

High-precision
mechanical engineering

Components

Surface treatment



polymeca

PASSION FOR PRECISION

Polymeca AG

A member of the 12,000 employee Hexagon Group, we make precision engineered mechanical components and assemblies at our plant in Heerbrugg, Switzerland.



Since being spun off in 1998 by Leica Geosystems, Polymeca has made a name for itself as a contract manufacturer and outsourcing partner for prominent companies.

Our extensive portfolio of products and services comprises the following: production engineering, turning, milling, grinding, surface treatment, surface coating, measuring, mounting and assembly. The fact that we're a «one stop shop» minimizes the logistics costs incurred by our customers.

The precision engineering of every component and assembly we make is assured by our high-tech machine fleet, a high degree of automation, continuous process optimization, and proactive process streamlining.

Our team of measurement specialists ensures not only that you get top quality products, but also that the manufacturing process is documented for you in a clearly understandable manner. We also have ISO 9001 and ISO 14001 certification.

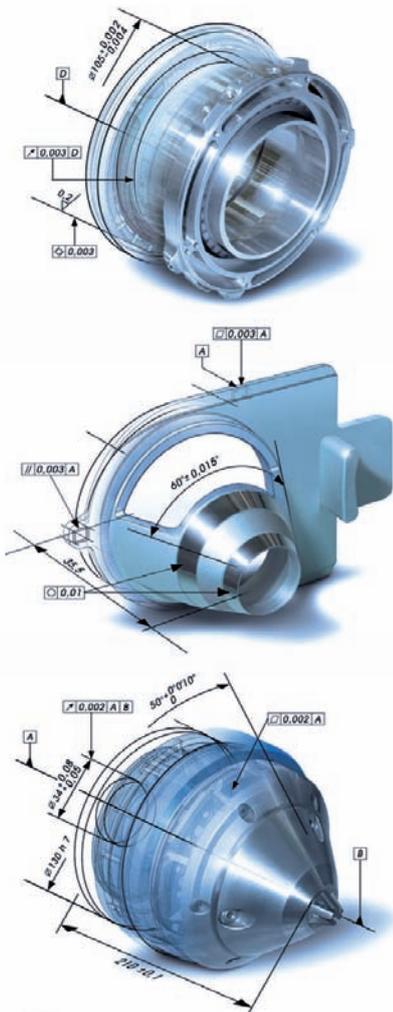
We employ 130 highly qualified individuals and our annual sales are around 25 to 30 million EUR.



Polymeca headquarters: in the four-country corner between Germany, Austria, Switzerland and Liechtenstein

Our portfolio at a glance

Polymeca offers every sort of mechanical engineering service from a single source. We don't see ourselves merely as an outsourced workbench for mechanical parts, but as a manufacturing partner for leading companies that seek to maintain a long-term relationship with suppliers. Our aim is to understand your requirements and fulfill them with process and cost-optimized implementation. Our ninety years of experience in the manufacture of parts with micron accuracy and of demanding electro-mechanical precision components have made us specialists in apparatus engineering and precision mechanics.



What we can do for you

Precision engineering to your exact specifications

- Machining
- Turning and hard turning
- Grinding
- Honing

Dimensional measurement

- Coordinate measurement
- Form and roundness testing
- Roughness testing
- Layer thickness testing

Assembly

- Component assembly in a clean room
- Adjustments; function tests; durability tests
- Electrical, pneumatic and hydraulic testing
- Test stand design and fabrication

Procurement logistics

- Procurement of unambitious parts in low wage countries
- Sourcing of material and components

- Warehousing to your specifications

Surface finishing

Painting:

- Industrial painting
- Painting in dust free cabins

Electrical and chemical processes:

- Anodizing
- Nickel plating
- Chrome plating
- Copper plating
- Zinc phosphatizing
- SurTec 650

Cleaning:

- Powder- and sandblasting
- Vibratory grinding
- Ultrasound cleaning

We can also provide other processes via our partners.



What makes us tick



Air conditioned production facility for fully automatic match grinding

Our mission statement:

«We aim to be a complete precision-engineering provider whose quality, inventiveness and reliability make our customers both loyal and contented, and who thus maintain long term relationships with us.»

We accomplish this via the following

- Highly motivated workers with outstanding qualifications
- A strong focus on customer satisfaction
- High tech manufacturing and testing installations
- Automated feeding systems that allow for fully mechanized manufacturing
- Multiple shift models
- Continuously tweaking our processes to make them ever more efficient
- Proactive quality and environmental management
- A host of satisfied customers

Planned precision

Production engineering

Here at Polymeca, we help you translate your product concepts into top-notch solutions that get the job done. And in this process, we partner with you every step along the way. So it's best to contact us early on in your conceptualization process – or preferably even before it begins – so that you can derive maximum benefit from our extensive know-how.

Our design engineering practice is based on the principle – one we've found to be sound and reliable – that to create a successful solution you need to know where you're headed and how you intend to get there. To do this, we draw upon our extensive experience and the most advanced engineering technologies, which allow our specialists to devise solutions that meet your exact requirements.

And please note: these consummate experts will not rest until the component we're making for you looks exactly the way you want it to.

Project management

Our project managers plan and monitor the progress of your project from start to finish and also act as direct liaisons between you and your project coordinator and developer.

Our project managers work closely with you in a manner that assures transparency in terms of quality, technology and resources, and is also your guarantee (thanks to the use of modern means of communication) that changes and adjustments in your project will be clearly and promptly visible for all concerned. Thus all concerned receive the requisite project information in a timely manner.

Nr.	Vorgangname	16. Mrz '12	26. Mrz '12	02. Apr '12
1	✓ Werkzeugbeschaffung	D	F	S
2	✓ Freigabe Werkzeug	S	M	D
3	✓ Stosshalter	M	D	F
4	✓ Stosswerkzeug	S	M	D
5	✓ schriftliche Bestellung	F	S	M
6	✓ Kick-Off Meeting	S	M	D
7	✓ Dat gepflege	M	D	F
8	✓ SAP-Daten / Materialstamm	D	F	S
9	✓ Stücklisten	S	M	D
10	✓ 54461 Arbeitszeichnungen	M	D	F
11	✓ 54461 Arbeitsplan	F	S	M
12	✓ 54476 Arbeitszeichnungen	S	M	D
13	✓ 54476 Arbeitsplan	M	D	F
14	✓ 54477 Arbeitszeichnungen	D	F	S
15	✓ 54477 Arbeitsplan	F	S	M
16	✓ 54478 Arbeitszeichnungen	S	M	D
17	✓ 54478 Arbeitsplan	M	D	F
18	✓ 54480 Arbeitsplan	D	F	S



We're nothing if not industrious

Turning

Dimensions:

Parts produced from bars ranging from 6 to 100 mm in diameter

Parts up to a diameter of 315 mm produced in a chuck

Accuracy:

Tolerance: .005 mm

Roundness: less than .002 mm

The production of turned components plays a central role at Polymeca. Whether from bars or machined in the chuck – we have automated our turning processes according to the latest techniques. Bar loaders and gantry loaders help us achieve nearly unmanned production of even demanding turned components, which saves costs.

For the highest possible process reliability, we employ high-tech machinery that performs entire processes. This reduces the number of process steps and the risk of reclamping errors.

Production facilities with stable temperatures provide consistent manufacturing conditions.



Milling

Dimensions:

630 mm x 630 mm x 650 mm

Accuracy:

tolerance: < .01 mm – .04 mm

A new era has begun in the area of milling. The operative word here is high speed cutting (HSC). This milling technique opens up a host of new applications such as producing components from solid materials.

The advantage for our customers: In many cases milling becomes more economical than casting. A further advantage: Initial samples and pilot series are available more quickly, which shortens the time to market for new developments. Thanks to high speed cutting, we can reduce our initial costs (e.g. casting molds are eliminated) and significantly reduce production times. Multiple-part workholding systems, special tools and pallet changers make further contributions to continuous cost optimization.



Ground and proven quality



Grinding

Dimensions:

Outer diameter 350 mm;
length 650 mm

Inner diameter 300 mm;
length 200 mm

Accuracy:

Roundness: less than .0003 mm

Cylindricity: less than .001 mm

Tolerance: .002 mm

Fit tolerance: less than .001 mm

Our grinding processes deliver best in class precision that meets the most exacting standards.

Match grinding is a process that allows for the machining of parts that need to be closely coupled, with tolerances amounting to a few micrometers or even less. These tolerances are monitored throughout the machining process; plus our fully automated cylindrical grinder continuously measures machine output using a highly sophisticated and precise measuring method that enables the machine to make the necessary adjustments during the process thanks to trend analyses. This in turn allows for continuous improvement of economic efficiency.



Measuring methods

Coordinate measuring machines

Dimensions:

1,500 mm x 1,000 mm x 700 mm

Accuracy: 1.0 μm + L / 400 mm

Form tester

Dimensions:

270 mm in diameter x 350 mm in height

Accuracy:

Roundness dev. < 0.1 μm

Straightness dev. 0.25 $\mu\text{m}/100$ mm

We at Polymeca have outstanding expertise in and equipment for dimensional measurement solutions and thus have the capacity to carry out dimensional quality certifications and optimize manufacturing processes. Our quality assurance processes are based on a zero-error strategy, to which end initial series are exhaustively probed and prodded in our air conditioned measurement lab and are documented via a prototype test report.

Once these initial prototypes are approved, manufacturing quality is carefully monitored during the entire production process using manual measurement equipment, as well as a versatile Leitz Sirio 3D measurement robot with a pallet-feed mechanism.

Surface finishing

Surface treatment

As a full-service company, we offer you a broad spectrum of surface finishing processes and galvanic treatments. And we have committed ourselves to strict adherence to environmental regulations in this area.

And you could even say that we're in the vanguard of environmental protection efforts in our sector, as we were one of Switzerland's first surface-treatment providers to implement the EU's Restriction of Hazardous Substances (RoHS) directive by completely eliminating hexavalent chrome and other hazardous substances from our production processes. Our unwavering commitment to environmental stewardship is also underscored by our ISO 14001 certification.



Procedures

- Black chrome
- Zinc phosphatizing
- Stainless steel blackening
- Brass blue annealing
- Electrolytic copper
- Shiny chrome
- Stainless steel etching
- Anodizing of aluminum
- Electrical nickel plating
- Chemical nickel plating
- Chemical copper blackening
- Black finish
- Aluminum chromate conversion SurTec 650
- Industrial painting
- Painting in dust free cabins



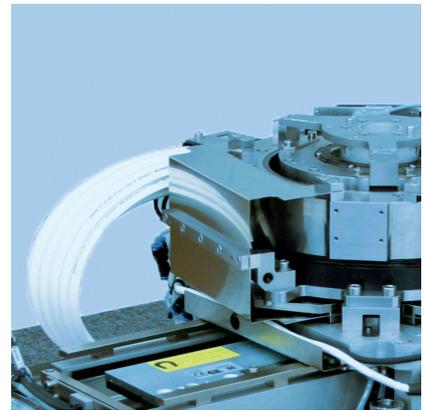
Mounted and tested



Component assembly

In our component assembly department, highly-qualified specialists ensure the reliable quality of your products using clearly defined assembly processes. In cooperation with our customers, we carry out assembly according to instructions or drawings, ensure specific purity standards and guarantee pristine delivery quality using customer-specific functional testing. To further benefit our customers, we direct focused attention to the realization of potentials for continuous improvement and economizing.

In addition to mechanical and electro-mechanical assembly tasks, we are also proficient in handling adhesive technologies, electrostatic discharge prevention and electrical testing as well as power and flow rate measurements.

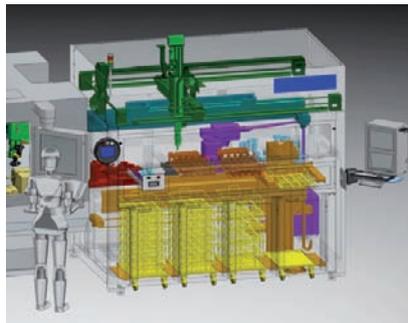


For outstanding availability

Automation and maintenance

We keep our production installations in tip top condition thanks to highly qualified technicians. We also offer this same maintenance service to external companies. At Polymeca, we use automation to make our employees' tasks easier, but not to replace our employees with machines. We make every effort to ensure that our employees (a) are used in the most productive and sensible manner possible; and (b) that they are not required to carry out monotonous tasks. A team of specialists transforms our workers' suggestions and insights into cost saving solutions on an ongoing basis. This approach enables us to build specialized machines in a highly flexible manner with a focus on automation.

In developing automation solutions, our emphasis is on improving efficiency, processes, and safety, while also expanding our production capacity.



Our portfolio

- Project management in machinery projects
- Control system development and fabrication
- Control cabinet fabrication to your specifications
- PLC programming
- Process visualization
- Design and manufacture of specialized machines
- Machine overhauling
- Planning and implementation of pneumatic and hydraulic solutions
- 3D CAD design



Focusing on «time to market»

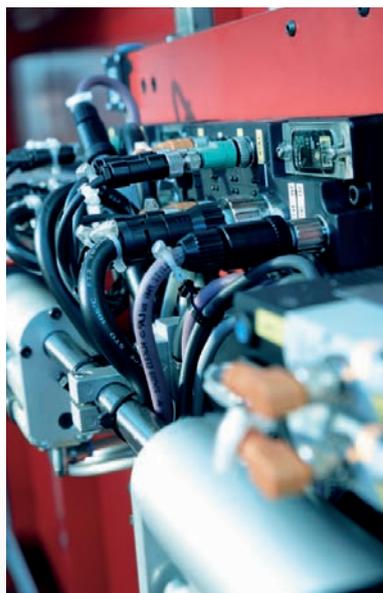


Prototype fabrication

And if you happen to be in a hurry...

Usually, in development projects and the production of manufacturing aids, every day earlier that parts are ready counts a great deal. In our prototype fabrication department, an exceptionally well qualified and flexible team makes your ideas take shape. Whether milling, turning or grinding, we offer our customers a high degree of flexibility for express needs and individual parts. Precision and high process reliability are the top priority – for prototypes and small production runs as well. You can count on us.





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