metal and thus of elastically resilient structures, which are almost always exposed to periodic forces. These lead to oscillations, which reflect both the frequencies and exciting forces as well as the characteristic frequencies of the structures concerned. The measurement of the vibrations enables conclusions to be drawn about structures and forces in the machine. Damage and structural changes of machine elements, e.g. a bearing, lead to changes in the vibration pattern.

The vibrations propagate in the form of sound waves (structure-borne noise) in the machine components. Since the machines consist of a large number of parts, which oscillations of other components are elastic and oscillate, there are filtering and overlapping of the individual vibration components. An oscillation signal consists of several signal components which add up to the total signal with different time delays and path-dependent attenuations. Individual searched vibration components are no longer recognizable from the temporal course of the overall signal without further. The power of the frequency analysis consists of dividing the number of existing linearly superimposed oscillations into frequency components. These frequency components may be assigned to a particular machine state, part or process.