



**DANOBAT
OVERBECK**

Got a Challenge?

HIGH-PRECISION INTERNAL, EXTERNAL & RADIUS GRINDING ID/IRD/ILD/IED



Innovative solutions for a better future

At Danobat, we are committed to introducing positive change in people, business and the environments we work in. We do this by developing innovative solutions that enable us to face future challenges.

We generate high value technological solutions that improve our clients' competitiveness. We offer resourcefulness and engagement to bring innovative and personalised answers to different challenges. We are committed to the process and the results from the beginning right through to the end, and adapt to each necessity, offering assurance and guaranteeing a 100% meaningful experience.

We are experts in the design and manufacture of precise, high added-value, customised solutions. Our process has become an attitude and a way of doing things: the Danobat way. Qualified specialists, in-house technology, backing for innovation and, of course, a corporate culture that places value on people and puts the customer at the heart of its organisational system.

We boost change



01

Innovative Solutions

We specialise in producing high value-added, innovative technological solutions that help industry to become more competitive.

Our mission is to provide a response tailored to the requirements of our customers, based on our expertise in the technologies applied to industrial manufacturing with intelligence, commitment, creativity, rigour and professionalism.

- Holistic solutions.
- Grinders.
- Lathes.
- Measuring systems.
- Advanced engineering services.
- System integration.
- Automation.



Digital Focus

Digital technology has transformed the way in which we shop, travel and communicate.

We think and act digitally. We are interconnected and so are our production systems and equipment. The latest advances in digital technology are at the service of our customers, and we focus on developing our own solutions using advanced technology.

- Danobat Digital Suite - Intuitive interfaces.
- Data System - Connected machines.
- Control System - Digital factory.
- Smart Machining - Smart components.
- Real-time, remote information.
- In-house software for controlling machines, cells and lines.



Advanced Services

At Danobat we offer the services the industry needs, such as corrective maintenance strategies and spare parts services, but we always try to go one step further and anticipate changes in the sector. Accordingly, we provide a broad range of high value-added services which are completely customised to meet the challenges faced by our customers.

- Process simulation.
- Production simulation.
- Advanced training.
- Inspections & quality control checks.
- Maintenance service.
- All-round spares maintenance.
- Software & hardware enhancements.
- Process optimisation.
- Obsolescence management.

High-precision internal, external & radius grinding

ID/IRD/ILD/IED

Grinding is one of the most demanding processes in the forming of workpieces. Its advantages are the high precision of the pieces created and the excellent quality of surfaces.

This catalogue presents our internal, external and radius grinding machine range, designed in close collaboration with our customers to provide complete, tailor-made solutions for particularly high-precision requirements.



Expertise

We specialise in the development of advanced solutions for the manufacture of high value-added components in industries where the most stringent standards are required in results.

We have broad experience in highly complex machining processes, and work with firms which are leaders in their different fields to design fully customised solutions.

We cover preliminary engineering work, machining process studies, the technical specifications of equipment, installation requirements and the personnel required to operate machines and production lines.

All-round solutions

At Danobat we can offer all-round solutions for the partial or complete manufacturing of strategic components such as shafts for electric motors on vehicles.

In the field of partial integration, we can incorporate ancillary operations into grinding solutions. These include cleaning, SPC stations, deburring, super-finishing and storage in baskets and on pallets. In the field of full integration, we offer complete machining lines that handle not only grinding but also the additional operations required to guarantee component machining.

Specialising to attain excellence

Our workforce is highly specialised, with high-level technical qualifications. Our goal is to develop the grinding solution best suited to each different production requirement of each different customer.

Our team of experts work closely with customers to provide solutions tailored to their needs and to tackle each different stage of the process of developing those solutions effectively.





Project team

This unit has a key role in the success of our projects, as it handles the task of compiling all the information required and passing on the specific requirements of each customer to the rest of the team and to our network of suppliers. As well as compiling information, the unit also draws up technical and commercial quotes.

Process and testing team

This team specialises in grinding. Its members are always up to speed with the latest technical developments on the cutting edge of technology. It determines the characteristics of the process and the solution best suited to each scenario.

The experts in this unit also anticipate and specify such major issues for customers as the useful lifetimes of tools, workpiece changeover times, machine energy consumption and life-cycle cost, among others.

To ensure that these tasks are completed and checked with the necessary rigour, at Danobat we have a network of centres of excellence equipped with a large number of latest-generation machines which enable us to conduct trials with our customers and internal tests to check tools, processes and technologies.

Our goal is to offer a facility with actual working conditions where the capabilities of machines can be checked, so that new manufacturing processes can be undertaken with full assurances and without risks. Our centres of excellence also enable us to optimise manufacturing processes at customers which are already up and running.

Technical team

The mission of this team is to specify what type of machine is best suited to the travel requirements, clamping/work holding systems and loading/unloading solutions in each case.

Our range



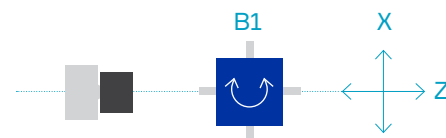
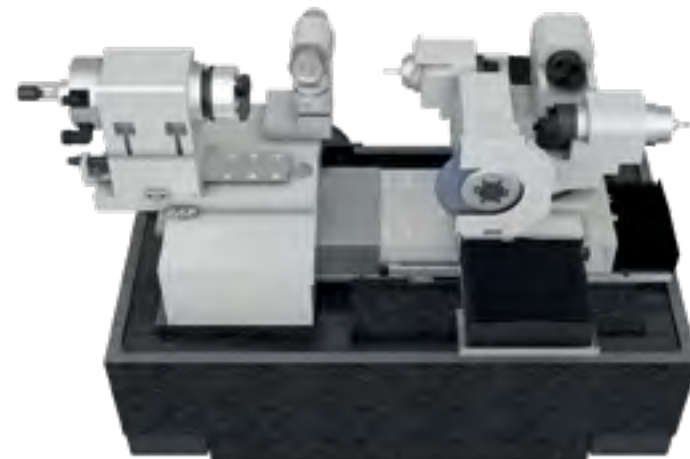
ID

Internal, external and face grinding machine

ID series machines provide high-precision machining for internal, external and face grinding of workpieces such as bearing rings, gears wheels, cutting tools, injection elements, non-round discs or hydraulic parts.

Individual workpieces or high volumes of production can be ground with great efficiency without compromising versatility.

To maximise the productivity of the ID it is typically provided with automatic loading and unloading systems, including solutions with robots, gantries, etc.



TECHNICAL CHARACTERISTICS

	ID-200	ID-400
Max. internal grinding diameter	100 mm	200 mm
Max. internal grinding length	100 mm	200 mm
Max. workpiece swing diameter	215 mm	560 mm
Max. workpiece length incl. clamping system	200 mm	400 mm
Max. workpiece weight incl. clamping system	40/45 kg/Nm	80/100 // 180/300 kg/Nm
X and Z axis stroke	400/200 mm	425/475 mm

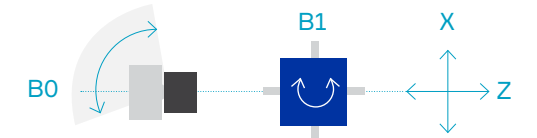
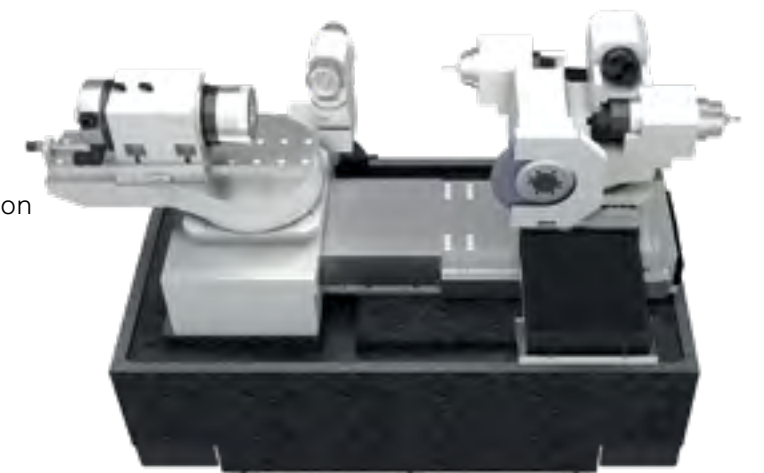
IRD

Internal, external and radius grinding machine

IRD series machines are ideal for high-precision internal, external, face, non-round and radius grinding applications for a wide range of materials (e.g. carbide, steel or ceramics).

The integration of a swivelling B0 axis for +91°/-15° axis and the X and Z axes (3 axis interpolation) enables different radius and contours to be ground with excellent surface quality.

The flexibility of this grinding machine enables it not only to grind forming tools and dies but also to machine workpieces for various industries such as bearings, ball valves, implants and much more.



TECHNICAL CHARACTERISTICS

	IRD-200	IRD-400
Max. internal grinding diameter	100 mm	200 mm
Max. internal grinding length	100 mm	200 mm
Max. workpiece swing diameter	215 mm	360 mm
Max. workpiece length incl. clamping system	200 mm	400 mm
Max. workpiece weight incl. clamping system	40/45 kg/Nm	80/100 // 180/300 kg/Nm
B0 axis swivelling angle	+91°/-15°	+91°/-15°
X and Z axis stroke	400/200 mm	425/475 mm

Our range



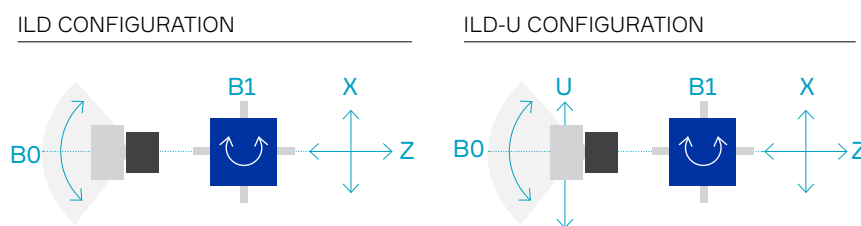
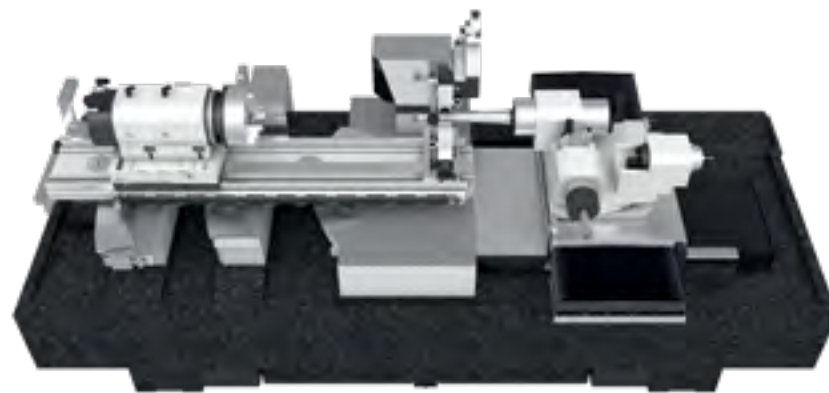
ILD

Internal and universal grinding machine

ILD internal universal grinding machines provide high-precision machining for internal, external and face grinding of large workpieces.

Depending on the requirements, the machines can be equipped with up to four grinding spindles and a measuring probe.

Spindle housings, shafts, tool holders, roller bearings, hydraulic components, aerospace components or machine-tool components can be machined with the ILD series using the latest technology.



TECHNICAL CHARACTERISTICS	ILD-400	ILD-600	ILD-700	ILD-700 U
Max. internal grinding diameter	420 mm	420 mm	500 mm	450 mm
Max. internal grinding length	400 mm	400 mm	400 mm	400 mm
Max. external grinding length	150 mm	150 mm	400 mm	400 mm
Max. workpiece swing diameter	600 mm	600 mm	700 mm	760 mm
Max. workpiece length incl. clamping system	800 mm	1300 mm	500 mm	500 mm
Max. workpiece weight incl. clamping system	500/500 kg/Nm	500/500 kg/Nm	500/500 kg/Nm	500/500 kg/Nm
B0 axis swivelling angle	+20°/-10°	+20°/-10°	+25°/-25° +90°/-15°	+25°/-25° +90°/-15°
X and Z axis stroke	450/550 mm	450/550 mm	700/700 mm	420/700/U700 mm

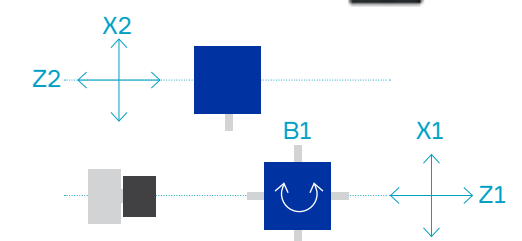
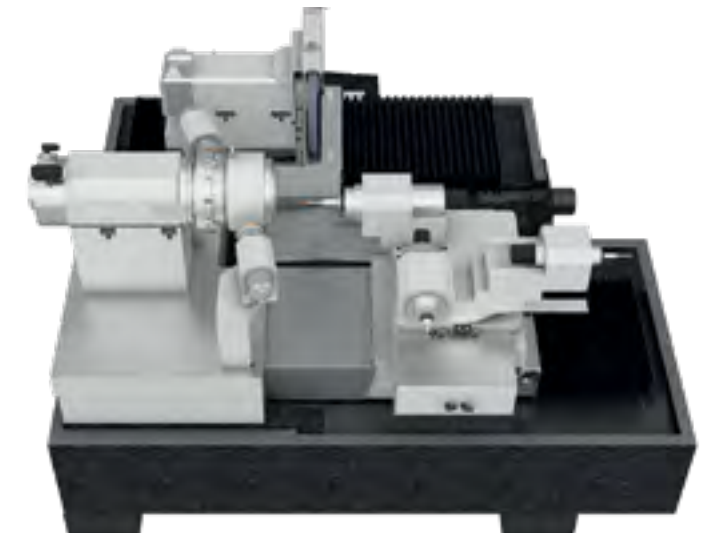
IED

Simultaneous internal & external grinding machine

The IED simultaneous grinding machine provides the fastest production times of any grinding machine in the Danobat-Overbeck range.

Given workpiece characteristics that permit simultaneous grinding, the grinding tools can be mounted on two separate cross-slides. Therefore, internal and external diameters and faces can be ground simultaneously with the highest quality.

To maximise the productivity of the IED it is typically provided with automatic loading and unloading systems, including solutions with robots, gantries, etc.



TECHNICAL CHARACTERISTICS	IED-400
Max. internal grinding diameter	300 mm
Max. external grinding diameter	250 mm
Max. workpiece swing diameter	300 mm
Max. workpiece length incl. clamping system	250 mm
Max. workpiece weight incl. clamping system	80/100 // 180/300 kg/Nm
X1 and Z1 axis stroke	220/550* mm
X2 and Z2 axis stroke	320/450* mm

* Reference measurement may vary

Typical IED grinding applications include gears and injection components, pump elements, tool holders (SK/HSK) or machine parts in general.

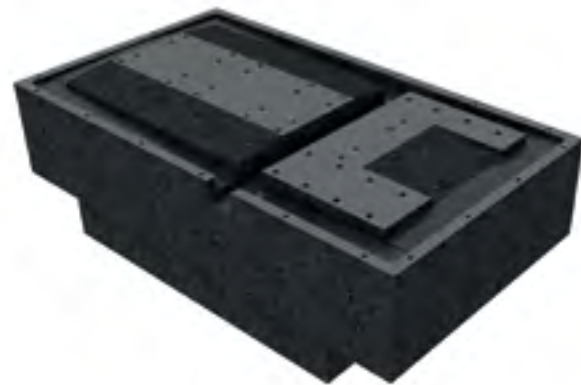
Core technology

Precision assemblies unit

Specialised precision assemblies unit, staffed by qualified fitters team with broad experience in bearing and spindle elements.

Each assembly is performed in a clean-room environment at a controlled temperature and documented to ensure traceability and interchangeability if replacements are needed.

The quality control checks performed at all stages of the assembly process ensure precision and provide a test bench where every single component undergoes running-in tests.



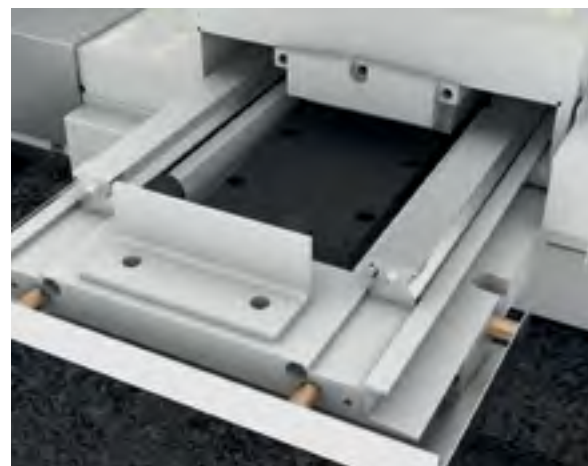
Natural granite machine bed

- Machine bed made of natural granite, the optimal material for achieving the highest accuracy and the best surface quality.
- Natural granite offers considerable advantages over cast iron or polymer composites in terms of precision for many grinding applications.



Workheads

- Danobat-Overbeck design, built in house components for highest precision and a long life.
- Modular designs for best application.
- Selected materials and designs for stable temperature performance.
- Easy integration of clamping cylinders.



Linear motors

- Linear motors ensure highly dynamic transmission of power. This means, for example, that precise results can be obtained in non-round grinding.
- Fast, precise movements assure the highest productivity and quality.
- No wear parts, maintenance-free.
- High precision through active cooling.



Grinding spindles

- Top quality spindles.
- High-precision bearings with oil-air lubrication or constant lifetime grease lubrication.
- Selected materials for stable temperature performance, driven by a built-in motor.
- Cutting speeds automatically controlled with frequency drives.
- Independent temperature control and efficient liquid-cooling system.

Core technology

User-friendly software

Pre-set, user-friendly standard cycles to easily program grinding processes in dialogue. Clearly arranged programming menu and help functions for efficient machine set up and operation.

Programming during grinding process, dialogue-guided and integrated DIN/ISO programming, integrated workpiece and grinding wheel

management, regrind option for time optimised correction grinding, dressing program for predefined grinding wheel profiles and program for dressing of free definable grinding wheel profiles.



Non-round grinding operations

- Complete integration of non-round software into standard Danobat-Overbeck software. This means that all grinding cycles are combinable without restrictions.
- Parameterisable curves, e.g. for polygons, eccentrics, squares, diverse punches as well as customer-specific forms can be saved in a graphic catalogue.
- After selection of the curve type, only a few specific parameters of the form have to be entered and the curve profile will be generated automatically.



CAD machine module and simulation software

- Danobat-Overbeck software module for efficient programming of grinding cycles for manufacturing of workpieces with easy and even complex contours.
- Assistant for stepwise creation of a finished part drawing from the definition of stock removal of the rough part, up to a complete machining plan for manufacturing of finished parts.
- Operation via keyboard or touchscreen.
- Collision control and process time calculation.



Thread grinding operations

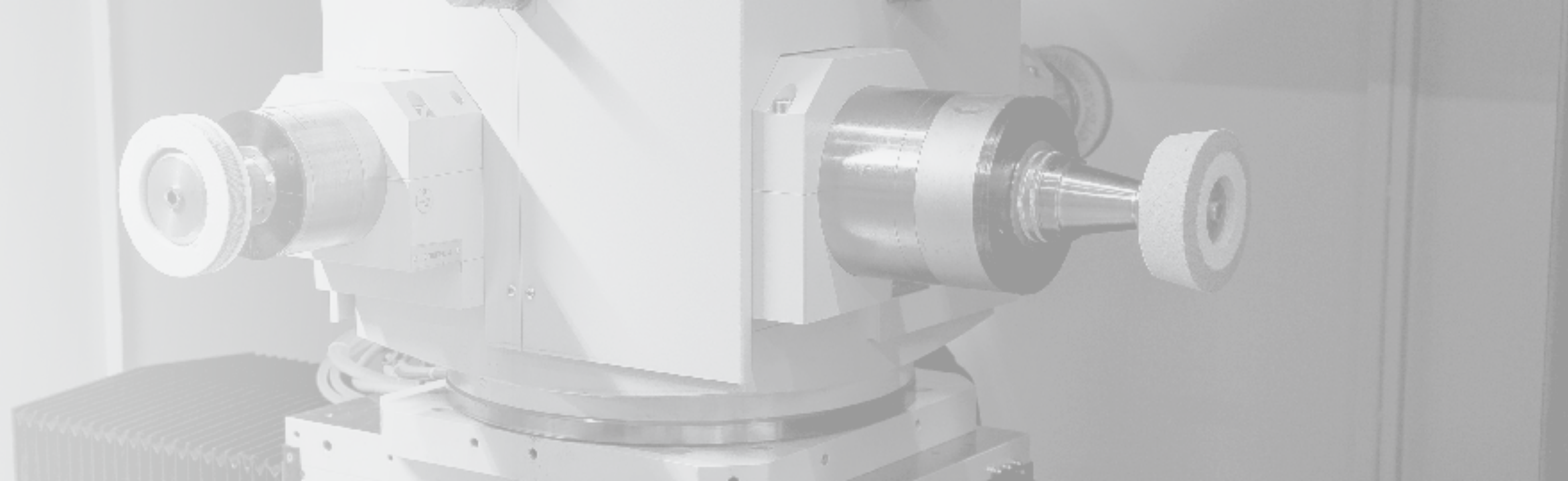
- Grinding parallel to the axis of ISO-metric thread and UN threads.
- Calculation of the profile correction, which is caused by the axis-parallel arrangement of the grinding wheel and workpiece.
- Generating an optimised dressing program for a wheel diameter, for the profile of the disc.



Jig grinding operations

- Grinding of e.g. complete bores/contours out of the rotation centre or forms that require non-continuous circulation of the workhead spindle.
- Face side keyways, precise reference hole.
- HSK – T grinding/milling.

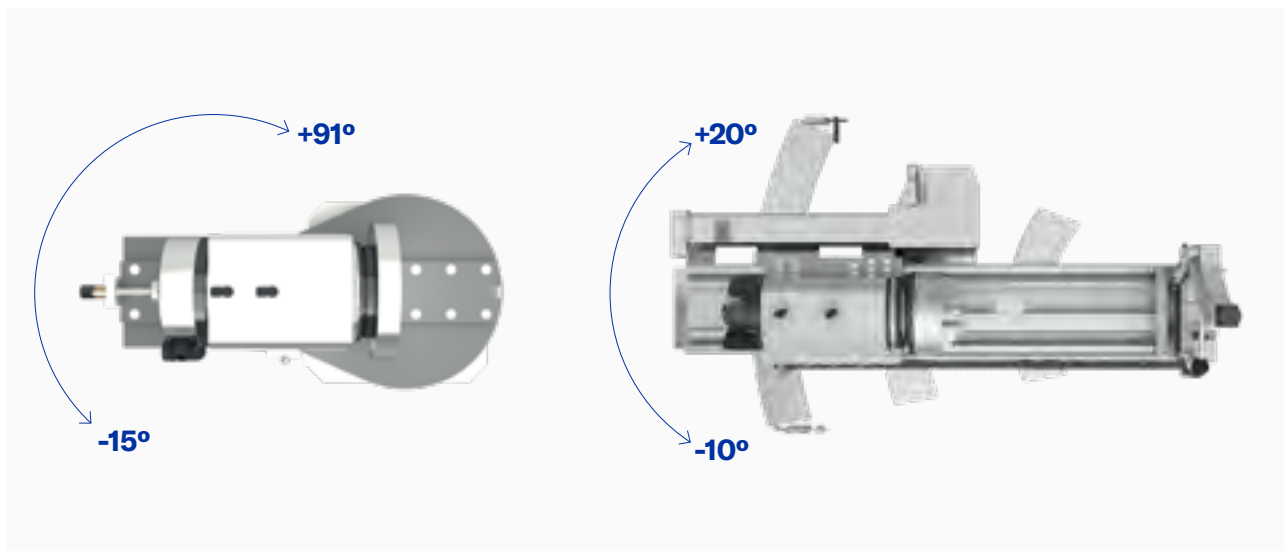
Versatility



Workhead

- Danobat-Overbeck design with no wear parts.
- Direct driven via torque motor.
- The system is built for high-precision workpiece shapes and surface qualities.
- Including B0 transformation of workpiece coordinates.

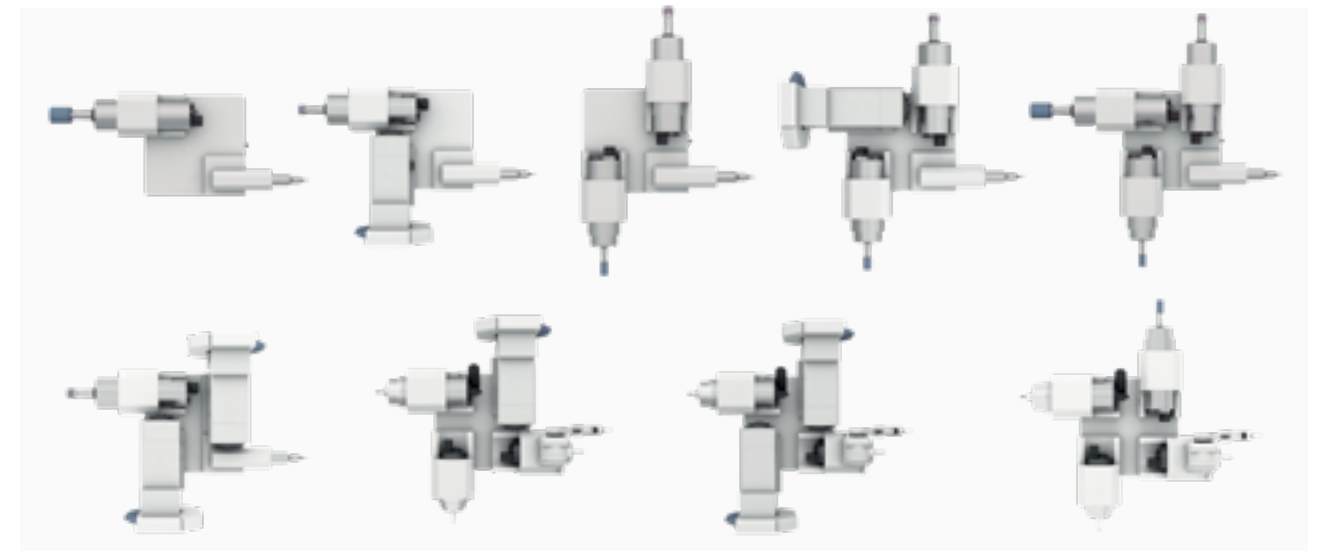
CONFIGURATIONS



Direct driven spindle turret

- Danobat-Overbeck design with no wear parts.
- Capacity for up to four spindles and one measuring probe.
- Direct driven via torque motor.
- Swivelling range of 300°.
- Freely programmable angle position.
- Including B1-transformation of workpiece coordinates.

CONFIGURATIONS (*)



(*) Based on customer requirements, other configurations may be considered.

Customisable technology

For every solution envisaged, an analysis is conducted of necessary variations and adaptation to prior or subsequent processes so that a turnkey installation is possible if the client so requires.

These are some of the technological solutions which add high value to your application manufacturing, helping your factory become more competitive.

Clamping systems

1. Three jaw chuck (automatic & manual chuck) / 2. Magnetic chuck / 3. Shoe system / 4. Steady rest / 5. Customised chucks



Dressing systems

1. Fixed dresser / 2. Dressing spindle / 3. Radius dresser / 4. Dressing revolver / 5. Dresser at workhead / 6. Roller dresser



Measuring systems

1. Touch probe / 2. In-process measuring / 3. Post-process measuring



Automated solutions

To ensure shorter production times and thus increase productivity, different automatic loading & unloading systems integrated in the control of the machine can be offered. Danobat-Overbeck develops turnkey solutions for different applications to suit customer requirements.

FLEXMOTION - Robotic cell



FLEXMOTION - Integrated robot



QUICKMOTION - Integrated loading & unloading system (conveyor or pallet system)



TURNKEY AUTOMATION SYSTEMS



Digital Focus

In order to advance towards the creation of smart factories, where all equipment is interconnected and can operate autonomously, we have a value proposition comprising solutions developed in-house, combining the latest digital technology and over 65 years' experience in machine tools and production systems.

Danobat's digital offering focuses on two main benefits for our customers: solution efficiency and user friendliness.

Data System

A platform for data capture, storage and processing to deliver the right information for monitoring machine condition. This is the ideal decision-making tool for optimising machine utilisation.

The technology allows you to:



Get real-time and historical information on a wide range of key machine parameters.



Monitor your machine anytime, anywhere.



Get automatic reports to support your decision making.



Improve machine utilisation by anticipating any system failure.



Work with optimised machining processes, to get best quality with minimum energy consumption.



Connect easily to corporate IT systems (ERP, MES, PLM ...).



Danobat Digital Suite

User-friendly interface for intuitive operation that assists the operator and helps in optimising machining processes.



Main facts:



User friendly and intuitive with outstanding usability.



Centralised information for fast and simple access.



Multiple operation aids for easy, efficient and accurate grinding.



Fully integrated with the latest multi-touch technology.



Digital support: machine documentation, troubleshooting and dynamic preventive maintenance schedule.



Energy efficient solution, thanks to the energy management module.

Based on its long experience, Danobat-Overbeck understands the machine user's needs and has designed a programming assistant that makes it quick and easy to follow the most complex cycles.



EXECUTION

Most relevant machining information displayed in a single view.

- Machining cycle progress.
- Key process variable display.
- Alarm visualisation with troubleshooting.



OPERATIONS

A clearer, more comprehensive list of operations showing the main parameters so that they are easier for the user to understand.

- Intelligent cycles library based on machine configuration for grinding, dressing and measuring operations.
- Easy navigation and configurable structure definition.
- Quick program operations for fast and easy programming.



INTEGRATED MODULES

Multiple optional integrated modules:

- Profile editor.
- Contour module.
- Threads module.
- Forms module.
- CAD files import.

Advanced Services

Danobat offers worldwide specialised services throughout your equipment life cycle. From engineering services for the design of machining processes and set up of the machine to technical service and spare parts.

We have an extensive network of professionals working in over 40 countries, capable of meeting customers' needs wherever they are and ensuring fast attention, effectiveness and proximity.

Danobat Centres of Excellence

An international centre working in the machining of high precision components to help our customers become more competitive by maximising their efficiency and productivity.

We have the resources required for excellence-based operation: latest-generation Danobat technology in machining, measuring, software and control, piloted by highly qualified staff working exclusively on our challenges and those of our customers.

Our centres of excellence are focal points for cooperation with customers, suppliers and other partners to generate high-value applied knowledge in manufacturing processes.

Original spare parts

We understand the critical importance of machine availability to ensure production output. We therefore have a wide stock of original spare parts (more than 100,000 item references) ready to be dispatched immediately to our customers from different warehouses around the world.

Corrective and preventive maintenance

We offer collaboration agreements for regular machine-status checks, to prevent the most common machine issues.

Digitisation of manufacturing and our nonstop monitoring solution can help identify patterns and predict future errors. And for any that can't be predicted, our worldwide service team can help get the machine up and running again with rapid attention.





Competitiveness is increasing in all sectors and as your needs become more sophisticated, the services you require also get ever more complex. Evolving your machine to cater to new needs requires know-how not only of the machine itself but of industries, machining processes and manufacturing environments.

Our expert team can help guide you towards the path of increased competitiveness.

Inspections

We place all our experience and knowledge of the equipment at your service to provide you with a real picture of your machine's status.

Process optimisation

Detailed studies of machining processes to provide an optimised solution that offers technical, production, quality and financial improvements. The optimal solution may include the development of specific machining and measuring cycles and engineering of specialised tools and fixtures.

Production optimisation

Years of experience dealing with a huge variety of challenges in a wide range of industries enable us to detect opportunities where others only see problems. An exhaustive analysis of your processes and workflows provides the input we need to develop a simulation model that will help you maximise output.

Retooling & Retrofitting

We can't control your future needs, but we can work with you to prepare for them. We perform retooling to help you face new challenges and even retrofitting to give your machine a second life-new components, new functionalities and a longer machine life.

Obsolescence management

Avoid future problems with component availability. Future-proof your machine. We propose and perform changes to obsolete components, anticipating any issues that could halt production due to lack of a spare part that may never arrive.

Software & hardware updates

Hardware and software are constantly being updated and upgraded. So if you want to keep your machine at the cutting edge, we have the right solution for you.

We install hardware and software upgrades to ensure an extended life cycle and performance improvements.

Advanced training

Get the most from your Danobat machine. Customised training in machine work modes, programming, cycles and specific functions, drive compensation, alarm messages, recovery instructions, preventive maintenance, etc.

The Danobat way

If you want to achieve different results, you have to do things differently. That is the Danobat way. Qualified specialists, in-house technology, backing for innovation and, of course, a corporate culture that values people and puts the customer at the heart of its organisational system, creating an ecosystem that fosters co-creation and generates real, lasting, sincere partnerships.

A way of working that bring us together and provide meaningful experience for both customers and our own team. Commitment, honesty, responsibility and trust to create innovative solutions that are fully customised, useful and profitable.

01 Experts close to you

The experience of our staff and our focus on working alongside our customers are Danobat's key distinguishing features.

02 The value of people

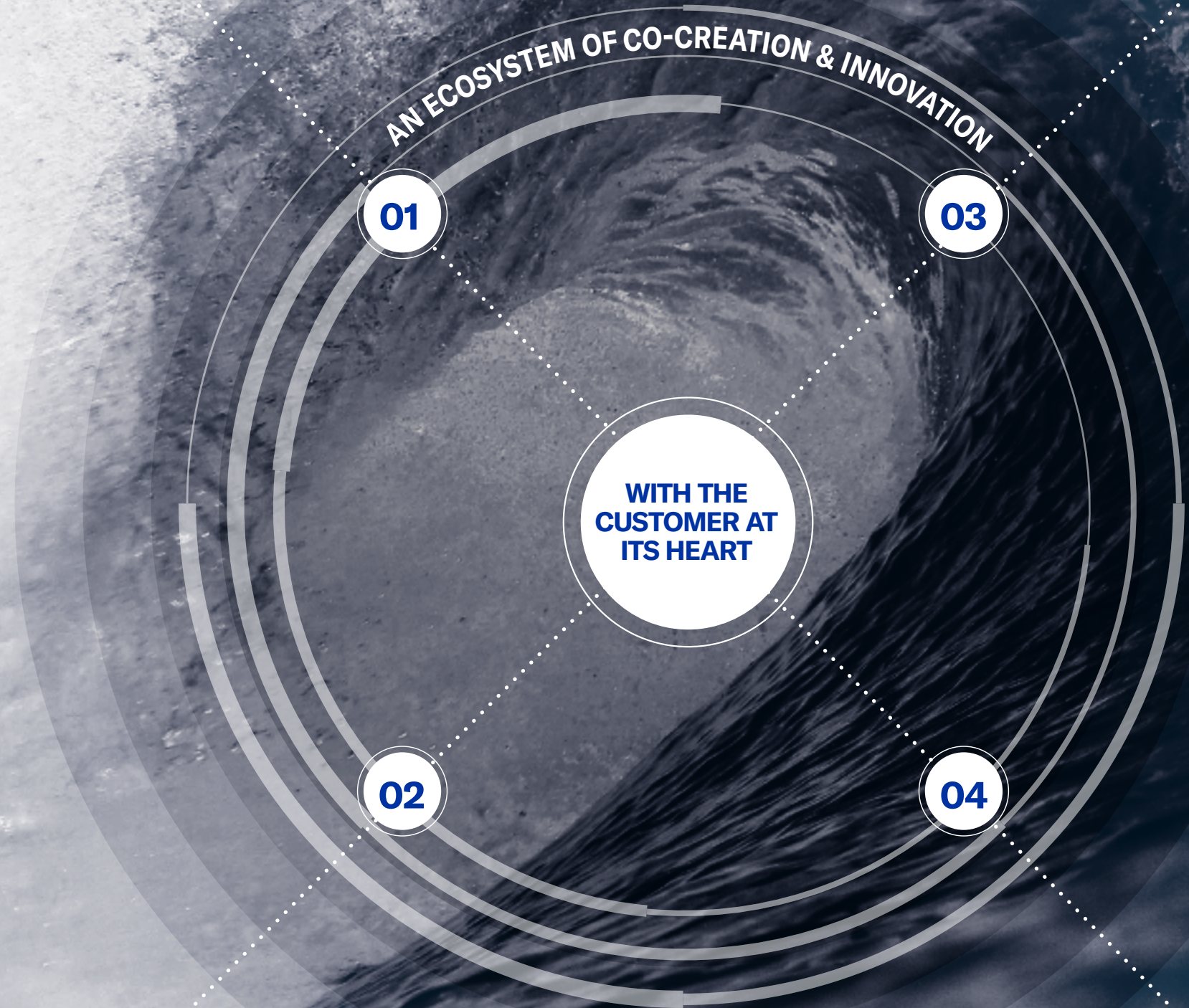
Commitment, enthusiasm, self-motivation, a feeling of belonging, initiative, creativity and adaptability to a changing environment: these are just some of the features that define the people who make up Danobat.

03 In-house technology

Precision in results and ease-of-use are our watchwords in all the solutions we provide. That is why we specialise in developing intuitive, easy-to-handle in-house technology.

04 Bringing the future closer through innovation

Danobat's track record can only be understood in terms of its firm, sustained backing for innovation. Since our earliest days more than sixty years ago innovation has been in our very bones. It is now our most recognisable identifying trait.





www.danobatgrinding.com

SPAIN

Danobat

Arriaga kalea 21
E-20870 Elgoibar
Gipuzkoa
T + 34 943 748 044
danobat@danobat.com

GERMANY

Danobat-Overbeck

Konrad-Adenauer-Str. 27
35745 Herborn
T + 49 (0) 2772 801 0
danobatoverbeck@danobat.com

ITALY

Danobat

Regione Cartesio 58
15012 Bistagno (AL)
T + 39 0144 441615
danobatsrl@danobat.com

RUSSIA

Danobatgroup

Ul. Argunovskaya 3/1
129075 Moscow
T +7 499 685-16-42
info@danobatgroupussia.ru

UNITED KINGDOM

Danobat

1 Sturrock Way · Bretton
Peterborough
Cams · PE3 8YF
T + 44 (0) 1733 265566
danobatltd@danobat.com

USA & CANADA

Danobat

1914 S.Houston Ave.
Humble, Texas 77396
T + 1 281 812 4259
danobatinc@danobat.com

BRAZIL

Danobat

Centro empresarial Perdices
Rúa Turiassu, 591
05005-001 São Paulo
T +55 113 082 90 80
danobatlda@danobat.com

CHINA

Danobatgroup

907B · Tower A Phoenix Place
Jia 5 Shuguangxili, Chaoyang District
100028 Beijing
T + 86 10 6467 3639
info@danobat.cn

104, Building No. 5
526 Fute East 3rd Rd.,
Waigaoqiao Free Trade Zone,
200131 Shanghai
T + 86 021 6111 8696
info@danobat.cn

INDIA

Danobatgroup

Office No-7 · Business Avenue · 2nd Floor
Niyoshi Park Road · Sanghvi Nagar · Aundh
411007 Pune, Maharashtra
T +91 20 2589 7648
danobatgroupindia@danobatgroup.com

DANOBATGROUP

