COMPLETE

Nr. 02/24

The complete machining magazine

All eyes on:

The efficient MILLTURN

The machine geometry can be checked in just a few minutes with the myWFL Health Check.

WFL MILLTURN TECHNOLOGIES

Back in time.

Our history focus “Linz in eras“ is moving into the next era – Linz and industrialization from 1850 onwards.

What comes to mind when you think of industrialization in Linz? Do you immediately think of the textile industry? Because this is where industrialization began in the Linz area. One district in particular developed into the heart of the country's cotton industry thanks to its factories. But companies that concentrated on the processing of iron also settled in the provincial capital, settled in the provincial capital. Read more from page 26.

Dear customers and readers,

This autumn the focus is on the numerous trade fairs which WFL will be attending. Trade fairs are incredibly important to us as we see them as the perfect place to meet our customers. It all kicks off with AMB in Stuttgart and IMTS in Chicago, followed by MAKTEK in Istanbul, MSV in Brno, BIMU in Milan, Siane Industries in Toulouse, JIMTOF in Tokyo, and finally we conclude the 2024 trade fair season with Aeromart, which is also held in Toulouse.

Thirty years of WFL and 40 years of MILLTURN: Two anniversaries which warrant some special attention. Just last year, WFL was able to look back on 30 years of business. What started out as a group of 12 individuals has grown into a team of more than 500 people. Thanks to teamwork and a common goal of "BEST IN COMPLETE MACHINING" (which WFL still stands by today), the company has grown continuously over the past three decades.

Expansion of the Management Board: Customers of WFL Millturn Technologies value the company's quick and unbureaucratic quotation and implementation of sophisticated technical solutions as well as their internal cohesion. The new additions to the Management Board ensure we can continue to make these rapid decisions at every level. You can read more about the expansion of our Management Board on page 10 onwards.

In this issue, you'll also find exciting information about software solutions from WFL and details about the myWFL Health Check. Our "All eyes on" feature takes a close look at internal machining. WFL attaches great importance to the precision, safety and quality of all its machining processes, from deep hole drilling and internal turning to chamber boring.
The ArianeGroup, a leader in the aeronautical industry, is a textbook example of how MILLTURN machines can be used. Read our success story to find out more. Further insight comes in the form of the user report from HORA, who supply customised control technology to ensure their customers' plants operate smoothly and efficiently over the long term.

Last but not least we have our training centre with its fresh new look and WFL's apprenticeship training scheme. Our young skilled workers remain our future.

We hope you enjoy reading this latest issue!

The WFL Management Team

Günther Mayr
CTO

Norbert Jungreithmayr
CEO

Stefan Hackl
CFO

Franz Schön
COO

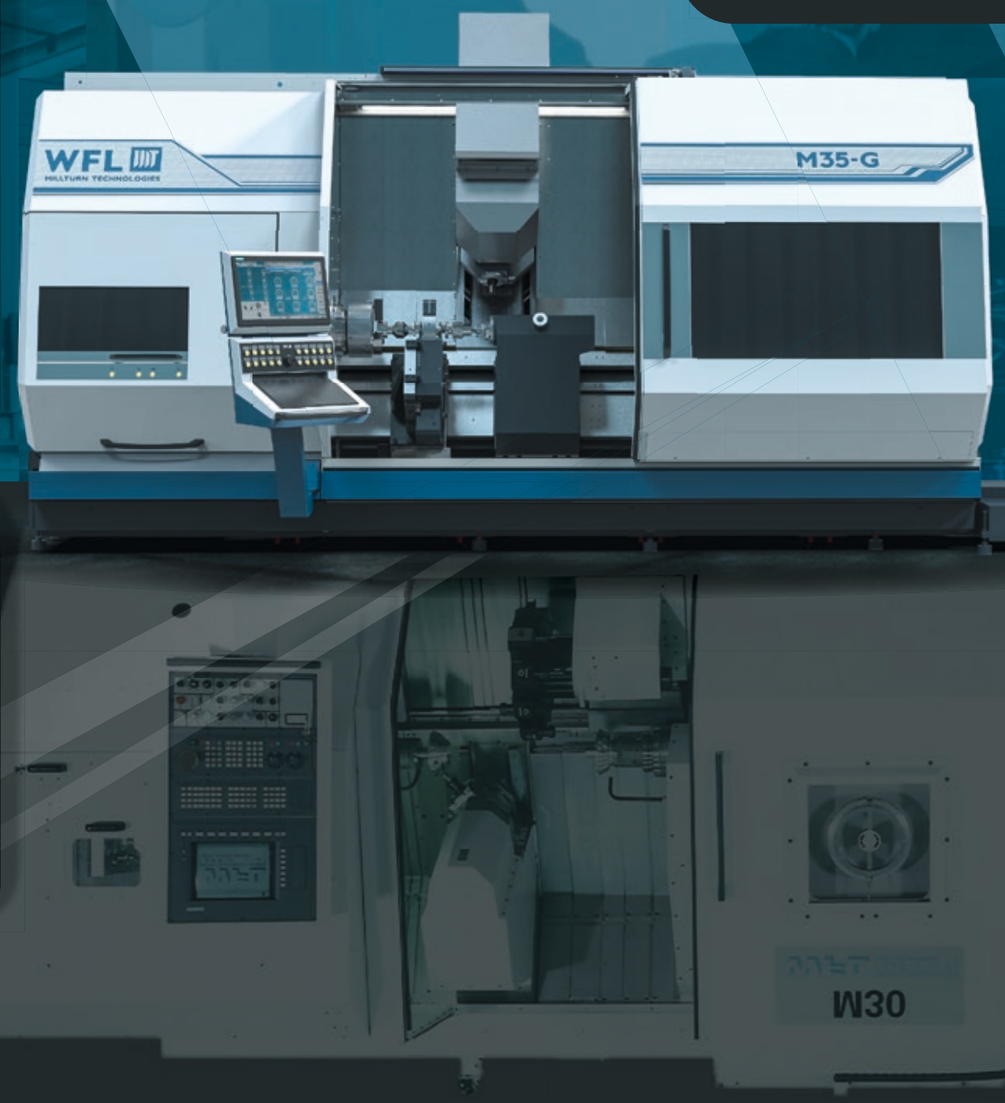
WFL MILLTURN TECHNOLOGIES

The world's first complete machining center, a Millturn WNC, was developed back in 1982. At that time, machine tool production was still part of VOEST-ALPINE. In 1993, WFL emerged as an independent company and concentrated on the manufacture of MILLTURN brand turning-boring-milling centers.

WFL - the abbreviation for Werkzeugmaschinenfabrik Linz - was taken over by the Autania Group at that time. Focusing on complete machining since 1983, WFL is the technology leader in the field of metal-cutting production machines. When different manufacturing technologies such as turning, milling, drilling or grinding are combined in one machine tool, this is referred to as complete machining. Clamp once - complete machining.

Through accelerated development and the commitment of its employees, WFL has succeeded in becoming the global market leader in the high-tech niche of complete machining.
Whether high-tech automation solutions or intelligent use of data, WFL combines the latest technologies with proven expertise. Decades of experience in complete machining are a key feature of the company. Reliability in the quality of the machines and continuous development of technologies in complete machining form the quintessence.

BEST IN COMPLETE MACHINING



2023

Equipment:
- Machine bed
- Compound Slide
- Turning-Boring-Milling unit
- Tailstock
- Chip conveyor and coolant cleaning system
- Steady Rest
- Disc Turret
- Operator Panel Sinumerik ONE
- Disc magazine in different variations
- Main spindle
- C-axis with retaining brake
- Cuck
- Counter spindle
- and many more customer specific adaptations

Technical Data:
- Turning diameter mm 520
- Workpiece length mm 2100
- Main drive kW 44 (32)

Turning-Boring-Milling unit:
- Power kW 44 (32) kW
- Torque Nm 125
- B-axis swiveling range +/- 100°
- Y-axis travel mm + 150/- 100
- Number of tool stations 80

Technical Data:
- Turning diameter mm 300
- Workpiece length mm 920
- Main drive kW 22

Turning-Boring-Milling unit:
- Power kW 9
- Torque Nm 125
- B-axis swiveling range +/- 90°
- Y-axis travel mm +/- 80
- Number of tool stations 24

Equipment:
- Turning-Boring-Milling unit
- Double Disc Turret
- Double Spindle
- High pressure coolant unit 80 bar
- Workpiece Measurements
- Operator Panel Sinumerik 880

1983

Expansion of the Management Board

An interview with Stefan Hackl and Franz Schön

WFL Millturn Technologies is sending a strong signal by expanding its Management Board. The two new experienced executives joining the board from WFL's own ranks are the current Chief Financial Officer Stefan Hackl and Head of Order Management Franz Schön. Customers of WFL Millturn Technologies value the company's quick and unbureaucratic quotation and implementation of sophisticated technical solutions as well as their internal cohesion. With these additions to the board, rapid decisions can be made at every level. We invited Stefan Hackl and Franz Schön for a chat for the current issue of Complete.

As CFO, Stefan Hackl will continue to be responsible for the Finance, HR and IT departments. In his new role as COO, Franz Schön will concentrate on Order Management and is also responsible for Production. CEO Norbert Jungreithmayr continues to act as Chairman of the Management Board and CTO Günther Mayr will be responsible for all agendas relating to technology and sales.

How do you feel about your new duties as CFO and COO?
Hackl: I am of course very pleased, but there's definitely also a certain degree of respect. We are currently in a transformation phase, previous duties are being handed to my colleagues and at the same time I'm getting to grips with the new aspects.
Schön: After working for WFL Millturn Technologies for over 30 years, I'm delighted to be able to take the next step in my career as COO. In future, I can be more involved in shaping and supporting our shared goals. In my area of responsibility as COO, I see it as my task to maintain the existing situation and take a targeted approach to further developments relating to capacity adjustments. One of the key tasks is keeping our employees motivated and engaged so that, in addition to the high-tech product that we sell, we can also guarantee the quality, reliability and performance for our customers.

If you could improve or change something at WFL, what would it be?
Hackl: I really value the fact that we seek out solutions and not problems – I want to develop and enhance this approach.
Schön: The aim, which we must work on, is to create sufficient assembly and service capacity in order to drive our growth forward.

What do you value about WFL?
Hackl: The solution expertise, commitment and the enthusiasm of our employees. Put simply, that no task is too difficult for us and when looking for the best solution we always think outside the box and give our best.
Schön: The fantastic team and our product of course. I'm always getting feedback from our customers and suppliers about WFL's brilliant performance. Even though it's not always easy on some projects to bring customer requirements to life, the WFL team aims to satisfy the customer and support them in the best way possible.

Do you personally have a vision for WFL?
Hackl: WFL is THE partner for innovative

NEW MANAGEMENT TEAM
The Chief Financial Officer Stefan Hackl (2nd from right) and the Head of Order Franz Schön (right) complete the management team.

»Stefan Hackl and Franz Schön have played a significant role in the company's success to date. Their new positions in the company underline these achievements and ensure that we as a team lead the company successfully into the future.«

CTO Günther Mayr

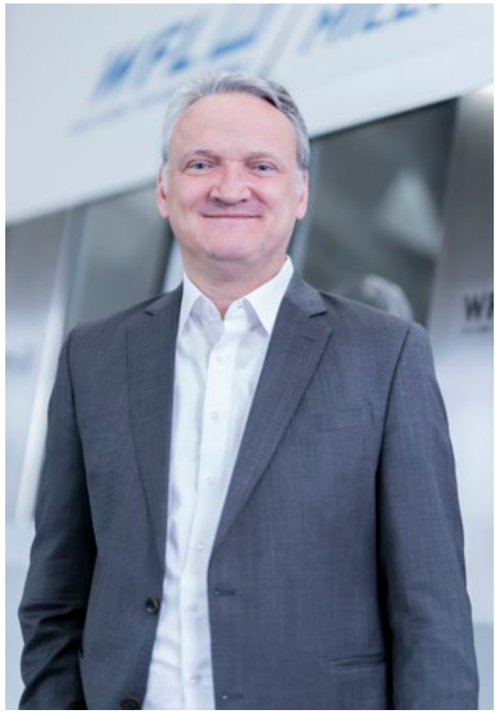
technology solutions. We have a global footprint and as a company we attract the best employees.
Schön: For me, it's important, first of all, that WFL continues to be seen as that which has set WFL apart and made the company successful: a company with a unique product and outstanding technology, reliability and quality. As well as fantastic and highly-qualified personnel, a partnership-based relationship with customers and the tendency towards further development both for the product and the company as a whole. Healthy, coordinated growth is important.

How would you describe your leadership style?
Hackl: Participative: provide clear goals, expectations and responsibility and appreciate your employees' expertise and listen to their opinions. An open culture of discussion is always important as is challenging and encouraging our employees. Ultimately, to also make decisions and not just delegate and retain control over implementation.
Schön: I regard my leadership style as a mix of authoritative and cooperative. For me, this isn't a contradiction. Some situations call for clear instructions. In many matters, however, it is necessary to involve employees to achieve the best results. To achieve shared goals, you need teamwork and motivated employees. I also regard myself as very open when it comes to contact with every employee.

How do you ensure a healthy work/life balance?
Hackl: I find balance by spending time with my family and friends, doing sport (running, cycling and hiking) and travelling to experience new cultures. But I don't tend to get to do much of the latter unfortunately.
Schön: For me, the best way to ensure balance is through sport, especially hiking or cycling. It clears your head and often gives you a fresh perspective on a variety of different issues.

How do you make decisions?
Hackl: We make 20,000 to 30,000 unconscious decisions every day. This starts early in the morning when you decide whether to take the lift or the stairs at the office and extends into far-reaching corporate decisions. The type of decision-making depends on several factors. It often makes sense to involve employees and ask for their professional expertise, while you need to make other decisions directly and immediately by yourself. When doing so, I rely on my gut feeling as well as weighing up the pros and cons.
Schön: I'm basically a person who relies heavily on their gut feeling. However, decisions must be made based on the matter at hand and the consequences they will have. When making a decision, I find it important to have a clear picture of the goal and the current situation. To do so, you need to involve the relevant people and departments to achieve the desired result when the decision is implemented.

What do you think are the three most important characteristics a leader must have?
Hackl: The world turns ever faster. Complexity and uncertainty are increasing. For us to be successful as a company, we need decisiveness, transparency, reliability, communication and solution-oriented behaviour above all else.
Schön: One important characteristic for a leader is to stand by the decisions I have made as a person and take responsibility for them.



»We are faced with constantly changing markets, technology and customer requirements on a daily basis. The decision to expand our Management Board is a strong sign of our efforts to build on our technological leadership.«

CEO Norbert Jungreithmayr

Did you know?

WFL Software Solutions

The right cycle for every machining task

WFL is using its decades of experience to offer well-engineered software solutions relating to the manufacturing process with a MILLTURN complete machining centre. We will begin our new software solutions series in this issue by looking at WFL cycles. The technology cycles of WFL cover a broad range of standard and special technologies for all kinds of applications. These program modules make it possible to carry out efficient programming directly on the machine control or on a PC. Programs can therefore be created for both complex and simple workpieces in only a short period of time.

Did you know?

WFL Software Solutions

by WFL MILLTURN Technologies

The benefits of the WFL software solutions

- Perfectly attuned to the MILLTURN software of WFL (Millturn PRO, CrashGuard Studio and CrashGuard)
- Comfortable programming on the PC and on the machine control
- Extensive range of standard and special technologies
- Considerable reduction in programming effort with WFL technology cycles
- Well-engineered solutions for process optimisation and maximisation of process safety
- Considerable reduction in tool costs thanks to advanced tool management
- Future-ready due to the best connectivity

TURNING, DRILLING & MILLING

The technology cycles from WFL simplify programming considerably and are a direct route to achieving the desired production result. The wide range of technology solutions fulfils all machining requirements. The technology cycles are diverse, for example thread turning, grooves, thread undercuts, drilling with chip breaking, deep hole drilling, gun drilling, turn-, face or path milling and much more.

Milling of threads

METAL CUTTING & FEED OUT

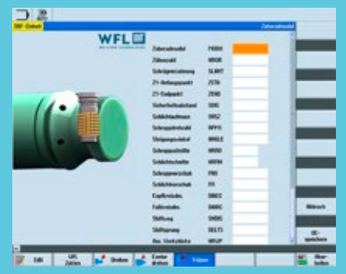
Cycle packages for crankshaft machining, for complex multi-axis machining with actuating tools or for a workpiece finish using grinding clearly show that a needs-based cycle configuration allows sector-specific requirements to be handled quickly and efficiently. There are many cycles to choose from, including Utronix (the virtual U-axis), Cranx-Basic (basic crankshaft package), Cranx-Advanced (extended crankshaft package), Cranx-Plus (complete crankshaft package), or also a 5-axis machining package and turning with swivelling B-axis, as well as deburring by means of 3-axis interpolation (centric holes) and cam milling.

GEAR CUTTING

From filigree internal gears with high accuracy requirements to large external gears that require high roughing efficiency – WFL offers the appropriate technological solution for every type of gear cutting.

Example cycle selections

- Flanx-Hob: Gear hobbing of external gears
- Flanx-Spline: Shaping of external and internal gears
- Flanx-Plus: Flanx-Hob and Flanx-Spline as a cycle package
- Flanx-LM: Milling of large gears with standard milling tools
- Flanx-Invo: Milling of external gears



Gear hobbing of external gears

MEASURING

High-precision radio transmission probes, linear direct measuring systems and backlash-free anti-friction guideways transform the MILLTURN into a 3D measuring machine. WFL provides the user with comprehensive modular measuring software and proven expertise for intelligent measuring strategies, which serve to exclude as many error-causing variables as possible, right from the very start. There are several cycles to choose from here too: the standard measurement cycle package and the extended measuring cycle package, which contains the ultrasonic wall thickness measurement.
The ultrasonic measuring unit enables measurement of the wall thickness of components. Ultrasonic measurement is used for long pipes or deep internal contours that cannot usually be measured using a radio transmission probe. The WFL measuring cycles allow wall thicknesses to easily be measured and analysed. For example, the different analysis algorithms can be used to determine the centring error.

There are also cycles for recording measurement data and scanning.

Workpiece measurement

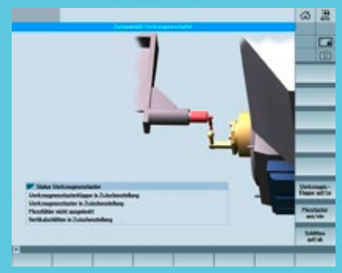
TOOL CONTROL & MANAGEMENT

Turning, drilling and milling tools can be measured using the tool control cycles.

Cycle selection:

- Calibrating the tool probe
- Measuring the tool automatically
- Measuring the cutting radius
- Measuring the tool manually

All information relating to the existing tools is organised in a uniform manner thanks to the tool management software solutions. This makes it possible to achieve a considerable reduction in the set-up time and minimise tool costs, as the tools are always used until the end of their life.



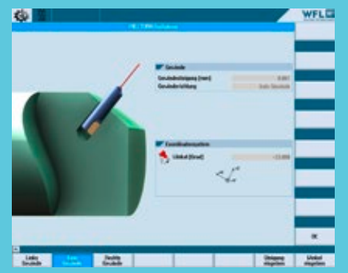
Turning, drilling and milling tools can be measured using the tool control cycles.

PROCESS SAFETY

The safety of the workpiece, tool and machine is a central objective in every machining process. Separate registration of all cutting force components in process monitoring ensures reliable detection of tool breakage, for example. The emergency retraction routines minimise the risk of rejection in the event of power outage.

Example software solutions

- Drive-independent emergency retraction routines, level 1 & level 2
- Control-led emergency retraction routines
- iControl Basic+
- iControl Advanced+
- Automatic display of input screens



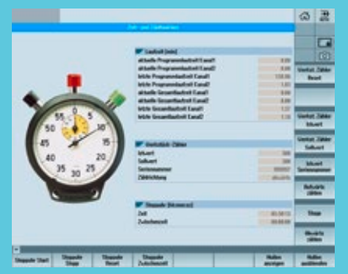
Process safety involves various different cycles.

PROCESS OPTIMISATION

Intelligent software solutions for increasing efficiency ensure a reliable blank machining process with variable allowance without overloading machines and tools and without user interventions.

Cycle selection

- Adaptive control (for feed rate and spindle speed)
- Torque and speed restriction of the milling spindle
- Automatic geometric check
- Process time recording
- Coolant unit control with pressure control and flow monitoring



Process time recording

PERFECT ERGONOMICS
The machine is sunk into the ground for optimum ergonomics. A lot of thought was also put into the design of the workspace around the machine, for the benefit of the employees.

A machine that impresses on every level

With its investment in a M80 MILLTURN / 3000mm, HORA Holter Regelarmaturen GmbH & Co. KG are setting new standards in the machining of valve parts weighing up to six tonnes. WFL was chosen following an intensive selection process. Several machine manufacturers were in the running, but ultimately WFL impressed this German family company in every regard. WFL's service and availability were the crucial factors. Read on to find out what other criteria were important to HORA and how WFL was able to meet every requirement.

HORA is a medium-sized family company employing around 300 people based in Schloß Holte-Stukenbrock, North Rhine-Westphalia. Engineering and production take place at its German headquarters, supported by a sales office in Shanghai and diverse sales partners around the world. Since the company was founded in 1967 by Georg Dresselhaus, it has focused on the development, design and manufacture of innovative control valves and actuators. By concentrating on the business areas of Power Generation, Gas Applications, and Process and Building Technology, HORA fulfils highly-specific customer requirements. HORA supplies customised control technology to ensure their customers' plants run smoothly and efficiently over the long term. In 2023, annual turnover totalled 50 million euros. All the company's profits are reinvested, leaving a factory packed with state of the art equipment. In the last five years, over 10 million euros has been invested in production. The company's investment in a WFL turning-boring-milling centre is the biggest single investment in a machine since the company was founded. Managing Partner Professor Dieter Dresselhaus focuses heavily on process innovation, thereby ensuring the long-term success of the company over decades.

The challenge

Since 2009, HORA has been concentrating on its production strategy for complete machining, which was limited by the size and weight of the components. In recent years, there has been an increase in the number of parts that could not be manufactured using complete machining methods for this very reason. The market is also moving towards materials that are difficult to machine, which pose an increasing challenge. As a result, a machine with the corresponding chip space and cutting performance was needed.

Since 2015, HORA has focused on the digital transformation of the entire order handling process, from the customer's enquiry to delivery and beyond. During this time, tools such as an ERP system with integrated APS, a PDM system, a product configurator and a digital dispatch management system were introduced. All systems are networked.

HALF LEAD TIME
The customer-specific acceptance workpiece for the WFL machine. Thanks to complete machining, the lead time was reduced by 50%. The machine is mainly used to manufacture valve bodies, perforated cages and plugs.

In addition to easing the challenges in heavy machining, investing in a turning-boring-milling centre was to be the last piece of the puzzle in creating a fully digitalised state-of-the-art process along the production line.

"We wanted to bring our vision of full digital networking to HORA, by implementing and digitally connecting what we currently regard as the best machine for our requirements," says member of the Management Board Eduard Schmidt. He adds: "We needed someone who could support us technologically and as a partner in setting a new standard in the digital process and help us bring our vision to life. From our perspective, WFL was absolutely the right decision, as both HORA and WFL value delivering the optimum solution for the customer. This common understanding paved the way for setting a new standard together," emphasises Schmidt.

The decision in favour of WFL

There were several crucial factors that tipped the balance in favour of MILLTURN. From the initial consultation to the end of the project and beyond, HORA felt they were in good hands with WFL. In an interview with WFL, HORA praised the entire project team and emphasised that every promise had been met or even exceeded. "We visited WFL in Linz several times and were impressed by their outstanding expertise. Workpieces stored on site with similar material, i.e. difficult to machine, and above all, geometrically challenging, had already been produced. WFL's practical references spoke for themselves. WFL focuses on the technology and process integration," says Andreas Petker, Production Team Leader at HORA.

HORA were also impressed by WFL's guaranteed service and spare parts availability. With WFL, HORA has a partner that is quickly available thanks to their geographical proximity, minimising the risk of production downtimes.
We must also not overlook the turning-boring-milling unit itself, which is the heart of the machine. The fact that this is manufactured entirely in house at WFL was also a decisive factor and one of WFL's unique selling points, which impressed HORA.

Another decisive USP was the WFL system boring bar, which offers HORA added value in terms of flexibility and costs due to the geometry of the components being produced.

HORA has been heavily expanding its multiple machine operation in single part production for many years and therefore tends to opt for machines that work with a Siemens controller. This is easier for the employees as it means that every machine is operated in a similar way.

»Every promise was kept or even exceeded.«

The machine has been making an impression in daily use since the start of the year. The solid construction and the machining performance are remarkable. "Machining at this scale is not new for us, but the cutting capacity is really remarkable and truly impressive! The cutting capacity was outstanding even during final acceptance of the machine, as the 160 indexable insert drill effortlessly cut the heat-resistant stainless steel (1.7335) with two tonnes of feed force and no vibration on the machine cover. In such moments, I like to grab the door but there were no vibrations to be felt," stresses Michael Beiwinkel, Head of Production and Building Technology. The stability and solid construction were impressive, as is the fact the machine does not need 100% of the drive force. Despite difficult materials and strenuous tools, there are still drive reserves – and all with a high chip volume being removed. The machine was commissioned at HORA in January 2024.

Ergonomic work

As an innovative company, HORA believes in optimum workstation design for its employees. The MILLTURN was sunk into the existing hall floor to allow optimum access to the workpieces during machining. "WFL really impressed us in this regard too. We didn't even need a special solution, as the machine is designed for optimum ergonomic conditions right from the start," says Production Team Leader Sascha Brechmann. Firstly a one-metre deep pit was dug, followed by the necessary construction work. Now the MILLTURN was sunk by 400 mm. The storage area in front of the machine was designed as a steel welded construction so that workpieces of up to six tonnes can be placed down without any problems. The workstation for the MILLTURN, as well as all the other machines in the HORA hall, offer occupational safety and excellent ergonomics. There are wooden floors integrated into the ground for an ergonomically optimal working environment. Likewise, there are no steps and therefore access is at ground level, which considerably reduces the risk of slipping.

The machine is currently working in two-shift operation. Four employees have undertaken the WFL training programme in Linz and worked directly on the machine at HORA with the technician and now operate the WFL machine independently. Just eight weeks after the final acceptance of the machine, the M80 MILLTURN was sometimes working on single parts without a directly assigned operator. In the case of components with a longer machining time, the machine runs without supervision, especially overnight.

The machine is mainly used to manufacture valve bodies, perforated discs, perforated cages and plugs. These manufactured parts can, in turn, be found in any type of control valve for challenging, customer-specific solutions in a wide range of industries.

New standards in digital networking

With the decision to opt for WFL, HORA was able to close a gap in the digital transformation of the order handling process. Now the production process is linked to this digital process which runs from the customer's enquiry through to design engineering. "Everything is now digital, from the enquiry, to the quote and the resulting product – regardless of where we are in the factory," says Schmidt.

The CAM team use the CAD models stored in the PDM system by the Design Engineering department to create the CAM data record, which is stored in Shop-

CONTROL VALVES FOR THE WORLD MARKET
HORA's premium products are control valves with corresponding drives. These are designed and manufactured on site and sold worldwide. Service is ensured across the entire service life of the product. Over 30% of HORA's employees are engineers.

THE PROJECT TEAM (from left to right)
Michael Beiwinkel (Head of Production and Building Technology), Sascha Brechmann (Production Team Leader), Sergej Kunz (CAM Team Leader) and Andreas Petker (Production Team Leader).

Floor following simulation in CrashGuard Studio.
"The combination of the applications in CAM and CrashGuard Studio is really exciting. We often have operations where there's no machine cycle, so it has to go CAM first of all," says Sergej Kunz, CAM Team Leader.
The required tools are now set up and measured using the data stored in ShopFloor. The determined tool data is also stored in ShopFloor. With a datamatrix code generated in ShopFloor, the tool can be identified and booked at any time.
The integrated APS in the ERP system takes on all the production control at HORA. If the APS plans a production order on the WFL, all data (NC program from the CAM and tool data from the measurement) is loaded onto the machine from ShopFloor. During machining, regular measuring cycles are run to guarantee the quality of the component. This creates a digital twin for each component produced.
"The measuring cycles during the process have enabled us to significantly increase the quality of our workpieces," says Sergej Kunz. He adds: "Thanks to the measuring cycles, we have benefited from considerable gains in efficiency, especially for large components. We generally hadn't been able to measure certain contours during the machining process before, and now we can. With the measuring cycles and the cross switch, we can now carry out highly accurate manufacturing and this benefits us enormously in terms of time and quality."

Steps for the future

Managing Partner Professor Dieter Dresselhaus is clearly committed to the Schloß Holte-Stukenbrock site, as 100% of the company's profits have been reinvested for several years now. This enables new standards to be set in process and product innovation.
HORA's products make a significant contribution to advancing the energy revolution, which is why the company expects to see a continued increase in demand for its premium products. As a result, increasing efficiency continues to be a focal point. This includes the efficient use of energy and resources in the company's own activities. "We ensure that our material procurement is sustainable. We avoid air and sea freight as far as possible. Of our entire procurement volume of 17 million euros, only around 1.5 million euros goes towards goods from Asia. This also underlines our largely regional purchasing strategy and our many partnerships in Germany and Europe," emphasises Schmidt.
"As a Partner for Performance, we believe our strengths lie in understanding customers' needs and turning them into products for challenging control tasks. We also realised WFL shared this focus when discussing the machine layout at WFL. This was confirmed as the project progressed," says Schmidt. He continues: "We definitely chose the right partner. The company's values are lived and breathed, both at HORA and WFL."

facts

- Company headquarters: Schloß Holte-Stukenbrock
- Founded in 1967 by Georg Dresselhaus
- Managing Partner: Professor Dieter Dresselhaus
- 100% self-financed, robust and sustainable
- 300 employees, > 30% engineers

All eyes on

myWFL Health Check

by WFL MILLTURN Technologies

The dashboard overview displays data such as machine status, performance, operating modes and override positions over time, as well as operating hours, channel status, active NC program and much more.

With the latest tool called myWFL Health Check, the machine geometry is checked by semi-automatic measurement of the milling spindle and tailstock as well as the main and counter spindle. The software also includes cycles and test equipment for measuring and logging the geometry. The myWFL Health Check can be used and retrofitted on all machine types and controls, regardless of whether the machine is equipped with different special options. The entire programme takes about 25 minutes. Long-term trends can be identified thanks to the integrated measurement data logging.

The steps of myWFL Health Check

First, the roundness and alignment of the milling spindle is measured with a test mandrel in the milling spindle. This is done with different B-axis angles and different clamping states (milling spindle clamped / unclamped, B-axis clamped / unclamped, ...) The repeat accuracy of the measuring probe is then checked using the calibration ring. Next, the machine zero point is checked in the X and Y directions. The machine operator must then clamp a short shaft in the chuck to check the alignment of the headstock. In the last step, the operator clamps a long workpiece between the chuck and tailstock / counter spindle, after which the position of the tailstock / counter spindle is automatically measured in relation to the main spindle. All measurement results are stored in a measurement database and can be compared with previous measurement results.
Depending on the machine version, the Health Check program saves up to 57 measuring points in the measurement data log.

Checking the machine

The biggest advantage is the simple and regular inspection to check the machine geometry. Intervals of at least once a month are advantageous here. The timely detection of worn machine components means that repairs and maintenance work can be initiated at an early stage. This in turn saves costs and time.
And, of course, the myWFL Health Check should be carried out after every collision to see where and which parts are broken. This saves time when repairing the machine after a crash, as it is possible to immediately identify which machine components are damaged and to check whether the machine geometry is correct. Without the Health Check, checking the machine geometry is a very time-consuming process that can take several hours.

Machine efficiency is increased

In principle, the Health Check can offer a great advantage and added value for all WFL customers, regardless of their industry. The myWFL Health Check is most effective for valuable components to produce no scrap parts. The health check should be carried out before production so that rejects can be prevented and none are produced. This point is also the main benefit for WFL customer. With the myWFL Health Check, it is unlikely that rejects will be produced, which means lower production costs.
The machine geometry is checked by semi-automatically measuring the milling spindle and tailstock as well as the main and counter spindles.

To summarize, the myWFL Health Check is a quick check of the machine geometry in just a few minutes. It is a simple method to avoid scrap parts, it includes both the necessary hardware and software and thanks to the integrated measurement data logging, long-term trends can be identified. The complete health check cycle is a quick but very efficient affair and takes about 25 minutes.

The myWFL Health Check can be used and retrofitted on all machine types and control systems.

The concentricity and alignment of the milling spindle are measured with a test mandrel in the turning-boring-milling unit.

This is done with different B-axis angles and different clamping states (milling spindle clamped/unclamped, B-axis clamped/unclamped, ...).

The repeat accuracy of the probe is then checked using the calibration ring. The workpiece probe is calibrated and checked for repeat accuracy.

The X and Y axes are checked against the zero point. After inserting a short workpiece into the chuck, the headstock alignment is checked automatically.

After clamping a long workpiece in the chuck and tailstock, the position of the tailstock in relation to the main spindle is automatically measured (also available for counter spindle).

The myWFL Health Check can be used and retrofitted on all machine types and control systems.

A total of six myWFL family members

In addition to the myWFL Health Check, there is also the myWFL Cockpit. This is an operating data acquisition system that displays the machine status (e.g. productive, available or fault), performance (productivity and availability), operating modes and override positions over time. Operating hours, channel status, active NC program, active tool and program runtime are also displayed. myWFL Energy is a possible extension of myWFL Cockpit with a multifunctional energy consumption meter for the power and compressed air consumption of the entire machine. This allows the current power and energy consumption data to be determined and displayed over time, as well as the energy consumption per workpiece. And with the option of an integrated condition monitoring cycle, significant changes between the new condition and the current condition can be checked.

A new feature is myWFL Reporting. With this software, reports can be created automatically and events for trigger types can be programmed manually, time-controlled or program-controlled. The myWFL e-mail messenger is currently in the development phase. This includes an alarm message function with e-mail notification of the machine status over the last eight days. The e-mail also contains additional information on the alarm or the current tool. In conjunction with M016-15-13 myWFL Cockpit, further information can be called up via the link sent in the e-mail.

The latest TECtalk highlights the topic of myWFL Health Check. You can watch the interview on YouTube.

ANTIQUITY
In the fourth century BC, Celtic fortifications were built. In the first century AD, the Romans built a fort and called it Lentia.

MIDDLE AGES
799: First documented mention as "Linz". Royal market and customs town, sometimes even a royal seat of the Holy Roman Empire of the German Nation.

EARLY MODERN PERIOD
After the Thirty Years' War, the city was reconstructed in the Baroque style. In 1672, Christian Sint established the 'Wollzeugfabrik' (wool factory), Austria's first textile factory.

18TH-19TH CENTURY
Steam navigation, horse-drawn railway in 1832, industrialisation in 1850, shipbuilding, locomotive construction, metal processing.

20TH CENTURY
Linz becomes a city, a university and cultural city and a key place of business.

21ST CENTURY
City of Culture 2009. Convention city, tourist hotspot, site of research and development.

THE RIVER AS AN ECONOMIC FACTOR
Shipping is of great importance for Linz

Linz and industrialisation from 1850 onwards

Industrialisation in the Linz area began in the textile industry. The district of Kleinmünchen established itself as the heart of the country's cotton industry, thanks to its textile mills. Companies that focused on processing iron also settled in the state capital. We've put together a few examples for you below.

The shipyard was established in 1840 and continued to grow over the years. The wintering harbour was established not far from here between 1897 and 1900.

A large number of ships were built in the shipyard, including police boats, paddle steamers or special vessels for the Vienna Fire Brigade. The ÖSWAG shipyard in Linz is the largest in Austria, focusing on three core business segments of new constructions, repairs, and ship conversion works.

It's not just the shipyard that is huge – the equipment is also massive. Thanks to its slipway, ships up to 135 meters long and up to 2,500 tonnes in weight can be lifted.

The passenger ship "Rhystärn", which was constructed for Basel, was a noteworthy project. This Swiss ship is 70 meters long and can carry up to 700 people at speed with two 450 hp engines.

Full steam ahead through Austria

The story of locomotive manufacturer Krauß & Comp. began in Augsburg, thanks to a German called Georg Krauß, who was regarded as a pioneer in the industry. In 1880, his success brought him to Upper Austria as part of an expansion plan. His main goal at the time was to establish a branch in Linz, to avoid import tariffs to Austria.
In 1878, Chancellor of the German Empire Otto von Bismarck had introduced protectionism to strengthen the German economy.
In 1881, the "Linzer Kraußfabrik" began production in the Markartviertel district and Georg Krauß was able to increase his profits even further. He built the Kremstalbahn railway, which was operated by Krauß & Comp. until 1892 and also took the opportunity to link the company premises to the same line. The Herz-Jesu Church was later constructed on the premises. The factory specialised in the production of locomotives for small, private local railways and was known for its versatile narrow-gauge railways. For example, the Kraußfabrik made locomotives for the Mariazellerbahn line and the Steyrtalbahn line.

LUXURY FOOD INDUSTRY: TOBACCO ...
The tobacco factory has been given a new lease of life.

... AND GRAIN COFFEE
Franck was known for its products made of cereals and chicory, which served as a substitute for coffee

LOCOMOTIVE FACTORY
The Zillertalbahn railway: an old Austrian railway wagon

But that wasn't all. A contract was concluded with the Bosnian-Herzegovinian state railway, resulting in the production of 118 locomotives. Unfortunately, this successful period came to an end with the Great Depression and the economic crisis that followed, with locomotive number 5 GERLOS on the Zillertalbahn line being the last to be manufactured in Linz. The City of Linz purchased the company premises and today the Kraußstraße road remains the only reminder of this impressive enterprise.

However, the food and beverage industry also came into being in this period. Some notable examples are:

Historic, industrial jewel

In 1850, the tobacco factory was founded as an emergency measure after the wool factory closed down. As the name indicates, tobacco was produced here, initially cigars and later cigarettes. Between 1855 and 1902, numerous extensions were made. But the existing building stock was showing its age, as was the technology. In 1928, the company decided on a new building, however, due to financial difficulties, this had to be carried out in several phases. The order for this was awarded to architects Peter Behrens and Alexander Popp from Vienna and was opened in November 1935 as the first large steel-framed building in Austria. During the Second World War, the new building, with around a thousand employees, produced somewhere in the region of five billion cigarettes a year.

After the tobacco factory closed, it was purchased by the City of Linz. When describing this vast 80,000 square metre historic factory today, words such as architectural jewel, centre of the creative industry, cultural hotspot and event location are used. This up-and-coming area is home to showrooms, agencies and start-ups as well as bars, restaurants and shops. Visitors are more than welcome to attend the numerous events. It's also possible to take a guided tour through the building.

A district named Franck

Aside from the tobacco factory, the company Franck was also a big player in the food and beverage industry.

The company "Heinrich Franck Söhne", which was founded in Württemberg, chose Linz as the location for its Austrian factory in 1879. The company was known for its products made of cereals and chicory, which served as a substitute for coffee. But this wasn't just drunk in place of pricey ground coffee; instead it was also served throughout the whole day, as an alcohol-free drink.
Their well-known brand product "Franck coffee" brought the family company immense success. The Franck family were not just famous for their successes, they were also known for their exceptionally generous company perks. Even back then, the company was no stranger to child support, pension funds, sick pay, workplace nursery and cheap company apartments. It wasn't just the employees that benefited from the company's generosity either, but the public in general. For example, they made donations for parts of the green spaces on the Freinberg mountain and for the building of the associated music school, which went on to become the Anton Bruckner Private University. Nowadays, the Franckstraße (Franck street) and the Franckviertel (Franck district) pay homage to the impressive Franck family, whose company existed for almost 100 years in Linz, as one of the most important commercial enterprises.

> »The old tobacco factory is now a center for the creative industries.«

From horsepower to steam power

What else happened in the 19th century? Steam navigation brought speed to transport by water and the horse-drawn railway picked up speed on land. As of 1832, there was a connection between České Budějovice and Linz. Four years later, it was possible to carry on to Gmunden. At around 200 km, the route was the longest of its kind in mainland Europe. This route was mainly used to transport salt from the Austrian Salzkammergut to Bohemia. As of 1855, a steam locomotive travelled between Linz and Gmunden. Besides Antwerp-Geneva (as of 1845), the Linz-Gmunden route was the second European steam-powered narrow-gauge railway.

It was not possible to switch over to steam locomotives in the mountainous stretch between Linz and České Budějovice due to the steep gradients and tight curvature radii. In 1857, the Empress Elisabeth Railway took over the horse-drawn railway. A few years later, a new route was established and the horse-drawn service came to a close in 1872.

In the next issue of Complete, we'll be taking a look at the 20th century, the period in which Linz became a city, full of culture with a university and an important place of business.

TIPPS DER REDAKTION

The **Pöstlingbergbahn Linz**, a "mountain tramway", exudes both nostalgia and modernity. The 20-minute journey begins in the Linz main square and ascends 539 meters, past Linz Zoo and the Anton Bruckner Private University, to the city's mountain, also known as "Pöstlingberg". During the summer months, you can enjoy this trip in the historic "nostalgia carriages", while the new tram is also available the rest of the time.

The **Grottenbahn** is also located on the Pöstlingberg. This has been in existence for over 100 years and is an experience enjoyed by young and old alike. Visitors taking a trip on the Dragon Express can immerse themselves in the realm of fairy tales, forest animals and dwarves. After the round trip, there's a chance to visit the fairytale world. Here you can view Linz main square from long ago as a small-scale replica and the paths at the sides lead to familiar scenes from fairytales.

Another attraction on the Pöstlingberg is the **Linz Zoo**. Visitors can exit the mountain tramway halfway and take a direct trip to the zoo, with a wonderful view across the city of Linz. The zoo features a tropical house, multiple open-air enclosures as well as a domestic animal park with numerous exciting species. To find out more, visit **www.linztourismus.at/en/leisure**

All eyes on

The internal machining expertise of WFL in the spotlight

by WFL MILLTURN Technologies

The most basic form of internal machining is drilling. Deep hole drilling is something of a special case. It is one of the special disciplines within the field of metal cutting, particularly as these kinds of machining steps usually require special equipment in terms of both tools and machines. In drilling terms, holes with a diameter between 0.2 and 500 mm and a drilling depth typically greater than five times the diameter are generally considered to be 'deep' holes. At smaller hole diameters, the length to diameter (L/D) ratio may be as high as ⩽ 100 or even 400 in special cases, depending on the process and workpiece involved. At large diameters, the length to diameter ratio is mainly limited by the travel path of the machine or its bed length.

As the MILLTURN is so flexible, deep hole drilling tools with a wide range of holders and cooling lubricant systems can be used:

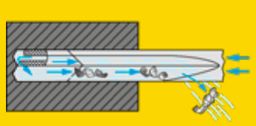
- Rotating tool: Directly held (HSK, Capto, etc.) and a cooling lubricant supply through the milling spindle or via bypass. This is used primarily for small holes.
- Rotating tool: Prismatic tool accommodation and a cooling lubricant supply through the milling spindle or via bypass as in the example above. Is used for deeper holes with larger diameters.
- Non-rotating tool: Prismatic tool accommodation and a cooling lubricant supply via bypass.

Cooling lubricant supply: an essential element

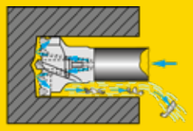
What challenges does WFL face when it comes to deep hole drilling? Firstly, the ensuring optimal cooling lubricant supply all the way to the tool cutter. And secondly, even and efficient swarf removal, with a low hole centre deviation and short tool life, even for materials that are difficult to machine.

The fundamentals of deep hole drilling are how to introduce cooling lubricant to the tool cutter, how to remove swarf at a steady rate, and how to create the straightest possible hole. With a coolant pressure of 10 to 350 bar and a coolant volume of 25 to 800 litres, WFL can cover all requirements.

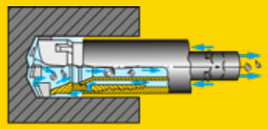
Various drilling tools have been developed over the years to suit different purposes. For deep hole drilling processes, the cutting body consists of solid carbide or indexable inserts and additional guide strips made of carbide. This arrangement ensures the drill is supported at the wall of the hole, which increases accuracy and makes it easier to centre the drill during the process.



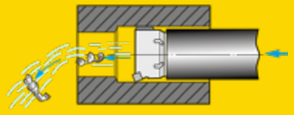
Gun driling



HTS drilling

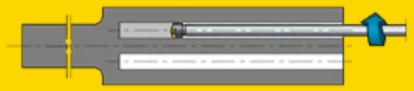


Ejector drilling



Counter boring

Workpiece rotating



Tool rotating

Internal turning as a machining discipline

The turning-boring-milling centres from WFL offer solutions that deliver process reliability even when carrying out extremely deep internal turning procedures. There are three variants to choose from. Standard internal turning processes can be carried out with internal turning tools and boring bars in a standard tool holder. A tool holder is employed via the WFL prism tool interface for longer boring bars. The option of using a separate additional compound slide is available for boring bars that are particularly large with a considerable overhang. Boring bars of up to 300 mm in diameter and an overhang of 3000 mm are used in this case.

The key discipline of chamber boring

WFL makes a distinction between two key groups: chambers in the centre of a rotating workpiece or outside the centre of a workpiece with a rotating tool. The centric variant is often applied in aviation, for example for landing gear and drive shafts, while the eccentric option is used in the oil and gas industry.

The issue of removing swarf

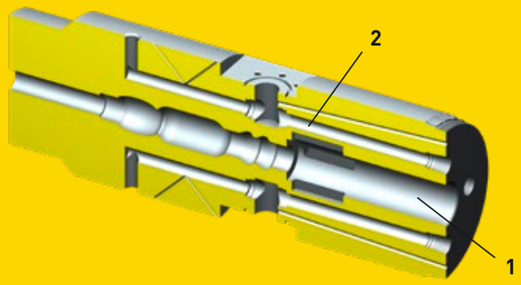
The benefits of chamber boring with a Millturn are clear: precise chamber boring in a centric and eccentric position, as well as the tailored cooling lubricant solution for optimised chip breakage and swarf removal. What's more, chamber boring tools up to a length of 3000 mm and a tool weight of 400 kg (on a M200 MILLTURN) can be conveniently stored in the prismatic tool magazine and automatically switched in.

Measuring the tool drift in a Millturn

Workpiece measurement is another extremely significant part of internal machining. The WFL measuring cycles are an easy-to-use intelligent measuring strategy involving a wall thickness measurement being carried out using an ultrasonic measurement method. The individual steps are:

- Wall thickness following deep hole drilling
- Ultrasonic wall thickness measurement
- Calculation of a new workpiece turning centre based on the workpiece inside diameter
- Turn-milling of new clamp positions for power chuck and self-centring steady rest
- Result: clamp and steady rest positioning are now concentric to the deep drilled hole

WFL iControl carries out process monitoring using configurable process signals, collision monitoring thanks to the collision alarm, tool breakage monitoring by monitoring the process signals of the expected progression over time and tool wear monitoring using 'yellow limits' and energy limits.



Chambers can be produced both in the centre of rotation (1) of the workpiece or eccentrically (2).

A vibration-damped boring bar with integrated sensors gives process reliability an extra boost. The integration of smart sensors in tools enables detailed tool information and machining states to be called up on the machine control, a tablet or a PC. Signals are transmitted via Bluetooth so that the machine can respond interactively to a defined trigger event. The process can be visualised for documentation purposes and is therefore fully transparent. Suitably equipped Silent Tools Plus boring bars provide information on utilisation, temperature, deflection and the surface quality achieved and actively intervene in the machining process in the event of an overload.

A TecTalk on this topic is planned for October.

Standard tools can be used together with the prismatic tool interface with the WFL system boring bar.

The manual docking solution for cooling lubricant supply via bypass.

WFL Machines Manufacture Key Components for Aerospace

WFL Multifunction Turning and Milling Centers are employed across various industries, with aerospace being a significant market. ArianeGroup, at the forefront of space transportation, stands as a prime example of utilizing MILLTURN machines. The production of key components necessitates the use of reliable and precise machinery.

The ArianeGroup site in Vernon, France, designs, develops, manufactures, and tests liquid hydrogen propulsion systems. Much of its activity revolves around propulsion for launch vehicles. The site encompasses three test benches for cryotechnic thrusters and component testing benches. In total, six WFL machines are present on the site: four M60 MILLTURN and two M35 MILLTURN, all utilized for machining key components.

MILLTURN Technology at the Heart of Key Component Production

"Machines from WFL are particularly crucial for us as we use them to manufacture high-value parts," states Dominique Delor, Head of Industrial Maintenance. The first M60 MILLTURN was acquired 20 years ago. Since then, three M60s and two M35s have been added to the production hall. Key components or "critical parts" produced on WFL machines are primarily rotating engine parts.

»If we needed a new machine, we would undoubtedly opt for a MILLTURN.«

"We primarily require precision and good rigidity in our machines because we machine hard materials that will undergo significant stress during use. Furthermore, process standardization is part of ArianeGroup's business strategy." In production, this entails working with the same machines and the same numerical control. For Dominique Delor, this is undeniable: "It saves us time and allows all our operators to work on these machines."

"Our satisfaction has increased as we gained experience with these machines. We have realized that they are good, sturdy, and reliable machines. Therefore, if we were to need a new machine, we would undoubtedly opt for a MILLTURN. Our colleagues in Ottobrunn, Germany, are also convinced by the MILLTURN. After visiting our production site in Vernon and the subsequent purchase of an M80, they were able to significantly reduce their production time," adds Delor.

Understanding Customer Needs and Building Trust

ARIANEGROUP - VERNON
has been using WFL Millturn machines for 20 years.
The high precision and rigidity of the machines, as well as customer service, are particularly appreciated.

HIGHEST PRECISION
During production, there must be no scrap. Every part must be precise. WFL machines help guarantee quality, because one of their major assets is their ability to respect tolerances.

The Vernon site has been working with WFL machines for 20 years. Dominique Delor asserts, "For 20 years, we have maintained excellent relationships with WFL. Whether your interlocutor is from sales or customer service, competence and trust are present at 100%. WFL understands the customer's needs. For us, in a new project, it is always important to have assurance of a functioning production. And that's the case with WFL. Their service doesn't stop at simply selling a machine. Implementation is also impeccable. By purchasing a WFL machine, we know everything will go smoothly."

"Another reason we are very satisfied with WFL machines is the efficiency of their after-sales service. Our M60 machines are used in three shifts. We produce complex parts and always have to ensure quality and adherence to delivery deadlines. WFL's after-sales service is extremely competent and fast. When we need spare parts, we receive them promptly, and everything works perfectly", explains the Head of Industrial Maintenance, Dominique Delor.

Maintaining Performance Constantly

ArianeGroup produces a considerable number of parts each year, maintaining a constant and significant activity on the machines. Any rejects are therefore excluded; each piece must be perfect and meet very precise specifications. Quality is an absolute priority in our workshops," Mr. Delor emphasizes.

"With WFL, we can guarantee this quality. Indeed, one of the great advantages of these machines is adherence to tolerances. Currently, we manually control tolerances, but in the future, we would like to implement automated control. This should contribute, on one hand, to reducing production time, and on the other hand, to cost savings. We want to utilize machine data and information to plan production in advance through predictive maintenance."

Growing Demand Requires Perfect Mastery of Production

Due to the constantly increasing demand, the technical requirements imposed on launch vehicles are also rising. Mr. Delor sees the improvement and digitization of production as a decisive project for the years to come. "I am convinced that with WFL, we will also be able to upgrade our production in terms of monitoring and predictive maintenance."

»I'm convinced that with WFL we can also improve our production through predictive mainentance.«

MOTOR COMPONENTS
Millturn machines in Vernon produce a large number of components for complex engines.

facts

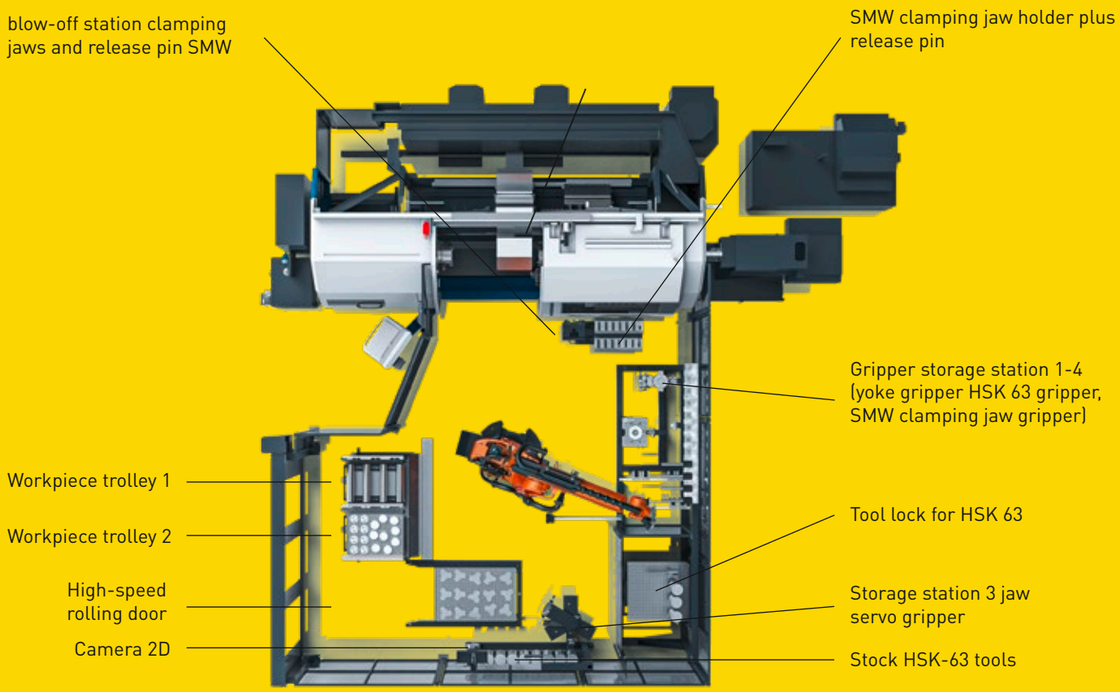
- 8.000 employees in Germany and France
- 8 subsidiaries and majority holdings
- 50/50 joint venture between Airbus and Safran
- ArianeGroup was founded by Airbus and Safran with the common goal of leading the European space industry to lead.
- Revenue of 2.4 billion euros

All eyes on

Automation M35-G Articulated robots

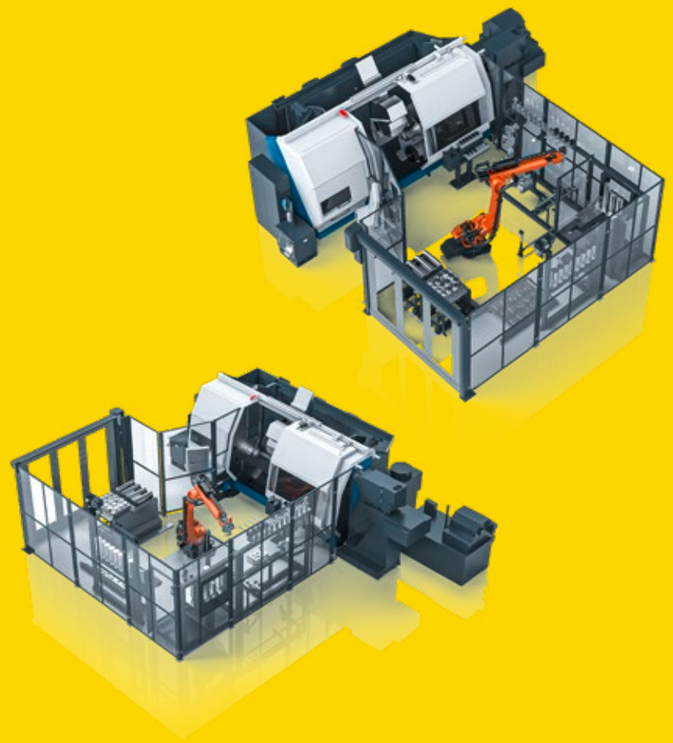
by WFL MILLTURN Technologies

An automated cell containing an articulated robot paired with a M35-G MILLTURN offers numerous benefits that boost efficiency and quality in the manufacturing industry.
Modern production technology calls for increasingly flexible and efficient solutions in order to meet market requirements – solutions such as an automated cell that connects an articulated robot to a M35-G MILLTURN. With this combination, you can carry out complex machining processes quickly and accurately while also reducing production costs. Thanks to automation, companies can increase productivity and the quality of their products while reducing their employees' workload.
Integrating an articulated robot into a M35-G MILLTURN is a forward-looking investment which helps companies to remain competitive and face the challenges of the modern world of manufacturing.



Advantages

- Continuous operation
- Quick cycle times
- Repeat accuracy
- Minimises errors
- Multifunctionality
- Quick changeover times
- Lower labour costs
- Lower operating costs
- Ergonomics
- Improved safety
- Easy expansion
- Easy component integration



1. Increased productivity:

Continuous operation:
Articulated robots can work around the clock, without taking a break. With a guaranteed material flow, production can take place 24/7, which significantly increases production capacity.
Quick cycle times:
Robots can handle workpieces quickly and precisely, which minimises cycle times and lead times.
Tool change:
Tools can be loaded and removed by the robot, meaning that additional tools can be stocked in the cell and exchanged during the process.
Clamping device changeover:
Industrial robots can also change the clamping devices without intervention from operators, which again increases output.

2. High precision and quality:

Repeat accuracy:
Robots work with higher repeat accuracy, which results in consistent quality of the manufactured parts.
Minimisation of errors:
Automation reduces human error, improving the overall production quality.

3. Flexibility and adaptability:

Multifunctionality:
Articulated robots can be programmed to carry out a multitude of tasks, including material handling, loading and unloading machines, changing clamping devices, changing tools, and assembly work.
Quick changeover times:
Thanks to parameter programming, changes to the production process can be implemented quickly, increasing adaptability to new product requirements.

4. Cost-effectiveness:

Lower labour costs:
Using robots reduces labour costs, as less manual intervention is required and operating personnel can work on other tasks.
Lower operating costs:
Automated systems can make more efficient use of energy and minimise wear on tools and machines.
Less production downtime:
Using automated systems can increase the availability of machine tools. No waiting during changeover of parts or clamping devices.

5. Better working conditions:

Ergonomics:
Heavy lifting and monotonous tasks are taken on by the robots, reducing the physical strain on employees.
Improved safety:
Robots can work in hazardous environments, lowering the risk of an accident for human workers.

6. Scalability:

Easy expansion:
If demand increases, automated cells can be easily expanded or adapted by integrating additional robots or machines. Likewise, processes within the plant can be switched over with ease, increasing effectiveness even further.

Helping to create a better future

OPPORTUNITIES THROUGH EDUCATION
Women training to be PV electricians in Costa Rica.

PLASTIC AS A RESOURCE
A plastic-eating fish from Senegal from the "Plastic revive for life" project

The TOOLS FOR LIFE foundation, which was founded in 2008 by Dr. Helmut Rothenberger, aims to give people in every corner of the world access to the essential resources needed to live a healthy life. This includes provision of tangible resources such as renewable energy, clean water and basic sanitation, as well as opening up access to intangible resources such as education and training. Climate protection is also part and parcel of the foundation's work and complements its other goals. In addition to developing countries, the foundation is active in Germany and other countries around the world. We spoke with CEO Dr. Sandra Rothenberger about projects close to her heart, the HERO Award and the development of the foundation.

How are the projects selected?
When we're selecting projects, the first thing we consider is the sustainability and longevity of the project enquiry. After that, regional distribution, the diversity of the projects in terms of the foundation's goals and our budget all play a role. Projects with long-standing partner organisations are given priority.

What were the most important projects for Tools for Life in recent months?
One was the Energy Transition Course. The aim of this course is to give students in Years 8-10 a passion for skilled trades. This is delivered in theoretical and practical modules on the energy transition and skilled trades, which enables them to progress. Another was the "Toilets Making the Grade" competition run by the German Toilet Organization (GTO), which we financed together with five partners. The aim of this competition was to encourage students in Germany to create concepts for clean school toilets. Even in a rich country such as Germany, many students avoid going to the toilet due to the poor conditions. We want to change this.

Which projects are particularly close to your heart?
Any project that boosts future prospects for children. After all, children are our future. Sometimes we need to give them the right tools to create a successful life.

How do you feel when a project is completed and you see how delighted the people affected are?
Working for the foundation is extremely fulfilling! Knowing that you have been able to make life a bit easier for the people involved or have given them new skills that will help them throughout their life is the reason why TOOLS FOR LIFE exists. So I feel pleased and happy when a project is completed, especially when we receive a message from the locals.

Do you have any special projects currently in the pipeline?
One of our special projects is our "Plastic Revive for Life" project. The aim of this project is to give plastic a new life and make it clear that plastic isn't waste, but a resource. "Plastic Revive for life" aims to tackle the problem of plastic waste in Africa. In our pilot country, Senegal, we've already set up several "plastic-eating fish" in schools in the region of Thies. These are large metal containers in which students can collect plastic waste. This is then collected by a company which gives the school money in return, which the school can use to buy new school books or chalk, for example. The plastic waste is then turned into granulated material, which in turn is used to produce hoses for drip irrigation. These hoses are used by local farmers so that they can also grow vegetables in the dry season with little evaporation loss and make some additional income.

The HERO Award was presented at WFL this year: What does the HERO Award mean to you?
The HERO Award gives us the opportunity to promote projects that lie outside our foundation's goals. It's also a way for TOOLS FOR LIFE to engage with employees from the corporate group and support personal, non-profit activities or a project that's close to your heart.

What's next for TOOLS FOR LIFE?
TOOLS FOR LIFE will increasingly focus on passing on manual skills and skill building. This means that we want to support more projects which promote practical skills and help people to help themselves and make long-term improvements to their living conditions. We plan to offer training programs and workshops in different trades, in order to open up career prospects for young people in particular. There will be a special emphasis on sustainable technology and environmentally-friendly practices in order to achieve economic and ecological goals. We also want to develop our collaborations with guilds and training centres to ensure high-quality training.

If you had one wish for the foundation, what would it be?
My wish for the foundation would be to bring more collaborative projects with the companies in the corporate group to life. These collaborations could be highly beneficial: the companies could bring their specialist knowledge and resources to the table, while the foundation would bring its experience in project work and not-for-profit activities. Such synergies could enable us to get bigger and more effective projects off the ground, which would have an even greater positive effect on society. For example, joint projects could be developed in the areas of sustainable energy, education and WASH (water, sanitation, hygiene).

WHERE THE FOUNDATION HAS HELPED:
Since it was founded in 2008, the TOOLS FOR LIFE foundation has:

- Helped **167,925 people**
- Received **€ 1,350,850** in donations
- Supported **94 projects**

The Hero Award – Honouring our heroes

The HERO Award of the TOOLS FOR LIFE Foundation, first presented in 2014, honours people and organizations that stand up for people and against injustices in everyday life. Employees of the ROTHENBERGER group are invited to nominate their heroes for the award. The Rothenberger family, as the board of directors of the foundation, selects the "Hero" from all the submissions. In 2023, the award went to retired couple Angela and Josef Haider. WFL employee Dieter Haider also travelled with them to Ust-Tschorna (western Ukraine) to deliver relief supplies. Since the war began, these trips have become more important than ever. This settlement with a population of 1,500 is home to many German-speaking Austrophile residents. Many hundreds of refugees from the war are also living there. Various donations such as clothes, medical supplies, food and toiletries along with other donations in kind are being transported into Ukraine with the help of volunteers.

Training in the world of MILLTURN

WFL offers customers basic, operator, programmer or service training and much more as further and advanced training. Our training options cover all requirements for programmers, machine operators and service technicians. The complexity of the MILLTURNs makes training essential and helps to ensure optimum handling. It enables complex and automated machining strategies to be implemented on MILLTURNs and therefore also ensure a long service life for the MILLTURN.

The new training centre also has a new external look.

Ongoing training not only guarantees maximum productivity on the production line, but also increases staff motivation and makes it easier to respond to new production tasks. Thanks to our experienced, in-house trainers, the machine's potential is fully utilised, operating errors are minimised and practical technical knowledge with real-life benefit is passed on to the customer. The training content is adapted in line with the machine configuration. Customised client training is also possible. The trainers enjoy tackling customer-specific and technical production challenges and are happy to develop new ideas and solutions for the WFL machines together with the participants.

Our training centre has a fresh new look

Our training centre has been modernised over the last couple of months. Despite the renovations, there were no interruptions to our training activities, so we were able to provide ongoing optimum support to our customers in a wide range of situations.

Experienced trainers Christoph Mayrhofer, Roland Aschauer and Stella Blum.

The facilities have had a fresh coat of paint and have been furnished with new tables and chairs for better ergonomics. What's more, our redesigned recreation room now is now the perfect place to take a break and offers plenty of space for discussions, sharing ideas and information and enjoying a quick snack or caffeine-booster in between. The outdoor space has also had a facelift. A new facade and decal in the blue WFL font now finishes off the training centre.

The centre now has 16 workstations, divided across three rooms, for training sessions. Nonetheless, the individual in-house training sessions are limited to six participants. This allows the trainers to better address all the specific questions about the machine. Training sessions can also be held at the customer's premises in the plant, directly at the MILLTURN.

What can my MILLTURN do?

The basic training gives participants sound expert knowledge of CNC machine operation and programming as well as general IT skills. The five-day course covers the following in detail: the fundamental principles, path info, technological functions, tool correction, contour description, front face and lateral surface machining, help function list, tool supplementation data, machine and machining cycles, workpiece measurement, and zero-point offset. Furthermore, customers gain an in-depth understanding of the individual tool change systems or machine concepts, to ensure a smooth, productive machining process.

The facilities offer enough space for discussions and sharing ideas.

A knowledge refresher

In addition to the basic course, there are, as already mentioned, also numerous other training courses. One such course is the WFL Refresh Training. As the name suggests, this refreshes the participants knowledge of mechanics and electrics and builds upon it.

This two-day workshop caters to all customer requests and specific questions and can be held in German or English. What does the WFL Refresh Training cover specifically? Explanations of the machine documentation, including the operating manual for the purchased parts and daily, weekly and annual maintenance. It also covers machine geometry checks, installation and removal of chucks and steady rests, as well as adjusting the steady rest and setting the machine geometry with regard to the angle setting device and compound slides, headstocks and B-axes, not to mention additional tips and tricks on how to operate one's own MILLTURN.

Online courses in the WFL Academy

The WFL Academy also offers the option of booking an online training session. The topics covered are CrashGuard Studio Basic, measuring technology, special cycles, iControl and WFL GearCAM. You can enquire about online training sessions by emailing manufacturingsolutions@wfl.at.

AMB 2024 – A fixture for WFL

From **September 10 to 14, 2024**, the metalworking industry will once again descend on the Messe Stuttgart exhibition centre as the AMB opens its doors. WFL will be live on site once again with a stand and two MILLTURNs, the M20-G MILLTURN / 1500 mm and the M50 MILLTURN / 3000 mm.

The M20-G MILLTURN appeals to customer segments that are looking for a compact and powerful complete machining centre. With the addition of two further centre distance versions, with 2000 mm or 3000 mm, the new M20 MILLTURN will soon also be available for longer shaft parts. Special features include the high stability of the machine as well as the holistic motor spindle concept for demanding machining technologies.

Visitors to the trade fair in Stuttgart will be able to watch a technologically challenging chuck part for the aviation industry being machined live. The workpiece has a length of 150 mm and a diameter of 300 mm. On the M50 MILLTURN / 3000mm, WFL will provide a live demonstration of the machining of a power generation shaft, as well as turbine blades and fir tree and generator shaft profiles. The demonstration workpiece has a diameter of 600 mm and a length of 2355 mm.

A focus on machining chuck parts

At the AMB in Stuttgart, visitors can also check out an exhibit on the Quick Change System. This automatic system is an innovative WFL solution for horizontal complete machining of chuck parts. The advantages of quick and, above all, precise exchange of equipment, including the workpiece, in the machine will be demonstrated using the M80 MILLTURN as an example.

Mobile robot automation with the mobileCELL

The demonstration of a mobile robot installed on an automated guided vehicle (AGV) is set to be one of the highlights at the WFL stand. It will show how it picks up chuck parts and tools from the warehouse and deposits them on the AGV. The mobile robot will then travel to the machine and, using a camera, scan the QR code to determine its exact position. The workpiece and tool are loaded and then removed again. For tools, there is an HSK-63 gripper and a Baruffaldi tool turret with EPPINGER QUICKLOCK tool holder system for automatic tool changes on the tool turret.

Mobile robots do not need cables or human input. Another key advantage of these robots is that they avoid obstacles, meaning that they can also be used in halls where the set-up is constantly changing and where machines and people are moving around. Sensors help to ensure that mobile robots move safely and efficiently between locations and interact safely and efficiently with people, forklifts and other material handling equipment.

Using intelligent software in combination with the relevant automation solutions not only enables workpieces to be loaded and unloaded but also means that machining centres can be supplied fully automatically with tools and clamping devices. As an innovative automation partner to WFL, FRAI is presenting its mobile robot system "mobileCELL", which responds to this trend, at the event. This concept has scope for various expansion stages, making it as future-proof as possible. See what these robots can do for yourself at AMB in Stuttgart!

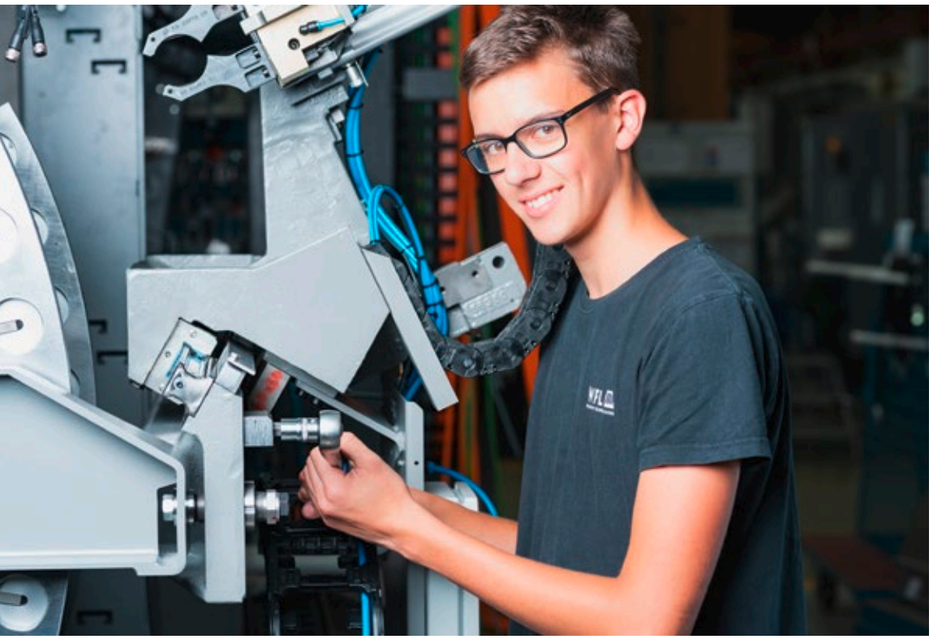
Collision prevention with CrashGuard Studio

Based on decades of experience, WFL offers sophisticated software solutions for all aspects of the manufacturing process with a MILLTURN. One of these tools is the CrashGuard Studio, which will also be showcased at the AMB in Stuttgart.
The realistic 3D simulation software CrashGuard Studio is the ideal tool for testing and optimising CNC programs after creation or modification. These tests can be carried out at an external work station or directly on the machine control system. Optimising the entire machining process and ensuring faults are corrected early significantly reduces the risk of collisions and generation of scrap, while also doing away with unproductive run-in and run-out times.
This enables the utilization of new performance potential and thus achieves competitive advantages. CrashGuard Studio is the perfect addition to any CAD/CAM software, as well as to the WFL collision prevention software CrashGuard. The data for workpieces, tools and clamping devices can be transferred as required.

Operational data acquisition with myWFL

The myWFL product range consists of the operational data acquisition software myWFL Cockpit, the multifunctional energy optimisation tool myWFL Energy, the myWFL Condition Monitoring System and the myWFL Health Check. Machine and program states over time, productivity and technical availability will all be displayed, either on the machine control system, PC or mobile device via a web browser. This means that the user can always be well-informed about their machine productivity.
myWFL Reporting is a new feature. With this software, users can automatically create reports and events for trigger types programmed manually or in a time-controlled or programme-controlled way. The myWFL E-Mail Messenger is currently under development.

Come and see our latest innovations on our stand 6A11 in Hall 6.



Quality training at the highest level

Parents only want the best for their children – and so do we for our apprentices. Young skilled workers are our future and we want to pass on our know-how to the next generation, which is why apprenticeship training has always been an important aspect at WFL.

As the global market leader in complete machining and a driver of innovation, we are always looking for committed and motivated employees and apprentices who share our passion for technology and innovation. At WFL in Linz, we offer first-class training in four different skilled trades. Apprenticeships can be undertaken in a technical or a commercial department. WFL instructors support our new apprentices from day one, helping them to integrate perfectly into the team. The young team members gain an excellent insight into the different areas of the company. After completing their training, many of our WFL apprentices choose to remain at WFL and start an exciting career with us.

What defines an apprenticeship at WFL?

On the one hand, it's the exciting day-to-day activities. No day is the same, each brings new jobs and challenges. The WFL employees are also part of a strong team which is all about team spirit and teamwork. Not only can apprentices attend fun and exciting team events with their colleagues, but WFL also holds its own regular events for apprentices.

WFL believes in performance-related pay and rewards special achievements during training and at technical college.

The company also values personal and professional development. This means that WFL both encourages and provides support for additional training.

Raising awareness among potential new recruits

WFL also regularly attends local apprenticeship fairs as direct contact with potential apprentices is particularly important. An apprenticeship campaign, set to begin in September, is already being developed with a focus on authenticity. The campaign's testimonials come from current WFL apprentices and their trainers, and the main goal, once again, is to encourage interested students as well as inform parents. The campaign will utilise both analogue and digital materials to spread its message. With regard to the digital content, WFL is on all popular social media platforms, and has also recently joined TikTok. The aim on TikTok is to make more young people aware of WFL. The videos give an insight into the company, the MILLTURNs, the workpieces as well as our employees and, above all, the apprentices.

The first step into the world of work

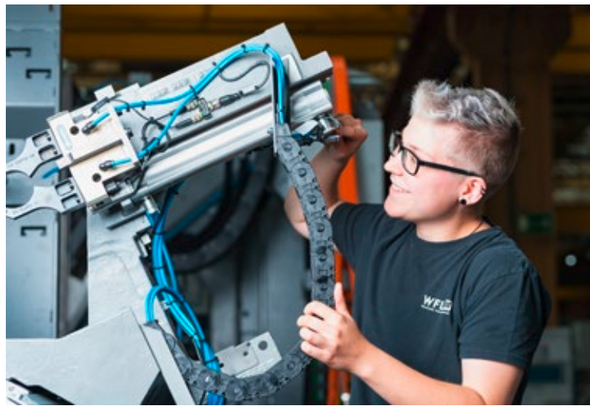
- Mechatronics (automation technology)
- Mechanical engineering
- Electrical engineering (automation and process control)
- Internal logistics clerk

Your benefits as an apprentice

- To increase technical and social skills, we offer numerous education and training opportunities. We also help you to prepare for the final apprenticeship exam.
- Parents' evenings. It's important to us to give your parents an insight into apprenticeships at WFL and let them know about your progress.
- Teambuilding. A good team can master any challenge. Therefore there are many exciting activities on offer throughout your apprenticeship, such as an apprentice camp.
- Bonus payments. Special achievements during training and at technical college are rewarded.
- Canteen with meal allowances and many more benefits...

Insights into apprenticeships at WFL

WFL is now also on TikTok!



»Geniuses don't just fall out of the sky. They must have an opportunity to form and develop.«

August Bebel

TECtalks
Technology worth spreading
by WFL Millturn Technologies

TECHNOLOGY UND INNOVATION ARE OUR PASSION

QUESTIONS I COMMENTS I IDEAS?
You have questions regarding our products, technologies or machining? We are looking forward to your mail at **office@wfl.at**

FACTS COMPLETE
Our customer magazine „COMPLETE" is available in German and English. Additionally a download link can be found on our homepage.

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