

UltraEmission: Exclusive solution in slug detection

Patented head start in technology

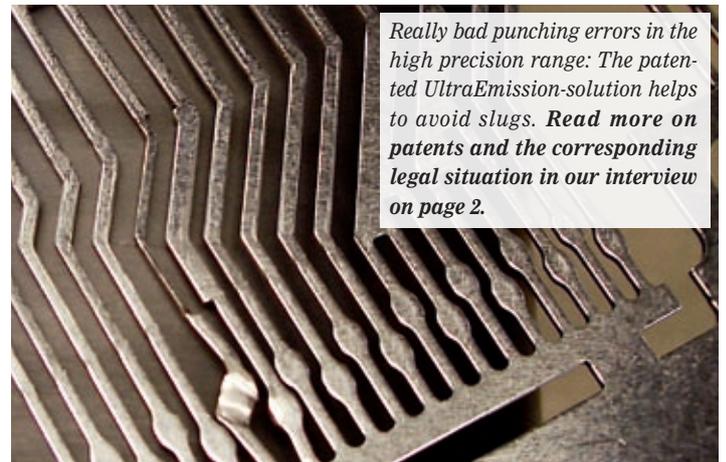
Exact test readings and a perfectly integrated sensor: BRANKAMP-group now patented their head start in technology regarding slug detection. Right until the present day, only the technology pioneers themselves offer the trusted and successful method of avoiding destructive stamping-waste. Thus, optimum procedures are assured in production.

“Of course, the competition does try to copy our idea“, concedes BRANKAMP-managing director Hans-Peter Schneider. “Yet they simply do not recognize many punhing errors. Their only chance at being within reach of the quality of BRANKAMP’s solution would be to infringe the rights of our patent.“ The specialists from Hannover-based PROKOS – a company of the BRANKAMP group – initiated the patent for the innovative method after extensive field tests. PROKOS-managing director Dr. Thomas Terzyk: “The idea, to sink the sensor into the machine itself by drilling a borehole is unequalled until today. Only like this could

a secure application be ensured, followed by test readings that were considerably better.“ That also convinced the experts at the German patent office, who granted PROKOS the patent for the new technology. “Any customer is invited to check this online in the patent office’s registry by entering the patent number“, explains Hans-Peter Schneider. Actually anyone promoting his products by mentioning a patent must name the correct patent registry number upon request. Otherwise, said party is in violation of applicable law (cf. interview with patent attorney Friedhelm Vomberg). The situation is the same, if technology protected

by patents is used illegally elsewhere. The worst case scenario: Shut down of the complete production facility. By the way: Not having known about the patent infringement does not protect the respective company from conse-

quences. “Our technology gives clients the security and certainty to work with the original at any time. The patent for our innovative UltraEmission-technology protects our solution until the year 2021“, explains Schneider.



Really bad punching errors in the high precision range: The patented UltraEmission-solution helps to avoid slugs. Read more on patents and the corresponding legal situation in our interview on page 2.

Interview with patent attorney Friedhelm Vomberg

Indemnity claim secured

What exactly does patented mean? What possible consequences do you face when buying products that only exist due to a patent infringement? BRANKAMP-Journal spoke to patent attorney and physicist Friedhelm Vomberg.

What does constitute a patent and in how far does it need to differ from a technological solution offered by competitors?

Friedhelm Vomberg: A patent is a set of exclusive rights protecting a technological invention, which has been granted for a device or procedure by the government to an inventor or their assignee for a limited period of time in exchange for a public disclosure of an invention. The patented solution must be new and rely on a real invention, not a small improvement or modification. You have to keep in mind however, that each individual examiner has a certain latitude



of judgment at his or her disposal. Which means: The results upon examination whether a patent is granted or not, may differ from one patent office to another.

What does “patent pending“ mean as opposed to patent granted?

Vomberg: While a company making use of a fully granted patent has the right to demand forbearance of usage and may also bring forth indemnity claims, that is not so with companies communicating a “patent pending“. They are only liable to compensation-claims – and only if it is probable that a patent will actually be granted later on.

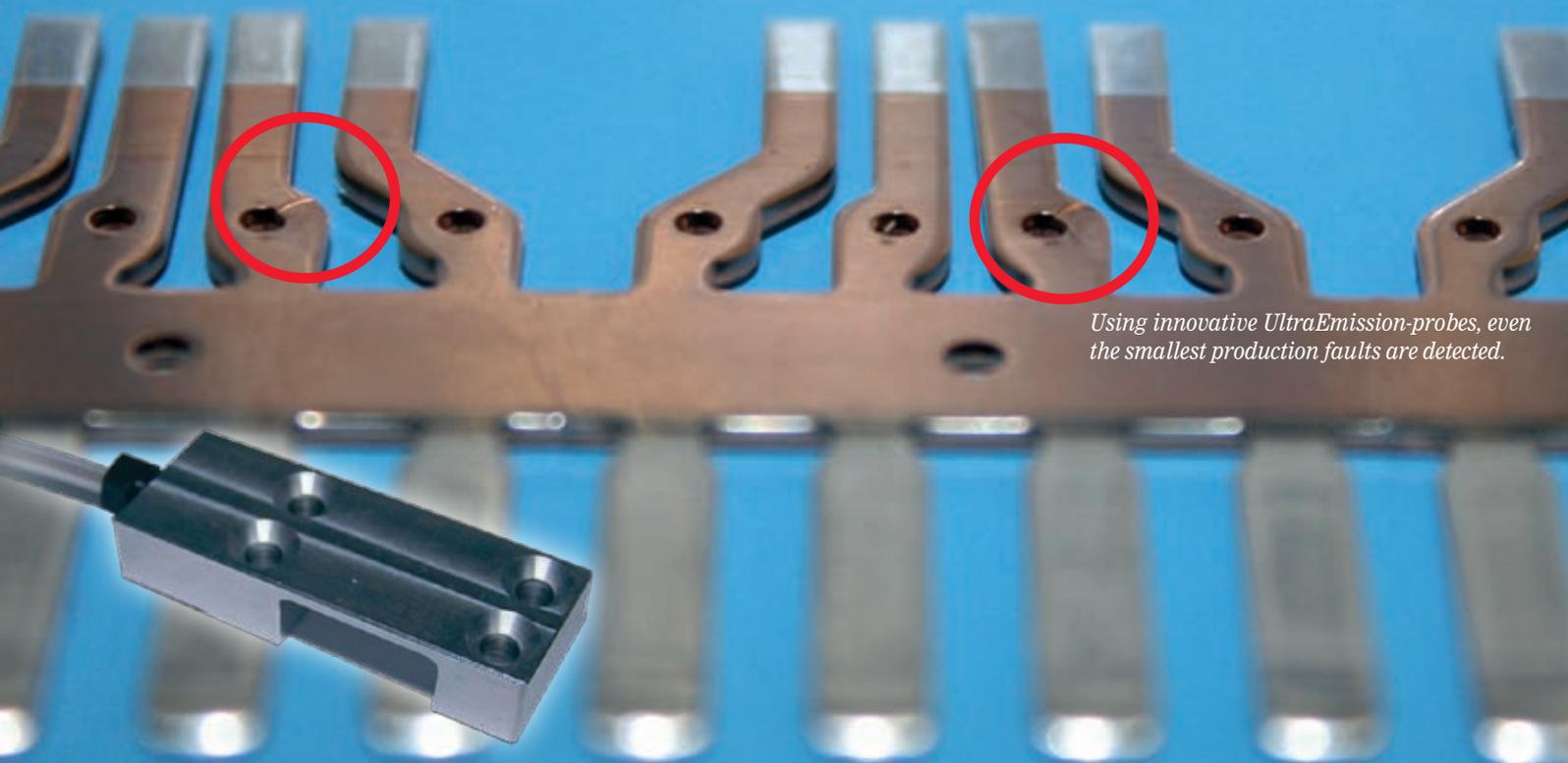
What does arrogation of a patent mean?

Vomberg: That question is related to § 146 of the German patent law. It means that there may be no wrongful representation of an article as patented. If you claim to have a patent, you must name the patent registry number. So that anyone who inquires may check what is protected in order to avoid

patent infringement. Thus, marketing or advertising, i.e. patent arrogation without a granted patent is not permitted. Even if you have registered an invention for a patent or if that is already pending.

What possible consequences is a customer facing if he uses a product that is “not free of legal claims from third parties“?

Vomberg: Upon illegal usage the patent holder may sue for forbearance and indemnity claims. In urgent cases you may even get a restraining order issued by a court. That may then enact forbearance. The mere fact that you did not know about the patent does not protect you from punishment or legal consequences!



Using innovative UltraEmission-probes, even the smallest production faults are detected.

UltraEmission: benchmark in slug recognition

Pole position for UltraEmission-sensors from BRANKAMP

For measuring process data during production, sensors and probes are used which are placed directly within the machine. Regarding performance and efficiency, there are a lot of differences. It is as in automobiles: A Daihatsu Cuore and a Porsche 911 are both cars indeed, but that is also about where the similarity ends. Regarding the topic of sensors, BRANKAMP managed to develop a premium product with the UltraEmission-technology, that detects waste i.e. slugs during stamping processes reliably.

Slugs are one of the most important cost-factors in stamping. Sometimes they stick to the tool, yet more often than not they are carried away from it together with the punched parts. As an effect, at unpredictable times, parts with ruined surfaces / damaged coatings are produced. As a rule, punched parts with slug-prints occur singularly and at random. Usually, an elaborate piece by piece individual control of all parts prohibits damaged items from reaching the customer.

The costs for this are quite high, however. In-process-control may help, since in that fashion, punching waste may also be detected in time. BRANKAMP developed a powerful means to this end with their systems based on UltraEmission-technology: By installing UltraEmission-sensors right upon the punching tool's binder

and by ensuing evaluation of signals with capable ProcessMonitoring-systems, slugs are detected already during production and right within the tool. Once a slug has hit the binder, the machine is stopped immediately.

System "learns" at the push of a button

In contrast to the usual eddy current probes, UltraEmission-sensors / probes offer a range of hands-on advantages: They don't need to be readjusted manually once the stroke rate is changed. The worker can start an automated teach-in-procedure at the simple push of a button, which researches a fault-free signal-curve including the corresponding process variations. That is especially important regarding delicate products, such as electric contacts. The material is

rather thin and the stroke rate is often 600 per minute or even more. "The higher the speed, the thinner and softer the material. That makes it considerably more difficult to adjust eddy current probes correctly and to generate reliable production protection", says Bernd Tapaß, one of the renowned BRANKAMP-"slug busters".

Small sensors and probes with big performance

When it comes to performance, the BRANKAMP UltraEmission-probe is also taking the lead: Eddy current probes only detect punching waste in a limited fashion. These probes measure the physical distance between the binder, also called stamp plate, and the lower tool. If that should not be within tolerance, the probes react. The problem:

Punching waste that was generated before – for instance within the tool – often won't be detected. "The position of punching waste is decisive for the fact, whether eddy current probes register it or not", explains stamping-expert Tapaß. "If the punching waste or slug has pressed itself into the material, then eddy current probes will have a hard time registering that." Since modern sensors and probes from BRANKAMP are far more capable than eddy current probes, it is possible to reach a higher performance with a lesser amount of probes. Instead of two eddy current probes one may achieve more with one UltraEmission-probe on smaller binders – and significantly so. One other advantage is the pricing: Compared to eddy current-probes, probes using BRANKAMP UltraEmission-technology are more affordable.