SCHNEEBERGER

newsLETTER

December 2018

New demo room in Roggwil

Construction of the new show room at the SCHNEEBERGER headquarters started in 2017. It has now been commissioned in 2018.

The new, well-lit space fits seamlessly into the existing company building. The 400 m^2 exhibition area is now able to present the newest generation of our grinding machines. The new space will also be used for customer training and application development.

The base plate was generously designed to carry the heavyweights from our machine range, as well.

The most modern cooling, heating, and air cleaning technology combined with LED light installation ensures a pleasant environment.

To supply the machines installed in the demo room with cooling lubricants, power, and compressed air, 12 pumps with 24 connection spaces including power boxes and supply tubes were installed. 230 volt power and LAN outlets are also integrated in the GIFAS boxes.

The central supply units, compressor, and coolant filter system are integrated with the newly built basement, and the supply hoses and tubes lead into the ground floor through corresponding openings. This installation enables speedy, simple connection and smooth supply of maximum 24 grinding machines.

The clean oil tank has a capacity of 3,000 litres and features a battery of 16 cartridges for pre and end filtering. The two separate pressure circuits for process and motor cooling generate 17 and 5 bar at a volume flow of 250 l/min for process and motor cooling.

Light ambience in the new demo room

Part of the tank system in the cellar of the new building

...Machine supply: It's all about connections!

The supply hoses for the coolant and compressed air

GIFAS power boxes and coolant pumps, as well as compressed air connection and drain for coolant

Connected and supplied in a few minutes!

Extended STEP Interface in **Qg1**

Our own STEP* interface in our grinding software Qg1 has already been presented many times at trade fairs, to our visitors in-house, and our numerous representatives.

Extended functions are now available that make the possibilities even more exciting.

Let's examine a cylinder with a corrugated cut, where the corner bevel needs to be ground. Without 3D capability, this is no simple endeavour, especially if the cut features asymmetry.

No more than three steps are needed to get this done:

After importing the STEP model, you select the surface or edge to be processed, which in this case is the outside bevel.

You can select whether the bevel is processed completely or only a segment of it should be processed. As required, the surface may be extended further, either in the direction of the surface normal or at an angle to it. This is also possible without any problems, no matter whether the original model delivers this information or not.

Next, just select the matching grinding wheel for this, and the program is finished.

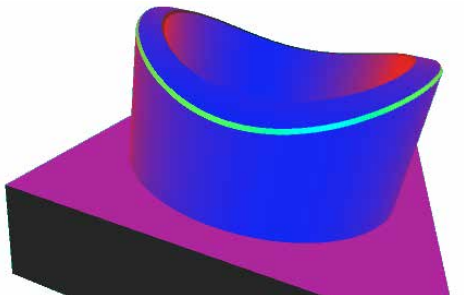
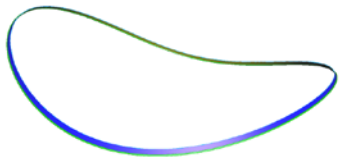
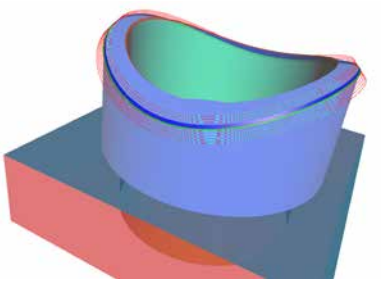


Fig. 1: Selection of the corner bevel



☐ Selection of the grinding area



☐ Extended edge projection

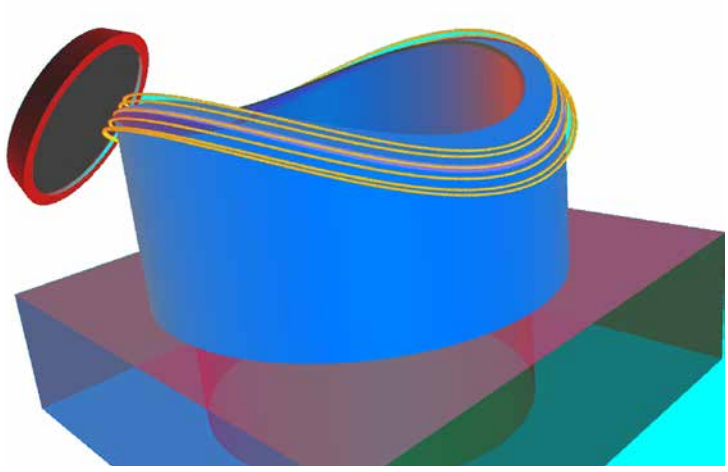


Fig. 2: Extended edge projection

STEP is a general data exchange format for CAD/CAM according to DIN/ISO 10303 and used worldwide. The extended STEP interface is already available and used by numerous customers.

...STEP by STEP 3D simulation!

In the figure (Fig.2), the extended projection features 5 edges, which follow the grinding wheel.

The STEP interface already offers several automated grinding processes like cylindrical grinding, cone grinding, and edge extrusion. If the whole thing is connected with Qreator, then there's practically no limit to the possibilities.

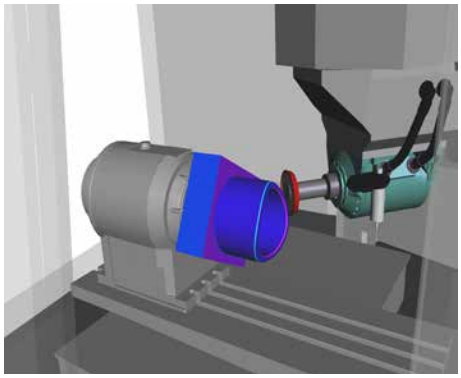


Fig. 3: Extended machine simulation with 3D model and grinding wheel during corner bevel processing

For an encore, a large part of the STEP grinding programs can be simulated in the new machine simulation, including the component and grinding wheel. The integrated time calculation also enables the processing duration of the component to be specified very precisely.

Spline shafts so that the connection fits

Splined shaft connections as per DIN 5464 and 5480 are used extensively in modern mechanical engineering, and they are used to transfer high torque with or without length compensation.

Normally, spline profiles are milled with a hob cutter or form milling. Nevertheless, if a very high level of precision is required, then splined shafts are ground.

OKEY AG, which has recently moved to Winterthur, Switzerland, is specialised in the production of splined shafts of this type.

In the new spline shaft module of the **Qg1** grinding software, both spline shafts with spline hubs (rectangular) and involute profiles for spline shafts are calculated and displayed in three dimensions. In addition to this, the associated grinding wheel shape is calculated, which is then able to be dressed and used directly at the machine.

In addition to header and footer modifications, bearing and bezel seating are also able to be geometrically projected and, if necessary, the outside diameter of the shaft can be rounded by grinding.

The special feature of this is that the calculated grinding wheel shape is able to be partitioned to a single groove, double groove, or separately to both flanks. While in case of a double groove, speedy processing times are the focus, partitioning the

Gear with spline hub profile

grinding in left and right flanks reduces the grinding pressure and improves control over the grinding process.

Furthermore, this strategy also enables use of two more narrow grinding wheels instead of a single wide one, just in case this is not readily available.

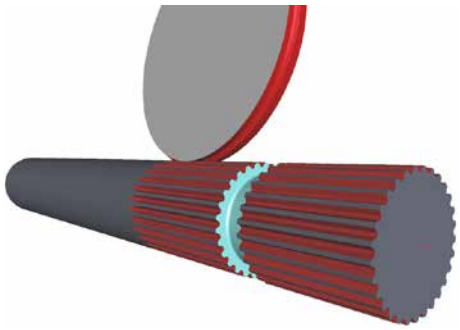


Fig. 4: Spline shaft with involute profile and bezel seating

A conformity inspection also checks if the grinding discs used match the workpiece. If the grinding wheel radius is greater than the target arc radius of the groove, then a warning is issued and the grinding wheel is marked orange.

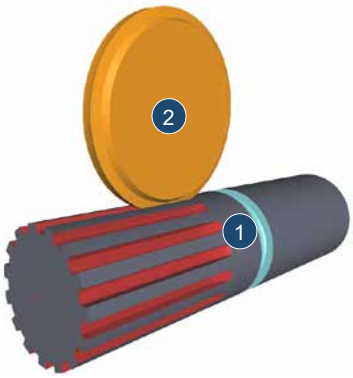


Fig. 5: Unwanted arc radius of the groove (1); the diameter of the grinding wheel (2) is too large at the arc. A smaller grinding wheel must be used in this case.

In case of special shapes, the desired spline form may still be imported in DXF format, of course. Now it is also possible to jump over certain grooves and grind in (partial) segments.

... a great connection, OKEY AG – SCHNEEBERGER!

OKEY AG has recently combined its various locations in Winterthur-Wülflingen at its new company headquarters.

For more than 80 years, OKEY has offered precise solutions in gearing technology as a contract manufacturer. All production processes like clearing, hammering, round and flat grinding, milling, drilling, and turning are covered by modern machinery and a highly qualified team.

Precision parts are delivered to companies in the medical technology area, aerospace, and energy and heavy industries.

The production capacity for spline shafts at OKEY has now been expanded with a CORVUS c-type from SCHNEEBERGER.

This machine features a worktable with a length of 3,000 mm, and it is also equipped with a round axis tool carrier and a magnetic clamping plate for variable workpiece positioning.

An up-and-coming new generation

SCHNEEBERGER employees offer their time to work with youth and support the new generation. Alexander Sandberg, for example, as the football coach for the juniors at FC Härkingen.

FC Härkingen Junior E Team

Training successfully completed

Training skilled workers is important at SCHNEEBERGER. This year, 3 young trainees successfully completed their apprenticeship programs with us to receive test certificates. The group included polymechanic Benny Widmer, who was able to present his practical work, which was part of his final test, to a large audience at the graduation party. Due to the complexity of the task, he was selected by the jury for this presentation. The task question consisted of programming and producing various CNC milled parts, which are components of a SCHNEEBERGER grinding machine. Benny Widmer mastered this difficult task with ease, and he completed his 4-year apprenticeship with great success.

Proud and skilled at the final presentation: **Benny Widmer.**

2019 trade fair calendar

TIMTOS	04.03. – 09.03.2019	Taipei	Taiwan
AFF'Tech	21.03. – 23.03.2019	Reims	France
CIMT	15.04. – 20.04.2019	Peking	China
LIGNA	27.05. – 31.05.2019	Hanover	Germany
EMO	16.09. – 21.09.2019	Hanover	Germany

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