CITIZEN

Turning

THE CITIZEN MAGAZINE 01/21

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Good Vibrations

Patented LFV technology optimises cutting processes with the “right vibrations”.

www.citizen.de/en

Dear Readers,

A cordial welcome to the first edition of our new corporate magazine “Citizen Turning”. Accompany us on a journey to a variety of crucial turning and pivot points which we at Citizen Machinery Europe use to consistently maximise the efficiency of production processes. We designed this new print magazine for you to be able to gain a better overview of the whole spectrum of our technological level of performance.

Whether Cincom Sliding Head Automatic Lathes or Miyano Fixed Head Automatic Lathes: Productivity, quality and precision are the core competences with which Citizen Machinery Europe gives numerous companies all over the world the decisive cutting edge over the competition in the global market. Our groundbreaking LFV technology, our laser integration and automation solutions as well as our recently introduced Automatic Tool Changer (ATC) have revolutionised the cutting process. In addition, the development of a new control software within the framework of Industry 4.0 opens the door to the efficient communication between machines on an entirely new level. We put the leading know-how of Citizen Group and our entire commitment into the new and further development of our technologies.

What is more, you may not only expect maximum efficiency from our lathes but also from our customer service. In all federal states, sales representatives as well as service technicians with long-standing experience and expertise are at the site in immediate proximity to the customer. Next to the locations of Esslingen, Villingendorf and Neuss, also our users in the East of Germany are now perfectly taken care of in the new branch office in Radebeul. Most service calls for machine downtimes are handled within one day.

Our short-term responses to your requirements contrast with our long-term strategies on the topic of sustainability. Our production facilities are equipped with photovoltaic systems, many of our machines may already be produced in a CO_2 neutral way.

As you can see: The world of Citizen Machinery Europe revolves around precision at the very highest level. In excess of this, however, we are also aware of the social responsibility of an international technology leader. Therefore, we take pleasure in productivity gains as we do in the Champions League success of the local volleyball team we sponsor. We stay on the ball for you. For efficiency has many fascinating colours.

“We hope you will enjoy reading this first edition of ‚Citizen Turning‘!”

Markus Reissig,
Managing Director Citizen Machinery Europe GmbH

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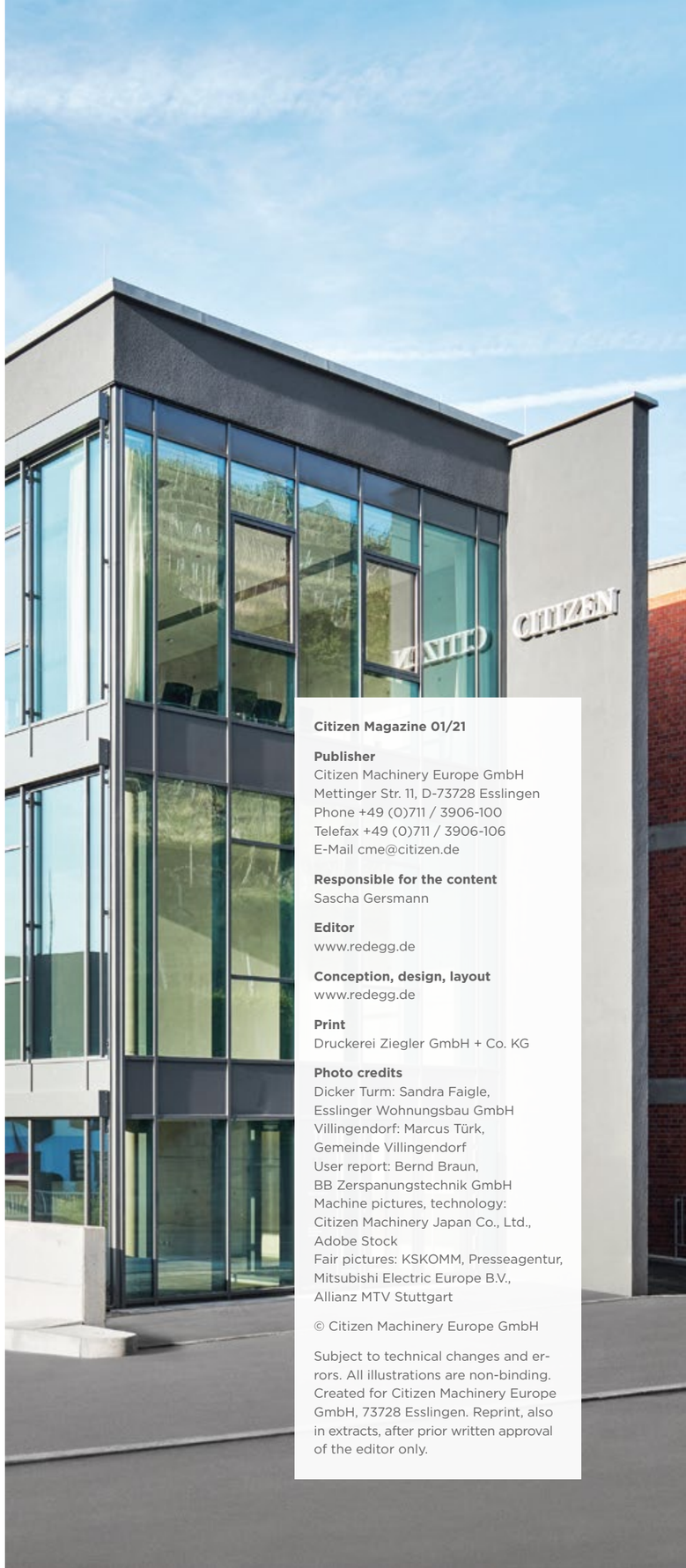


Citizen Magazine 01/21

Publisher
Citizen Machinery Europe GmbH
Mettinger Str. 11, D-73728 Esslingen
Phone +49 (0)711 / 3906-100
Telefax +49 (0)711 / 3906-106
E-Mail cme@citizen.de

Responsible for the content
Sascha Gersmann

Editor
www.redegg.de

Conception, design, layout
www.redegg.de

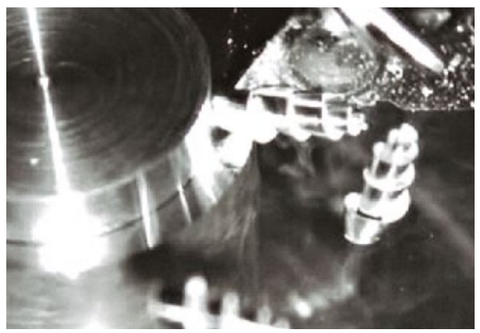
Print
Druckerei Ziegler GmbH + Co. KG

Photo credits
Dicker Turm: Sandra Faigle, Esslinger Wohnungsbau GmbH
Villingendorf: Marcus Türk, Gemeinde Villingendorf
User report: Bernd Braun, BB Zerspanungstechnik GmbH
Machine pictures, technology: Citizen Machinery Japan Co., Ltd., Adobe Stock
Fair pictures: KSKOMM, Presseagentur, Mitsubishi Electric Europe B.V., Allianz MTV Stuttgart

Good Vibrations.

Patented LFV technology optimises cutting processes with the “right vibrations”.

The smaller the chips, the higher the process stability. “Low Frequency Vibration Cutting”, hereinafter referred to as „LFV“, is a universally applicable and highly efficient cutting technology developed by Citizen Machinery. The principle: Chips are broken up in a controlled way by low frequency vibrations. Machine stops due to tangled long chips are thus clearly reduced. In excess of this, LFV offers a number of further benefits to increase precision and profitability. The cutting resistance is reduced, built-up edges are avoided and the tool life may be increased considerably.

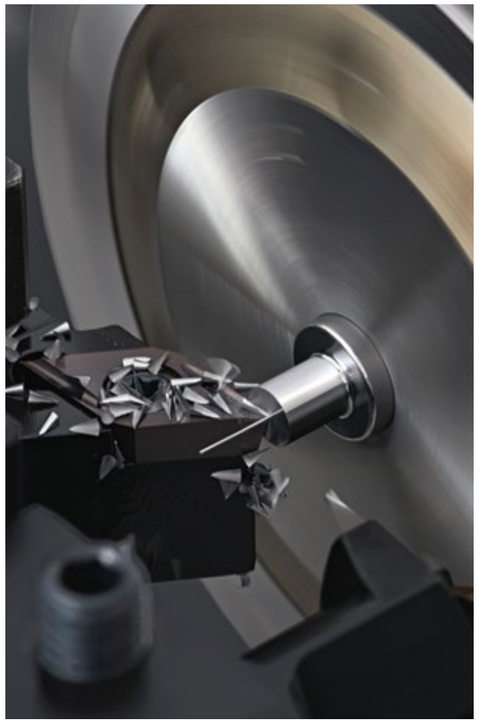


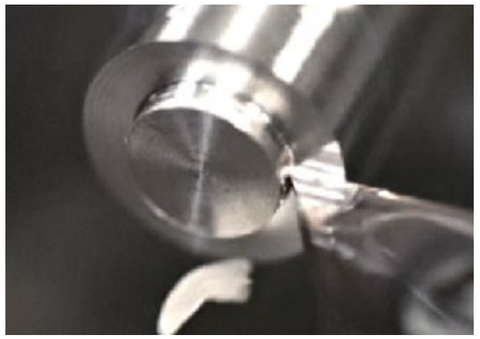
With LFV - short fine chips Without LFV - long tangled chips

Chips are those tricky components in the manufacturing process which jeopardise the tightly set tolerances and thus often counteract the striving for high quality standards. “After having cut the thread, the main work is usually done: Therefore, it is now really important that no errors occur from then on which would damage the almost finished workpiece or make it unusable”, says Marc Flattich, application engineer at Citizen Machinery Europe GmbH in Esslingen. The problem: Chips from titanium, stainless steels, copper and aluminium are difficult to control permanently. To prevent tool options and optional accessory from getting “bogged down” in the production process, the LFV technology provides remedy. Fast and effectively.

Less downtimes thanks to good vibrations.

The drives of the machining axes generate oscillating movements in X or Z direction, each synchronised with the spindle speed. During a spindle rotation, the moving axes change direction. This generates so-called “air cuts” in order to break up the chips in a precisely controlled way. The maximum length of the chips is determined in the program by the user himself by simply changing the frequency. “This is how the LFV Mode 1 functions - a mode, which has been integrated and proven itself since the introduction of the system”, explains Marc Flattich. In Mode 2, the spindle rotations are defined per vibration which is particularly suited for high circumferential speeds in finish and depth machining. Especially in connection with small diameters, this mode offers considerable benefits. Mode 3 has been adapted to the requirements of thread chasing. It brakes up chips up before they can get entangled around part or tool causing severe damage.





LFV available for wide machine pool.

When the technology was introduced, the VC03 as well as the Cincom L20 were equipped with LFV technology, meanwhile also the Cincom L12 and L32 have received this innovative feature. From the Miyano fixed head automatic lathes series, the BNA-42GTY and the ANX-42SYY are available with the patented technology. “Towards the upper end of the scale, we thus cover diameters up to 42 mm, the L12 machines small parts up to 12 mm diameter at adequate speed. As the Cincom D25, M32, A20 and MC20 have also been “pimped” with the LFV technology, the machine pallet has now been extended in a differentiated way,” reports Markus Reissig, Managing Director at Machinery Europe GmbH. Up to 59 different tools may now be loaded in the Cincom D25 by way of extension levels or options. Bar material up to max. 25 mm diameter and lengths of 250 mm or 65 mm without guide bush may be machined in the most versatile ways - among other things using up to three tools simultaneously. Complex parts, as they have become standard in medical technology and also for suppliers of automotive parts and components, can now be produced effortlessly with impressive precision. Markus Reissig: “Who uses high-quality repeatable processes, will be rewarded with clean chip breaking and discharge. With the LFV technology, we have introduced a highly effective method to bring chips under control. Thanks to our wide machine pool and our new LFV modes, we expand our fields of application many times over.”

“

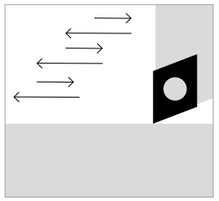
Even I was sceptical. Because vibrations during the turning process are actually a no-go. However, we immediately achieved success and also the customers were delighted with the LFV technology.”

Markus Reissig, Managing Director
Citizen Machinery Europe GmbH

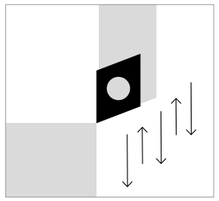
From taper to circular arc:
Diversity at creatable geometries.

Among other things, the oscillating movement allows for the realisation of tapers, circular arcs and holes besides linear turning processes. The technology can be activated and deactivated via G codes in the program. This allows for avoiding problems like uncontrolled tangled chips and built-up edges depending on the material cut.

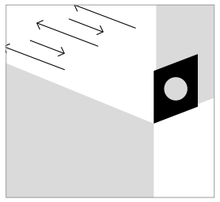
Machines with
LFV technology:



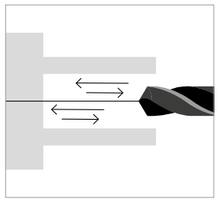
Horizontal surface



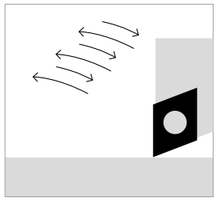
Vertical surface



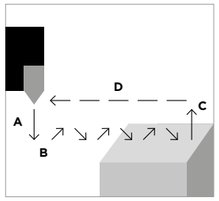
Taper



Hole



Circular arc

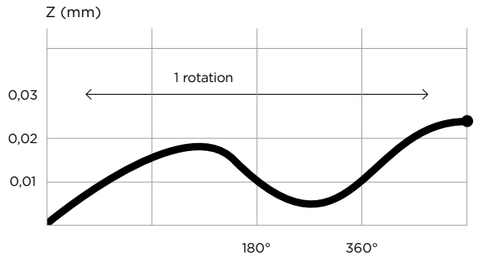


Thread

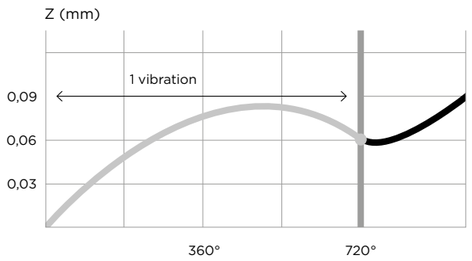
Defined chip
breaking.

Controlled chip breaking may be done in three different modes:

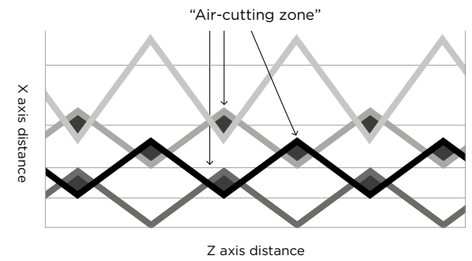
Mode 1
Specifies the number of vibrations during one spindle rotation if fine chips are desired.



Mode 2
Specifies the number of spindle rotations per vibration if high circumferential speeds for fine or depth machining with small diameters are desired.



Mode 3
Allows for turning threads if the breaking up of chips during thread turning is desired.



Machine	Type	Axes with LFV	Mode 1	Mode 2	Mode 3
Cincom					
L32	VIII	X1 / Z1 / X2 / Z2	×	×	×
	X	X1 / Z1 / X2 / Z2	×	×	×
	XII	X1 / Z1 / X2 / Z2	×	×	×
L20	VIII	X1 / Z1 / X2 / Z2	×	×	×
	X	X1 / Z1	×	×	×
	XII	X1 / Z1	×	×	×
L12	VII	X1 / Z1 / X2 / Z2	×	×	×
	X	X1 / Z1 / X2 / Z2	×	×	×
A20	VII	X1 / Z1 / X2 / Z2	×	–	–
D25	VIII	X1 / Z1 / X3 / Z3	×	×	×
	VII	X1 / Z1 / X3 / Z3	×	×	×
MC20	III	X / Z	×	×	×
	IV	X / Z	×	×	×
M32	V	X1 / Z1 / X3 / Z3	×	×	×
	VII	X1 / Z1 / X3 / Z3	×	×	×
	VIII	X1 / Z1 / X3 / Z3	×	×	×
Miyano					
BNA-42GTY		X1 / Z1	×	×	×
VC03		X / Z	×	×	×
ANX-42SYY		X1 / Z1 / X2 / Z2	×	–	–

The LFV advantages at a glance:

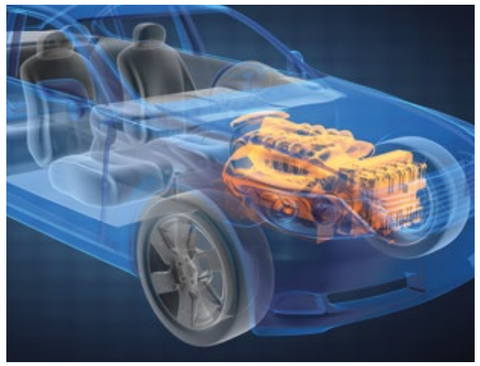
- ⊕ Controlled chip breaking when cutting difficult to machine materials
- ⊕ Reduced cutting resistance
- ⊕ No formation of built-up edges
- ⊕ No unnecessary machine stops
- ⊕ Extended tool life
- ⊕ Universally applicable

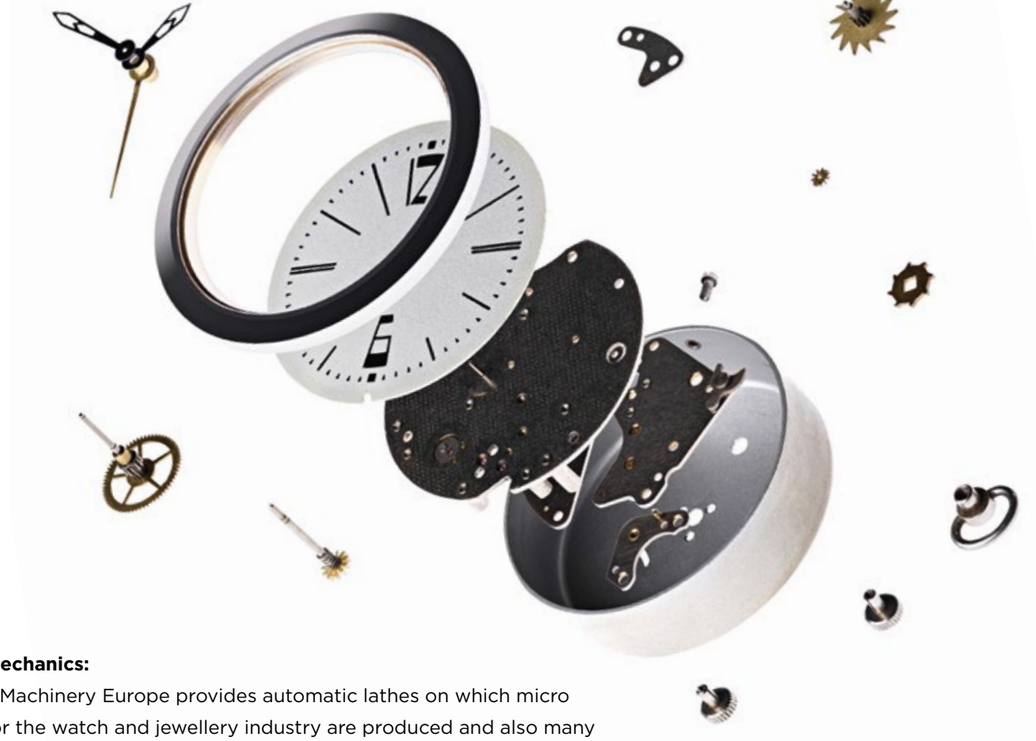
Everything revolves around perfection.

Tailor-made solutions for specific requirements.
An industry overview.

From the tip of a pen up to aeroplane screws, from ball bearings up to fittings, from temple hinges up to segment rings for piercing jewellery. The production of a great number of objects in this world depends on the right automatic lathe being available. In the Technology Centre of Citizen Machinery Europe in Esslingen, engineers and technicians develop innovative manufacturing processes, applications and individual solutions to allow customers from a large variety of industries to achieve the decisive competitive edge. To this end, we rely on simple and mostly automated process solutions which do not only reduce sources of error but save a lot of time in addition. Citizen Machinery Europe knows a lot about the widely varying criteria of special industrial sectors - and is able to provide for significant efficiency improvements by way of tailor-made lathes :

Automotive:
Several millions of workpieces are manufactured on Citizen Machinery automatic lathes, among other things vent screws, ball joints, engine parts and elements for suspension and ABS, components for airbags as well as for the hydraulic system.





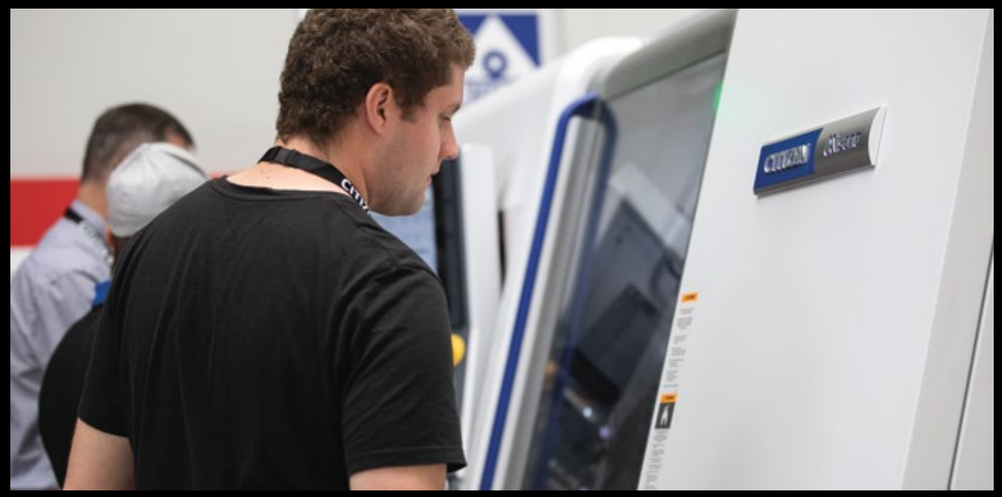
Micromechanics:
Citizen Machinery Europe provides automatic lathes on which micro parts for the watch and jewellery industry are produced and also many other turned parts requiring ultimate precision, particularly gears, screws and balance wheels.

Medical technology:
Citizen Machinery Europe serves this dynamic market by providing automatic lathes used to manufacture medical instruments like dentist's drills and drill heads as well as implants. In the orthopaedic sector, bone screws, bone nails or hip joints are part of the portfolio.

Pneumatics and hydraulics:
Automatic lathes of Citizen Machinery Europe are used for manufacturing large part quantities with maximum accuracy, like e.g. complete contours, valves, valve gates and bodies, hose couplings, hydraulic shutters, screw fittings or also parts for micro motors.

A global company. Two brands. Unlimited opportunities.

Cincom und Miyano – Guarantors of success under the roof of Citizen Machinery Europe.



In the four branch offices, in-house exhibitions are held on a regular basis.

Cincom Sliding Head Automatic Lathes are synonymous for state-of-the-art high-performance CNC automatic lathes. Under the brand of Cincom, sliding head automatic lathes are produced which literally set new standards in the machining of complex parts and small diameters. Miyano of Citizen Machinery is simply state-of-the-art when it comes to fixed head automatic lathes. In diameter ranges from 42 mm to 80 mm, the Miyano lathes are an investment for life.

Both Cincom and Miyano are sold under the common roof of Citizen Machinery Europe, the European subsidiary of Citizen Machinery Japan. The parent group Citizen Watch Co., Ltd., is the world market leader in the field of microtechnology. Citizen Group is employer for approx. 23,000 employees all over the world.

Historical roots in Nippon - and on the River Neckar.

Next to their Japanese origin, Citizen Machinery Europe also have a strong German “hereditary line” which takes us right to the Boley company. Both companies, Boley and Citizen, have achieved groundbreaking progress in the field of lathes. The history of Citizen started in the 1920s in Japan. At that time, the first pocket watches were produced in small lots - among other things for the Japanese Emperor. In 1930, the Citizen Watch Co., Ltd., was founded which has continued to manufacture the world-famous watches until today. Since then, Citizen has developed leading know-how in the matter of miniaturisation and production efficiency. Citizen Machinery disposes of the technical resources and potential to develop a wide spectrum of high-quality high-accuracy machines for a wide variety of application fields.

Latest HMI interfaces guarantee high user friendliness.

Precision in high-speed mode.

Here is a brief overview of the historical milestones of Citizen Machinery Europe.

1870

The Boley company is founded in 1870 in Esslingen on the Neckar and soon builds up a reputation as manufacturer of sliding headstock type lathes and automatic lathes in this market - worldwide.

Figure: Boley lathe

1970

Since 1970, Citizen has been selling sliding head automatic lathes of the CINCOM brand in Europe. Initially from Brussels, starting from 1986 from Filderstadt near Stuttgart.

1992

Citizen takes over Boley GmbH as 100% subsidiary. From then on, the two lines “Boley fixed head automatic lathes” and “Cincom sliding head automatic lathes” are the guarantors of a successful two-brand strategy.

2003

Fusion of both companies to become Citizen Machinery & Boley GmbH under the roof of the parent company Citizen Watch Co., Ltd., Japan. At the Esslingen location, development, design & construction, production, sales and service are brought together under one roof.

2007

In April 2007, Citizen Watch Co., Ltd., Japan becomes a holding company. Citizen Machinery & Boley GmbH thus becomes a subsidiary of Citizen Machinery Co., Ltd., Japan. Citizen Machinery Japan forms a capital and business alliance with Miyano Machinery Japan, a leading manufacturer of fixed headstock type CNC automatic lathes.

2008

Citizen Machinery & Boley GmbH becomes Citizen Machinery Europe GmbH. In the course of the global orientation of Citizen Machinery Japan, the activities on the European market are re-organised. In addition, a European Technology Centre is established which focuses on the development and construction of innovative solutions for users from all over the world.

2011

Citizen Machinery Japan merges with Miyano Machinery Inc., Citizen Machinery Europe sells the Miyano fixed head automatic lathes together with the Cincom sliding head automatic lathes under the name of Citizen Machinery Europe in Germany and parts of Europe.

Figure: ANX-42SYY

2021

Citizen Machinery Europe opens the new Technology Centre East in Radebeul (Saxony) to also offer customers in the New Laender of the former East Germany the best possible service right on-site.

The time is ripe.

Cincom sliding head automatic lathes for the watch and jewellery industry and medical technology.

Maximum flexibility, outstanding performance and ease of operation. From the R04 through the M16 right up to the L12 – Cincom sliding head automatic lathes impress users worldwide when it comes to producing complex workpiece shapes for a wide va-riety of applications.

Cincom sliding head automatic lathes have a single-cast machine bed, ensuring high rigidity and reliable stability. The coolant tank is located separately – thus minimising heating of the machine bed. A further advantage: Most Cincom models can be converted from a sliding head to a fixed head automatic lathe within 30 minutes. Companies can thus benefit from the greatest possible variability of tools and simple handling.

More efficiency for the production of very small parts.

A noble housing. A stylish dial. Elegant fingers. A watch inspires not only with the first impression. The second look at the inner workings reveals the technological precision hidden at the “heart” of the chronograph. But it is this precision work that makes out the quality – and the value – of a watch. Lathes of a very special type are required to turn the filigree micro parts. Citizen Machinery Europe supplies these very machines that can produce any parts of a watch, glasses or a piece of jewellery. From the steady rest to the gear wheel down to the smallest screw. Upgrading allows special needs to be met within a very short time.

Clocks and watches:

- Steady rest
- Fingers
- Clockwork
- Ratchet wheel
- Adjusting nuts
- Gear wheel
- Escape wheel
- Mainspring barrel
- Dial
- Mechanics
- Alarm
- Chiming mechanism
- Dial train
- Recirculating balls
- Spring mechanism
- Spiral spring
- Spring bronze

Glasses:

- Temple hinges
- Screws
- Nose bridge
- Nose pads for temples

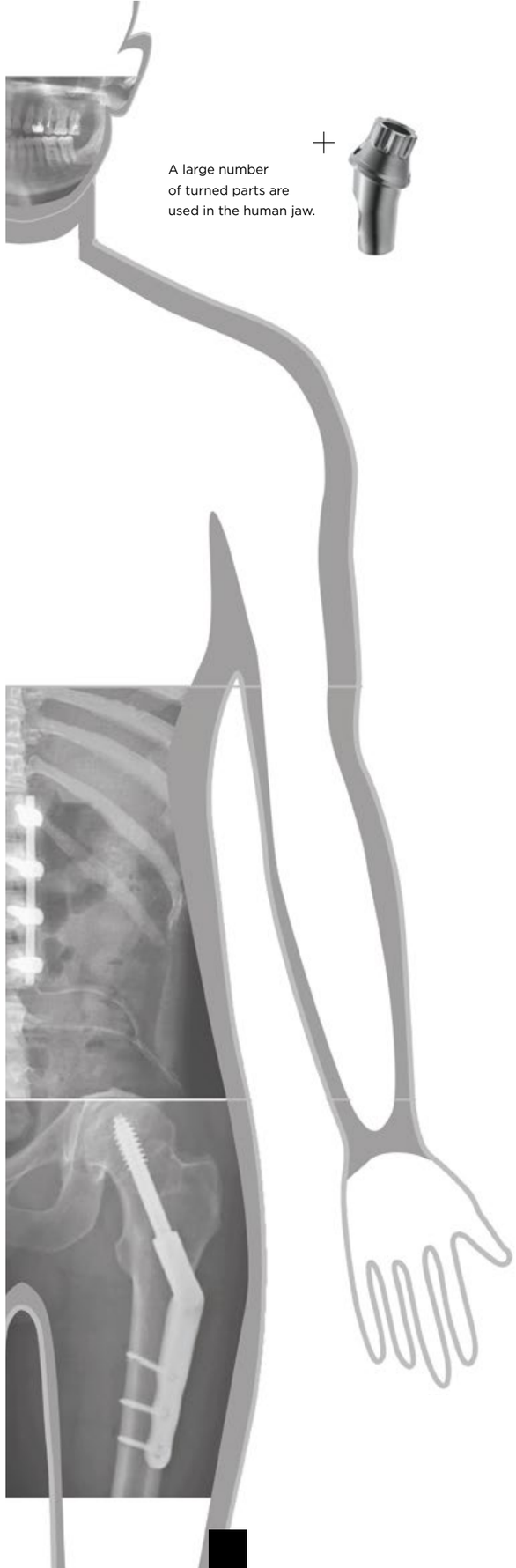
Jewellery:

- Segment ring
- Tunnel
- Balls
- Rods
- Nose rings

Medical technology:

How long does it take to train as a dental assistant? 664 seconds.

Of course, we don't mean the highly qualified human assistants, but modern dental crowns. Production of an implant on a Cincom sliding head automatic lathe (brass drill head, 12.6 mm x 22.0 mm diameter) takes just over 11 minutes. From the femoral neck screw designed to restore full mobility to the joint immediately after surgery, through to the cylinder body for a ventilator. Complex medical technology components produced on sliding head automatic lathes have little in common with conventional turned parts: Bone nails, bone drills, angled connecting elements for dental implants, various surgical and dental instruments up to the head and handle of the well-known dentist's drill. At the European Technology Centre in Esslingen, the Citizen Machinery engineering team develops customised machine concepts and production programmes. This means that even manufacturers who have no previous experience with sliding head automatic lathes can tap into enormous rationalisation potentials within a very short time. With comparatively low investment costs, sliding head automatic lathes significantly streamline the production process. The total throughput time of the workpieces is shortened and the flexibility of the production processes is increased.



A large number of turned parts are used in the human jaw.

R04

The R Series from Cincom - the solution for ultra-small parts.

The Cincom R04 has a compact design with a depth of only 455 mm, meaning that it has a very small footprint. The automatic lathe achieves a maximum spindle speed of 20,000 rpm in continuous operation. These spindles can be used in conjunction with a synchronously driven guide bush.

Type	›	R04-5F6
Control unit	›	Fanuc
Number of axes	›	6 + (C1 and C2)
Max. machining diameter (bar)	›	Ø 4 mm
Max. part length	›	40 mm
Max. main spindle speed	›	20,000 rpm
Max. back spindle speed	›	20,000 rpm
Number of mountable tools	›	17

The initial spark.

From lighter friction wheels to high-tech lathes:
The success story of Miyano.

Miyano fixed head automatic lathes of Citizen Machinery Europe master each challenge within a diameter range of 42 mm to 80 mm with confidence. Who would have thought that a long tool making tradition is incorporated in these true state-of-the-art wonders of precision.

The origin of today's Miyano models lies in the production of precision files for industrial applications. Miyano utilised the know-how and the technology of the “Miyano files” held in high regard by specialised craft and additionally started to produce friction wheels for lighters. Extraordinarily precise, rigid and long-lived automatic lathes were indispensable for the production of friction wheels just as extraordinarily precise, rigid and long-lived. Ever since, Miyano has put the focus of their machine tools on three key factors:

High precision,
high stability,
long service life.

These three basic principles for instance manifest themselves today in the production of parts for the automotive industry. The main components of Miyano products include highly rigid spindles, handscraped guideways and a machine bed in platform design.

Reliable pillar for high quality: the highly rigid spindle.

One of the outstanding features of Miyano is the highly rigid spindle design which serves as the cornerstone of precision machining in the full sense of the word. Spindles in thick-walled design, equipped with large-diameter antifriction bearings, minimise deflection and grant permanently stable work processes. Another advantage is the combination of precise double-row cylindrical roller bearings for reliably receiving radial loads as well as high-precision angular ball bearings on the other side granting enormous precision and stable true running accuracy. In addition, Miyano's unique construction prevents longitudinal displacement caused by heat generation from affecting the machining accuracy. The stability and high rigidity of the spindle improves the shock-absorbing properties of the machine - vibrations may easily be reduced. This extends the tool life while simultaneously reducing the operating costs. The consistently stable true running accuracy boosts the machining quality, increases the performance in series production and thus reduces the workload on the operator at the same time.

Cycle times are significantly reduced due to the configuration of the turrets.

Insertion spindle
for particularly high
ease of maintenance.

The construction of the insertion spindle requires extreme care as it has substantial influence on minimising the downtimes of the machine. Spindles of Miyano are not directly mounted to the headstock - instead a 3-step insertion spindle is used offering a high degree of maintainability. If a spindle at a conventional automatic lathe must be replaced, reassembly of the spindle bearings is done at the customer's factory so that the machine must be shut down for an extended period of time. When using a Miyano insertion spindle, the only work required is the removal of the old spindle and reassembly of the new one which takes about half a day's work.

A crucial advantage for Miyano customers:
handscraped guideways.

The extraordinarily high stability and the excellent damping characteristics of these guideways offer optimum surface contact over large areas. This not only ensures powerful machining, as is for instance necessary for hard turning processes, but also a long life of the heavily stressed cutting tools. The chip removal tolerance in scraping processes at handscraped guideway surfaces amounts to just 2 micron where the contact areas are tested by applying red or vermillion dye. Depending on the strokes of the machine, the completion of a single handscraped guideway may take up to ten hours. In case of box guideways, scraping is done along three contact faces per side for a single axis so that a total of six positions must be scraped. In order to also eliminate individual deviations, the scraping work is checked quantitatively by measuring the required pressure.

Maximum precision
for up to ten years?
It's as simple as that.

Uncomplicated ergonomic maintenance is one of the main features of handscraped guideways. When repairing roller guides due to age-related wear, the guideway must be replaced - a time-consuming and highly complex process. Handscraped guideways, by contrast, allow for restoring the high machining quality by simply adjusting the guide rails. Some customers were even able to maintain the required accuracy over a period of ten years - just by adjusting the guide rails.

Smooth and simply better -
machine bed in platform design.

Miyano has designed a construction based on the model of a platform constantly maintaining its flatness over a long operating period. Ribs - elements installed at right angles to the front side - help to suppress deformation. The heavy bed design reinforced with ribs is a further important feature to achieve excellent stability and damping characteristics. When mounting the spindles and turrets on these extremely stable, smooth and 100% level surface (inclined by 30°), the distortion of the mounting surfaces of the various units due to the heat generated by the individual components may be reduced to an absolute minimum. Also the heat expansion of the individual units is no problem as the offset occurs in the same direction (perpendicular to the mounting surface) so that the relative distortion between workpiece and cutting tool is suppressed.

The intelligent "tank station"
reduces temperature differences.

Miyano uses coolant tanks integrated in the machine bed. Thanks to the special configuration, the coolant is evenly distributed around the bed so that temperature differences between the individual parts and components are reduced to a minimum and any deformation is excluded. Furthermore, the tank has a synergetic effect as the heated coolant just cools down slowly due to the bed's thick walls thus eliminating the negative influence of abrupt temperature changes. In that way, the operator comfort was improved and the work required for chip removal reduced so that chip collection is considerably facilitated by presorting in fine meshed filters. Additionally, the special design of the ribs ensures that chip collection inside the tank is not impeded.

Miyano Advantages:

- ⊕ Spindle of maximum rigidity
- ⊕ Handscraped guideways
- ⊕ Machine bed in platform design
- ⊕ Modular construction
- ⊕ Savings due to low follow-up costs
- ⊕ Reduced tool wear

Much more than
just inexpensive.

Miyano fixed head automatic lathes of Citizen Machinery Europe offer an unmatched price-performance ratio. They stand for maximum precision, rigidity and longevity. Conclusion: More efficiency and productivity can't be found elsewhere.

“If we have a problem, we call Mitsubishi in Ratingen.”

Long-standing cooperation between Citizen Machinery and Mitsubishi Electric.

Citizen automatic lathes have been equipped with CNCs (Computerized Numerical Controls) from Mitsubishi since 1989. This reliable and always trusting partnership has resulted in numerous innovations that have repeatedly ensured leaps in quality in the machining industry.

Outstanding ease of use is achieved through multi-touch displays and pioneering Citizen human-machine interfaces. The perfect multi-axis and multi-subsystem control functions boost productivity levels across a wide range of industries. High-performance servo and spindle drives offer exceptional energy efficiency and a fully integrated nano control. And much more besides.

“The focus of this cooperation is quite clearly on the benefits for our mutual customers.”

Roman Gaida, Head of Division Europe, Mitsubishi Electric Europe B.V.

Roman Gaida: "As manager responsible for the Mechatronics CNC division at Mitsubishi Electric Europe, working with the world’s leading machine tool manufacturers is of particular importance to me. In my view, trust, continuity and future-oriented technologies are crucial for successful cooperations. We are therefore all the more proud to be able to look back together with Citizen on more than 30 years of cooperation – with a focus on the users of these high-end machine tools. We wish to and will continue this partnership in order to be able to play a pioneering role in shaping the future with its challenges such as digitalisation, the Internet of Things and Industry 4.0 in the interests of our joint customers. Citizen and Mitsubishi Electric have both the capabilities and the resources to achieve this."

“Sometimes you need a quick solution without much ado and a strong partner at your side to achieve your goal.”

Markus Reissig, Managing Director Citizen Machinery Europe GmbH

Markus Reissig: “If we have a problem, we call Mitsubishi in Ratingen. I have been working closely with my colleagues at Mitsubishi since 1989 - and that in an extremely practice-oriented manner. Even at that time it was a matter of commissioning and servicing the first Citizen automatic lathes equipped with Mitsubishi CNCs. The merging of the technical know-how and professional competence of our two companies has released – and is still releasing – strong synergy effects that, of course, primarily benefit our joint customers. What I would particularly like to emphasise, however, is the partnership-oriented and trusting character of this cooperation. Because only with trust and something like a common vision were we able to master the challenges of the past decades so successfully – and we will continue to support our joint customers in achieving business success with our high-end lathes.”

Common values.

Mitsubishi Electric and Citizen Machinery harmonise not only on a technical level. Also, and in particular, the subject of social and societal responsibility clearly shows how similar the two companies are. The common goals for our business activities in harmony with the environment, the people and nature are:

- Maximising energy efficiency of the production facilities and company sites, of the production and the finished components themselves
- Minimising the impact on the environment
- Meeting and surpassing all environmental protection standards, requirements and laws
- Involving employees and suppliers in all efforts for sustainable action
- Transparency towards society with regard to our business activities in general and our efforts to preserve the environment and nature in particular
- Taking of concrete measures to conserve resources and mitigate climatic change

Mitsubishi Electric in Germany:

Mitsubishi Electric has had its headquarters in Ratingen, near Düsseldorf, since 1978. In 1996, Mitsubishi Electric Europe B.V. was founded as a wholly owned subsidiary of the Mitsubishi Electric Corporation and took over the complete European sales and marketing activities from Mitsubishi Electric. During the course of this, the German branch became part of the new European company and manages its sales and marketing activities via the head office in Ratingen as well as via regional offices throughout Germany.

“Fast return on investment almost unavoidable.”

Cincom MC20 – Efficiency miracle from Esslingen.

High production speed, low-cost operation and compact dimensions - what sounds like the three wishes to the fairy godmother, is rather the short description of the MC20. Equipped with up to four spindle modules operating simultaneously and passing on the workpiece among each other fully automatically, you can bid a confident farewell to downtimes, complex loading processes and spatial bottlenecks.

This modern type of conservation of resources is responsible for a clear rise in the matter of efficiency at the same time. Thanks to the MC20, also prefabricated cold forging parts instead of bar material are increasingly further processed which saves chips and also material costs. Besides the classical 1>2>3>4 cutting variant, the MC20 also allows for the 1>2, 1>2 variant, i.e. the parallel machining of two parts of similar size, e.g. from one part family. Sascha Gersmann, Head of Marketing and Key Account Manager at Citizen Machinery Europe, tells about the meanwhile third generation of the Cincom MC20: “Apart from bar machining, this high-precision lathe enables above all the fast, economic and space-saving production of cold forging parts. To excel at that task, it can precisely be custom-tailored to the parts to be manufactured - which makes it the chameleon among all lathes!”

20 + 20 + 20 = 20.

If two conventional machines turn a workpiece one after the other with a machining time of 20 seconds each, that component is finished wit-hin 40 seconds. Not so with the MC20: “On this machine, three or four modules may split up the complete machining process amongst themselves with 20 seconds per spindle each. And voilà - you end up with a cycle time of just 20 seconds in total …”, explains Marc Flattich, application engineer at Citizen Machinery Europe GmbH. The Cincom MC20 comes equipped either with three independent spindle modules (Type 3) of exactly the same structure of which two are positioned next to each other and the third one on the opposite side. Or it is available with even four spindle modules (Type 4) - for another plus in flexibility and speed. Independently of the equipment variant, the Cincom lathe with a width of 3.12 m and a depth of 1.23 m is by no means larger in size than other automatic lathes with just one spindle. Thanks to the small footprint, the user may save an enormous amount of space in the production hall. Less space required, shorter machining times, reduced costs. Striking arguments which have already convinced many decision-makers all over the world.

Reducing complexity, maximising performance.

Example: In a conventional production line, the workpieces must cycle through three machines from loading to finishing, which adds up to a total of ten individual steps. Marc Flattich: “With the Cincom MC20, we were at least able to reduce this process to six operations. As the modules pass on the workpiece amongst each other, the blank must only be loaded at a single spindle. This is done within five seconds using an automatic loading system the grippers of which are easy to exchange. It is thus no longer necessary to re-align the loader/unloader for each workpiece type so that the user again saves time and costs at this point.” The modules of the Cincom MC20 transfer the workpiece to the opposite spindle in 2.5 seconds. Flattich: “For the spindles, we offer a variety of clamping systems, from collet chucks up to precision chucks. We deliver all clamping gear as standard version and also as custom-tailored version according to the customer's requirements.” Per module, six tool stations are provided which open up a large number of machining opportunities to the user. Sascha Gersmann: “To be able to complete the machining tasks in an uncomplicated way despite all their complexity and the abundance of options, the operating concept has been kept as simple as possible by using the latest generation of the Mitsubishi Meldas control units. Thanks to an additional Windows tablet, the user may use all functions in an easy and self-explaining manner.” Furthermore, for the efficient and controlled breaking up of chips, Citizen also fitted the Cincom MC20 with the patented LFV technology. By changing the frequency in the program, the user may easily define the max. permissible length of the chips.

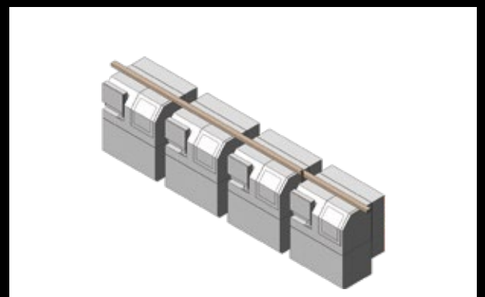
The door for perfect handling is wide open.

When redesigning the MC20, the focus was also placed on the improved setup of the machine. “The door may now be opened wider which drastically facilitates loading and unloading everyday. True, these are no more than details, however they still clearly facilitate the user's work”, according to Marc Flattich. The Cincom MC20 is definitely no standard machine, which means, it is precisely configured to match the part or part family to be machined. Sascha Gersmann: “After a maximum of eight months, the high-precision lathe may take up its work and help the user save money.” Users with a high part output quickly profit from the short cycle times and the consistent simultaneous cutting principle. If you add the fact that the MC20 may replace three to four single systems, a fast return on investment is almost unavoidable.”

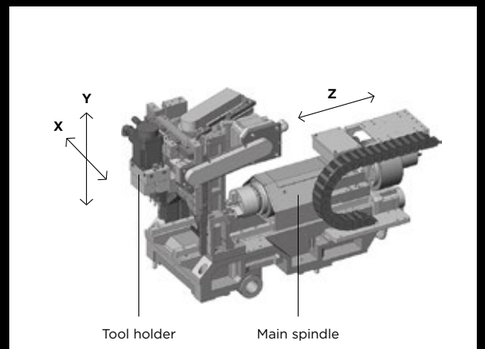
The key to Mass Customisation:

Due to the combination of three or four machining modules in one configuration with several stations, the MC20 supports a large number of machining layouts and achieves entirely new dimensions in terms of productivity and performance. In addition, the machining processes may be optimised using the dynamic Cincom control software. The control supports highly flexible operations and thus makes mass customisation come true.

This offers benefits in the field of:
Maintenance, productivity & space requirement



Combines four conventional units of a production line to a single unit.



The MC20 consists of three or four identical modules depending on the machine type. Each module disposes of X, Y and Z axes.

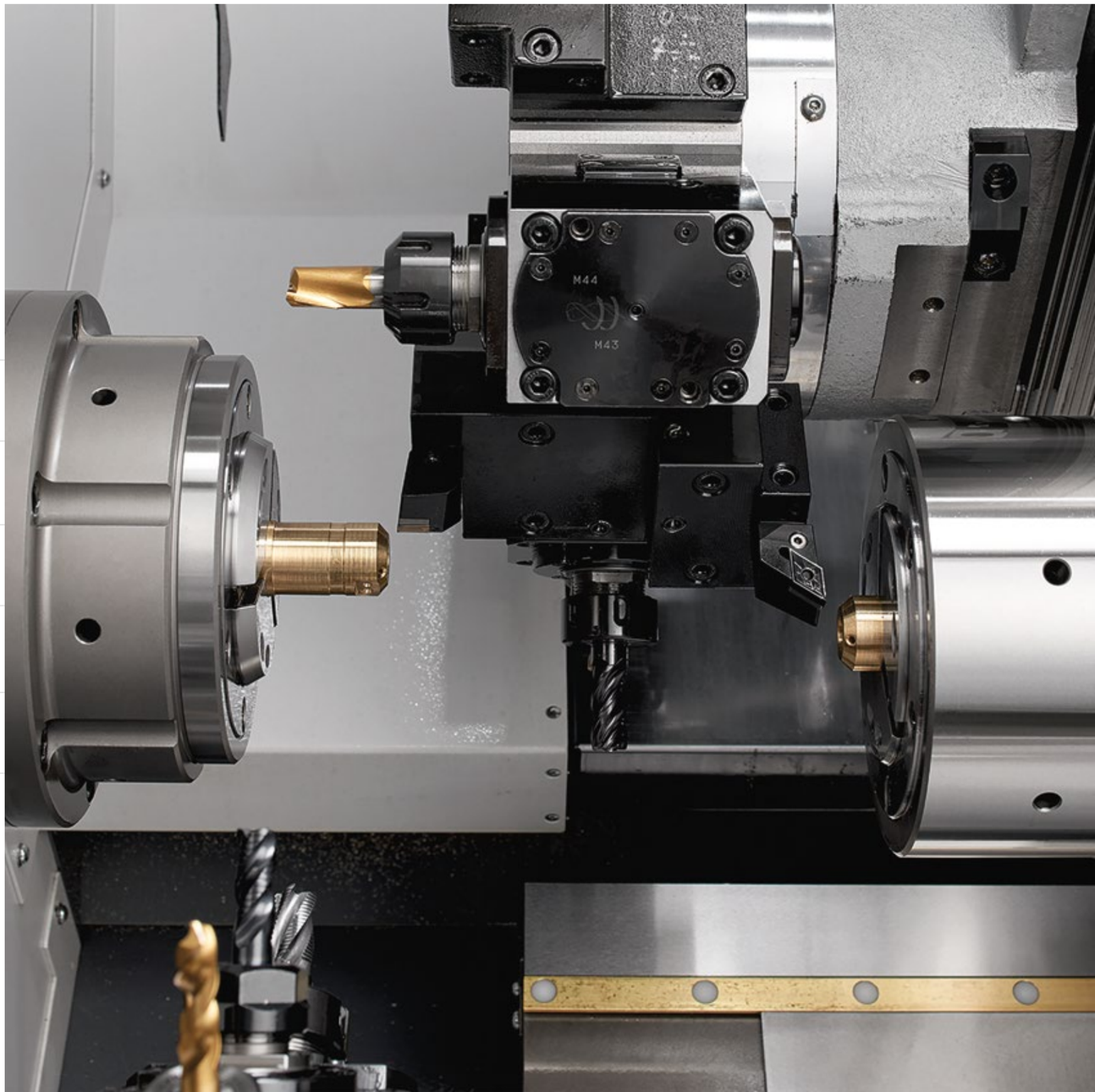
Advantages of the Cincom MC20:

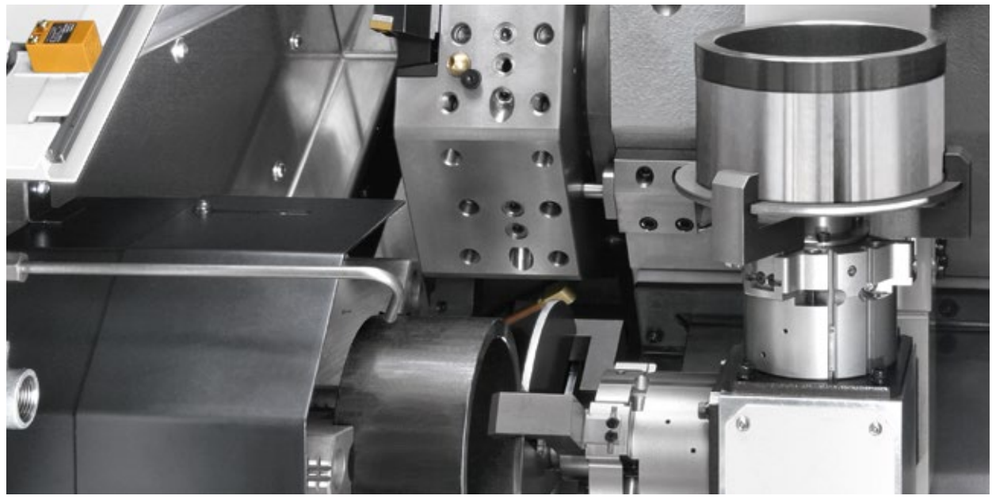
- Part transfer between spindles and machine-internal loading system
- Optimisation of the machining processes due to high transfer accuracy
- Excellent operating comfort through intuitive use of several functions
- Patented LFV technology on each spindle
- Individual machine configuration for specialised mass production

Flexibility spells with double “Y”

High-torque Miyano fixed head automatic lathes with two Y axes.

BNE-51MYY and BNE-65MYY process materials with diameters of max. 51 mm and 65 mm and are equipped with one Y axis each at the upper and lower 12-station turret. This makes the tool selection highly flexible permitting an optimised process division. The result: short cycle times and increased productivity. In addition, also the operating comfort has been raised to the next level due to the touch control of the new human-machine interface M800 of Mitsubishi Electric.





Double Y axis increases the scope.

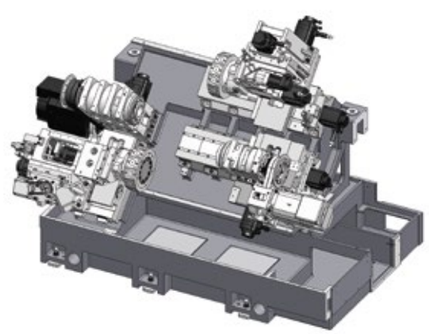
The upper and lower turret of the models BNE-51MYY and BNE-65MYY are equipped with one Y axis each. These two 12-station turrets offer the same performance but significantly more variability in terms of tooling and an unrestricted perfect process division - without any disadvantage due to any cutting unbalance.

New design for a better insight.

The machine cover has completely been redesigned with a large window to provide excellent visibility of the machining area. Furthermore, the machines are equipped with a new ergonomic operator panel. The modern 15" touch panel facilitates the control of the functions and improves productivity hand in hand with the new NC control units.

Slide structure facilitates chip removal.

Rectangular lapped slides have been adopted for all slides except for the X3 axis. The sliding contact between the surfaces grants maximum stability and excellent vibration-damping properties.



Furthermore, both Miyano models convince through a powerful machining performance which not least helps to extend the tool life.

Shorter cycle times through high-performance machining.

The two turrets equipped with Y axis and the mechanical configuration formed by main and back spindle reduce cycle times as it paves the way for high-performance cutting - like for instance simultaneous machining “left/right” as well as “top/bottom” for superimposed and similar kinds of machining.

BNE-51MYY / BNE-65MYY

Control unit	Mitsubishi
Max. machining length	195 mm
Max. machining diameter	Ø 51 mm / Ø 65 mm
Maximum drilling diameter	SP1: 25 mm
	SP2: 20 mm
Number of spindles	2
Spindle speed (SP1 / SP2)	5,000 rpm
Spindle motor (SP1 / SP2)	SP1: 18.5/15 kW
	SP2: 11/7.5 kW
Number of turrets	2
Number of rotary tools (HD1 / HD2)	12
Rotary tool speed	6,000 rpm
Machining capacity (HD1 / HD2)	
Drilling	Ø 16 mm
Tapping	M12 x 1.75
Rotary tool motor (HD1 / HD2)	4.0 kW
Rotary tool torque	25 Nm
Footprint	2,860 mm x 2,190 mm

BNE-51MYY and BNE-65MYY:

- Double Y axis
- Slide structure for simple and reliable chip disposal
- New design with innovative touch panel
- Shorter cycle times
- Machining diameter 51 mm and 65 mm

Bullseye.

Miyano ANX-42SYY - the new generation of turret lathes.

For the first time, the LFV technology for lowfrequency vibration cutting is being used for the turrets of a Miyano lathe. This makes tangled long chips and all the associated problems such as downtimes and reduced cutting resistance a thing of the past. Another highlight of the ANX-42SYY is the operating panel with its new human-machine interface (HMI) that makes working with the automatic lathe even more user-friendly. In addition, efficient processes are guaranteed also for users who rely not only on Miyano fixed head automatic lathes, but also on Cincom sliding head automatic lathes to boost their productivity. Thanks to new operating processes, changeover problems are avoided and boundaries between the two successful brands eliminated.

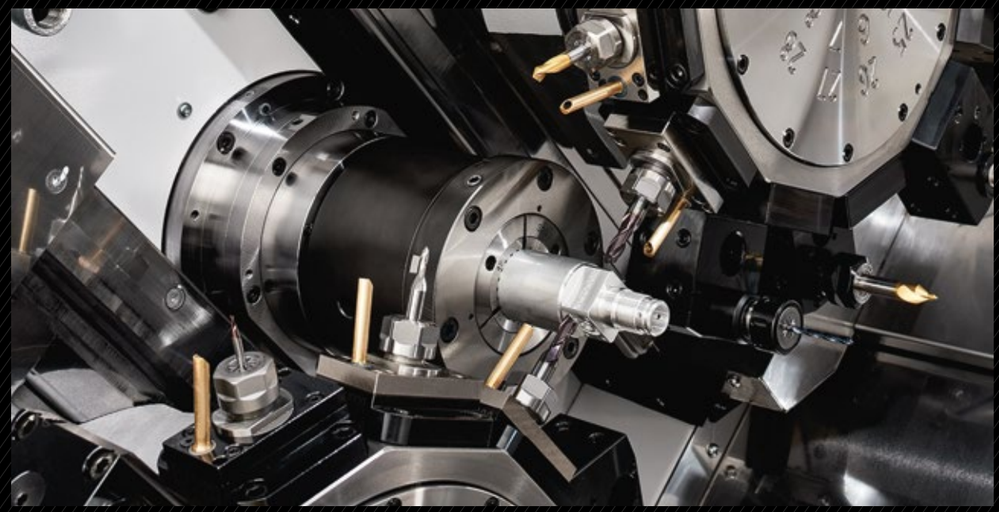
High performance in a small space.

The ANX-42SYY is equipped with two spindles and two turrets, each with one Y axis. Its rapid traverse rate has been increased in the linear guideways of all axes. Each spindle disposes of an integrated motor shortening acceleration and deceleration times and improving the response behavior on the whole. All these innovative functions are housed in a compact machine measuring only 2,650 mm in width.

Synergy effects simplify processes.

The two turrets, each with 12 stations and Y axis, have the same capacity and can accommodate the same tool holders as the turrets on the BNA Series machines. The tools that can be used are therefore the same for both machine series. All stations can be equipped with driven tools designed for 20 Nm. Complex machining tasks such as simultaneous machining on three axes, machining with superimposed control or machining involving both Y axes are considerably simplified for the user.

Two turrets with 12 stations each. Two spindles with a spindle speed of 6,000 rpm each.



New HMI boosts quality of work.

Just as on the Cincom sliding head automatic lathes, the operating panel now also works with multi-axis control group technology. The productivity of simultaneous machining has thus been considerably optimised. Furthermore, the latest NC control unit and the 15″ touch panel have been enormously improved for greater user-friendliness. Conclusion: The ANX-42SYY combines outstanding functions, space-saving design, and maximum efficiency in one machine.

ANX-42SYY

Control unit	Fanuc
Max. machining length	130 mm
Bar capacity, round bar	SP1: Ø 42 mm
	SP2: Ø 42 mm
Number of spindles	2
Spindle speed (SP1 / SP2)	6,000 rpm
Spindle motor (SP1 / SP2)	11/7.5 kW
Inside diameter of draw tube* (SP1 / SP2)	Ø 46 mm
Number of turrets	2
Number of rotary tools (HD1 / HD2)	12
Rotary tool speed	6,000 rpm
Machining capacity (HD1 / HD2)	
Drilling	Max. Ø 12 mm
Tapping	Max. M8 x 1.25
Rotary tool motor (HD1 / HD2)	2.2 kW
Rotary tool torque	20 Nm
Footprint	2,650 mm x 1,630 mm

* Preturning of the material bar not necessary up to Ø 42 mm.

From soloist to a world-class orchestra.

Automatic Tool Changer (ATC) increases number of loaded tools many times over.

The innovative system is available as a further variant of the Cincom L20XII. The ATC enables the use of a total of 13 tools in connection with the B axis for front end machining, among which are 12 changeable tools and one integrated tool.

The fields of application include complex parts for medical technology, like for instance implants. Here, the ATC ensures easy tooling for the machining of various workpiece types in a single setup.

Besides the B axis machining, many more applications for ATC tooling present themselves. This includes an enormous spectrum of cross and end-face machining processes with the most different tools, among which also slitting cutters and hobs.

Thanks to the effective tool configuration, the user may benefit from the high machining speed of a sliding head automatic lathe - while simultaneously profiting from the extraordinary versatility of a turning center with B axis including ATC technology.

ATC performance features

Max. speed of the rotary tool with ATC tooling	12,000 rpm
Motor output	2.2 kW
Tool holder type	JBS-15T
Number of B axis tools	12 (magazine) + 1 (integrated)
Total number of tools to be mounted to machine	Max. 34 (including B axis
Tool change time (chip-to-chip)	4.0 sec
Max. outer tool diameter	Ø 30 mm
Max. tool clamping diameter	Ø 10 mm (ER16)

Bordering on ingenious.

Cincom L20 defines perfection anew – with combined turning and laser machining on one machine.

Precision is everything. Particularly when the job at hand involves the machining of extremely fine webs and minimum corner radii at medical instruments, automotive parts or components of the aerospace industry. With turning and milling alone, however, the user will quickly reach the limits of his manufacturing capacity even if using micro tools. This is where laser technology comes into play.

Principally, lathes offer a higher degree of flexibility than laser cutting machines. You may for instance load 3-meter bar material into automatic lathes and then receive finished products as a result. Also the loading/unloading times are significantly shorter compared to models with laser technology.

In contrast, laser cutting stands for a whole new quality in terms of precision. It allows for the cutting out of complex filigree structures in very thin materials. The dynamics of the cutting process may be controlled by the variables laser output, beam quality, wavelength of the laser light as well as the focus diameter. Especially in medical technology, laser cutting facilitates various micro machining processes like for instance the production of stents for the heart and vascular system.

However, in order not to ruin the production advantage with regard to precision due to time losses during the re-tooling process, Citizen combines the best of two worlds - turning and laser cutting - in one single machine.

The Cincom L20: the machine in which laser technology has been “implanted”.

Markus Reissig, Managing Director of Citizen Machinery Europe GmbH, explains the triumphal march of the machine around the world: “Thanks to the perfect interaction of a total of nine axes and the combination of rotary and stationary tools, the L20 already brings along the ideal conditions for complex 3D milling operations - not least for medical products. Implants or bone screws mainly from difficult to machine materials, like titanium, cobalt-chrome or high-alloy steels, are the speciality of the Cincom L20. So, nothing was more obvious than implanting the new laser technology in this machine.”

Michael Neitzel, Manager Application Technology. Citizen Machinery Europe.

Re-tooling? What for?

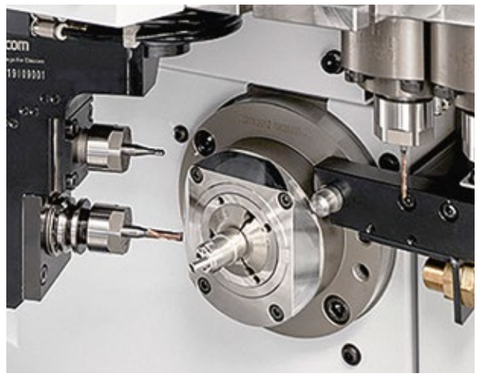
100% precision, zero wear. That is the formula using which the laser technology raises the productivity standard to a new level. “We are able to integrate the laser unit in almost every Citizen machine starting from a machining diameter of 20 mm. But we are already working on offering even smaller diameters,” says Michael Neitzel, expert for laser technology at Citizen Machinery Europe. Markus Reissig confirms: “Very small corner radii, filigree webs, flexible shafts from tubes with a maximum of 2 mm wall thickness may perfectly be machined using our laser technology - continuously without any tool wear. Next to the unsurpassed precision, the enormous repeatability is another convincing argument, above all as all processes and subprocesses are handled on one and the same machine: Re-tooling has become the exception!”

For the user nothing will change - except for the efficiency.

Apart from specially coded door switches and system-related safety measures, working with the L20 including laser unit is in no respect different from operating the “normal” lathe: “Its scope of functions in the matter of turning is of course 100% identical to that of the standard model”, assures Michael Neitzel. With the combination from lathe and laser, Citizen has the exact answer to the market's requirements. Markus Reissig: “What we started with the L20 will be continued in other machine types. This will soon result in new fields of application of the laser beyond the already existing ones - for maximum precision and composite manufacturing processes.”

With high pressure to more efficiency.

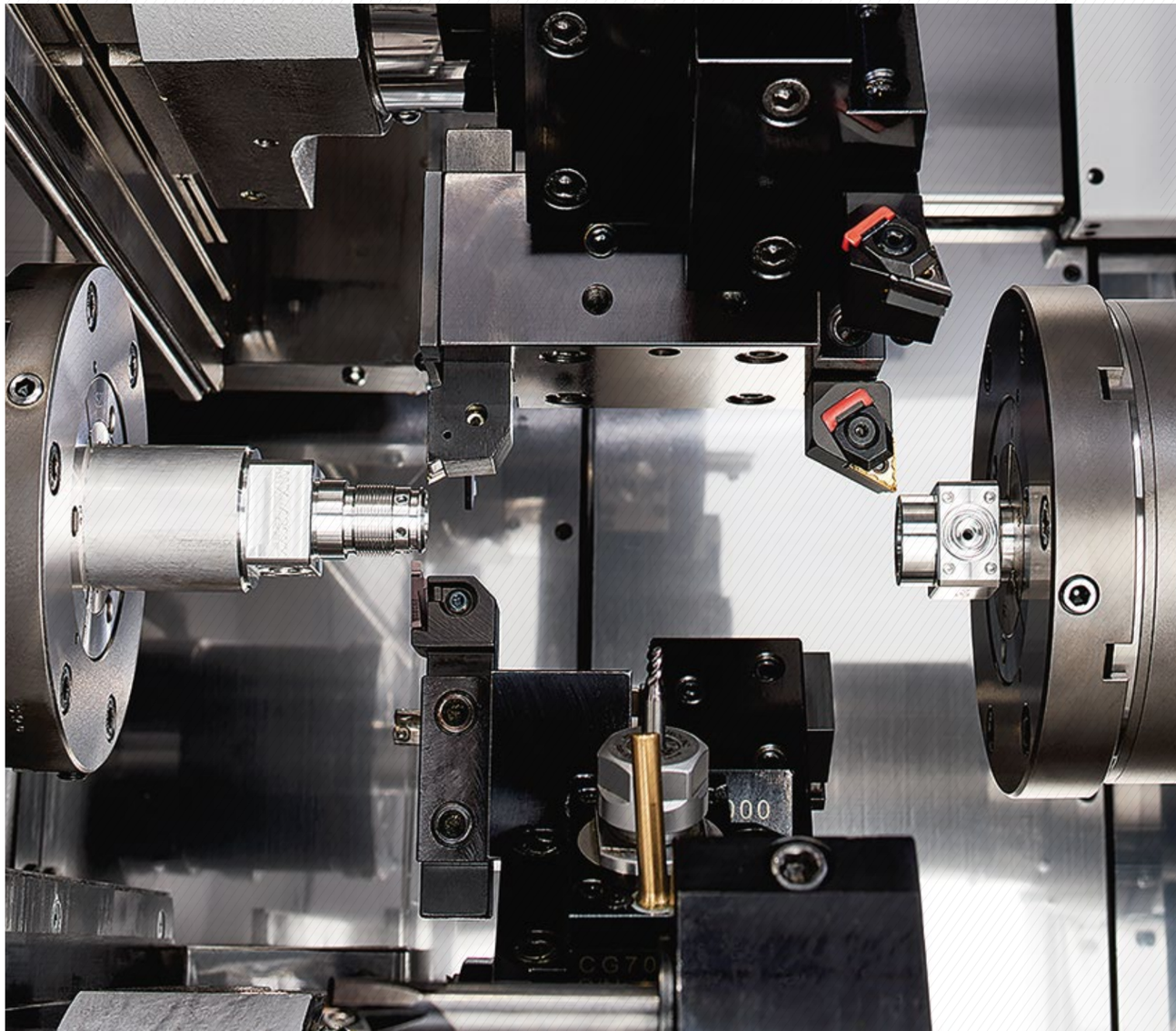
Upgrading boosts productivity with the help of custom-made products.



Better chip breaking. Better cooling. Better feed rates. Since 2006, individual lathes have been upgraded to meet very specific requirements of the respective production part at the Esslingen, Villingendorf and Neuss sites – and in future also in Radebeul. The goal: Passing on Citizen Machinery Europe's innovations and technological advances to the customer. Practically no machine is delivered today without an external high-pressure system. “Initially we worked with a pressure of 20 to 70 bar,” says Ömür Akgün, specialist for upgrading at Citizen Machinery Europe. “Thanks to the advances in technology and materials, we can now operate with up to 150 bar.” When the oil hits the components of the lathe with such enormous pressure, the cooling thus generated can significantly prolong the machine running time and downtimes are avoided.

For particularly delicate and precious production parts, such as in the watch and jewellery industry, high-frequency spindles are also used to provide the greatest possible protection against scratching. Ömür Akgün: “The basis for every upgrading project is a kind of bucket list from the customer. Depending on the part to be produced and the material to be machined, we develop a customised concept to optimise productivity. As part machining has generally become more and more complex, the demands on upgrading have also risen significantly.” For this reason, the range of services offered by the department has also developed rapidly. Citizen Machinery Europe machines can now be equipped ex works with the following performance-enhancing electrical and mechanical attachments:

- Chip conveyor
- High-pressure systems up to 150 bar
- Part conveyor
- Workpiece conveyor belt to discharge parts
- High-frequency spindle
- Option for longer workpiece machining
- Vacuum part removal
- Tool breakage detection
- Fire extinguishing system
- Oil mist extractors



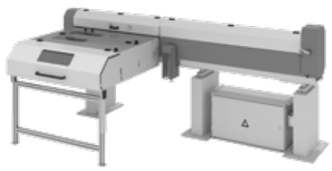
“Networking is not enough. We want the machines to communicate.”

Industry 4.0: Citizen Machinery develops new control software.

An entirely innovative and unconventional platform, designed by an international team with experts of Citizen Machinery Europe as well as Citizen Machinery Japan. The goal: to transform the manner of communication and interaction between man and machine. But also to take the communication between machines to the next level. Stefan Schöffer and Thomas Aichele, Software Development Citizen Machinery Europe, provide insights.

Loading magazine

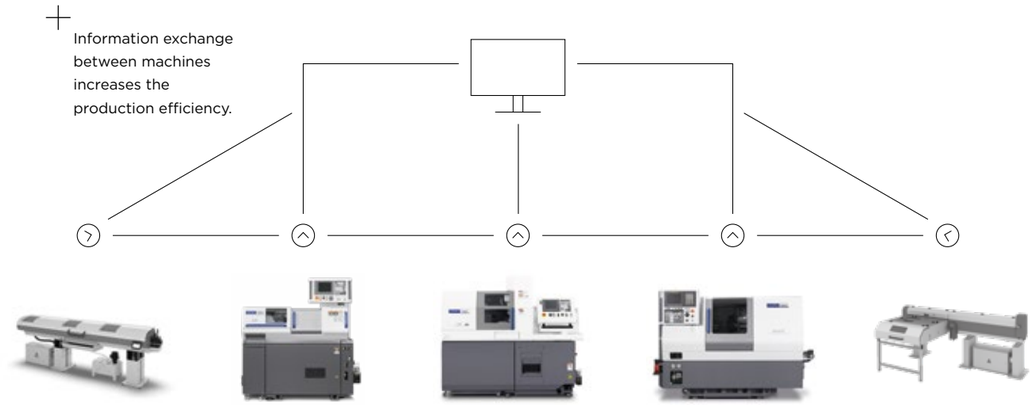
machine



Unloading station

What can the new software do which is currently being developed? What is new about it?

Stefan Schöffer: “We are using OPC UA, one of the most important communication protocols for Industry 4.0 and the Internet of Things. OPS standardises the access to machines, equipment and other systems in industrial environments and permits a homogeneous data exchange independently of the manufacturer. In other words, software and machine speak the same language. In excess of this, we are working with MTConnect – which is a standardised open protocol for the acquisition of machine data. In particular, it may be used for machine monitoring and performance analyses. Thanks to using these languages, we are operating based on the latest software development standards.”



What are the advantages for the user?

Thomas Aichele: “The efficiency and effectiveness of the production processes is sustainably improved. By continuously monitoring process parameters with the help of sensors, we are able to realize so called Predictive Maintenance. Which means: The system recognizes and indicates maintenance requirements in advance. This reduces downtimes while simultaneously extending the machine life cycle on the whole. Also, the energy consumption may be checked and controlled in a highly efficient way.”

The technology behind these innovations is becoming ever more complex. What impact does this have on the handling in the daily production workflow?

Stefan Schöffer: “A central element of each new development in this field is that the man-machine interface may be operated in an as simple and intuitive way as possible. On a touch panel, all necessary functions are clearly presented from where the user may branch to all submenus and detail functions depending on his specific requirements. The operators have simple access to diagnostic tools, machine status, file management, macro and offset management, the visualisation of the workpiece currently being cut, machine manuals for tooling, support functions for quality control and much more. The visualisation of the machine data is done in real time including permanent updates and provision of diagrams, charts and visual displays for control and monitoring purposes.”

Thus, the interaction between man and machine is facilitated. How about the communication between the machines?

Thomas Aichele: “Intelligent communication between machines is a crucial factor which we push ahead using the new software. For one thing, we grant the automatic networking with our in-plant logistics systems or other machines integrated in the production cycle. However, networking alone is not enough. If machines within a production line are interlinked using the OPC server, specific information about the currently manufactured product and the machines may be transferred. This does not only include order information like order number and product dimensions, but also quality data as e.g. compensation values for dimensions or predefined temperature limits during a production step. In excess of this, machines may also be integrated into process control systems via the OPC server. On the whole, this results in a significant optimisation of ERP as well as MES systems.”

The end of the “endless” chip.

BB Zerspanungstechnik uses Cincom L20E-2M8 sliding head automatic CNC lathes with LFV technology - thus eliminating machine stops due to tangled long chips.

BB Zerspanungstechnik GmbH from Königsbach-Stein near Pforzheim has specialised on turned parts with a particularly smooth surface finish and excellent haptics. In the first place, the company produces parts for the writing utensil industry. For a long time, BBZ faced problems in connection with the long-chipping materials 1.4404 and 3.3206 (AlMgSi0,5):

Minimum process stability could only be achieved with these notorious “endless” chips by programming a machine stop after every tenth part. At the cost of all resulting interruptions and delays. Then, however, one discovered the new opportunities of the LFV technology of Citizen Machinery.

The turning point: a visit to the Citizen in-house exhibition.

At the former Citizen location Zimmern ob Rottweil, the managing BBZ partner Bernd Braun became aware of the LFV technology. This is where Citizen Machinery presented this innovative method in Germany for the first time - on a Miyano VC03 for inserts equipped with linear drives. There and then, the idea was born to also make the LFV technology available for sliding head automatic lathes with ball screws. Thereupon, BB Zerspanungstechnik GmbH ordered two Cincom L20E-2M8 LFV sliding head automatic CNC lathes as first customer in Europe. From day one after commissioning, both new machines have been able to fully live up to the high expectations.

Controlled breaking up of chips improves productivity.

Next to the controlled breaking up of chips, the Cincom L20E-2M8 allows for unmanned production and in excess of this convinces through a remarkably high process stability. When cutting the material 1.4404 and with a cycle time of 3.5 minutes, the output could be boosted by 900 to 1,000 parts/week. Further advantages were an optimised surface finish and an up to 15% longer tool life. Furthermore, the utilisation of the machines was raised significantly as machine stops caused by tangled chips were no longer necessary on the Cincom L20E-2M8 models. This finally makes delays caused by the “endless chip” a thing of the past.

Björn Wied (li.), Wietec and Bernd Braun, Managing Directors of BB Zerspanungstechnik GmbH.

> *“Our machines with LFV technology efficiently handle the controlled breaking of chips when cutting difficult to machine materials thanks to their special control technology.”*
>
> Björn Wied, Managing Director of Citizen Machinery Sales partner Wietec

The faster the communication, the faster the solution.

Flexible customer service generates added value – long after the purchase.

As an internationally operating company with worldwide sites, Citizen Machinery Europe can guarantee short machine delivery times of just a few weeks. The branch in Germany benefits from a European central warehouse from which most models can be called off very quickly. That is an important competitive advantage, as some of our market competitors sometimes have long delivery times. Another advantage in terms of delivery times is the spare parts warehouse in Esslingen. From here, required spare parts are delivered to destinations throughout Europe.

A strong customer service network for the whole of Germany.

We have a total of four branches, in Esslingen, Villingendorf, Neuss and Radebeul. Experienced and expert service technicians are on duty from all branches throughout Germany. Sales representatives with many years of expertise are on site in all the Federal states. Citizen Machinery Europe customers of course have the option of having turning tests and piece time calculations carried out before making a purchase. Machines can be examined in detail live in the showrooms. Citizen Machinery Europe has its own design engineering departments at the sites in Esslingen and Villingendorf and can therefore react quickly to specific customer requirements. An added bonus: Citizen Machinery Europe's Research & Development department constantly sets new standards in Industry 4.0 strategies, enabling the implementation of innovative digital applications that continuously optimise handling and efficiency. Software solutions can thus be developed easily and within a very short time. Each customer gets a designated contact person who coordinates the whole ordering and sales process.

In addition, in-house training is offered with every machine sold. On-site and web-based training are also part of the service spectrum.

Some suppliers break off contact with the customer after the sale, and you are left to yourself and your machine. Citizen Machinery Europe knows from decades of experience how important reliable, flexible and professional support is, particularly in the application phase. The Service hotline can be contacted from Monday to Friday between 7.00 a.m. and 6.00 p.m. or at service@citizen.de. Experienced technicians attend to customers personally and can handle most issues and enquiries over the phone. To ensure that no reaction times are lost, Citizen Machinery Europe works with a ticket system and first-level support. If a problem can't be resolved over the phone, a service technician is sent to assist the user on site – normally within 24 hours. Jürgen Schad: "The personal contact via the hotline helps to avoid downtimes for our customers." Most service calls for machine downtimes are handled within one day. All other cases are also resolved within a very short time. Service and maintenance can be booked at any time and are carried out absolutely thoroughly and reliably. In this way, customer service as implemented by Citizen Machinery Europe becomes a crucial factor in increasing overall production efficiency.

> ***What have our machines and our customer service got in common? Both go hand-in-hand and form the basis for successful cooperation. We understand all-round service to mean looking after the customer before, during and after the machine sale."***
>
> Jürgen Schad, Technical Director of Citizen Machinery Europe

Service first

- Cincom service hotline: **+49 (0)711 39 06 140**
- Miyano service hotline: **+49 (0)741 17 40 713**
- Service: **service@citizen.de**
  Spare parts: **parts@citizen.de**

Special treatment? Quite normal.

Practically every Citizen Machinery Europe lathe is custom-made.

Individual options or automation variants help users to obtain the optimum system for their specific requirements. With solutions developed in-house, Citizen Machinery offers the decisive added value on the road to the autonomous production line.

There is no patent recipe for innovation. No one project is the same as the other, every development is a special case and is handled with the corresponding precision. Jürgen Schad, Head of Customer Service, Citizen Machinery Europe: “Together with the customer, we examine the production processes and think in different directions from the very beginning: In addition to flexibility, effectiveness and the greatest possible efficiency, our focus is of course on the outstanding quality of the machining. In addition, we aim to make the individual work steps as simple and automated as possible. That minimises mistakes and maximises success so that the customer can hit the ground running when the machine is delivered.”

“

Minimise mistakes, maximise success.”

Jürgen Schad, Head of Customer Service,
Citizen Machinery Europe

**Standard is the reliable basis.
Full configuration is the competitive advantage.**

Depending on the model from the Cincom sliding head range or the Miyano fixed head portfolio, certain features are already integrated as standard: Part catchers, workpiece conveyors or grippers through to pick-up tables for long workpieces. “But sometimes it just has to be a gantry loader, a pallet conveyor or a customised bar loading magazine – depending on the level of automation the customer needs for efficient production,” says Jürgen Schad. Depending on the industry sector and batch size, there are widely differing criteria to be satisfied here. It benefits the customer that the Citizen lathes cover bar diameters from 12 mm up to an optional 80 mm and can therefore already be configured very flexibly ex works.

The future: success is automatic.

The majority of Citizen Machinery’s lathes are designed and manufactured in-house, making every single machine as individual as desired. Jürgen Schad: “If more complex projects are required, such as turnkey systems with the associated periphery, we have the right suppliers in our pool of experts. And thanks to our smart Industry 4.0 options, the road to automated production in the digital factory is also just a few clicks away.”

The best time for training?

Whenever you want!

The Citizen Machinery Europe team will be happy to accommodate your individual wishes. The dates and specific contents of the training courses are tailored to the needs of the customer. The greatest importance is attached to ease of operation right from the development of the automatic lathes. The course then shows how the processes can be optimised in line with the intentions of the inventor. Operator, programming and maintenance courses are offered, depending on the desired objective.

Do you need a special solution or help in improving the machining process? Citizen Machinery Europe's experts are there for you - with comprehensive know-how of the Cincom and Miyano product range and of the very latest in turning technology worldwide. The spectrum of subjects ranges from NC programs and time-and-motion studies through to machining tests and tool design. Jürgen Hänle, applications engineer at Citizen Machinery Europe, confirms: "Even the most efficient technology can only make the optimum contribution to boosting productivity if the machine is operated with the necessary application know-how."

Problems? Just swipe them away.

The Citizen app: That's customer service today.

If you need expert support from Citizen Machinery Europe, particularly during the application phase, you can choose from several access options. The Service hotline can be contacted from Monday to Friday between 7.00 a.m. and 6.00 p.m. or at service@citizen.de. The new Citizen app offers a solution that is both innovative and user-friendly: Here you get not only a comprehensive overview of the Cincom and Miyano lathes currently available, and of the latest technological developments from Citizen Machinery Europe. After registering accordingly, existing customers can also use the app to make the planning of their maintenance and service calls even more effective. Simply make a video of the current situation of the lathe using your smartphone, upload it, add a brief description of the problem and then send it directly to Citizen Machinery Europe's customer service. Shortly afterwards you receive the ticket for your issue and the service team contacts you immediately. The Citizen app is available in the App Store and the Google Play Store.

Google Play Store

App Store

Did you know?

› that you can determine the chip length yourself thanks to our patented LFV technology?

› that there are ten different types of chips?*
1. ribbon chips, 2. thread chips, 3. flat helical chips, 4. oblique helical chips, 5. long helical chips,
6. short helical chips, 7. spiral helical chips,
8. conical helical chips, 9. loop chips,
10. discontinuous chips.

› that our parent company, Citizen Watch Co., Ltd., was founded in 1930 and has four business units?
- Watches (Citizen Watch)
- Lathes (Citizen Machinery)
- Electronic products (Citizen Electronics)
- Devices and components (Citizen Systems)

› that Citizen Machinery is the world leader in the sale of sliding head automatic lathes?

› that our lightest machine (R04) weighs only 1,100 kg?

› that our heaviest machine (ABX-64THY2) weighs no less than 11,350 kg?

› that we have two controller manufacturers as partners with Fanuc and Mitsubishi?

› that the distance from Esslingen to Tokyo is 9,421 km?

› that we can offer machines with a bar capacity of 80 mm (Miyano)?

› that Citizen Machinery Europe is the spare parts centre for the whole of Europe?

* Source: Fachkunde Metall. 55th Edition, Haan-Gruiten: Europa Lehrmittel 2007, p. 137.

Networking at the click of a mouse.

Citizen Machinery also on LinkedIn

LinkedIn is now available in 24 languages and has over 660 million users in 193 countries and regions. Citizen Machinery also uses this platform to provide the community with regular updates and short film clips. We have been able to attract more than 1,000 followers within a very short time – numbers rising. Feel free to visit Citizen Machinery's profile on linkedin.com.

The “Dicke Turm” is saved!

Esslingen’s landmark preserved.

Around 2.5 million euros were needed to renovate the medieval “Dicke Turm” (“Fat Tower”) and make it accessible to the public again. A large number of private initiatives, but also companies contributed to achieving the target. In addition to a large donation, Citizen Machinery came up with a special campaign here: Production of a limited edition of miniature brass “Fat Towers”. The idea: Donors who contributed 100 euros and more could receive one of these shiny gold souvenirs as an extra “Thank you”. Mayor Jürgen Zieger was not surprised that so many people from Esslingen were committed to the preservation of the “Dicke Turm”. “After all, the tower is the architectural landmark with the highest public profile.” It has marked the Esslingen skyline since 1525 and is regarded as a symbol of the residents’ solidarity with their city and the entire region.

Welcome to Turning Valley!

Villingendorf – the charming Black Forest site of Citizen Machinery Europe.

Panorama view of Villingendorf. Kindly provided by Marcus Türk, Mayor of the municipality of Villingendorf.

Industrial density or natural recreational space? Why “or”? The Schwarzwald-Baar-Heuberg region with the districts Schwarzwald-Baar, Rottweil and Tuttlingen is characterised by innovative medium-sized industry, and at the same time by an excellent leisure and recreational value. From the Upper Black Forest in the west to the Great Heuberg on the Swabian Alb in the east. From ThyssenKrupp’s ultramodern elevator test tower to the cosy wine tavern in the village. Attractive countryside and a varied cultural offering on the one hand and cutting-edge technology on the other are not opposed here, but harmonise just like the parts of a high-precision lathe. Schwarzwald-Baar-Heuberg with its population of around 492,000 is one of the strongest industrial regions in Germany. But it’s also a real insider tip for lovers of a good quality of life.

Home for high-tech experts – and mountain bikers.

The economic map is dominated by medium-sized, often owner-managed companies that sometimes lead the world market in their niches. In addition to machine engineering, important sectors also include medical technology, metal processing, IT and electrical engineering as well as rubber and plastics production. Around Daimler AG's test centre for autonomous driving in Immendingen, technologies are being developed in every corner of the region that have what it takes to set international standards. In between, specialists from different fields can recharge their batteries in the magnificent natural surroundings. Outdoor sports enthusiasts and hikers will find ideal conditions in the Black Forest, on the Swabian Alb and in the Danube and Neckar valleys. Lake Constance and the Alps are just a stone's throw away. Many a city dweller has lost his heart here on holiday and has come back and stayed.

A further bonus in this region is the well-developed infrastructure. Numerous educational institutions, including four universities, ensure that there is no shortage of young talent. The “Ringzug” (“Ring Train”) with its connection to the Stuttgart-Zurich intercity line ensures ideal connections Since 2017, Citizen Machinery Europe has been represented with the Technology Centre South at the Villingendorf site, taking advantage of the synergy effects of top technological expertise and outstanding quality of life.

Get back into the swing!

6th Citizen Machinery Europe Golf Trophy in August 2021.

Welcome back to the green! The tournament is played as a classic four-ball or better ball. Players with a registered handicap of 54 or better are eligible to play. Here's a brief review of last year as a foretaste of the new tournament at Golf Club Hetzenhof:

The maximum number of participants for the 5th Citizen Machinery Europe Golf Trophy was reached within a very short time. On Saturday, 29 August 2020, 24 flights each of 4 golfers started out on the 18-hole round. At each of the holes, both players of a team hit one ball and then one of the team's balls was selected for further play in line with the better ball mode. The players then played alternately until the hole was completed. After the round, everyone was able to enjoy a delicious barbecue sponsored by Citizen Machinery Europe. The atmosphere throughout the tournament was overwhelming. Organisers and golf fans from the region are already looking forward to the next Citizen Machinery Europe Golf Trophy in August 2021.

Arrival at the top of the European ladder.

Citizen Machinery Europe is the sponsor of Allianz MTV Stuttgart.

3x DVV Cup winners, 1x German Champions (2019), 1x VBL Supercup winners: Allianz MTV Stuttgart's trophy collection is very impressive. In the Champions' League, too, the team left its mark in 2021. In the toughest of all the groups – with Eczacibasi Istanbul, Dynamo Moscow and Lokomotive Kaliningrad – the Stuttgart women finished third with 7 points, just behind the top team from Moscow. Allianz MTV Stuttgart has thus justifiably earned the respect of Europe's elite. Now the focus is back on the German league – with the players looking to take the momentum from the Champions' League with them. We're keeping our fingers crossed!

CITIZEN – simply precise