

# Work efficiently with LUB

## Clamping wedges for turning tools with internal cooling.

### TIME SAVING AND BETTER QUALITY WHILE SETTING UP AUTOMATIC TURNING MACHINES



With almost 40 Tornos, Citizen or Gildemeister automatic turning machines, we reach an annual production of 140 million pieces of brass, steel, stainless steel or aluminium, within a range from Ø0,5 to Ø32 mm. Photo credit: Klaus Vollrath

*Modern automatic turning and milling machining centers include numerous working axes and tool-stations enabling the execution of many complex tasks that can result in significant productivity increases. Unfortunately, the drawback is that it requires more setup time before proceeding with operations. Much of this time is taken up with the setup of many turning tools fitted on the base tool plate. A faster setup method is available using a clamping wedge for turning tool-holder with internal cooling and adjustable location stop.*

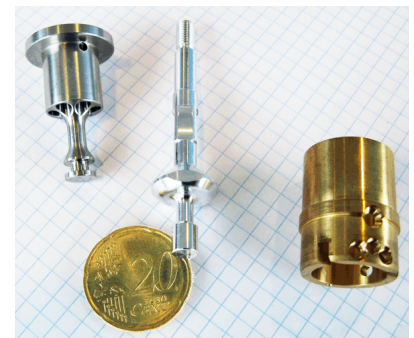


Klaus Meier  
Photo credit:  
Klaus Vollrath

*"With multidec®-LUB, we successfully decreased the down times due to the settings from about 2 days to 4-6 hours. (...) After settings operation of the clamping wedges, the cutting-tool is immediately positioned with a tolerance of about ±0,02 mm only."*

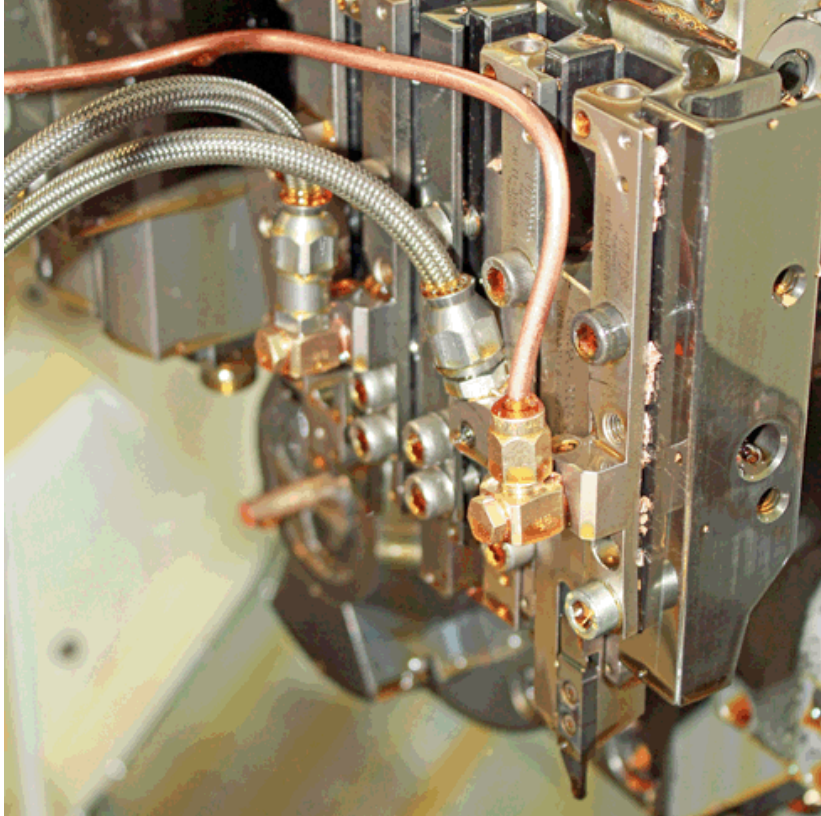
"We manufacture high precision machined parts for a large array of industrial customers. The part runs can vary between 500 and millions of pieces per year.", said Klaus Meier, customer technical support advisor at RitzFahr in Efringen-Kirchen (Germany). With almost 40 Tornos, Citizen or Gildemeister automatic turning machines,

we reach an annual production of 140 million pieces of brass, steel, stainless steel or aluminum, within a range from Ø0,5 to Ø32 mm. The targeted segments will be focused on the complexity of the shapes, the high precision required or the difficult-to-machine materials like super alloys. Our customers range from mechanical, clock-making, automotive, medical implants, electronic parts sectors. We have a good reputation as a premium supplier to those customers, many of which serve international markets. Our customers are aware of technical support and advice regarding the feasibility and the forecasted budgets about new products that RitzFahr



A set of high precision turned parts from stainless-steel, aluminum and brass, manufactured by RitzFahr. Photo credit: Klaus Vollrath

provides. This is a valuable service. We realize what seems a good idea designed on the screen sometimes doesn't work out as the best solution to deal as an efficient and sustainable application on the shop floor.



Tool-plate from a Citizen with four stations, equipped with three multidec®-LUB wedges. The pipe from brass that still remain records us, how the operation of setting used to be tedious to setup the old high-pressure cooling systems. Photo credit: Klaus Vollrath



Sven Zehner  
Photo credit:  
Klaus Vollrath

*“While machining difficult-to-work materials or complex parts, cutting-tool’s shelf life depends on the quality of the cooling system”*

### How to avoid time-consuming “machine set-up” ...

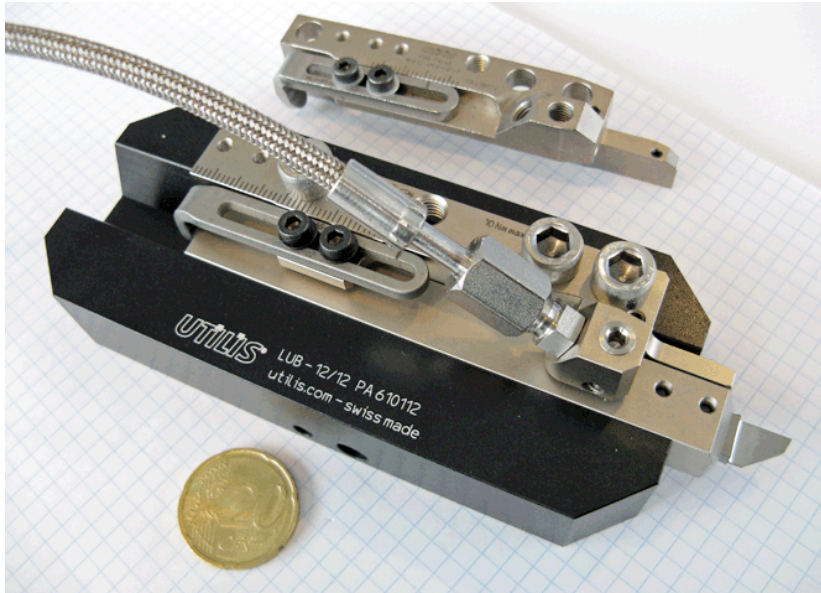
“Our customers use automatic Swiss-type turning machines setup with tool-base plate with 6–8 tool stations.”, explains Sven Zehner, technical support advisor at Erich Klingseisen KG, precision tools dealer in Aldingen (Germany). Tools are equipped with holders from several brands and suppliers where the dimensions of those tool-holders may vary. Our machinery is equipped with tooling from several brands, each with varying dimensions. This makes the adjustment and setup tedious and time-consuming. Additionally, the situation can worsen by adding the set up time of the cooling system, in order to reach and cool down the cutting tool edge and the worked part, especially while ma-

chining difficult-to-work materials or complex parts. Cutting-tool shelf life depends on the quality of the cooling system. The Coolant must reach cutting edge exactly and with an optimal pressure. The cooling system must provide efficient heat control on the cutting edge while the aim needs to evacuate the chips from the turning part. Integrated cooling systems, with high or low pressure – high pressure until 200 bar – constitute a new standard in machine tool technology. Previously the fitting of cooling pipes used to be a difficult and time-consuming job. In the end the setup tasks used made the process very time consuming from application to application causing downtimes to take days vs. hours.

### ... Enter the assets of setup clamping wedges with internal cooling system:

“In order to overcome those several drawbacks, we developed a quick change tool setting system with internal coolant delivery, in compliance with the current tool-holders from several suppliers”, explains Denis Juillerat, Area Sales Manager Europe and South-America at Utilis AG in Müllheim (Switzerland). Those wedges are called “multidec®-LUB”, which are secured with several screws. The wedge is fixed on the tool plate base. Two adjustable stops – one front and one back (with rounded form) – provide a needed repeatability of the setting of the cutting edge by a few hundredths of millimeter after changing of cutting-insert or tool-holder. The second benefit is the integrated ducts which lead to two nozzles at the front of the wedge that are both oriented towards the cutting-tool. With the two jet coolant design the coolant goes exactly on the cutting edge of





The clamping wedge (on the top) secures the tool-holder into the tool station of the tool-plate. Two adjustable stops – one front and one back (with rounded form) – provide a repeatability of the setting of the cutting edge by a few hundredths of millimeter accuracy after changing of cutting-insert or tool-holder.  
Photo credit: Klaus Vollrath

the interchangeable cutting-insert. The wedges are available for right and left-handed tools. Also, the range of accessories includes flexible hoses

their adapted geometry, the internal ducts of the wedge and the structure of the hoses provide a reliable flow of the coolant and ensure a maximum jet of oil focused on the critical zone without pressure loss allowing the coolant to reach exactly to the tool's cutting-edge.

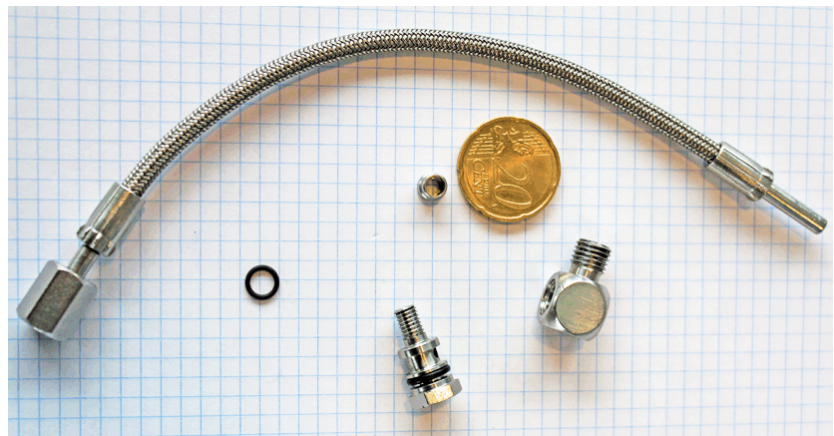
### Reduce down times

“With this technology, we successfully decreased the down times due to the settings from about 2 days to 4–6 hours”, explains K. Meier with a great satisfaction. Hence, one of the main assets provided by the wedges developed by Utilis is the equipment flexibility. We can adapt tool-holders from several brands into the wedge allowing the operator to select a tool-holder from a supplier, according to his specific needs. After setting the operation of the clamping wedges, the cutting-tool is immediately positioned



Denis Juillerat  
Photo credit: Klaus Vollrath

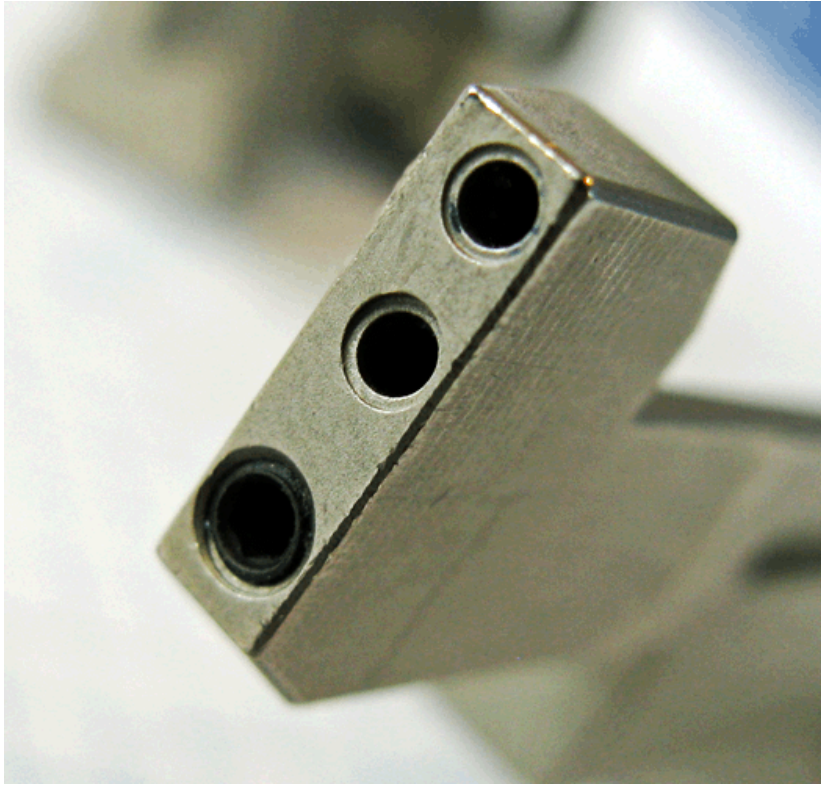
“In order to overcome those several drawbacks, we developed a tool setting system with internal alimentation of coolant, in compliance with the current tool-holders from several suppliers”



The structure of the hoses for high pressure provide a reliable flow of the coolant and insured a maximum jet of oil focused on the critical zone without pressure loss. They are easy to setup and efficiently protected from eventual damages from chips. Photo credit: Klaus Vollrath

and connectors which are available for high and low pressure cooling. Thanks to their laminate structure and

with a tolerance of about  $\pm 0,02$  mm. Then the actual adjustment is made with the numerical command of the machine. The wedges are custom made for every model of machine. To order “multidec®-LUB” wedges from Utilis, the customer just has to fill in a form providing the main dimen-



The two jets of coolant design an offset, they are meeting exactly on the cutting edge of the interchangeable cutting-insert.  
Photo credit: Klaus Vollrath

sions of his machine's tool-plate. With "multidec®-LUB", the process of setting of your machine becomes a controllable and traceable operation. This technology enabled RitzFahr to reach an important flexibility to meet the fluctuating demand for urgent short runs, and even failure or disruption due to breakdown.

Also, this new technology highlights the vision of your company to deliv-

ery high quality results. Every time you have to interrupt the machining process in progress to reset for another one, you have to check, analyze and record all the data of the worked part. This process enables improved quality management which is a real plus for customers. The system is complemented and improved by a reliable computer-aided quality management system provides for efficient tool changes. All the typical drawbacks and loss of time due to machine settings are solved with this quality management operation.

Another asset of the internal cooling system is the increasing shelf life of your cutting-tools. For instance, in a given case, the process duration has been reduced from 61 to 43 seconds. Also, the exact coolant jet prevents the obstruction of chips in the critical zone of machining, for instance around the guiding sleeve. The hoses are reliable and easy to settle, thanks to the quick connectors.

■ Klaus Vollrath *b2dcomm.chtem*

#### Contacts

Utilis AG, Precision Tools  
Kreuzlingerstrasse 22  
CH-8555 Müllheim, Switzerland  
Phone +41 52 762 62 62  
Fax +41 52 762 62 00  
[www.utilis.com](http://www.utilis.com)  
[info@utilis.com](mailto:info@utilis.com)

#### ■ Utilis AG, Precision Tools

Kreuzlingerstrasse 22, CH-8555 Müllheim, Switzerland  
Phone +41 52 762 62 62, Fax +41 52 762 62 00  
[info@utilis.com](http://info@utilis.com), [www.utilis.com](http://www.utilis.com)