

INFOTECH

NEWS OF THE AUTOMATION DIVISION



Reliability is the foundation of a successful business relationship.

Reliable 24/7

2

ROBOTsander:
better than
hand-polished

3

Machining time
reduced by 50 %

4

48 % faster thanks
to high-pressure
cooling

6

Editorial



Reliability is the foundation of a successful business relationship. Let me compare Suhner's proverbial reliability to a circle.

Reliability begins with being able to listen and being willing to understand. Our customers' feedback is the basis of the quality of our planning, the careful execution of our orders and of our comprehensive service support – up to the moment when the existing system is replaced by another state-of-the-art system. In most cases, this only happens decades later. Then the circle closes.

Throughout the entire life cycle of a system, we are your partner for reliable systems, provide permanent support, optimize your system performance using our innovative solutions, and simplify and accelerate production processes. It is on this very cycle that the expert concept is based.

Summertime is also called holiday time. Enjoy your holiday and forget your everyday stress during this most enjoyable time of the year, as Suhner's products and services, tried and tested a thousand times, will keep your production running while you're away.

Christian Jermann
Head of Suhner Automation



Suhner Products – Reliable 24/7

High system availability is absolutely necessary for effective production. If these systems operate 3 shifts a day, 7 days a week, special demands are placed on the construction and design of the installed components. But their integration into the manufacturing machine and into the entire production line also plays a crucial role.

In order to avoid downtimes and production losses, it is essential that all parties involved – from the component supplier and the machine manufacturer to the end user – engage in close and solution-oriented collaboration. And this is the major advantage offered by the Suhner Automation experts: We advise and support our customers and their customers far beyond our product portfolio. We always aim to find the best overall solution for you, because a reliable supplier-customer relationship begins in the planning phase.

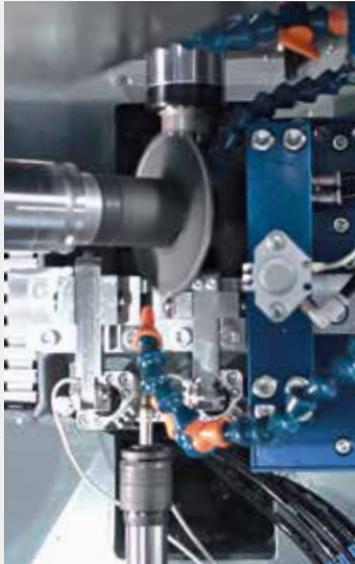
There are other important factors that affect the machining of various materials, since coolants, dust and chippings can heavily clog both components and the entire system.

Therefore, robust and cleverly designed components and easy servicing are the main pre-requisites for reliable, around-the-clock operation. It was these requirements stemming from the automotive industry and its suppliers that were the basis for the development of Suhner's machining units for all machining operations such as drilling, reaming, tapping and milling.

Machining cycle time 2.9 seconds

Since 1924, Lehner AG has been developing, designing and manufacturing production and assembly machines for various industries.

When one of our customers requested a challenging cycle time of 2.9 seconds for a new machine performing all drilling, sawing and thread cutting operations, Lehner AG turned to SUHNER, its long-time partner. The machine concept and the selection of machining spindles were optimized and adapted together, so that the required cycle time of 2.9 seconds could be sufficiently achieved.



The three Suhner spindles perform the three drilling, sawing and thread cutting operations simultaneously.

"Thanks to Suhner's units, we have been able to achieve the cycle time requested. The machining units have made it possible for us to build a compact and thus cost-efficient system."

**Marc Tschopp, Technical Director,
Lehner AG, Siggenthal Station**



ROBOTsander – Shines Better than Anything Polished by Hand

Suhner Automation AG has added the ROBOTsander to his product portfolio. The work that used to involve hard, extensive manual labor can now be performed by a highly efficient robot system.

Applications

The ROBOTsander was developed as an automation solution for surface machining. Whether it be surface processing, e.g. painting, or sanding of components of any possible geometry – the ROBOTsander will ensure a highly efficient and automated machining process. Thanks to the various end effectors, the user can choose from a large number of possible applications. Whether you need to roughen surfaces, sand and polish this or that, perform deburring, mechanical removal of paint – the ROBOTsander will ensure you achieve the surface quality you require.

Advantages

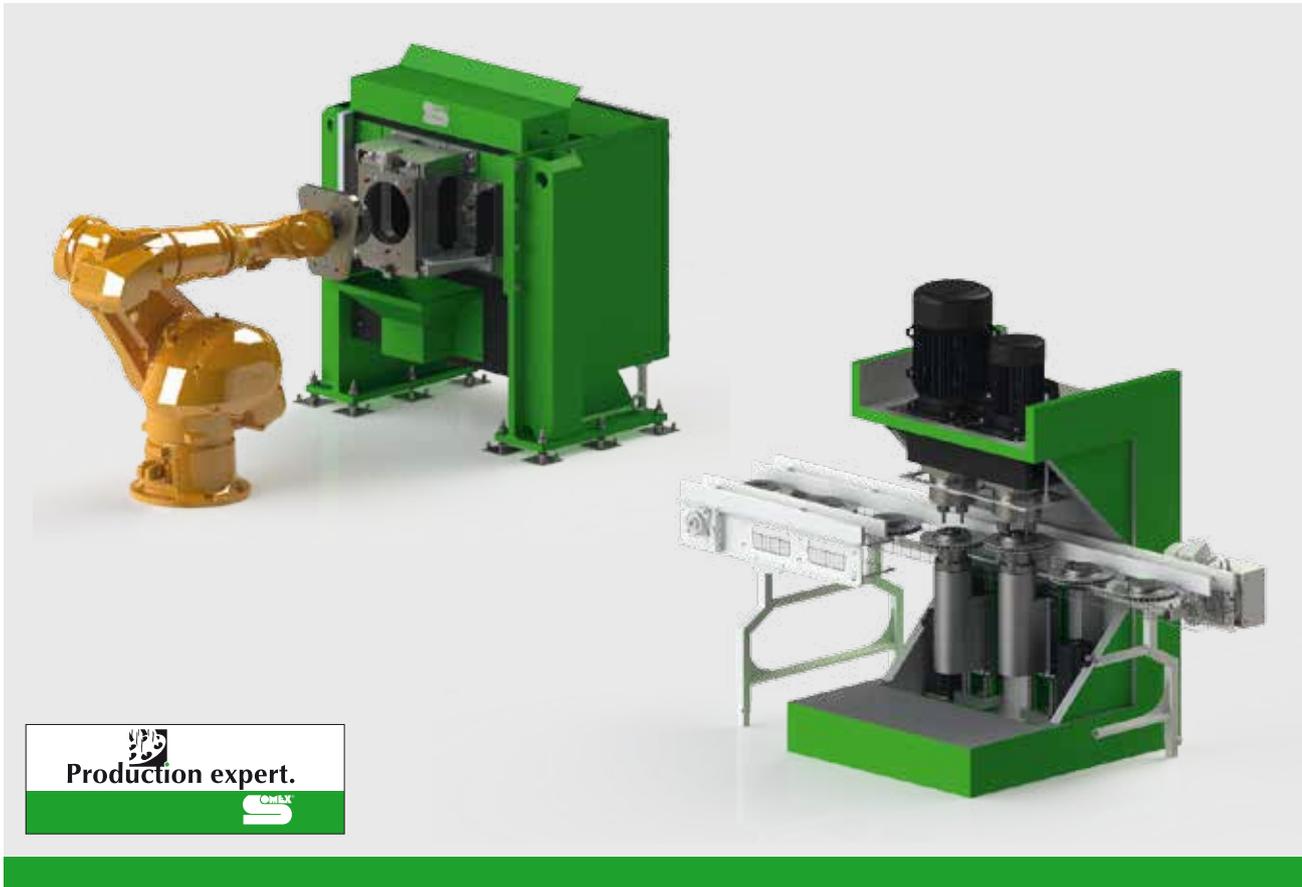
The ROBOTsander performs extremely time-consuming and strenuous tasks effortlessly and automatically. But what exactly does this mean for the user? The systems are especially suitable for free-form surfaces. A specially developed computer program calculates and generates the required robot program from the respective 3-D CAD file.

The electrically operated and highly precise end effectors guarantee a most efficient first-class machining. Apart from that, surfaces are machined very evenly and in accordance with the individual customer requirements. The ROBOTsander is also suitable for very large components, e.g. 3 × 20 m. Workers are protected against dust emissions while the ROBOTsander is in operation.

Synergy

SUHNER's Abrasives and Automation divisions possess many years of experience and know-how, which were successfully integrated and applied in the development of the ROBOTsander. Combining these competencies resulted in the generation of excellent synergies. The result is an extremely innovative first-rate solution: the ROBOTsander.

Our products and services create added value with fantastic chances for your company.



Cycle time reduced by 50%

As a recognized specialist for customer-specific machining systems, SOMEX was commissioned by RENAULT to carry out a study. RENAULT were very pleased with the concept presented to them, with a reduced cycle time of 50%.

SOMEX, Suhner's subsidiary, is known as an expert for project-specific machining spindles up to complete machining systems far beyond France's borders. In order to exceed the various customer requirements with regards to the solution concept and system integration, SOMEX has bundled its profound specialist knowledge in the fields of construction, sales and production to form the new "System Management" department.

When RENAULT's order was received, this new department had the opportunity to prove its capability. The customer imagined a solution that would involve an independent

drilling unit performing the required machining of brake discs and a robot carrying out material handling from and to the upstream and downstream process steps.

In close collaboration with the customer, SOMEX developed such a solution. However, the customer was also presented with a totally different alternative. That alternative solution was centered around the material flow from and to the upstream and downstream process steps. The drilling unit had to be adapted accordingly, and the robot was replaced by a linear feed. Result: The process time was reduced by half, and the return-on-investment time was massively reduced.

Being a reliable partner, SOMEX presented the customer with new and innovative ideas and did not simply choose the simplest way of completing the project. Reliability begins

with the first stroke on the drawing board or the CAD screen and only ends decades later when the system is decommissioned.

As a reward for this extraordinary achievement, RENAULT has included the SOMEX specialists in its official supplier list and knows that they can always count on SOMEX.

SOMEX and Suhner are happy to support RENAULT and all our customers with their upcoming projects using their groundbreaking concepts and systems, as well as help them achieve even bigger successes.

Solution for complex machining applications

SOMEX is used for providing their customers with highly customized solutions and develops units for very complex processes. One such client had commissioned SUHNER Automation to manufacture a unit that would perform abrasive cutting of metallic workpieces using a diamond disc.

Adhering to the customer's specifications, SOMEX's project team opted for a MAX100, in order to ensure that the job was performed to a high standard and to guarantee the reliability of the unit in spite of the stress it would be exposed to.

The machine's operating environment required the following changes to be made to the MAX100, which was equipped with a 30 kW drive motor:

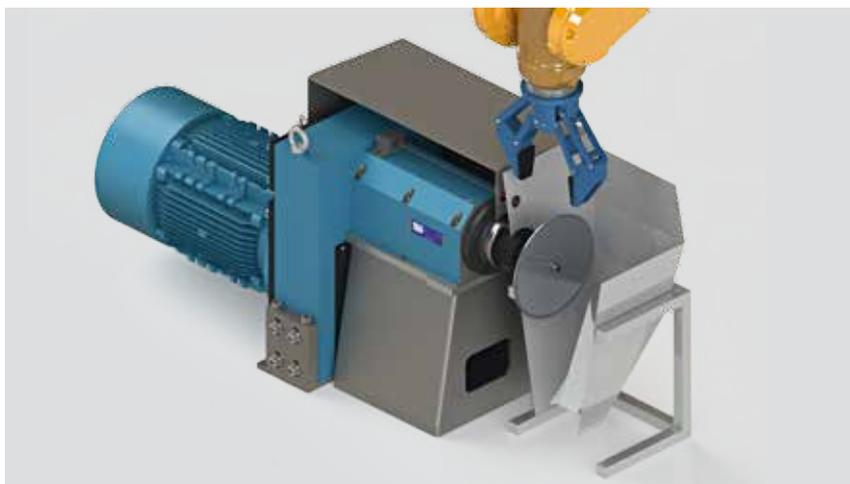
- Reinforced sealing to protection against splashes of cutting fluid.
- Creation of overpressure in the body and in the housing to prevent microparticles from penetrating.

Here is a brief description of the unit's operation at the customer's site:

- Due to the dust during the cutting, the machine is installed in a completely dust-proof cell.
- A robot takes the workpieces off the conveyor and holds them during the cutting process.
- This feed movement during the separation process is controlled, so that the rotation speed of the cut-off wheel always matches the ideal cutting conditions. For this purpose, the unit has a laser measuring device, which automatically adjusts the speed of the MAX100.

Thanks to the quality of the planning, the execution and the customer's feedback, the customer decided to have a second – identical – unit installed. This reflects the quality of the entire service that SOMEX offers their customers, including consultation, planning, project management, commissioning, customer service and maintenance.

From a standard unit up to the most complex, automated cell – we always fulfil our customers' wishes by offering them professional consultation and competence.



Suhner at the EMO 2017 in Hanover

Hall 17, Stand D 65 / D 69 / D 73

Suhner's Automation division, with its four sub-divisions, will present its entire range of services and machine units for drilling, thread cutting and milling. This includes heavy machining units with a drive capacity of up to 50 kW, but also driven and stationary CNC tools.

Here is a little preview of what to expect:



Robot-guided tools for grinding, polishing and drilling



Deep drilling units



ROBOTsander

Find out more about our new robot-guided tool technology and SU-matic's world debut and visit us at our joint stand. **Our international consultants are looking forward meeting you.**

Benefits of High Pressure Coolant



High pressure coolant (HPC) systems, which deliver coolant at pressures of 70 bar and higher, help modern CNC machine tools to reach their full productive capability and increase their ROI. HPC is not a new technology. Swiss type automatic lathes have used HPC systems for many years. As larger

machine tools have grown in capability, HPC systems became necessary also on these machines to make the processes more effective. The HPC system permits coolant to be directed in a high pressure stream directly at the critical area where the cutting tool actually meets the work piece.

- Faster cycle times
- Longer tool life
- Process predictability for automation and 24/7 lights out

Benefits of using coolant at 70 bar and above

- Much higher cutting speeds and feed rates
- Eliminate peck cycles in drilling
- Better chip control
- Improve surface finishes

Unattended production and 48% faster just by adding High Pressure Coolant

In 2014, we were approached by a customer, who realized that some of his existing processes required frequent manual intervention to clear chips and were, what is very inefficient. An unattended and robotically automated process was impossible!

"We had technically advanced machine tools, and felt strongly we should be able to run an unattended, 'lights out' process. This would improve ROI by reducing the amount of non-value added time in our process, reduce the number of machine operators required to tend our machine tools and it would improve our ability to deliver product to the customers. To optimize our process we realized that we would have to understand the inefficiencies in our existing process and find ways to eliminate them.

We found Chip Evacuation to be our biggest problem. It caused us to stop our existing process at various points to remove chips which our flood coolant had not been able to remove. Our cycle time was 24 minutes."

SU-matic/MP Systems proposed him to augment the existing 6 bar flood coolant system with a 70 bar high pressure coolant system.

"After implementation of an SU-matic/MP Systems RF8 high pressure coolant system which delivered 30 liters of coolant per minute at 70 bar we found that we could eliminate all of the stops that were previously required in our process for the manual removal of chips.

SU-matic/MP Systems also explained that 70 bar coolant is powerful enough to break through the vapor barrier that occurs at the

Machining Issues Preventing Automation

Current Method
Face
OD Turn
Drill Thread
Drill Ball Race
STOP
Bore Ball Race
STOP
Undercut
STOP
Jig Mill
STOP
Transfer
Face
OD Turn
Drill
Rough Undercut
STOP
Finish Undercut
STOP
Bore
STOP
Angle Drill

Total Stops = 7

Cut Time = 19:25

Chip Time = 4:36

TOTAL TIME = 24:01

Implementation of HP Coolant System

New Method
Face
OD Turn
Drill Thread
Drill Ball Race
Bore Ball Race
Undercut
Jig Mill
Transfer
Face
OD Turn
Drill
Rough Undercut
Finish Undercut
Bore
Angle Drill

48%
Decrease in Over All Cycle Time

35%
Cut Time Reduction

Total Stops = 0

Cut Time = 12:30

Chip Time = 0:00

TOTAL TIME = 12:30

work piece when cutting with low pressure coolant, and performs two functions. It provides a much higher level of lubrication to the cutting tool which prolongs tool life, it also quenches the hot chip and helps it break before it turns into a longer, stringier chip, facilitating rapid chip evacuation."

As a result of HPC, the cycle time has been reduced to 12 minutes 30 seconds, a 48% decrease and the improved reliability allowed us to run unattended, "lights out" production.

Tooling expert

10 Years Partnership with OKUMA



OKUMA and SU-matic look back on 10 years of collaborative development and manufacturing of special and standard solutions for drilling and milling CNC tools.

On April 6, the time had finally come: In Zola Predosa, a little town near Bologna in Italy, OKUMA's dealers from Europe, the United States and Asia, together with Suhner and SU-matic, remembered the highlights from the past 10 years. A good example is the 2009 compact radial unit with the Capto C4 spindle design or the last generation of power tools from 2016, which has set new standards in terms of transmission of torque and cutting force and will continue doing so. We also cast a glance into the future and saw some very promising products. **Here's what**

we disclose for now: We at SU-matic have developed a new exiting product that is the first of its kind and will present it to the public at this year's EMO in Hanover. So, do stop by and discover SU-matic's newest development at stand D65/D69/D73 in hall 17.

During the visit at the SU-matic plant in Bologna, our OKUMA partners had a critical look over our shoulder and were thrilled. With the utmost care and precision, single components are assembled into tool holders and powered tools. The process is carefully logged to ensure top-quality. This is an example of reliability and a further reason why SU-matic's products offer superior quality and durability.

Trade Fair Calendar

5 – 8 September 2017

AMTS

Shanghai, P.R.C

SUHNER (Suzhou) Industrial
www.shanghaiamts.com

18 – 23 September 2017

EMO

Hanover, Germany

Otto Suhner GmbH

www.emo-hannover.de

26 – 28 September 2017

ALIHANKINTA

Tampere, Finland

Oy Maanterä Ab

www.alihankinta.fi

3 – 5 October 2017

MRO EUROPE

England

OTTO SUHNER AG

mroeuropa.aviationweek.com

9 – 12 October 2017

MOTEK

Stuttgart, Germany

SUHNER Automation AG

www.motek-messe.de

9 – 13 October 2017

MSV

Brno, Czechia

Rupet International s.r.o.

24 – 26 October 2017

SOUTH-TEC

Greenville, USA

SUHNER Industrial Products Corp.

www.southteconline.com

6 – 9 November 2017

FABTECH

Chicago, USA

SUHNER Industrial Products Corp.

www.fabtechexpo.com

13 – 16 November 2017

CCIMT

Chongqing, P.R.C

SUHNER (Suzhou) Industrial

www.ccimtshow.com

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ABRASIVE



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TRANSMISSION



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