

Achieving optimal settings for metal-forming machine tools:

## A tachometer for manufacturing



*Driving a car without a tachometer? Sure you can, but it's not such a good idea.*

Would you drive a car without a tachometer? Sure you can, but it's not such a good idea. "What applies to the road applies to production," according to Professor Dr. Klaus Brankamp. "The machines work, but they'd work a lot better if all the machine operators had the right information." Modern measuring instruments for machine are absolutely vital says the expert in manufacturing.

Without the Strasbourg-based inventor Otto Schulze, we would still be driving cars in a quite different way. It was he who invented the tachometer, in October 1902. Today, driving without up-to-date vehicle information is unthinkable. Surprisingly, it's been a whole different story in many manufacturing operations – until today. "Although machine operators are required to monitor massive forces, high stroke rates and production speeds on expensive machines, up until now we have been lacking the 'tachometer' to help them," criticises Professor Brankamp. "These systems can actively support machine operators in their work. All too often, operators have to rely solely on natural instinct, a good ear, and personal experience during set-up, start-up and production."

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A BRANKAMP PK 6000 on a Hatebur AMP 30 S. This multi-stage press is used to manufacture gearwheel blanks, flange-collar nuts and cam blanks. The Hatebur unit has a total force of pressure of 2,500 kN and weighs 36 tonnes.

### Techni Show

## International meeting

March 14-18 saw the annual sectoral meeting for metalworkers staged in the Netherlands: The Techni Show in Utrecht once again attracted specialist visitors and exhibitors from all over the world to the biggest and most important trade fair. The Dutch representation for BRANKAMP, SGM Machine Technology B.V., was present to exhibit the latest ProcessMonitoring systems, together with BRANKAMP's authorised representative Werner Ebeling.



## News

### SOUTH AFRICA – GROWTH MARKET

At over 26 per cent, South Africa offers one of the highest growth rates for automotive manufacturing. In the past year alone, over 500,000 new cars were registered. Car ownership is currently at 97 vehicles per 1,000 people – and rising. German manufacturers BMW, DaimlerChrysler and Volkswagen manufacture cars locally, and have now achieved a market share which is over 40 per cent.

### GERMANY: THIRD-BIGGEST MACHINE MANUFACTURER IN THE WORLD

Germany continues to be the third-biggest machine manufacturer in the world. In 2005, the actual figures for global machine production saw a six per cent increase, to EUR 1,150 billion. The top-ranking country is the USA, with EUR 250 billion, followed by Japan with EUR 177 billion. Germany ranks third, with EUR 165 billion, according to the Federation of German Machine and Plant Manufacturers.

### VW: MASSIVE LAY-OFFS IN BRAZIL

The Volkswagen Group is looking to shed thousands of posts in Brazil in the coming two years. Furthermore, Europe's biggest automotive manufacturer is also said to be considering closing one of its five South American factories. The reason for the lay-offs is reportedly a reduction in staffing costs by 25 per cent for the new models.



### QUOTE OF THE MONTH:

**"A clever man doesn't make every mistake himself. He gives others a chance too".**

*Winston Churchill*

## The special issue

Trade fair breaks records

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## News

### BOSCH: MARKED INCREASE IN SALES

The Bosch Group has succeeded in posting noteworthy growth in 2005. The company increased sales by 6.4 per cent, to EUR 41.5 billion. Bosch is similarly optimistic about the current year. The automotive supplier is forecasting a five per cent growth in sales.

### GM: RUSSIAN PLANT?

General Motors is planning to establish its own manufacturing operation in Russia. The world's biggest automotive manufacturer is in negotiations for a plant close to St. Petersburg, according to GM's European boss Carl-Peter Forster.

### SECO TOOLS: RECORD RESULT

Seco Tools can rightly describe 2005 as a more than successful year. The Swedish machine tool manufacturer and cutting specialist achieved a ten per cent increase in its sales (up to EUR 523 million) and its operating result. Around 50 per cent of Seco Tools sales was achieved with products which are less than five years old.

### FIGURE OF THE MONTH: Number of hours worked in 2004 per employee per annual, in an international comparison.

SOUTH KOREA	2,380
POLAND	1,957
JAPAN	1,840
USA	1,812
SPAIN	1,746
GREAT BRITAIN	1,646
ITALY	1,519
AUSTRIA	1,481
GERMANY	1,360
FRANCE	1,360
NETHERLANDS	1,312

Source: Federal Statistic Office

Employees worked longest in South Korea, with an average of 2,380 hours per annum in 2004. Second place went to Poland, with 1,957 hours. Germany, with 1,360 hours per annum, is in the bottom third internationally.

### ProcessMonitoring on thread milling machines:

## RFID Technology

RFID is electrifying the experts. . No matter whether for logistics, retail or aircraft construction, using radio chips is allowing companies in all sectors to have hopes of significantly more economical processes. At Reed Machinery in Massachusetts (USA), for example, this trend-setting technology is already being used – in combination with the BRANKAMP PK 6000i ProcessMonitoring system.



RFID technology in use: The BRANKAMP PK 6000i system on a thread roller at Reed Machinery.

For this, the beading punches on the thread rollers are equipped with a modern RFID chip. The BRANKAMP PK6000i ProcessMonitoring system monitors the roller forces and keeps an accurate count of the number of rolling operations carried out. This data is sent to the so-called

smart tool software which is integrated into the machine controls. The program stores the data on the RFID chip in the tool. The tool data is continuously updated during production. This means that the machine operator has the precise production data available at all

times, even when the tool is removed from the machine, on threads for hollow parts or bolts. His only requirement is for a mobile reading device. Reed Machinery produces machines for manufacturing threads for hollow parts, bolts and non-circular parts.

### Factory M

## Customised production management from EUR 99.-

Are you looking for a press-button solution on your PC to see which machines are running or not, when the order will be completed or how to optimise use of your machines? Then Factory M from BRANKAMP is the answer you are after. The operational data logging software delivers all the relevant production data in real time. And the key feature: Factory M is bund-

led together into sensible packages, each priced at just EUR 99. This allows the customer to decide for himself, and on a cost-favourable basis, which operational data logging modules he wishes to use for his production operations. The impulses for operational data logging can be transferred from the existing ProcessMonitoring systems or from other current

monitoring systems. If no monitoring systems are installed, the data is recorded by the BRANKAMP IMC box and passed to Factory M.

The IMC box records and stores impulses from up to eight machines. For this, it transfers the production data to the company's own server. There, it is stored in the BRANKAMP Factory M database.

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## A tachometer for manufacturing

Only experienced experts succeed in setting up a complex production machine with the deliberate aim of ensuring precise replication of an earlier operation. But is the rolling machine operating within the ideal range? According to Professor Klaus Brankamp, "True-to-gauge threads can also be produced with a configuration that subjects the tools to an extremely high level of wear and tear. This results in increased machine downtimes or lower production speeds." So although the operator's practical experience is important, it is not enough to guarantee top performance in the long run. And

in modern industry, speed is a critical factor. Only the maximum speed guarantees success, and economic survival.

### Faster set-up and re-equipping processes

There are particular opportunities to be seized in achieving quicker set-up and re-equipping processes. That's why innovative companies around the world are taking advantage of the opportunities that lie in modern measuring technology for manufacturing. ProcessMonitoring systems, which use sensors to record and display the key parameters and

forces for the machine, are an optimal tool for use during set-up. The interplay of various factors – quicker set-up, longer lifetimes, fewer stops – brings with it massive economic potential. "Doubling the accumulated production quantity reduces unit costs by 20 – 30 per cent", reckon expert Klaus Brankamp. "Put simply, the cost advantage that companies can achieve with a higher production speed is almost unbeatable. Using modern operator information systems opens up new opportunities to increase efficiency, thereby significantly increasing the ability to compete internationally."

wire 2006

# Trade fair breaks records

wire 2006 was a trade fair which broke all records. A total of 1,104 exhibitors displayed their product innovations at this specialist trade fair for the wiring and cable industry. The wire and tube fairs were staged at the same time, and 65,000 visitors attended the two events. BRANKAMP also had its own stand to present its ProcessMonitoring systems. "For us, wire was a complete success," said Franz Saliger, BRANKAMP's authorised representative. Particularly in demand were the Factory M concept, RFID technology and the ECO line.

BRANKAMP's Factory M concept allows production operations to structure their operational data logging solutions for process monitoring to suit their own needs. "We have bundled together intelligent packages for this. It allows the customer to decide which operational data logging functions he needs

and which he can do without", said Franz Saliger, an authorised representative for BRANKAMP. Particularly attractive was the fact that a Factory M module is available for as little as EUR 99. (See also Page 2)

Another magnet for visitors to wire was RFID technology,

which the Erkrath-based process monitoring specialist has integrated into its systems. Using this innovative technology, production data from the ProcessMonitoring system is stored on a chip and continuously updated. Using a mobile reading device, the machine operator can call up the data at any time – even

when the tool has been removed from the machine. "This means that he always has an overview of the production data," said Saliger. (See also Page 2)

There was similarly strong interest from visitors in the ECO line from BRANKAMP. With the two ProcessMonitoring systems ECO 300 and ECO 500, the Erkrath-based company has developed a cost-favourable monitoring tool for any and all cold forming processes and thread rolling machines (See also Page 4).





User-friendliness

# Selecting the best

Just as every Internet user has his own favourite home page when entering the world wide web, so machine operators have their individual favourite functions for process monitoring. Whether it is the total figure for the volume produced, the graphs or the trend information, using the star key on the ECO 500 the machine operator can call up his preferred function quickly and straightforwardly.

The ECO line:

## Cost-favourable and efficient

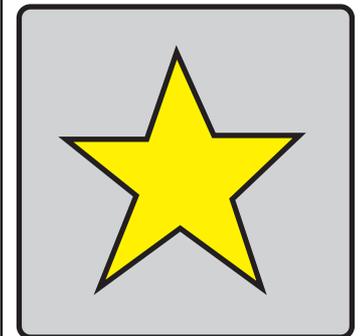
With its ECO line, BRANKAMP has developed a cost-favourable ProcessMonitoring system for cold forming machines. Both options, the ECO 300 and ECO 500, are easy to operate and reliably monitor all cutting processes.

The ECO 300:

- Less cost – More production
- Visualization of the process data for every channel
- Numerous counter functions: order counter, shift counter, total counter, sorting and box function counter
- Visualization of quality factor
- Visualization of machine speed
- Autotest programme after switching on
- Automatic learning of sensitivity and amplification
- Rapid signal processor
- Curve analysis with dynamic limits
- Presetting and visualization of order number
- Operator identifier
- Selection for manned or unmanned (GostShift) shift
- Display of error messages
- Crash control
- Automatic machine stop in case of freak outs
- Dosage programme
- LCD display
- Edit production data via bar code (optional)
- Serial output RS-232 for data transmission

The ECO 500:

- Less cost – More production
- Visualization of the process data for every channel
- Numerous counter functions: order counter, shift counter, total counter, sorting and box function counter
- Visualization of quality factor
- Visualization of machine speed
- Autotest programme after switching on
- Automatic learning of sensitivity and amplification
- Rapid signal processor
- Curve analysis with dynamic limits
- Presetting and visualization of order number
- Selection for manned or unmanned (GostShift) shift
- Display of error messages
- Crash control
- Automatic machine stop in case of freak outs
- Dosage programme
- Recording and transmitting of production data
- TFT display
- Edit production data via bar code (optional)
- Ethernet



A single press on the favourites button is all that is required – and the chosen data appears on the monitor. This means that there is no longer any need to flick through menu functions which the operator only rarely requires. Using this individually-personalised favourites button, the machine operator can access the data of special relevance to him far more quickly. Customised settings are no longer a problem when using the new generation of ProcessMonitoring devices for cutting operations, the ECO 500.

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