VIBRATION COMPARATOR

VC-2100

Application Examples

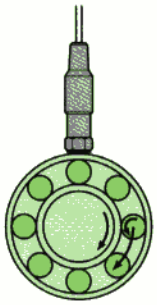
The VC-2100 can be used in a wide variety of applications, thereby greatly expanding your capabilities for *shipping inspection*, *facilities diagnosis*, and *trouble detection*.

Go/nogo Diagnosis Based on Product Vibration Values

(Example)

It is possible to perform a go/nogo test of bearings based on vibration values.

The bearing is rotated and the diagnosis is made based on the resulting bearing vibration. By noting the vibration in a particular frequency band, it is easy to detect particular problems in bearings, such as damage, foreign matter, and unbalance). In addition to an acceleration pickup, it is possible to use a velocity pickup as the sensor. When using a velocity sensor, the VC-2100 is switched to external signal input.



Related Fields

- Electric home appliances (e.g., washing machines, air conditioners)
- Automotive (e.g., power seats, door mirrors)
- Other product manufacturing (e.g., motors, gears, bearings)

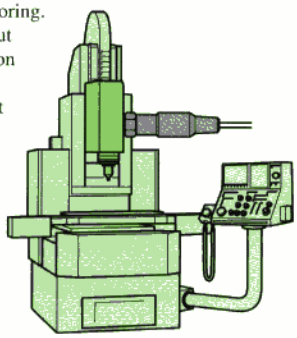
Inspection of Abnormal Operation in Machinery

(Example)

It is possible to detect abnormal operation of the main shaft of machine tools.

The runout of the main shaft of a machine tool greatly affects the accuracy of a machined workpiece. While the conventional method of measuring main shaft runout is that of using a displacement indicator, environmental and operating conditions and cost make the use of this approach difficult. The VC-2100, with its ability to detect abnormal main shaft vibration, provides a method that is immune to environmental conditions and which can be used for continuous monitoring.

When the main shaft runout becomes large, the vibration value also increases, enabling main shaft runout problems to be detected by detecting vibration.



Related Fields

- Machine tool manufacturing and machining

Facilities Diagnosis

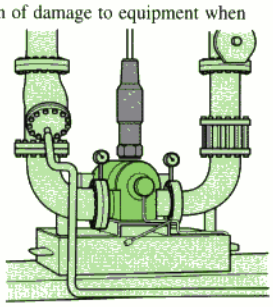
(Example)

It is possible to gain a grasp of and detect abnormalities in bearings and gears of production facilities without the need for human intervention.

In facilities diagnosis in the past, the approach taken was that of periodically performing vibration measurements of such components as bearing boxes to determine when maintenance should be done, based on changes in the measured vibration values, this process being highly labor-intensive. In addition, suddenly occurring problems under this system could cause damage to equipment.

Using the VC-2100, a vibration comparator takes the place of the human operator, and performs constant monitoring of vibration, thereby enabling a great reduction in labor, while contributing to the prevention of damage to equipment when problems occur.

The ability to arbitrarily select frequency bands further enhances the diagnosis precision.



Related Fields

- Steel
- Chemical plants
- Other production line facilities management

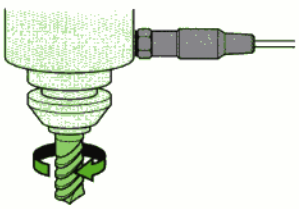
Detection of Tool Breakage and Wear

(Example)

It is possible to detect breakage of drills and bites used on a machine tool without human intervention.

Machine tools used for mass production of parts run almost completely unattended by operators. If a drill or other cutting tool breaks during this type of unattended operation, bad production can result, thereby requiring reworking. In the worst case, the product might even need to be discarded.

The VC-2100 Vibration Comparator detects the vibration occurring when a cutting tool breaks and stops the machine, thereby minimizing the resulting production of bad workpieces. Because a worn cutting tool results in poor machining precision, by monitoring the change in vibration values caused by tool wear, it is possible to improve machining precision.



Related Fields

- Parts machining
- Machine tool manufacturing
- Monitoring on a machining line