

New technology from Vecoplan – Adaptive intelligence for greater efficiency

Reduce the risk of machine damage by 60% with a new, intelligent vibration system

Nowadays, machines have to do more than ever before: rising energy prices, variable materials and growing demands on efficiency and operational reliability are currently presenting the mechanical engineering industry with enormous challenges. Technology leader Vecoplan laid the foundation for making processes more efficient through digital control technology with the Vecoplan Smart Center (VSC) as a digital control platform. With the new Vecoplan Intelligent Detect (VID) module, the company is now further developing its VSC. Intelligent vibration sensors actively reduce the risk of machine damage by up to 60 percent.

Predictive maintenance is currently regarded as a solution towards which many industrial companies are working. Forecasts target the prediction of maintenance requirements and the prevention of breakdowns; however, this approach is often the wrong one for highly variable production processes, where long-term forecasts are less important than direct reactions and flexible adjustments during operation. This is precisely where Vecoplan will come to the fore with its new Vecoplan Intelligent Detect (VID) module. The VID will be seamlessly integrated into the Vecoplan Smart Center (VSC) digital platform, which intelligently networks machines and processes.

A 60 percent reduction in the risk of damage – a tangible effect in practice.

Unlike traditional predictive maintenance solutions, which attempt to predict future failures, VID takes an adaptive approach. It detects deviations as they happen during operation and responds immediately. At the heart of the VID self-learning system lies a high-frequency vibration sensor programme, which uses sensors to detect even the smallest vibrations in the shredding process and supplies precise data to the evaluation unit. This unit compares the signals with the material-specific thresholds and decides whether or not it should intervene by stopping the rotor, for example, which immediately shuts down the machine. Should a foreign material enter the machine unnoticed, the system facilitates its precise localisation. Operators can then recognise more quickly where and under what conditions the material has entered the shredding process and can then take targeted countermeasures, preventing damage before it can even occur. "Ultimately, this specifically means fewer repairs, less tooling and

shorter downtimes for our customers, enabling them to produce much more cost-effectively,” says Patrick Pfeiffer, Director Sales Service at Vecoplan. The exact intensity of each impact is documented to analyse recurring faults, for instance.

Expanding the self-learning system with individualised ‘recipes’ for every material

The material-specific learning function of the new technology is especially innovative. When a new machine load of material is being set up, the VID analyses the vibration values for a few minutes and automatically creates an individual threshold value. The system can reliably distinguish between lightweight film material, for example and hard plastics. The machine’s speed and ramming behaviour is also taken into account. The ‘Recipes’ function allows operators to set various programmes and input materials at the touch of a button, define the desired output in advance and activate it immediately. The system remains flexibly adaptable, even after a rotor change or an adjustment to the machine geometry. The effectiveness of this self-learning technology is verifiable – and initial usage scenarios have shown that VID drastically reduces the risk of serious machine damage, avoiding high repair costs. Machine delays were also reduced by up to 70 percent. “Our tests have shown that our customers who use VID not only experience less downtime, they also enjoy a whole new level of operational reliability,” says Patrick Pfeiffer. Bearings can also be monitored using state-of-the-art technology, allowing users to obtain an evaluation of their bearings and estimate their further service life. Vibration analysis can therefore detect a typical bearing failure long before it occurs.

The VSC as a digital control and service platform

The Vecoplan Smart Center, which has been established for years as the company’s digitalisation concept for its machines and systems, provides the framework for the new VID module. All the relevant data, from speeds and performance values to ram movements, and vibration profiles to foreign material warning messages is brought together here in a standardised interface. This means 100 percent transparency for operators and service technicians. Machine statuses can be tracked in real time, settings can be monitored and adjusted directly as needed – even remotely. “With the VSC, we’re providing our customers with a tool that goes far beyond classic machine operation. It creates the basis for data-driven decisions and a sustainable optimisation of the entire value chain,” explains Patrick Pfeiffer.

Easy to retrofit – for new and existing systems

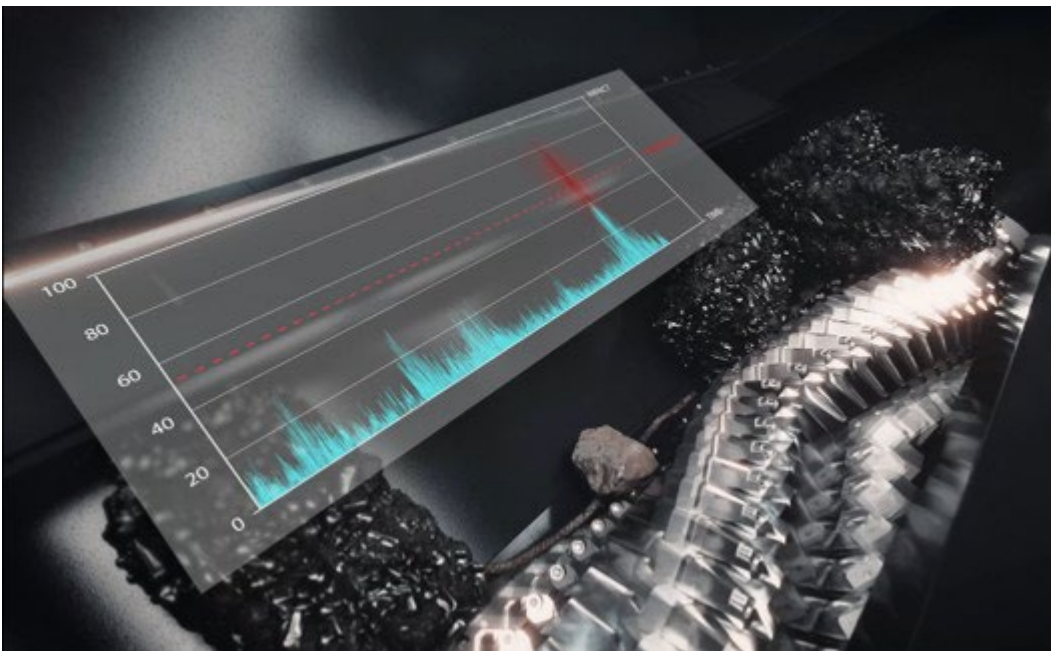
Both the VSC and the VID can be easily integrated into existing systems. Only sensors and an evaluation unit are added during retrofitting. Users benefit immediately, with no lengthy

adjustment phases and complex tests. With the Vecoplan Smart Center, Vecoplan is creating a platform that makes digitalisation in mechanical engineering a tangible reality. The VID is a crucial component in making processes transparent and controllable, while actively protecting them against damage. With this digital platform, the technology leader Vecoplan is launching an intelligent solution that offers users maximum flexibility and consistent, high-quality results. More efficient and with less downtime than ever before.

Meta title: Adaptive intelligence from Vecoplan

Meta description: Vecoplan integrates the new Vecoplan Intelligence Detect module, reducing the risk of machine damage by 60%

Photo:



The high-frequency vibration sensors of the new, self-learning technology 'Vecoplan Intelligence Detect', can detect foreign materials before damage can occur.

Photo: Vecoplan® AG

Vecoplan AG is a producer and supplier of machines and systems for processing and handling primary and secondary raw materials for material and thermal recycling. These include wood, biomass, plastics, paper, other materials, and household and commercial waste. The company lays the foundation for functioning recycling thanks to its extensive portfolio. Vecoplan supports its customers as a partner for single-machine orders, complex plants, and mega projects. 580 employees currently work at the company's sites in Germany, the USA, the UK, Spain, Austria, Poland, Italy, and France.

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