

New measuring method

Absolute force measurement during thread rolling

Many operators find a setting that provides the required type of thread only by way of time-consuming trial and error. A setting thus established cannot in any way ensure an optimum tool life or a high degree of process reliability. Threads that are true to gauge can be produced even with a setting that subjects the tools to extreme wear and tear.

Operators inevitably require assistance to help them in the setup process. A particularly suitable means of providing such assistance is the measuring and indication of the forces applied when forming the thread. By visualising the force characteristics, the adjustment process becomes transparent and promptly shows up any setup faults. In this way, the effect of adjustments to the die holder on the product is immediately discernible, facili-



Roller with adjusting screws

tating a quick setup process that is easily repeated.

So far, merely non-calibrated measuring chains have been used for measuring the forming forces during flat die rolling. Frequently, the component forces acting on the adjusting screws are acquired as

relative values. A measurement of relative forces is sufficient for ProcessMonitoring. However, to assist the operator in the setup of the production system, absolute force measurements have major advantages over relative force measurements:

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wire China

wire in Shanghai



Brankamp will exhibit on the Wire 2004 in Shanghai from Sept. 22 to Sept. 25 2004. Till now ProcessMonitoring is not very well known on the Chinese coldforming market. We want to offer our customers the advantage to produce high quality parts with more safety and lower costs due to machine protection, tool protection, higher machine speed and monitoring of the process quality. Brankamp Sensors are placed in the machines to monitor the forming forces of single- and

double stroke presses, threadrollers and multi station presses. With the visualisation of the force curves the machine operator can handle the quality relevant parameters more easily and quicker when he is setting up the machine and adjusting the tools. The Brankamp B 400 and C 100 ProcessMonitoring System can be ordered with a program and Windows® operation system in Chinese language. The Brankamp PK 4000 offers an easy to handle operator surface that is based on the use of icons instead of language.

ProcessMonitoring in use

Patterer trusts BRANKAMP

Recently, Patterer GmbH, based in Rieden in East Allgäu, successfully commissioned its first BRANKAMP PK 5000.



(l.) BRANKAMP-man Volker Simon, (r.) Markus Egger

The manufacturer of production technology established initial contact with BRANKAMP during the Stamping Days in Pforzheim. After initially renting the device, the company soon after decided to buy it. In April, Patterer moved its production to a new hall. "We intend to invest in further ProcessMonitoring systems," says Managing Director Markus Egger.

News

GROWING OPTIMISM IN MACHINE AND PLANT CONSTRUCTION

In the first three months of the year, the inflow of orders in machine and plant construction rose by 15%. The target increase in sales for this sector in the whole year has been set at 2%. In the EU, the leading production country in machine and plant construction is Germany with a share in production of 40%.

GEBRÜDER SPIEGEL AG SET FOR GROWTH

The BRANKAMP representation in Switzerland, Gebrüder Spiegel AG, headquartered in Kreutlingen, has increased its number of staff. In order to cope with the demand, the company has hired additional sales staff that has already undergone intensive training provided by BRANKAMP.

GILDEMEISTER RECORDS INCREASE IN ORDERS

In the first quarter of the year, the machine manufacturer Gildemeister managed to increase its orders by 5% as against the previous year, recording 241 million Euro. The financial year of the Bielefeld-based company is thus on schedule. „We anticipate to see a continuous upturn in demand throughout the year,“ says head of the company, Dr. Rüdiger Kapitzka.

BUSINESS FAILURES SHOW SLIGHT DECLINE

In February, the number of company insolvencies fell by around 0.8%. According to the Federal Statistical Office, a total of 3.082 companies filed petitions in insolvency. In contrast, the number of consumer insolvencies rose by 35.4%.

QUOTE OF THE MONTH:

»Most of all, I like to remember the future«

Salvador Dali

The special issue

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»Test series: Machine protection in processing centres«

News

IFO ECONOMIC CLIMATE INDEX RISING

The worldwide economic activity in 2004 has continued to pick up. This is the result of a survey carried out by the Munich-based IFO institute. According to this survey, the IFO economic climate index in the first quarter rose to 111.0 points—corresponding to an increase of 10.8 points as against the 4th quarter of 2003. The biggest improvement could be seen in the economic climate in North America and Asia. However, Western Europe and other regions also signalled positive trends.

AUDI SOON IN INDIA



From July, the VW subsidiary, Audi AG, will be represented on the

Indian market, having concluded two dealer contracts in Delhi and Bombay. Further contracts are to follow. Over the next five years, Audi intends to sell around 1,000 cars in India.

FIGURE OF THE MONTH:
What are the key factors of successful companies? What companies consider important for their success, in per cent



Companies consider their products to be the most important factor in their success, ahead of qualified staff and satisfied customers. Innovations wound up in the last place, apparently not being attributed a high value in terms of ensuring success.

Source: Forum / Impulse

Put to the test

Yamazaki Mazak has convinced itself of BRANKAMP

Dr. Elmar Barz, European Chief Executive of Mazak, personally convinced himself of the efficiency of the BRANKAMP systems.

“Bernd Eckstein, Manager of Application Technology at Mazak Germany, paid a special visit to the production facility of a well-known German machine manufacturer,” said the authorised BRANKAMP signatory, Werner Ebeling. “He was able

to appraise the use and possibilities of our Process-Monitoring systems in their day-to-day production process.”

Our photo shows the visit of Mazak chief engineer Said Nezhlioui and Mazak Chief Executive for Europe, Dr. Elmar Barz, at the BRANKAMP stand at the SIMODEC. Mazak France is also favourably disposed to the introduction of BRANKAMP systems.



Mazak chief engineer Said Nezhlioui, Mazak Chief Executive for Europe, Dr. Elmar Barz and Werner Ebeling (of l. to r.)



Mazak Integrex 200 turning and milling centre with BRANKAMP CMS

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Absolute force measurement during thread rolling

- The force displayed in kN is less abstract than the indication of relative values
- Absolute forces are representative of the actual tool load
- The absolute forces measured at the setting screws are comparable quantitative-wise
- Absolute forces allow a quantitative evaluation of optimisation measures on the tool

absolute forces to be measured even during flat die rolling. The core of this process is a newly designed sensor measuring component forces on the adjusting screws. Prior to installation, the absolute force sensor is calibrated. The cost-intensive and time-consuming calibration work on the production machine thus becomes a thing of the past. This calibration does not lead to additional machine downtimes.

comparison of the four adjusting screw forces in relation to each other: In case of an optimal die alignment, the relation of the maximum forces to each other results from the dimensions of the die holder compared with the length of the thread shaft. As expected, the greatest force is taken up by the “Top inlet” adjusting screw, the lowest force by the “Bottom outlet” adjusting screw.

Therefore, BRANKAMP has developed a process that allows

The calibrated measurement initially enables a quantitative

to be continued in the next
BRANKAMP Journal

Portrait

On the go for the customer



He put his heart and soul in it: Werner Ebeling

“Satisfied customers are all important. That’s when business becomes pleasure,” says Werner Ebeling. The authorised signatory and Head of Sales

for the metal-cutting sector lives this philosophy. He started at BRANKAMP on 1 January 1988. Prior to that, the qualified mechanical engineer had already worked as a sales manager for 15 years. At BRANKAMP, he initially set up the metal-cutting sales sector. However, that was not enough for the tireless 59-year-old. For no sooner was this task accomplished than the “passionate salesman” started

with other projects, such as the launch of a French agency. Which he did during his holidays at the French Atlantic coast, where he has a holiday home—his second major passion next to his job. This is where he spends almost every single minute of his spare time. And to ensure that he will not miss his job there, he has long since looked after a number of French customers, such as Ford Bordeaux.

Control Machine Security

Test series: Machine protection in processing centres



Field tested: The BRANKAMP CMS-System at use in processing centres. Decidedly the best in the acid test

Who likes to buy a pig in a poke? A well-known machine manufacturer from the south of Germany, at any rate, wanted to know for sure before fitting its machine park of more than 30 processing centres with BRANKAMP CMS systems for collision control, and systematically tested them first in the most extreme conditions.

“In the past two years, we incurred rather high maintenance costs due to a number of very serious collisions. In order to lower these costs in the future, we have examined various possibilities,” the plant manager outlines the starting position. To support the decision for BRANKAMP CMS systems, five new series of tests were carried out with different starting parameters.

1. Test of the Emergency Off function

Set point BRANKAMP:	650 N/mm ²
Machine in use in Y direction (surface milling)	



Result: Promptly upon reaching the set point, the machine came to a standstill. No damage!

2. Emergency Off function with the following parameters in Y

Feed f:	5000 mm/min
Feed Z:	6 mm
RPM n:	12000 min ⁻¹
Processing:	Surface milling
Set point BRANKAMP:	650 N/mm ²

Result: Promptly upon reaching the set point, the machine came to a standstill. No damage!

3. Crash simulation in Y with the following parameters

Feed f:	5000 mm/min
Feed Z:	6 mm
RPM n:	12000 min ⁻¹
Set point BRANKAMP:	650 N/mm ²

Result: Promptly upon reaching the set point, the machine came to a standstill. No damage (tool or machine)!

4. Crash simulation in Z with the following parameters

Feed f:	5000 mm/min
Feed Z:	40 mm
RPM n:	12000 min ⁻¹
Set point BRANKAMP:	850 N/mm ²

Result: Promptly upon reaching the set point, the machine came to a standstill. No damage (tool or machine)!

5. Crash simulation in Z with the following parameters

Feed f:	6000 mm/min
Feed Z:	25 mm
RPM n:	8000 min ⁻¹
Tool:	VHM-drill
Diameter:	13 mm
Set point BRANKAMP:	220 N/mm ²

Result: Promptly upon reaching the set point, the machine came to a standstill. No damage (tool or machine)!

Following these extensive series of tests, the BRANKAMP systems were installed in the production. Conclusion of the company: “The parameters for every test were set far higher than those used in production (some by more than 200%). All the tests were successful, and without this collision monitoring system they would have caused damage to the machine. Everyone present could be convinced of the success of this system.”

Acoustic monitoring for pressrooms

Bad news for slugs



WITH Ultra Emission versus production of rejects due to punchings

Slugs caused by punching scrap, are not easy to cope with. But now BRANKAMP has designed the UE System, that is able to detect even tiny parts of punching scraps.

The production of rejects due to punchings is a common nuisance, as often only occasional stampings show surface markings. A random quality check, therefore, does not ensure good parts quality. Even the use of a standard ultrasound monitoring device is worthwhile only to a certain degree: As a rule, slugs can be detected correctly only when using pure cutting and stamping tools. As a recognised acoustic expert, BRANKAMP has used its know-how to develop a process that detects punchings

even with follow-on composite tools with spring-mounted hold-downs: known as the UltraEmission monitoring process.

High level of productivity without loss of quality

“This is a quantum leap in acoustic monitoring,” says authorised signatory Hans-Peter Schneider. “A powerful combiflex sensor detects even small punchings.” Thus the surface quality of the parts is checked bit by bit. A reliable evaluation is ensured by

quattromatic envelope curve monitoring.

The in-process quality control directly in the tool ensures good surface quality even with a high number of strokes and thin sheet metal, while at the same time preventing tool damage. The innovative combiflex replacement sensor technology also makes time-consuming adjustment work unnecessary.

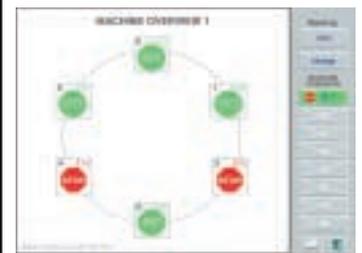


User-friendliness

Everything at a glance

The BRANKAMP Factory Net allows several systems to be networked. In the „Machine Overview“, the operator can see at a glance any machines that are connected. The required machine can then be selected by mouse-click.

The advantages are obvious here: The operator needs but one screen for several ProcessMonitoring systems. He can jump directly to the mask of each machine. As soon as a machine stops, a red stop sign will appear in the appropriate place. Thus, the operator can always see at a glance.



Fast and clearly arranged: with the Machine Overview the operator has all machines at a glance

The time stated for each machine informs the operator as to how long the machine has been running or when it stopped. In addition, the different colours—green for active, red for a stop—will tell the operator immediately whether the machine is running or idle.

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