

imoberdorf ag



Swiss-made technology



Keep your worlds turning

The art of mastering the series production

Our mission statement

After more than 80 years of family business, the concerns remain the same: to use, develop and integrate the best technological solutions to manufacture highly productive Swiss-made machines that are amongst the most precise in the world. To respond to your evolving needs in a constantly changing market, we know how to innovate, surprise and exceed your expectations.

At *imoberdorf*, our solutions are synonymous with flexibility, reliability, longevity, speed and precision. Each construction meticulously meets your wishes by providing you with a turnkey solution. You benefit from all our know-how.



Fields of application

imoberdorf machines are present in the most varied industries and this since many decades. Our solutions allow the machining of practically all existing materials that make up your products. With the modular design of our machines, we cover the machining requirements for a large variety of parts. From the size of a needle to the size of a large hand, the possibilities are very wide. Our machines excel in complete or partial machining from raw bars, blanks, shaped parts and much more. For all industries in search of the best result, we can configure and offer the right machine for your requirements.

Wherever precision, complexity of machining and high productivity are required, *imoberdorf* is here for you.



What our Butterfly represents

As with your project, each phase of the Butterfly's development is crucial. It all starts with an egg that matches your idea. The egg is then transformed into a caterpillar. It is at this precise moment that we begin by identifying and clarifying your needs. This is how the foundations of the concept come to life. The multiple molts of the caterpillar reflect the iterations necessary to reach the objective: to propose the answer that will raise your enthusiasm. The caterpillar builds a silk cocoon and transforms itself into a chrysalis (butterfly pupa). The time has come to start building the machine of your dreams. Piece by piece, it will take shape to reach the desired maturity. The Butterfly is ready to emerge from its cocoon and no words can really describe this wonderful result. Impressive, solid and precise, the machine is finally ready to start a long and productive career.



Unlike our little Butterfly, your *imoberdorf* machine will not fly away!

The advantages of *imoberdorf* machines

Speed

The multiple CNC stations machine several parts simultaneously. This reduces downtime between machining operations to a minimum. From loading to unloading, no other manufacturing concept can achieve such a high production rate. Our solutions guarantee a machining time close to the technical or physical limit!



10 to 20 times faster*

Performance

Several factors come into play and their importance depends on the machining to be carried out and the resources required. Carrying out all the steps with a single machine and, if possible, with a single clamping to achieve complete machining in perfect harmony. With the additional option to turn the workpieces, the limits are pushed even further.



2 times higher efficiency*

Ecology

Each machine uses the latest available technology to optimize and reduce energy consumption as much as possible. With machining units specifically configured to meet your needs, we ensure targeted and minimal consumption. The aim is to use only the necessary energy.



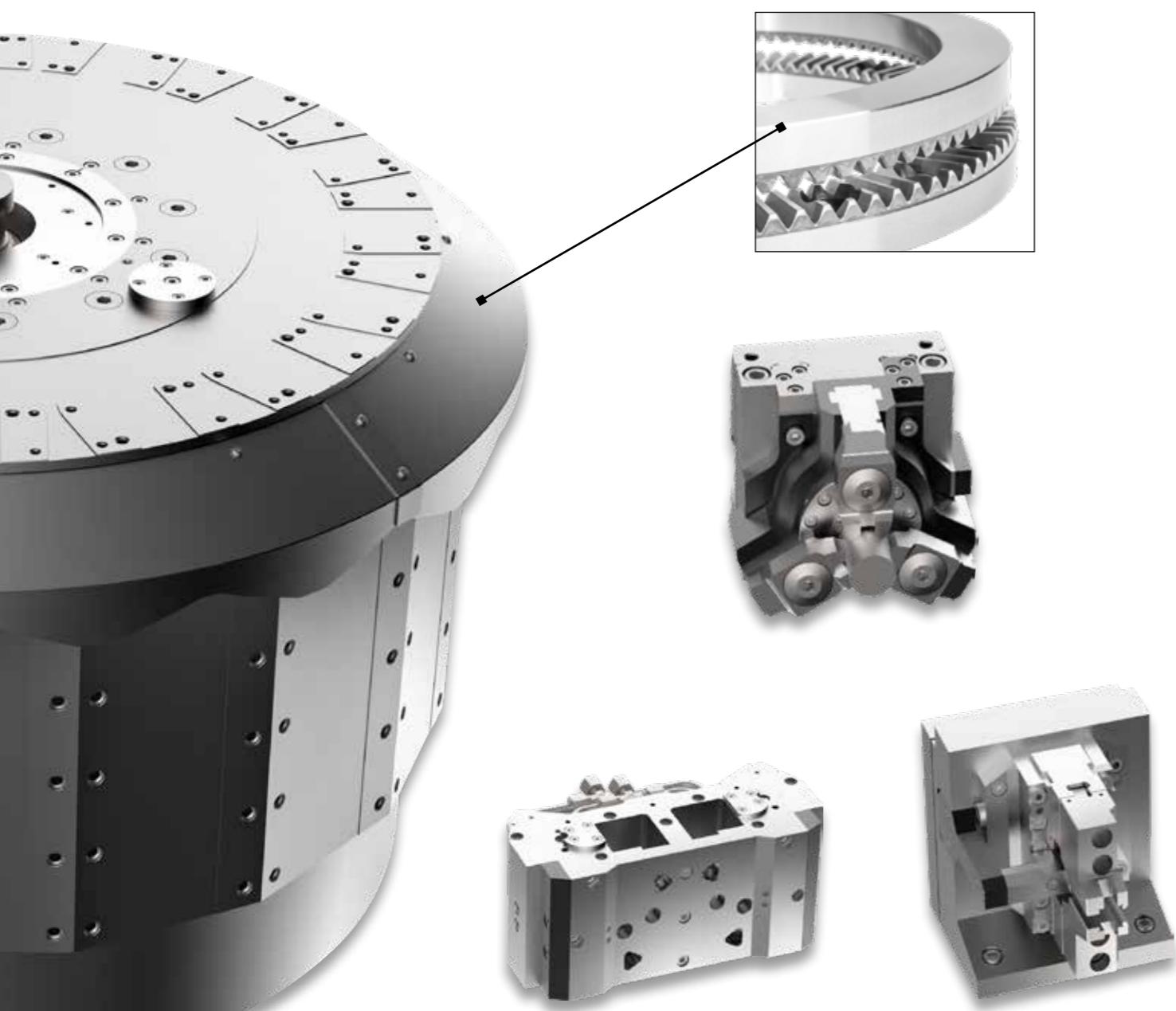
consumes 50% less energy*

« When it comes to machining complex workpieces quickly, economically and ecologically, the answer is simple: *imoberdorf*. »

The hearts of our rotary transfer machines

Table with « Hirth » coupling

Variant used to directly fix « static clamping systems ». In this case, it is the table that guarantees the indexing accuracy. If machining requires access to a different side of the workpiece, the clamps can be designed to orient the workpiece with a hydraulic or motorized system. This variant gives the possibility to clamp the parts vertically or horizontally.



« All the clamps are developed by us. Every detail is important to guarantee perfect machining. »



Table with drive

This variant is used to transport « dynamic clamping pots ». Indexing is guaranteed by a very precise and stable « zero point » interface. This is the necessary variant to be able to implement our **imo-sat** or **imo-rot** system. With **imo-sat**, the clamped workpiece can be indexed very precisely and with **imo-rot** it can be rotated at up to 12'000 rpm.

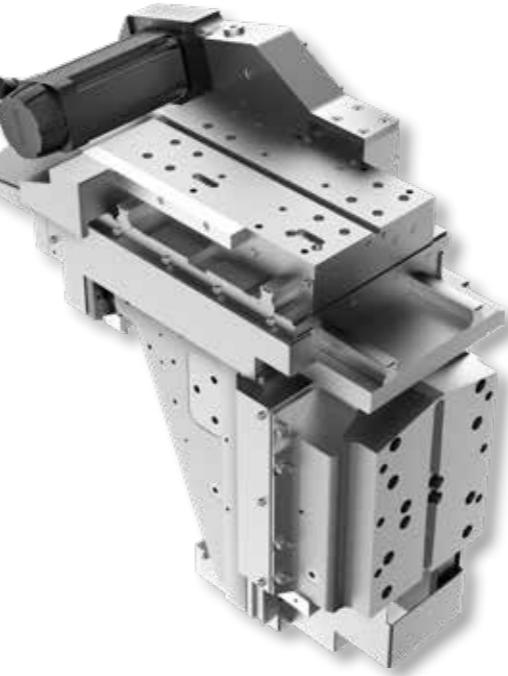
Precise, strong and flexible clamping

One of our specialties is to clamp your workpieces stably and precisely. With the experience we have gained, we are able to develop clamping systems for every application. Our goal is to maximize their compatibility so that you can machine different parts from the same family without having to replace the clamps entirely.



imo-compact

The **imo-compact** unites all the elements of a rotary transfer machine. Even the smallest platform offers optimum accessibility.

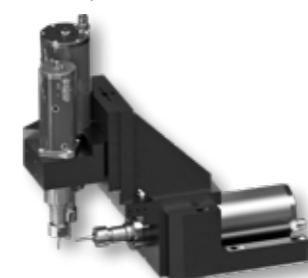


The 3-axis **E-97-CNC** unit meets the most common needs: drilling, milling, reaming and tapping. It can be equipped with two spindles and installed horizontally or vertically. This unit can also be used on the **imo-smart** and the **imo-space**.

TECHNICAL DATA

Useful rail travel X / Y / Z:	80 mm / 140 mm / 90 mm
Power:	up to 3 kW
Repeatability accuracy:	1,5 µm and 0,5 µm with glass ruler (optional)
Absolute accuracy X / Y / Z:	±2 µm / ±2 µm / ±2 µm
Available spindles:	<ul style="list-style-type: none"> - HF up to 60'000 rpm - Multi-spindles - Tool changer

Multi-spindles



Tool changer



The **imo-rot** corresponds to the 4th axis: the C-axis. This option allows you to turn your parts directly on the **imo-compact** to achieve the performance of a vertical spindle lathe.

TECHNICAL DATA

Rated capacity:	up to 7,5 kW
Rotation speed:	up to 12'000 rpm
Torque:	up to 30 Nm
Repeatability:	±1 µm on a Ø of 50 mm
Absolute accuracy:	±2 µm on a Ø of 50 mm

TECHNICAL DATA

Number of stations:	up to 20 stations (10 stations with E-97-CNC)	Number of spindles:	up to 38 spindles
Indexing accuracy: - with Hirth coupling - table with drive	±2" (±3 µm with Ø of 800 mm) ±1 µm repeatability	Indexing time: - with Hirth coupling - table with drive	~ 0,8 seconds ~ 1,2 seconds
Loading/Unloading:	manual or automatic	Installation dimensions:	3'500 mm x 4'300 mm, height 2'300 mm
Platform dimensions:	Ø 2'200 mm	Required floor loading:	min. 1'000 kg/m ²



The **imo-sat** corresponds to the 4th axis: the C-axis. This option allows you to index your parts precisely.

TECHNICAL DATA

Axis acceleration:	150 U/s ²
Holding torque:	up to 120 Nm (optional)
Repeatability:	±1 µm on a Ø of 50 mm
Absolute accuracy:	±2 µm on a Ø of 50 mm

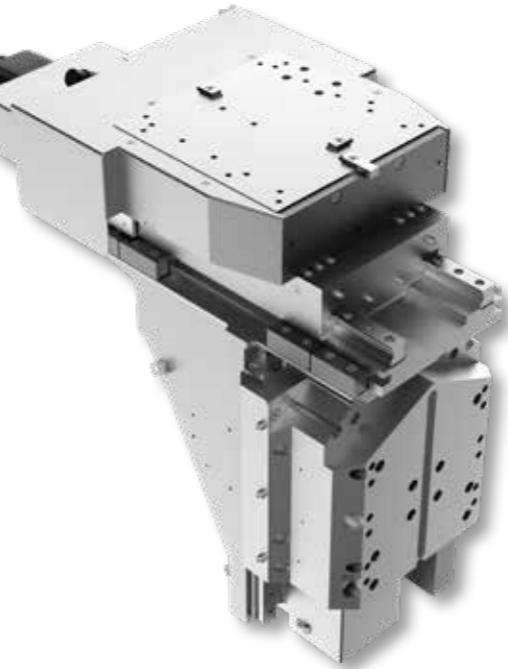
imo-smart

The **imo-smart** is designed to be a highly flexible and versatile solution. The excellent accessibility allows adjustments to be made in record time.



TECHNICAL DATA

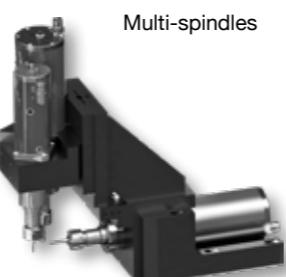
Number of stations:	up to 24 stations (12 stations with E-80-CNC)	Number of spindles:	up to 46 spindles
Indexing accuracy: - with Hirth coupling - table with drive	±2" ($\pm 3 \mu\text{m}$ with \varnothing of 800 mm) ±1 μm repeatability	Indexing time: - with Hirth coupling - table with drive	~ 1,5 seconds ~ 2,5 seconds
Loading/Unloading:	automatic	Installation dimensions:	4'600 mm x 7'500 mm, height 3'000 mm
Platform dimensions:	\varnothing 3'400 mm	Required floor loading:	min. 1'500 kg/m ²



The 3-axis **E-80-CNC** unit meets the most common needs: drilling, milling, reaming and tapping. It can be equipped with two spindles and installed horizontally or vertically. This unit can also be used on the **imo-compact** and the **imo-space**.

TECHNICAL DATA

Useful rail travel X / Y / Z:	100 mm / 130 mm / 120 mm
Power:	up to 7,5 kW
Repeatability:	1,5 μm and 0,5 μm with glass ruler (optional)
Absolute accuracy X / Y / Z:	±2 μm / ±2 μm / ±2 μm
Available spindles:	<ul style="list-style-type: none"> - HF up to 60'000 rpm - Multi-spindles - Revolver - Tool changer



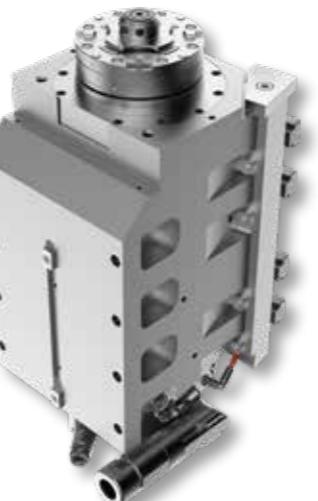
Multi-spindles



Revolver



Tool changer



The **imo-rot** corresponds to the 4th axis: the C-axis. This option allows you to turn your parts directly on the **imo-smart** to achieve the performance of a vertical spindle lathe.

TECHNICAL DATA

Rated capacity:	up to 15 kW
Rotation speed:	up to 8'000 rpm
Torque:	up to 60 Nm
Repeatability:	±1 μm on a \varnothing of 50 mm
Absolute accuracy:	±2 μm on a \varnothing of 50 mm



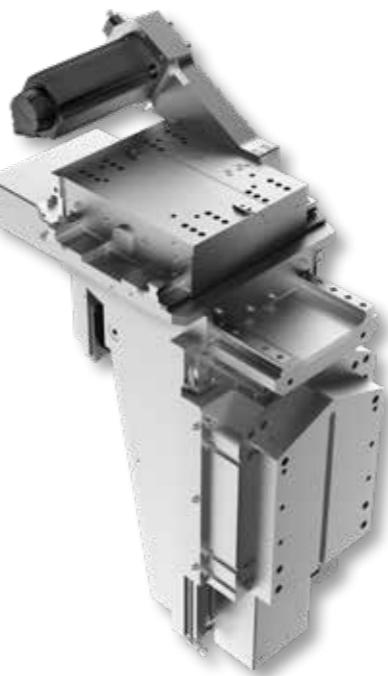
The **imo-sat** corresponds to the 4th axis: the C-axis. This option allows you to index your parts precisely.

TECHNICAL DATA

Axis acceleration:	150 U/s ²
Holding torque:	up to 120 Nm (optional)
Repeatability:	±1 μm on a \varnothing of 50 mm
Absolute accuracy:	±2 μm on a \varnothing of 50 mm

imo-space

The **imo-space** meets the highest demands for functionality and productivity. With this large platform, the possible applications are pushed to the extreme.



Multi-spindles



Revolver

Tool changer

The 3-axis **E-88-CNC** unit meets the most common needs: drilling, milling, reaming and tapping. It can be equipped with two spindles and installed horizontally or vertically. This unit can also be used on the *imo-smart*.

TECHNICAL DATA

Useful rail travel X / Y / Z:	100 mm / 130 mm / 200 mm
Power:	up to 8,5 kW
Repeatability:	1,5 µm and 0,5 µm with glass ruler (optional)
Absolute accuracy X / Y / Z:	±2 µm / ±2 µm / ±2 µm
Available spindles:	<ul style="list-style-type: none"> - HF up to 60'000 rpm - Multi-spindles - Revolver - Tool changer

The **imo-rot** corresponds to the 4th axis: the C-axis. This option allows you to turn your parts directly on the *imo-space* to achieve the performance of a vertical spindle lathe.

TECHNICAL DATA

Rated capacity:	up to 15 kW
Rotation speed:	up to 8'000 rpm
Torque:	up to 60 Nm
Repeatability:	±1 µm on a Ø of 50 mm
Absolute accuracy:	±2 µm on a Ø of 50 mm

TECHNICAL DATA

Number of stations:	up to 30 stations (16 stations with E-80-CNC)	Number of spindles:	up to 58 spindles
Indexing accuracy: - with Hirth coupling - table with drive	±2" (±3 µm with Ø of 800 mm) ±1 µm repeatability	Indexing time: - with Hirth coupling - table with drive	~ 2,0 s ~ 2,5 s
Loading/Unloading:	automatic	Installation dimensions:	6'400 mm x 9'300 mm, height 3'360 mm
Platform dimensions:	Ø 4'400 mm	Required floor loading:	min. 1'800 kg/m ²



The **imo-sat** corresponds to the 4th axis: the C-axis. This option allows you to index your parts precisely.

TECHNICAL DATA

Axis acceleration:	150 U/s ²
Holding torque:	up to 120 Nm (optional)
Repeatability:	±1 µm on a Ø of 50 mm
Absolute accuracy:	±2 µm on a Ø of 50 mm

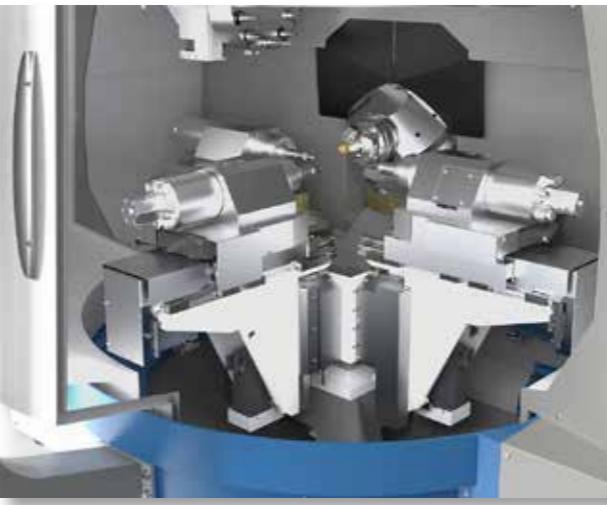
imo-flex

The **imo-flex** rearranges proven kinematics. The manageable solution for smaller batch sizes with up to 80 tools!



TECHNICAL DATA

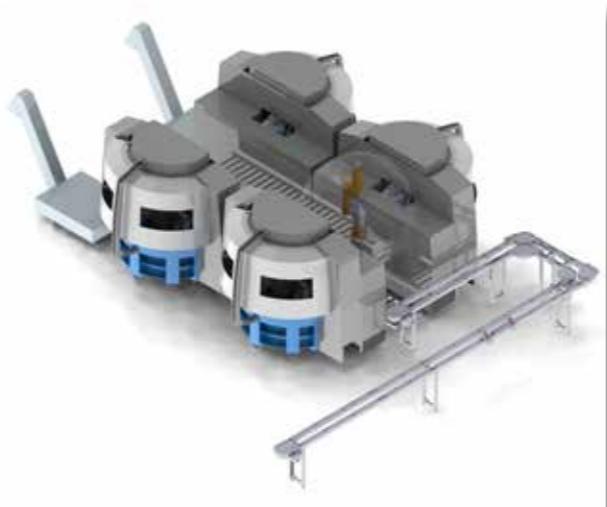
Number of stations:	up to 3 machining units	Number of main spindles:	up to 3 spindles (HSK-25 to HSK-63)
C-axis:		Number of tools per station:	
- Axis acceleration:	150 U/s ²	- Tool changer	10 pcs
- Holding torque:	up to 120 Nm (optional)	- Tool magazine	18 pcs (optional)
- Repeatability:	±1 µm on a Ø of 50 mm		
Swivel table:	< 2 sec.	Tool change time:	approx. 2.5 sec.
Loading/Unloading:	the workpiece carrier automatic	Dimensions:	3'000 x 2'400, Height 2'200 mm
Workpiece size:	up to approx. 150 x 150 x 150 mm	Required floor loading:	min. 1'000 kg/m ²



Interior view with 3 machining units



Machining unit with tool changer



Arrangement example

Up to three machining-adapted 3-axis units (E-97-CNC or E-90-CNC) with horizontal main spindles are arranged around a workpiece carrier.

The workpiece carrier is moved to the working space via the swivel table. There, it can be indexed or rotated via the C-axis.

The machining units can work on the workpiece simultaneously. This yields a significantly higher level of productivity compared to conventional machining processes.

The tool changer allows up to 10 tools to be made rapidly available to each machining unit.

If required, the system can also be supplemented with a tool magazine boasting 50 tools.

This can be used for the implementation of chaotic production or the storage of additional tools for work during „unmanned shifts“.

The imo-flex and its interfaces are designed in such a way that several machines are able to be flexibly linked to one another.

This allows additional units or loading/unloading robots to be used multiple times.

Reap the benefits of eco-friendly production now!

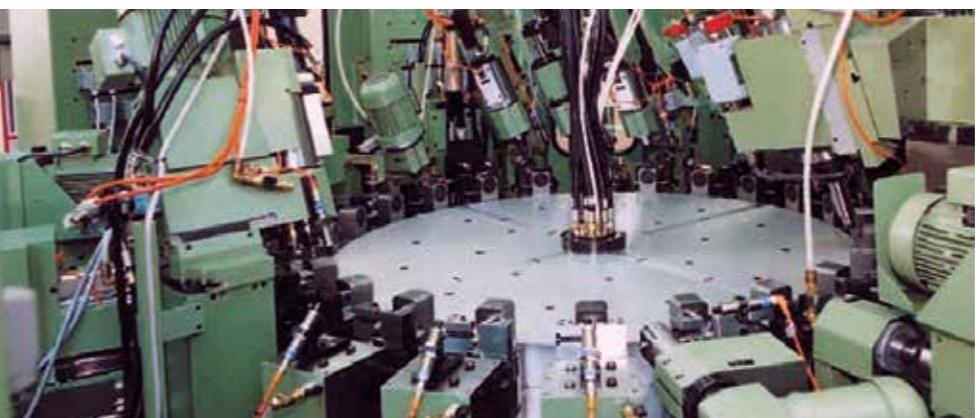
imo-conventional

For decades countless conventional Imoberdorf rotary transfer machines around the world have been producing high-precision workpieces in large quantities every day. In most cases, Imoberdorf can still supply these machines with spare parts. Imoberdorf offers the possibility of overhauling such machines and equipping them with a new PLC-control.



Imoberdorf also offers rotary transfer machines based on conventional technology for processing simpler workpieces where a CNC solution cannot be calculated. Be it an overhauled used machine or with a new basic machine imo-compact or imo-smart as a basis. The conventional machining units, which are equipped with hydropneumatic or hydraulic feeds, offer a cheap and economical manufacturing concept, especially for simple parts, which can produce successfully for decades. Thanks to the modular system of how the conventional machining units are constructed, our customers have a wide range of machining options to choose from.

imo-Premium with 24 stations



Interior view of an imo-Premium rotary transfer machine with 24 stations

I-76 with 12 stations



I-76 with 12 stations
after a complete revision.
Equipped with a new PLC control.

After 30 years still as precise as a new machine. Proverbial Imoberdorf Swiss made quality.

Indexing Accuracy:
+/- 0,003mm
Altitude Accuracy::
+/- 0,002mm

Drilling unit E-02/07-QS



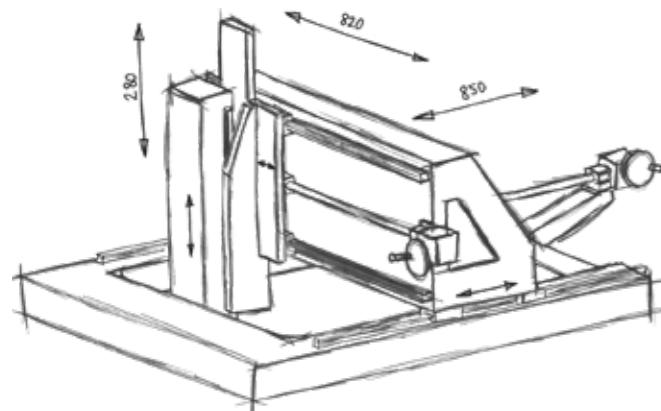
Unit E-02/07-QS



Both processing units are equipped with stepless feed cylinders. These work against mechanical stops that can be adjusted using micrometer screws.

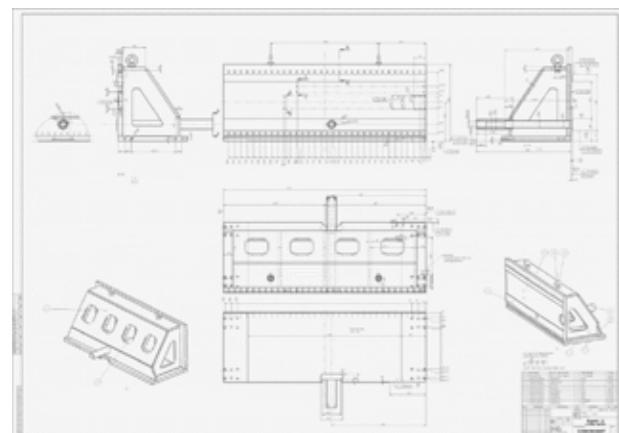
imo-consulting

Our engineers form a very versatile and competent team, capable of meeting all your challenges. Our **imo-consulting** department can help you in the most complex situations to identify solutions or to develop them if they do not exist yet. Even if it does not directly concern our machines, our design office will analyze your request and provide you complete answers. Challenge us!



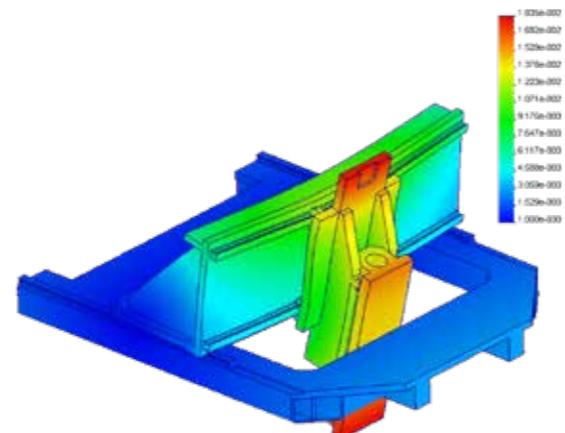
1. CONCEPT

- Analysis of problems
- Solution concepts
- System optimization
- Process sequences
- Automation
- Software



3. ENGINEERING DATA

- SolidWorks
- ProEngineer
- Quality Management



2. CALCULATION

- Numeric calculation
- FEM simulations
- Layout



4. REALIZATION

- Prototyping
- Procurement
- Assembly
- Installation
- Service & maintenance
- Further development

imo-history

1943 Josef Imoberdorf decides to found a subcontracting company for the watch industry.

He starts the business in his laundry room and does what it takes to surprise customers and pursues his dream: to manufacture Swiss products that are synonymous with high precision and quality.



1947 In order to meet the needs of the watch industry, a semi-automatic pin press is designed. The first patent application is filed.

1957 The **MB-1** is the first rotary transfer machine designed for the watch industry. It allows drilling and tapping on the balance wheel of mechanical watches.

1962 The **MB-3** has 3 machining stations with the well-proven design.

1966 Much larger and equipped with 5 machining stations, the **MB-5** also meets the needs to produce contacts used in electrical connectors.

1968 With 11 machining stations, the **I-68** represents a big step forward and offers even more possibilities.



1970 **Markus Imoberdorf** takes over the company and continues its mission: to offer solutions that generate real enthusiasm and to be one of the world's leading manufacturers of rotary transfer machines.

1971 The company has 35 employees and moves from Grenchen to **Oensingen**.

1974 The **MB-7** with 7 machining stations also meets the needs of the eyewear, compressor and electrical contact industries.

1976 Equipped with 15 machining stations, the **I-76** can also machine hydraulic fittings and reels for magnetic tapes.

1984 Available with 7, 11 or 15 stations, the **I-84** allows larger machining operations.

1998 Acquisition of the license for **Posalux** rotary transfer machines.



2000 **Anton Imoberdorf** takes over the company and the focus remains the same: to meet customer needs with innovative solutions that reflect uncompromising excellence.

2002 Birth of **imo-smart**: intelligently solved. With this new platform, the Computer Numerical Control technology is implemented.

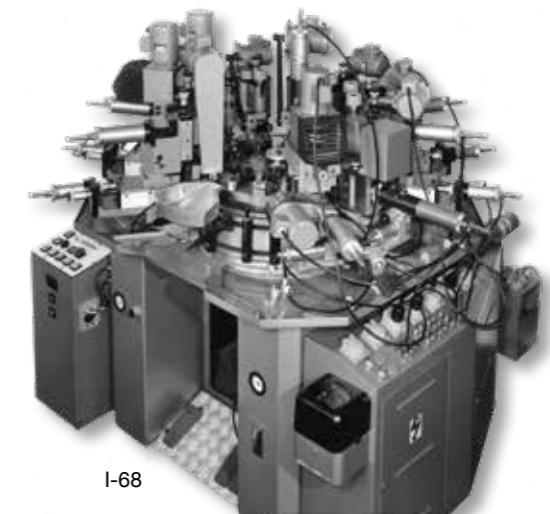
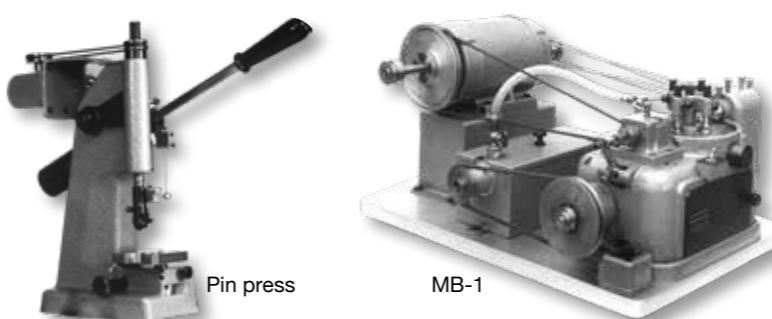
2006 Birth of **imo-space**: performance that pays off.

2007 First integration of the **imo-rot** technology.

2008 Birth of **imo-compact**: only small in size.

2010 First integration of the **imo-sat** technology.

2020 Foundation of **IMO TECH (JIAXING) CO, LTD** in China to ensure an efficient coverage of the Asian market.





PDF Version



imo-compact



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