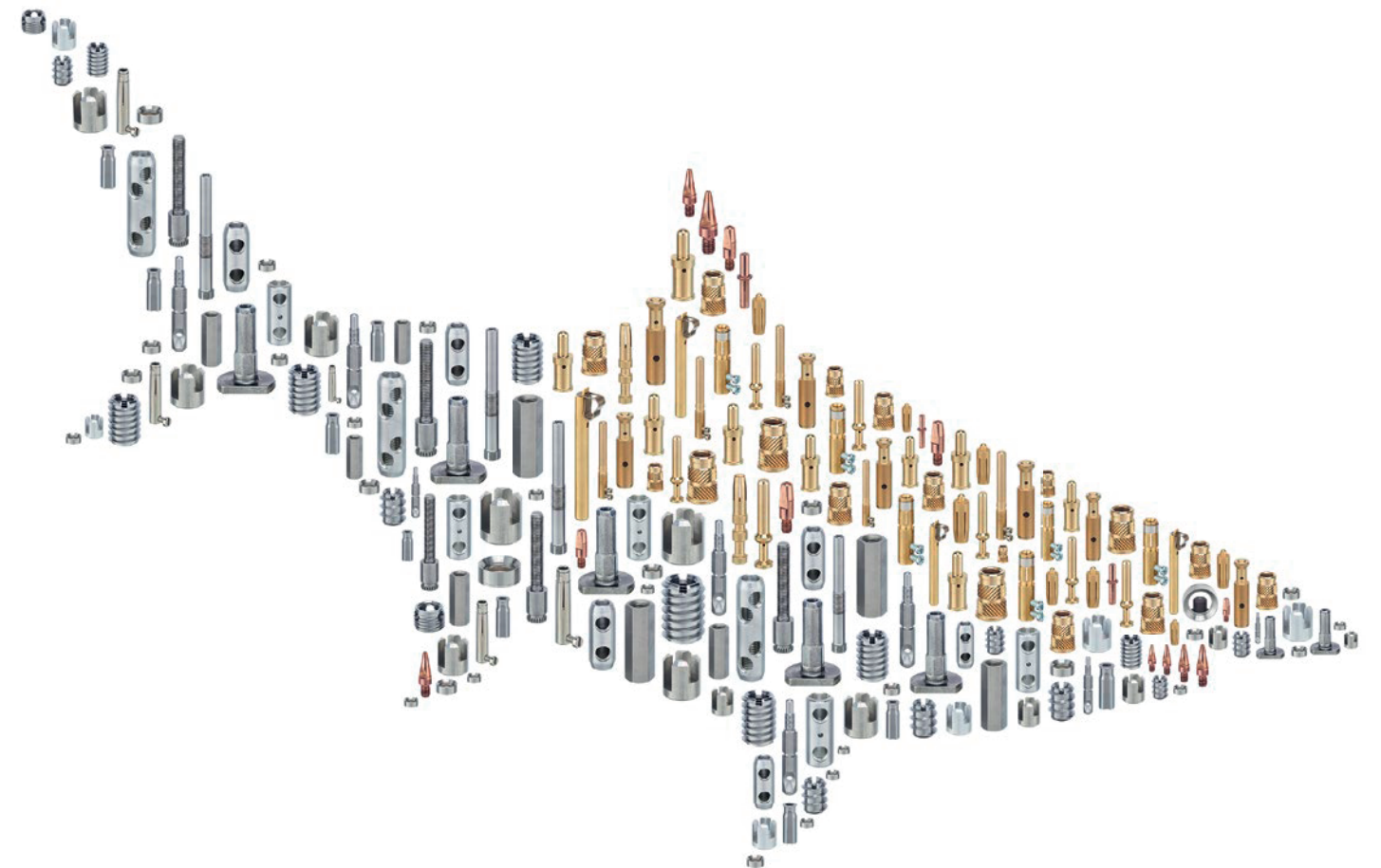


**WINEMA Precision Turning Cell (PTC) –
The fourth dimension in rotary transfer machining**

The new WINEMA PDZ enables machining of the complete outer contour of the workpiece without positioning errors, and with micrometer accuracy! The stable WINEMA PDZ is integrated into the machine as a decoupled turning cell, free from any drive and processing influence at the other stations. The PDZ gives you highest concentricity for internal and external turning. Take advantage of fast rotary transfer with the possibilities of an automatic lathe – combined in one machine.

- ▶ Vibration-proof cast construction
- ▶ Complete machining of the outer contour
- ▶ Internal machining possible
- ▶ Highest concentricity when turning between centers
- ▶ Up to 3 modules can be used in a WINEMA RV 10

Parts-oriented manufacturing solutions



Individual flexibility and consistent quality

WINEMA transfer machines are modular in design, to suit the precise needs of the respective user. The high degree of user and operator comfort is reflected in machine setup as well as rapid changeover times.



Our customers' workpieces have special requirements in terms of materials, geometries, raw materials and batch sizes – which is why we develop tailor-made rotary transfer machines for the most diverse spectrum of parts. Maximum flexibility combined with constant high quality – that's the most noticeable feature of the WINEMA machine concept.

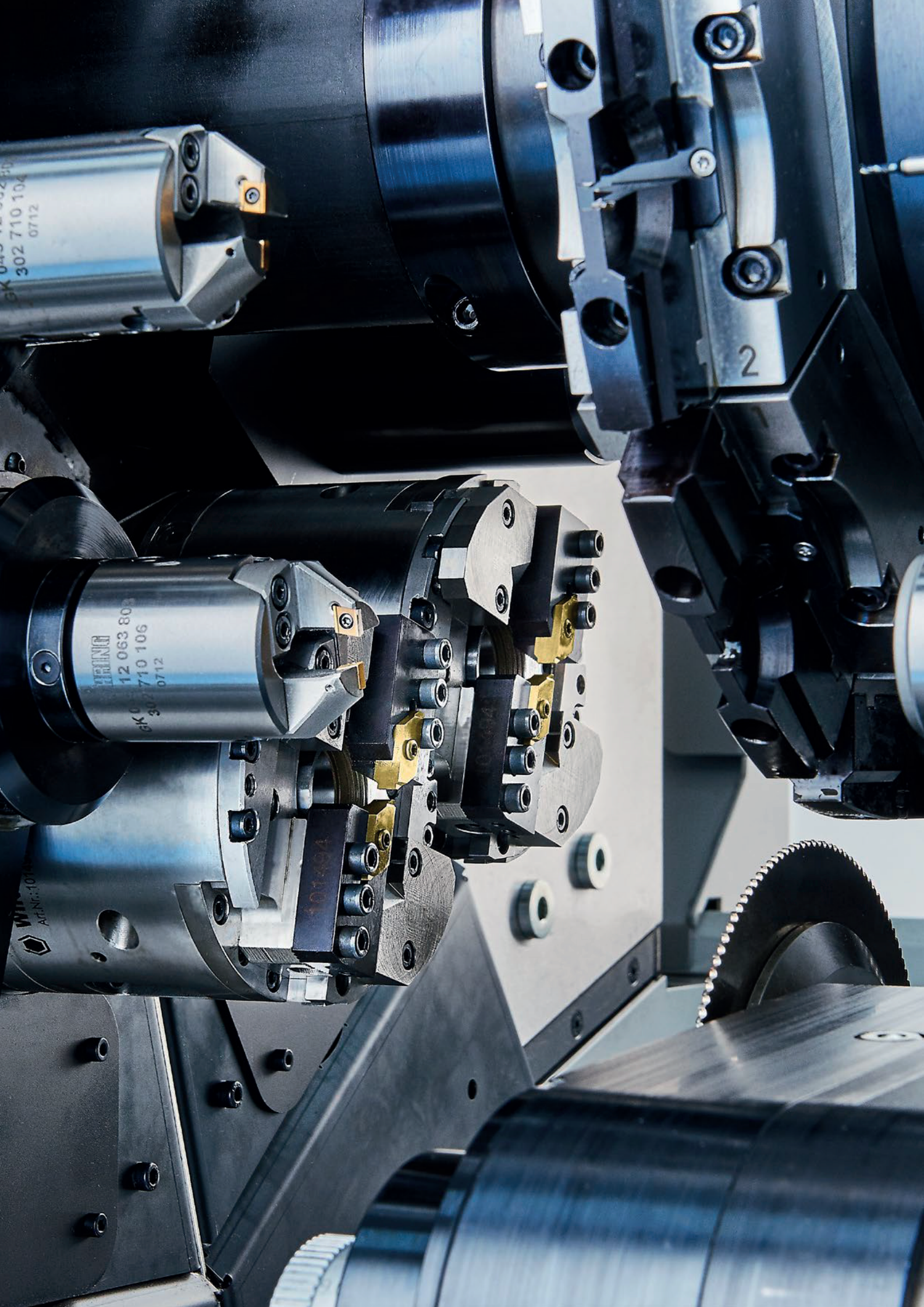
Behind our machines and services are experienced employees who carefully and responsibly follow established quality guidelines, and engage independently in further development. Every single one of them strives to keep quality flawless, and to meet all the expectations of our customers. Because satisfied customers are the basis of our continuing business success.

Customers from the most varied industries rely on our solutions for their production. You'll find machines from WINEMA in all kinds of sectors including automotive, electronics, gas and welding technology,

fastening technology and, of course, in the production of fittings and parts for hydraulic systems.

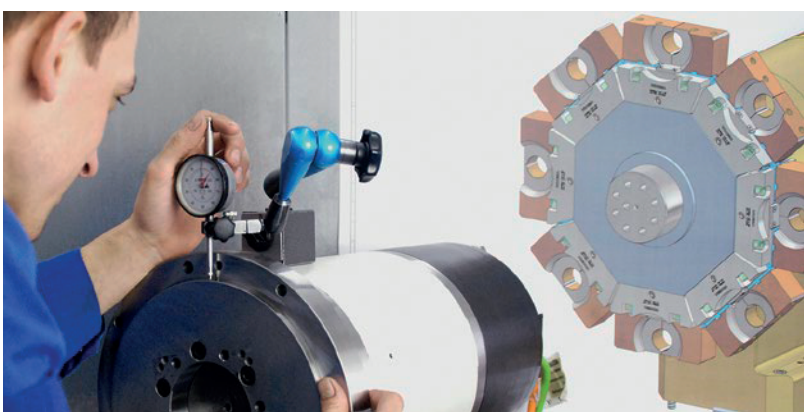
By reviewing our business processes constantly, we support the further development of our quality management system, and we also maintain a continuous improvement process (CIP). All the mechanical components of a WINEMA machine are manufactured by ourselves and selected partners according to the strictest of quality standards, and are assembled in Grosselfingen.

Your advantages with WINEMA are obvious: With our machines, you can react flexibly to market requirements. And with our innovative solutions, you'll always be one turn ahead of the competition!



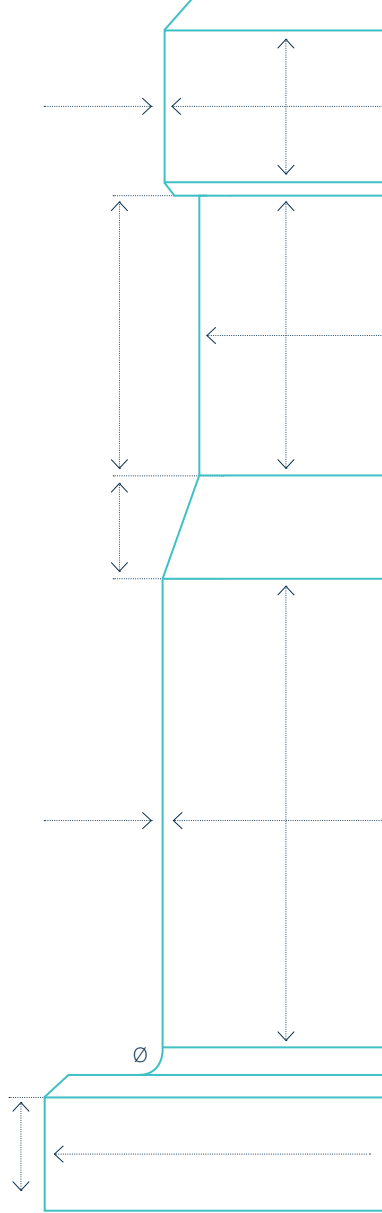
Don't waste any time!

Convenient set-up and fast changeovers – with WINEMA you're always one turn ahead of the competition.



Not even a fraction of a second ever gets wasted by a WINEMA machine. That's our goal, and to achieve it, there has to be perfect division of the processing steps at the machining stations. This requires the sound processing expertise that WINEMA has built up over more than 50 years of experience in mechanical engineering.

In the old days they always used to say that rotary transfer machines were inflexible. Today, our rotary transfer machines are extremely fast and very flexible indeed. The typical changeover between different types of workpiece and clamp is ultra-fast. All of it is made possible by rapid-change tools and clamps, unrivaled accessibility, and a CNC control perfectly matched to all the requirements. Additional stations can be retrofitted with ease – so new workpieces can be set up without a problem.

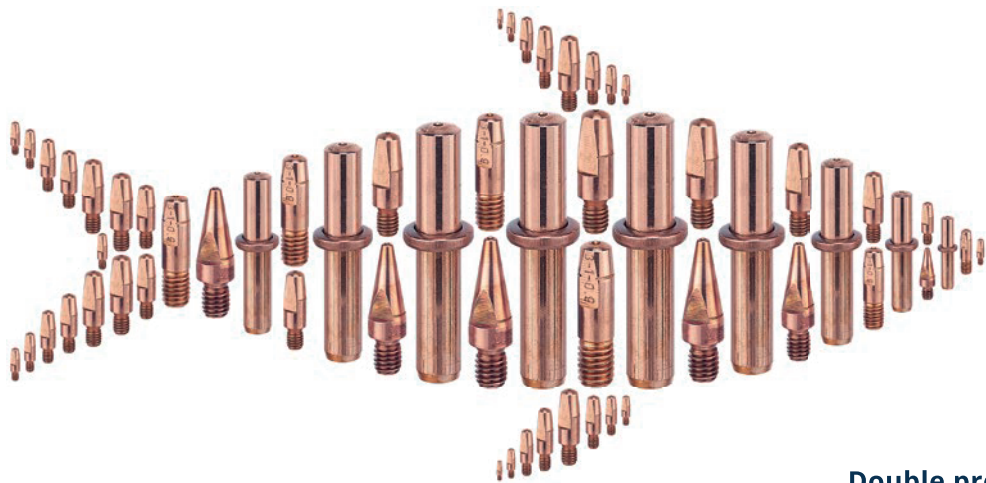


Parts and benefits

Reliable quality with high unit performance, a modern control, convenient user-friendliness and problem-free component changeovers – rotary transfer machines from WINEMA are real all-rounders!

Thanks to the enormous number of available workpieces and CNC axes in our machines, changeover time can be reduced down to one to two hours. Rapid changeover within a parts family works in just the same way as it does between workpieces with entirely different geometries.

Complete tool changes at all stations can be done in just a few minutes, thanks to the HSK interface and the individual tool data storage. That means true flexibility in parts production, and it guarantees ultra-low part costs, even with the smallest of batch sizes.

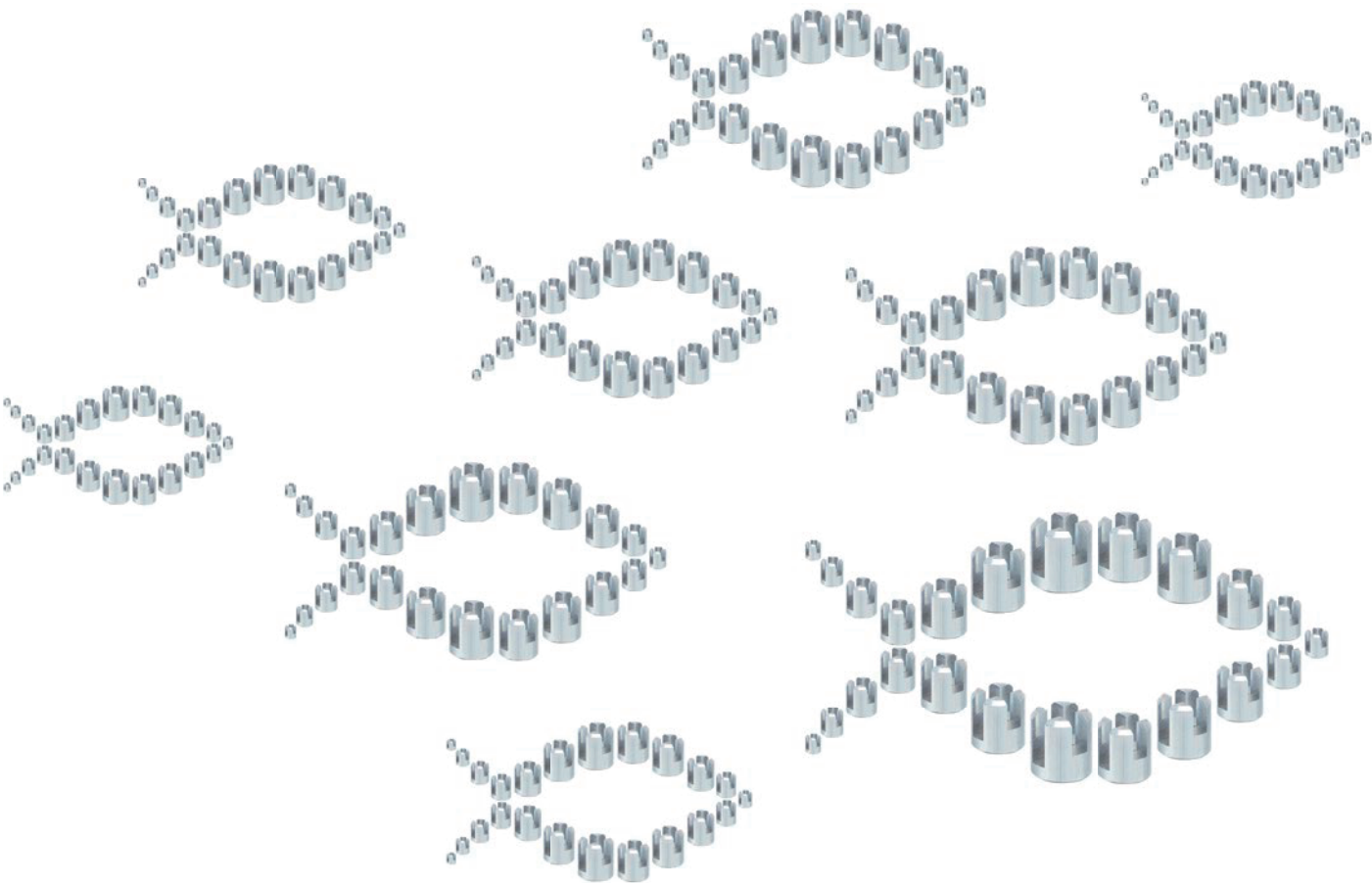


Medium to mass production of parts families

Double processing of workpieces
Simultaneous feeding of 2 workpieces or rod/coil at two clamping stations respectively is possible. The double indexing results in optimal division of the clamping stations. In this version, two radial machining units are still available for each workpiece. In addition, two CNC-pre-turning units can also be used upstream of the indexing table. This equipment enables double production of workpieces that are even more demanding.



Mass production with minimal part costs



High flexibility in variant management

Machining of different workpieces
Simultaneous machining of two different workpieces is also possible due to the double indexing function. This is interesting for all variants where 2 workpieces respectively are required for any one batch (sleeve/cover). For order-specific production, this enables throughput time to be reduced.

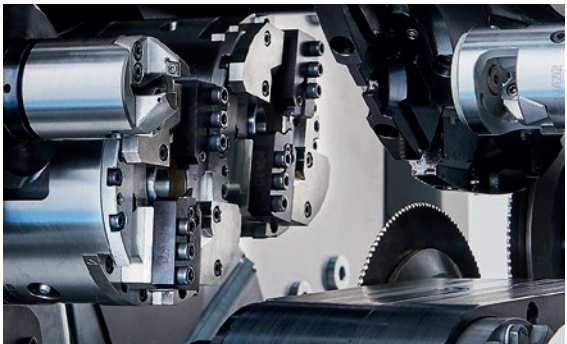
WINEMA RV FLEXMASTER –

the machine concept for more precision and productivity

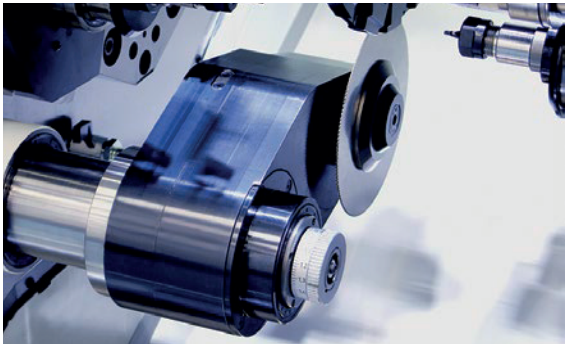


The basis for the precise machining possibilities offered by a WINEMA machine are the machine bed and the two unit carriers. The design of the welding and cast construction, with the support of current FEM calculations and simulation, guarantees optimal geometric precision. The functional and appealing machine design allows best accessibility for individual machine configurations and maintenance work. Every single station on a WINEMA transfer

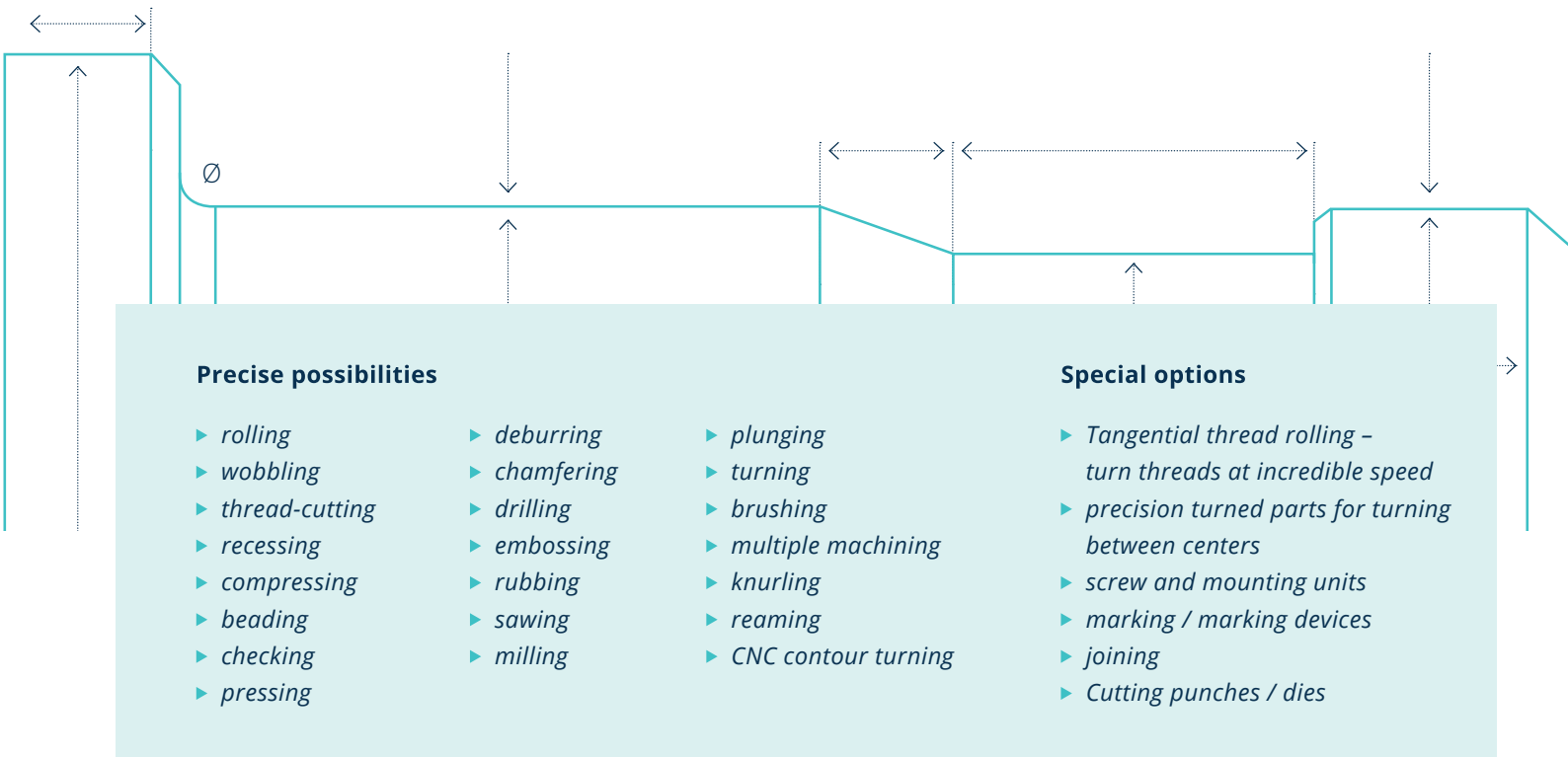
machine has had its machining technology optimized. Several CNC processing units are available for each station. The individual processes are perfectly coordinated, so that all machining units use up almost exactly the same amount of processing time.



The CNC pre-turning unit
Developed by WINEMA, the CNC pre-turning unit combines the rod feed with a piercing or turning operation before the workpiece is clamped in the clamping plate, enabling the external contour or parts of it to be machined before they lie in the clamping area. Machining can be carried out in front of the clamping plate with coil production and with rod processing up to Ø 13 mm (RV 10) or Ø 24 mm (RV 20/RV 30), without long remaining pieces being produced. The workpiece is also additionally clamped during machining in a standard collet chuck.



CNC saw feed
The saw feed, in a stable swing version (RV 10, RV 20), enables a saw feed that is optionally adjustable continuously hydraulically with end-stop/stroke sensor, or, as CNC controlled axis, enables programmable speeds and positions (e.g. for fast sawing of thin-walled tubes). The robust carriage design of the RV 30 even enables cutting of high-strength steels over 1000 N/mm² in just a few seconds. The saw console and the saw carriage are mounted in pre-tensioned roller guides. They create an extremely stable unit, enabling a calm and linear saw cut.



The WINEMA RV 10 FLEXMASTER –

Ideal for the production of small workpieces



This machine concept is designed for the predominantly chip forming machining of workpieces in a single clamping. The typical part size lies in the diameter range from 2 to 13 mm and up to 80 mm in length. All processing feeds of the vibration-damping quill units are CNC controlled as standard, with hydraulic drive and direct measuring system.

The WINEMA RV 10 FLEXMASTER is designed for maximum yield combined with exemplary setup functionality. The comprehensive concept is already noticeable right away from the tidy, very accessible processing area. An increasing number of variants, shorter product lifecycles, changes to the component, new materials: With the WINEMA RV 10 FLEXMASTER you can react flexibly to the requirements of the market and nonetheless achieve production speeds that were once the preserve of cam-controlled machines.

Set-up in record time

Set-up time between workpieces is dependent on the extent of the set-up tasks. For the conversion of an RV 10 FLEXMASTER equipped with 16 axial machining stations, a complete set-up can be carried out in 1.5 hours – and that includes changeover to a different rod diameter. Change of clamping devices, tools, programs and set-up parameters plus station retraction all take place within that time (without dimensional optimization).

The WINEMA RV 20 FLEXMASTER –

Ideal for part sizes from 4 to 30 mm



This CNC controlled rotary transfer machine is designed for the machining of workpieces in one clamping with a typical part size in the diameter range of 4 to 30 mm, but it can also feed rods up to 42 mm in diameter. The machine is equipped with a vertical indexing plate with 8 clamping stations. The workpieces can be machined by a maximum of 14 axial and 3 radial units. In the case of machines for processing workpieces with a maximum of two transverse machining operations, the front door can now be completely opened, offering even better accessibility to the working area.

Feed

For processing pipes or profiles, using the standard collet feed, rods with a cross-section of up to 42 mm can be inserted and sawn. The length of the workpiece in standard can be up to 180 mm, and up to a maximum of 200 mm depending on how much machining is involved.

Radial milling unit

The WINEMA RV 20 FLEXMASTER offers the possibility of using an HSK 32 or HSK 40 spindle for radial drilling and milling operations (thread milling contour milling) or an angle head for face machining (key widths, multi-edge milling, slitting, drilling, contour milling).

Set-up time

Maximum 2h for the machine with repeated set-up. During that time, with production from rod, set-up can take place from workpiece to workpiece, including swarf exchange (diameter change), tools, programs setup data, and retraction (without dimensional optimization).

The WINEMA RV 30 FLEXMASTER

Ideal for medium and large workpieces
between 20 and 50 mm in diameter



Like the entire RV series, the WINEMA RV 30 is also consistently designed to produce maximum yield with exemplary set-up functionality. The 10 clamping stations in conjunction with the optional 3-axis units arranged Horizontally and axially offer best conditions for the processing of even more complex components. An increasing number of variants, shorter product lifecycles, changes to the component, new materials: With the WINEMA RV 30 FLEXMASTER you can react flexibly to market requirements and nonetheless achieve production speeds that were once the preserve of cam-controlled machines.

This machine concept is designed for the predominantly chip forming machining of workpieces in a single clamping. The typical part size lies in the diameter range from 15 to 50 mm and up to 200 mm in length. The raw material is fed either from rod via the WINEMA loading magazine or as a press blank or sawing section directly into the chuck. Then up to three sides can be simultaneously machined at the stations. The station with the longest

machining time determines the cycle time. The workpiece can be turned over or newly positioned in pre-determined stations, and, if necessary, the clamping force can be reduced for finishing operations. All machining feeds of the vibration-damping quill units are CNC controlled, with hydraulic drives and direct measuring systems.

Indexing plate and processing stations

The WINEMA RV 30 is equipped with a vertical indexing plate equipped with 10 clamping stations. The workpieces are clamped in precise 2 jaw chucks. The interface developed by WINEMA for the top jaws enables clamping jaws to be exchanged within only a few minutes using just two screws. Once clamping has started, a maximum of 18 axial and 4 radial units are available. In addition, instead of the rod feed, a form rotation unit can be placed in front of the indexing plate (up to 24 mm diameter), so that the outer contour or parts of it can be machined, which then lie in the clamping area.

WINEMA FLEXMASTER series

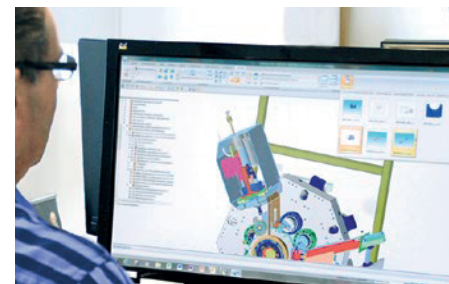


| | RV 10 | RV 20 | RV 30 |
|---------------------------------|----------------------------------|--------------------------------------|----------------------------------|
| Max. material diameter - rod | Ø 13 mm | Ø 42 mm | Ø 15-50 mm |
| Single part | 16 mm | 50 x 50 mm | 60 x 200 mm |
| Max workpiece length | 80 mm | 180 mm | 200 mm |
| Clamping stations | 10 | 8 | 10 |
| Part performance per minute | up to 100 (double production) | 4-50 parts | up to 100 (double production) |
| Machining units | Max 22 (18 axial, 4 radial) | Max 17 (14 axial, 3 radial) | Max 22 (18 axial, 4 radial) |
| Stroke, machining units | 90 mm | 90 mm/120 mm | 90 mm/120 mm |
| Clamping system | Hydraulic 2 jaw chucks | Hydraulic 2 jaw chucks / claws | Hydraulic 2 jaw chucks |
| Control | CNC Bosch MTX | CNC Bosch MTX | CNC Bosch MTX |
| Quill feed | CNC | CNC | CNC |
| Weight (depending on equipment) | 6.500 kg | 8.500 kg | 17.000 kg |
| Dimensions (machine only) | 2,4 m x 1,2 m x 2,1 m | 2,8 m x 1,4 m x 2,5 m | 3,07 m x 1,85 m x 3,04 m |

We help you – competently and quickly

Whether it's problems with installation, set-up, minor operating faults or bigger difficulties – we're here to help you!

To ensure that your WINEMA rotary transfer machines remain constantly operational, our service staff will arrive at your premises as fast as possible. Our service employees are highly-qualified mechatronics engineers, technicians and machine builders, with ultra-precise knowledge of your machine, and support you with their comprehensive expertise.



WINEMA international

Solutions from WINEMA are in demand internationally.

That's why you'll find us and our partners in the European and American markets as well as the Pacific ones. If you have a specific inquiry, just contact us at our headquarters in Grosselfingen!

Certification

In 2006, WINEMA was first certified according to DIN 900:2000, and since 2016 according to DIN 9001:2015.

The annual review of the certificate confirms us in our endeavor to continuously improve our factory operations and control mechanisms for the benefit of our customers, and to retain and improve our quality standards for the benefit of our customers.

Our work is determined by the needs of our customers, the requirements of the market and current developments. We react promptly and welcome any wishes and suggestions you may have. Precision, high quality and reliable technology – those are the guiding principles of our daily work, and they characterize our products.

