

Optimised production processes

FactoryNet[®]: manufacturing needs to be networked

In practically every office today, a computer with an internet connection is part of the basic equipment. According to the German Federal Office for Statistics, last year computers were being used in 84% of all German companies, and 78% are using world wide web access. But while administration and service departments are being equipped with ever more high-performance networks, the manufacturing department is often being left out.

In the vast majority of companies, connecting Manufacturing up to the corporate network is the exception. Yet great untapped potential still lurks in intelligently incorporating value-adding operations into a corporate network. FactoryNet[®] – the comprehensive process optimisation concept from BRANKAMP – not only makes production flows more

transparent, but also makes them considerably quicker and more cost-favourable. ProcessMonitoring systems using sensors can recognise breaks of tools or crashes at an early stage, and can stop machines. It practically eliminates cost-intensive repairs and long down-times. At the same time, it means that supervisors and

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News

EMO A HUGE SUCCESS

The world's premier trade fair for metal working, EMO in Hanover, once again broke all records this year. A total of 2,000 exhibitors from 39 nations, and 160,000 expert visitors from 85 countries, visited this mecca for metal workers staged on September 14-21. BRANKAMP was also exhibiting, with innovative new process monitoring products.

BRANKAMP AT WIRE 2006

The ProcessMonitoring specialist will again have a dedicated stand at wire 2006. From April 24-26, 2006, BRANKAMP is exhibiting its ProcessMonitoring innovations in Düsseldorf (Hall 16, Stand C58), alongside 616 other companies from around the world already confirmed for the event.

TOKYO MOTOR SHOW: ENVIRONMENTALLY FRIENDLY

There was a clear focus on environmentally friendly drive options at the 39th Tokyo Motor Show (October 21 to November 6, 2005). As well as hybrid technology, the studies produced by the car manufacturers are increasingly looking to fuel cells as a solution.

WORLD ECONOMY SET TO GROW IN 2006

The global economy is set to grow again next year, despite rising oil prices. That is the finding of a conference of 70 experts at the Kiel Institute for the Global Economy.

QUOTE OF THE MONTH:
"Globalisation is a fact. As such, the discussion is no longer about whether we consider gravity it exerts good or bad."

Manfred Weber, General Manager of the Federal Association of German Banks



BRANKAMP NC 100 integrated into the controls for a Monfort MCH 500. The NC lathe with a turret for short parts to be turned was equipped with ProcessMonitoring for the Russian market, and it manufactures drive parts for trucks.

BRANKAMP New Brazil agency for metal cutting

Complementing the Brazil agency for forming engineering, there is now a BRANKAMP agency for metal cutting engineering. As a long-established company, HDT in Sao Paulo has been marketing products from well-known machine tool manufacturers for many years. HDT is now to handle customer services and marketing in Brazil and neighbouring countries for the Erkrath-based ProcessMonitoring specialists.



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„Punching slug recognition using ultra-emission (Part 2)“

News

RUSSIA AS AN EMERGENT AUTO NATION

After China, Russia ranks amongst the most strongly growing automobile markets in the world. Between 2004 and 2014, the number of new vehicles is set to increase year on year by around 100,000, according to a joint study by Roland Berger Strategy Consultants, the German Federal Committee on Eastern European Economic Relations and the German Federation of Automobile Manufacturers.

INCREASED CRUDE STEEL PRODUCTION

By contrast with the month figures for the previous year, global crude steel production for September increased by around 3.5 per cent, to around 92.1 million tonnes. Whilst Chinese crude steel production has increased to 30.4 million tonnes, there was no increase over the previous month, according to the International Iron and Steel Institute (IISI). In total, 61 countries provide the IISI with full information on their steel production.

FIGURE OF THE MONTH: Labour costs around the world

An international comparison of labour costs in industry, 2004 (in euro)

DENMARK:	28.14
WESTERN GERMANY:	27.60
FINLAND:	24.88
FRANCE:	20.74
UNITED KINGDOM:	19.89
USA:	18.76
ITALY:	17.24
CANADA:	16.82
GREECE:	10.42
POLAND:	3.29

Source: Cologne Institute for Business Research

Labour is most expensive in Denmark, where the hourly rate is € 28.14. The USA falls in mid-table, with an hourly rate of € 18.76. The lowest labour costs were recorded in Poland, at € 3.29 per hour.

Portrait

Carpe Diem

Carpe diem – Seize the day. That is the professional and personal motto of BRANKAMP employee Axel Terhaag.



As Vice President Sales, the 38-year old has been responsible for the North American market at BRANKAMP since March of this year. "In my job, a constant readiness to travel and a high degree of flexibility are fundamental requirements. I am travelling every four to six weeks," he says.

Then Terhaag, a keen tennis-player, takes a one- or two-week trip "over the pond" and provides local sup-

port to customers in the USA and Canada.

From Chicago to Erkrath: the secret's in the mix

"The combination of desk job and local customer support is the attraction of the challenge," says Terhaag, who lists an MBA amongst his qualifications. If he's not travelling on business for BRANKAMP, he likes to spend time mountain-biking or playing with his two daughters, Pia and Jil.

Monitored by BRANKAMP

Sharp work, for sharp whetting!

Up until now, the procedures for measuring ring wheel wear on machines for manufacturing knife blades have been imprecise, and have caused high wear to the small metering plate due to the long contact times between the grinding wheel and the metering plate. By

contrast, the new BRANKAMP procedure has reduced wear to a minimum by using a structure-borne noise meter after each grinding operation to record the contact between the ring wheel and the plug gauge, thereby optimising the ring wheel setting. The inno-



vative BRANKAMP procedure is being used, for example, on GSQ's VG5 vertical grinder.

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FactoryNet®: manufacturing needs to be networked

works managers have key production ratios at their fingertips at all times.

Via intranet or internet: an insight into production

Data is sent by the ProcessMonitoring systems via wire or using wireless data transfer directly to the BRANKAMP eR5 software. Using the internet-based ProductionMonitoring system, data can then be viewed securely via the intranet or world wide web from any computer.

Fast information, faster processes

This makes it possible to analyse faults on a machine better, and to rectify such faults more quickly. In addition, linking Manufacturing into the network brings other tangible benefits: it facilitates significantly faster order processing

and sales optimisation. The Sales department is also able to access production data and capacities, and to estimate the level of take-up of machine capacity on the basis of the stored data. This means that Sales can also offer customers a better service: questions such as how many parts have already been produced for an order, or when an order will be

completed, can be answered easily from the corresponding screen mask. By offering rapid fault analysis, faster order processing and maximum transparency, BRANKAMP's FactoryNet® lowers production costs. To give an example: if a company doubles its cumulative production volume, then unit costs are reduced by 20% to 30%.



Good conversation at the MASHEX '05 in Moscow: Thomas Hertl (Kennametal), Dr. Alexander Loktev (Technopolice), Werner Ebeling (BRANKAMP), Dr. Dimitry Loktev (Technopolice) und Heinz Dörner (Schütte).

In-Process monitoring during punching

Punching slug recognition using ultra-emission (Part 2)

Punching slugs are an irritating problem. Some of them stick to the tool, but frequently they are passed out of the tool with the punched part. This means that punched parts are produced with a non-permitted surface marking, with an unpredictable frequency. Workable protection is provided by in-process monitoring using BRANKAMP Process-Monitoring systems with ultra-emission monitoring.

By Dr. Thomas Terzyk*

A product known as the Combiflex sensor is used for ultra-emission monitoring; it is screwed directly onto the pressure pad. The ultra-emission signals given off by the stripper plate as it comes into contact with the tool beneath it are measured. Generally, one sensor per stripper plate is sufficient. The simple mounting for the Combiflex sensor provides for a change monitoring sensor device which does not require any elaborate work to calibrate it. As an alternative option, ultra-emission sensors can also be installed in a fixed position on the stripper plate. For this, a price-favourable option on the Combiflex sensor is available.

On all the complex follow-on composite tools so far equipped with these devices, the Combiflex sensors produce signals which can be replicated very well in fault-free manufacturing. Even small slugs produce



noticeable deviations from the "good" pattern.

A machine which learns at the touch of a button

Envelope curves are used to monitor the ultra-emission signals. At the press of a button, the machine operator can start an automatic learning process

(teach-in procedure) on the monitoring system which determines the fault-free signal pattern with the associated process scattering. It is possible to set the envelope curve width using standard values. Product-dependent setting of monitoring is not required. In all cases, monitoring is carried out from the start of the cycle, i.e. approx. 120 degrees prior to the placing of the pressure pad, to the machine's lower reversal point.

Ultra-emission stops the machine if danger is detected

If slugs are identified, the ultra-emission signals move outside the envelope curves and the monitoring system triggers a machine stop. The removal of all the punching slugs (which can often only be found with difficulty in the tool) is only con-

firmed once the original signal pattern is produced by the stripper plate, following a machine restart. This provides the machine operator with a high-performance aid which makes fault-seeking easier, guarantees the quality of the parts produced, and reduces non-productive time on the machine.

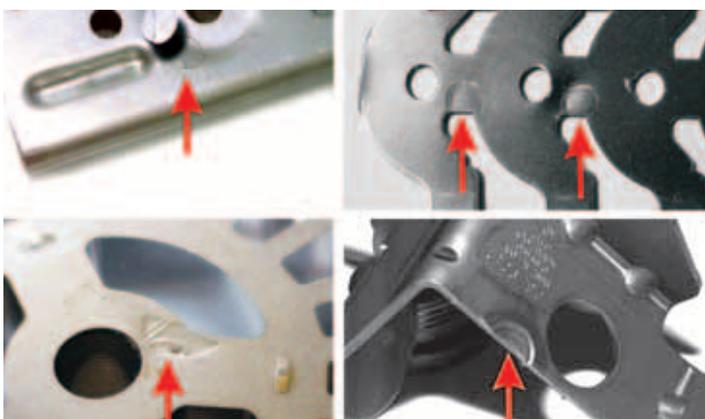
Clear advantages from ProcessMonitoring

For punching operations, the use of ultra-emission monitoring produces the following advantages:

- Cost-favourable guarantee of surface quality through in-process quality monitoring using ultra-emission sensors directly on the tool.
- Avoids damage to the tool, and the associated downtimes, caused by migration of punching slugs.
- Reduction in reject production.
- High productivity with no loss of quality. Even at high stroke rates and with thin sheet metals, good surface quality is ensured.
- Simple determination of monitoring limits, using the teach-in procedure. No time-costly, highly accurate calibration work needed, thanks to the innovative Combiflex change monitoring sensor system.
- No impairment of tool maintenance and repair.

If you are interesting in reading Part 1 of this article, please contact us on +49 (0) 211 250760.

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Online ProductionMonitoring System with eR5

FactoryNet in use with the eR5 Just simple

Whether for the volume produced, time to completion of order or to resolve problems, all your key production data is now just a mouse-click away with the BRANKAMP eR5 Online ProductionMonitoring-System. This means that your Production Manager can access manufacturing data 365 days a year, 24/7 via the intranet or internet. The BRANKAMP system is a key component in linking your production halls to the network – using FactoryNet.

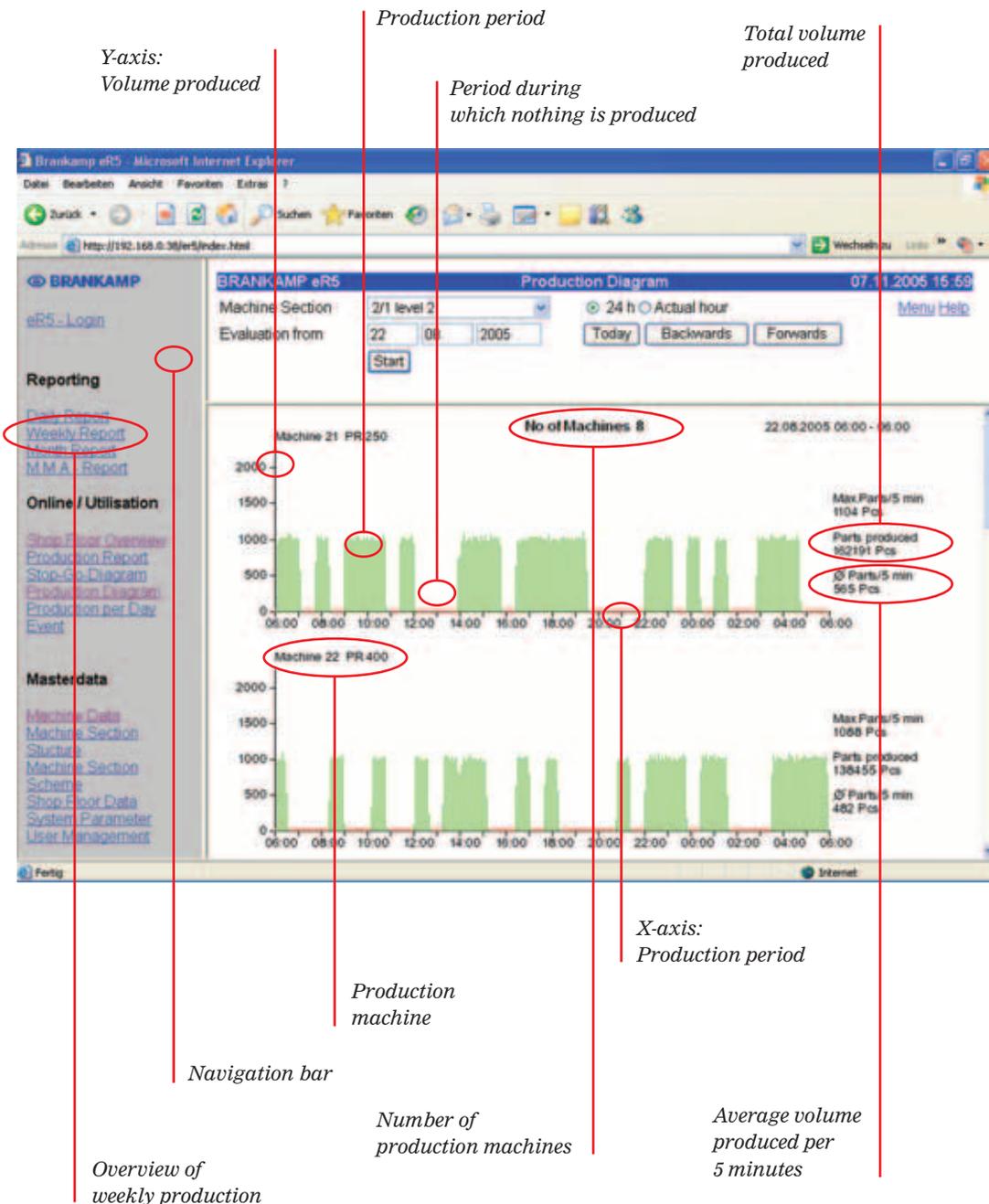
User-friendliness

The eR5 Online ProductionMonitoring System stands out not just for its cost- and time-savings, but also for its ease of use. To make the system as easy to use for the Production Manager as possible, the BRANKAMP system works with the screen mask and functions of a standard internet browser.

With just one click on the corresponding link, the production information required is displayed on screen. In order that the operation of the Online

ProductionMonitoring System is as simple as possible, data queries using the BRANKAMP eR5 are entered using a traditional internet browser, such as Internet Explorer or Netscape Navigator.

This enables the user to work with the functions with which he is familiar from using the internet in conducting queries for production data – there is no need for the user to familiarise himself with a completely new system. The BRANKAMP eR5 thus means that long familiarisation periods and expensive software implementations are now a thing of the past.



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