

## VIBSCANNER® 2

*High-speed data collector  
with triaxial sensor sets new standards*



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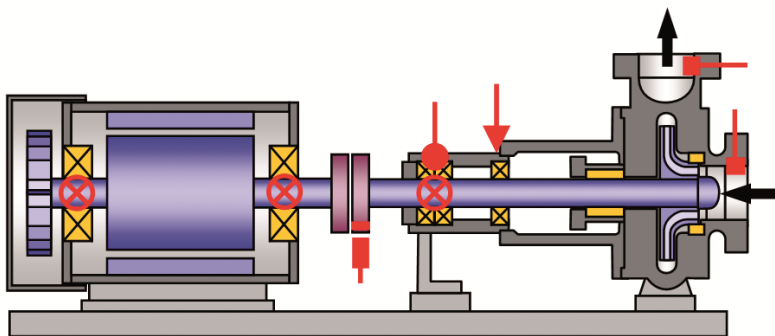
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## Be a part of it! Condition Monitoring

All consumer goods as well as industrial semi-finished metal products and production parts can only be produced as well and efficiently as the preceding production cycle permits. Consequently, if one cog in the wider, overall process is not within all of the required tolerances, this can result in lower product quality, rejects and even machine failures. In the end, the producer loses out as he/she has to pay contractual penalties or even have his/her goods replaced on the market by competitor products. A financial loss is the result of a machine failure – regardless of the level at which it occurs. And the maintenance costs as well as the procurement of replacement parts or even a complete machine are not accounted for in this regard. The more critical the machine, the more disastrous its failure and the more severe the potential direct and indirect consequences.



*The failure of a single system can entail serious consequences.*



*Multiple measurement locations per machine are often necessary in order to obtain reliable data*

Vibration-based condition monitoring (online and offline) is a predictive, efficient and sustainable tool for preventing machine failures. Vibration sensors record the machine vibrations that are generated and supplies them to digital measuring devices. A plant maintenance specialist then evaluates the measured data and can therefore determine the exact condition of the machine and its individual components. On the basis of the deviations from the specified tolerances as well as extreme, sequential, continuous vibration peaks, the maintenance specialist

can identify any ensuing damage before it leads to a disastrous failure of the machine. Thanks to a scheduled standstill, only minimum interference in the production chain is required. At the end of the day, such interference only entails insignificant (financial) consequences.

While particularly critical machines tend to require continuous monitoring (generally by means of online condition monitoring), e.g. because they are inaccessible or only accessible with great difficulty, less critical machines can be monitored by using a hand-held unit. If necessary (generally in a cycle specified by a maintenance specialist), this hand-held unit can be connected to the machine for monitoring. Because it is rare for only one machine to be explicitly monitored, the maintenance specialist specifies a so-called "measurement route" as under normal circumstances a large number of machines are monitored in complete operation. On the basis of this route, the individual measurement locations are each connected to the hand-held device or to the data collector for a short period of time. Depending on the device, it may take a few minutes for

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vibration monitoring to start for each measurement location. In total, a number of working hours accrue in relation to a route with many measurement locations as, under certain circumstances, these locations are situated far away from each other. To this end, the maintenance specialist provides good data quality and can produce new maintenance schedules on the basis of this data.

This procedure is however very tedious and time-consuming if the measurement route and the maintenance schedule are not of such good quality due to the large amount of time needed to record the measurements. For this reason, the goal needs to be to expedite the recording of the measurement route so that the employee on-site, who is to record the measurement data with the data collector, can take on further tasks. Thanks to its triaxial sensor, the new high-speed data collector VIBSCANNER® 2 records the measurement data up to four times quicker than comparable devices and therefore makes great progress in streamlining maintenance activities. At the same time, the data quality remains equally high while the recording time is reduced.



*The new high-speed data collector  
VIBSCANNER® 2.*

### **Keep it smart and simple – VIBSCANNER® 2**

The whole development of VIBSCANNER® 2 follows this motto. The result: A unique measuring device with which even untrained personnel can easily and effectively measure machine vibrations on rotating systems.

Thanks to its forward-looking measuring principle and data acquisition across three axes with the triaxial sensor, all relevant condition information is recorded with the touch of a single button. And all at a measurement speed that completely opens up new dimensions.

*A triaxial sensor measures vibrations in three perpendicular directions, while a single-axis sensor only records one direction. Certain erroneous conditions such as cocked bearing or bent shaft can be identified in a single measurement with a triaxial sensor.*

It is not only in terms of the measuring speed and precision that the VIBSCANNER® 2 sets new standards in handling but also through its robustness and its intuitive operating concept. The measurement routes are specified by the maintenance technician and can be transferred, independently of the software, as a data file to the employee's device on-site (e.g. via email). The employee then loads the route from his/her laptop/desktop/tablet onto the device via a USB cable and can begin measuring immediately.

The intuitive, graphical user interface assists the employee on-site in conducting error-free and reproducible measurements. If need be, the device provides him/her with exact information about the status of the measurement locations and the progress of the route.

*Clearly identify coded measurement locations – that's what makes VIBCODE® stand out. VIBCODE® is the unique, intelligent and field-tested sensor system that detects its measurement locations automatically. VIBCODE® therefore provides important, reproducible results for reliable condition assessment as the measurement location, axis, and contact pressure are always the same.*

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*Measurement locations that are not equipped with a VIBCODE® can be identified by an RFID reader. In this regard, the VIBSCANNER® 2 displays the next measurement location with the position and axis and ensures that no measurement location is overlooked, mixed up, or erroneously processed.*

Following completion of the measurement route, the data packet with the results can be downloaded onto the PC and sent to the maintenance technician by email. This means the technician always receives high-quality vibration and machine condition data which he can evaluate with the OMNITREND® Center software.

**The bottom line:** High-speed vibration measurement without any loss of data/quality while, at the same time, saving time for employees on-site and for maintenance technicians.

### ***It's all about speed***



The original Oktoberfest in Munich now has a history spanning more than 200 years and is today, more than ever, the epitome of safety. Even if it's more well known around the world for its beer than its rides, the flagships of manufacturers and operators of mobile roller coasters and carousels can be found here. One of them is the now famous "Five Looping" or "Olympia Looping". At one time, it was the largest mobile roller coaster with five consecutive loops. To date, many hundreds of thousands of guests have taken a ride on it since it first made an appearance at Oktoberfest. However, to ensure complete safety at all times, all drives, brakes and every line need to 100% function – in warm and cold conditions as well as when it's dry or wet! PRUFTECHNIK helps ensure such complete safety at the world's largest public festival.

As is the case every year, to be permitted to participate as a funfair operator at Oktoberfest in Munich, all drives must first be put through rigorous testing. After all, the ride up to the highest point – at least 54 m high – marks the centerpiece to the roller coaster. A total of 76 individual measurement locations on the route need to be attended to and recorded. The roller coaster is not allowed to enter service until the final OK has been given by TÜV Sud.

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The Olympia Looping is extreme in all its dimensions. The relatively tightly dimensioned drive, the extremely high number of cardan shafts and, of course, the enormous height compel technicians to use unconventional means. For this reason, the whole system can, for example, only be recorded by means of thermographic hotspot analysis. In this regard, you won't make much progress with conventional, visual test methods. To be able to monitor this system efficiently using mobile condition monitoring, the new high-speed data collector VIBSCANNER® 2 from PRUFTECHNIK is being used for the first time.



*VIBSCANNER® 2 is perfectly suited to confined and difficult to access spaces.*

And, as a matter of fact, it was possible to precisely identify and locate a malfunction in the system the very first time it was used. The part in question was of course removed immediately and replaced with a new part. Meanwhile, the measurement route was carried out unabated to the highest point at an elevation of 54 m.



*The new VIBSCANNER® 2 can record all the measurement data in just a few seconds. In this regard, a total of 76 measurement locations need to be recorded. These measurement locations are located up to 54 m above the ground.*

Thanks to the sequential, serial drives, the wagons are transported to the peak at an elevation of 54 m. When in operation, the wagons dart from there directly to the first loop at up to 100 km/h. Any carelessness in relation to maintenance and the safety of the system poses a major risk of death. PRUFTECHNIK helps ensure optimum performance during the entire period of operation! Through the years, Olympia Looping has also evolved into a kind of emblem of Oktoberfest. That's why it's absolutely essential that this fairground ride always runs. And, to date, this has always been the case thanks to the support provided by PRUFTECHNIK Condition Monitoring.

savings and the extremely quick data acquisition, the measurement data is of fully reliable quality and can be reproduced at any time. And that's exactly what it was made for: extremely quick data acquisition with minimum time expenditure without any loss of quality caused by faulty measurements or sensor failures.

By using the brand-new VIBSCANNER® 2 from PRUFTECHNIK, the complete route could be carried out in roughly two-thirds of the time that had previously been required. However, despite the tremendous time

To attend to all 76 measurement locations at elevations up to 54 m, the employee on-site needs a considerable amount of time. During each individual measurement, he/she can be consoled by the beauty of Munich and its environs from above. But those times are now a thing of the past! With the new VIBSCANNER® 2, data can be recorded in a fraction of the time previously needed and the employee on-site can pretty much sprint to the end of the measurement route. In concrete numbers, this means: Time needed up to 2016 approx. 4-5 hours; time needed since 2017 only around 1½ hours. What tremendous time savings!

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**The bottom line:** The brand-new, high-speed data collector VIBSCANNER® 2 from PRUFTECHNIK expedites the recording of measurement data many times over while, at the same time, the quality of the measurement data is not compromised or lowered in any way. VIBSCANNER® 2 is the evolution of mobile condition monitoring. It has never been so quick and easy.

### ***Great expectations and realistic goals***

The new high-speed data collector VIBSCANNER® 2 will be launched in early 2018. More than two years worth of development time was spent on design, measuring equipment, software, hardware, marketing and sales activities, in order to ultimately pursue a lofty yet extremely realistic goal. VIBSCANNER® 2 has the potential to become the number one device in the world for mobile condition monitoring. Its clear features (one-button operation, intuitive user interface, high-speed data acquisition, ergonomic design for left and right-handers, in-built stroboscope for external RPM measurement, etc.) make it as unique as it is successful. In short:

The high-speed data collector with triaxial sensor sets new standards:

- Quick – measuring times up to 4x shorter than the industry standard
- Easy – intuitive operation thanks to the graphical user interface
- ALL IN ONE – record all condition information at the push of a button

#### **About PRUFTECHNIK:**

With groundbreaking technological developments in the field of laser measurement technology, vibration measurement technology, and quality control, the PRUFTECHNIK Group, with its companies and partners in more than 70 countries, continues to set new standards for condition monitoring and availability optimization of machines and plants.

Web: [www.pruftechnik.com](http://www.pruftechnik.com)

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