plastic processing

Interference of vibrations

case study

Challenge for VibroMatrix®

In the course of further processing after extrusion of JACKODUR insulating materials, surface milling machines are used to create a flat surface. The surfaces of the upper and underside are made by separate milling in one operation created. Here, JACKON places the highest demands on the surface quality as a prerequisite for further finishing with e.g. decorative films.

The requirements for the vibration behavior of the machine. The smallest deviations in the speed different drive units lead to unbalance excited vibrations of the milling shafts to interference patterns on the surface of the product.

The solution

The multi-channel vibration measurement system VibroMatrix® offers not only the appropriate instruments for diagnosis, but also delivers with the InnoBalancer® Pro also the right tool for targeted reduction of speed-dependent vibrations cause of uneven mass distributions in the rotors machine tool.

The VMSet-04P is used here, a set for on-site 2-channel vibration measurement.

Jackon Insulation

Since our founding in 1987, progress and innovation have always come first. We have established new processes, developed new products and experienced continuous growth. With more than 300 employees today, we are one of the leading suppliers of XPS solutions in Europe.

Our main office and its production facilities are located in Mechau, Germany, and we also have a factory in Olen, Belgium. Our product management, sales and marketing functions are handled from our office in Steinhagen, Germany. With our seamless field service operations, we are never far from our customers. We supply most of our innovative XPS solutions to customers in Europe, but you can also find our products used in a broad range of applications in places like Dubai or Sydney!

Interference of vibrations

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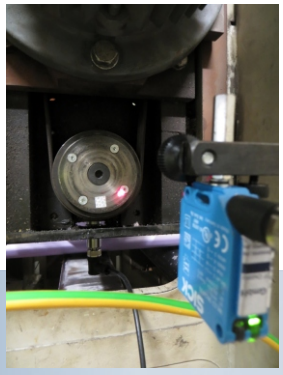
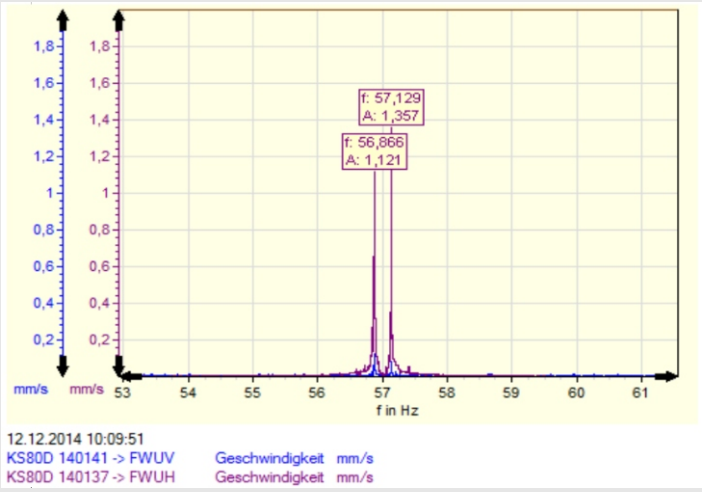
Product after the extruder, before the processing step face milling.



Vibration measurement on the bearing of the milling shaft and detection of the speed.

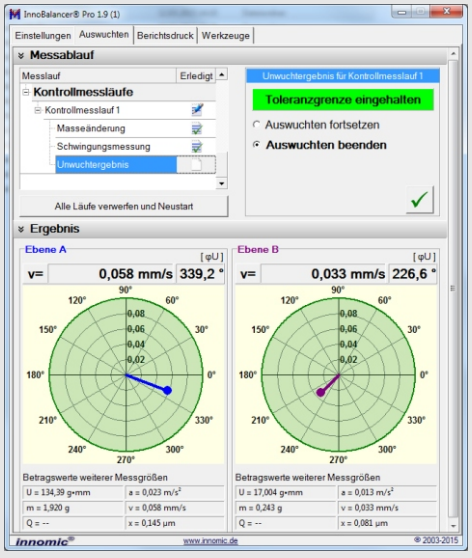
Measurement of the bearing vibrations on the milling shafts

During the preliminary investigation, the bearing vibrations measured with the InnoAnalyzer® Pro. In particular the speed-dependent vibrations of the 1st order were examined. The following frequency analysis shows the rotational frequency of both drive units with a difference of below 1 Hz. The resulting beat corres-pondered with the interference pattern on the product surface.



Balancing the milling shaft

With the InnoBalancer® Pro, both milling shafts were turned into two planes dynamically balanced. The bearing vibrations could thereby reduced by 95%. That became accordingly improved overall vibration behavior of the machine, so that the remaining inter-ference with a beating no negative active influence more on the sur-face quality of the product.



Benefit for the customer

- Restoring surface finish
- Process quality control
- Reduction of bearing forces
- Reduced maintenance costs
- In-depth knowledge of you own production facility
- Multiple uses with one-time acquisition costs