Made
in
Germany

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HOMOGENEOUSLY SMOOTH AND POLISHED SURFACES
FOR DENTAL LABORATORIES

OTEC
PRECISION FINISHING SOLUTIONS

APPROVED 25 years TECHNOLOGY

SUSTAINABLE PRODUCTION

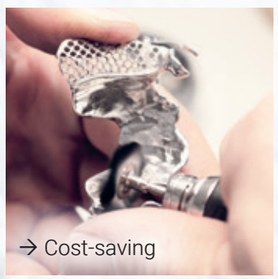
PERFECT WORKFLOW IN DENTAL LABORATORIES

COST-EFFECTIVENESS AND HIGH-QUALITY RESULTS

Best results with OTEC

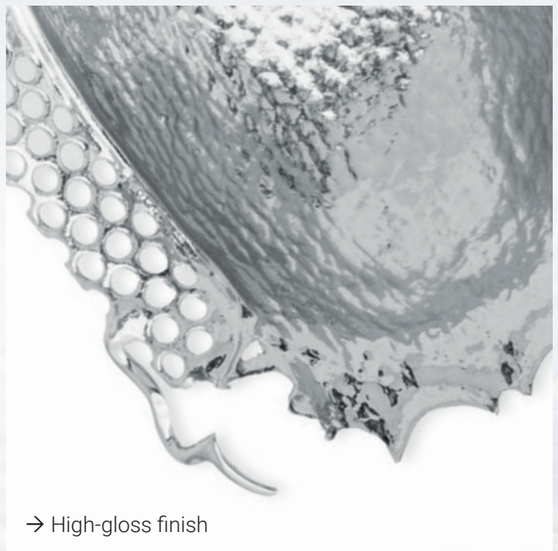
→ Dimensionally stable

→ Standardised production

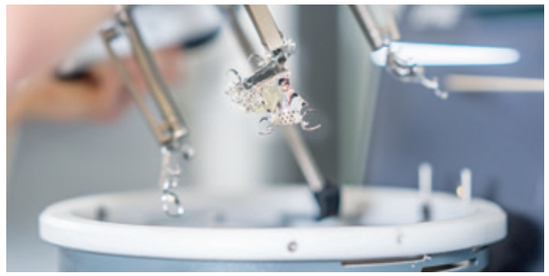


→ Cost-saving

→ Precise



→ High-gloss finish



Content

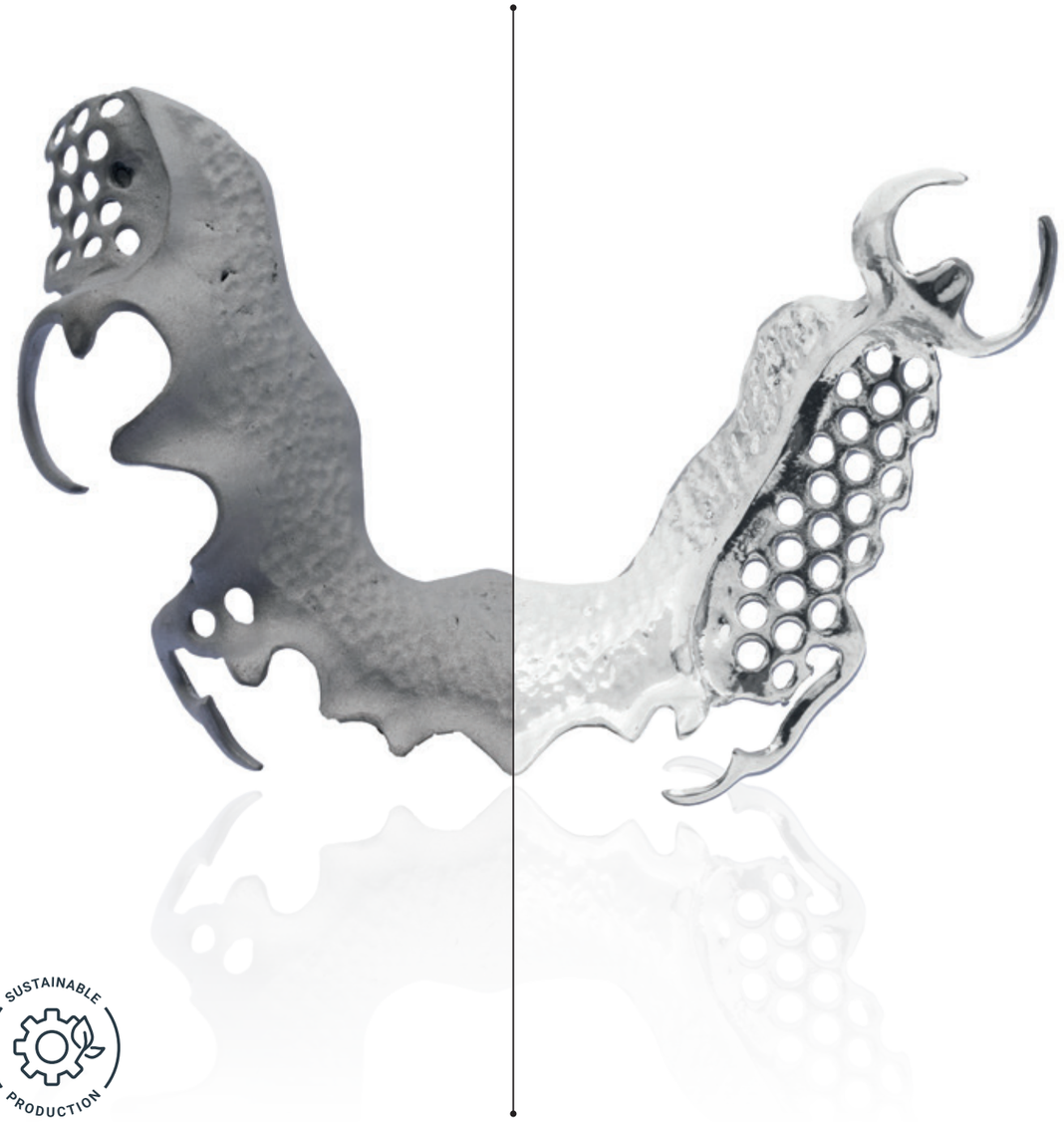
As a reliable global partner for perfect surfaces, OTEC develops and manufactures machines for high-end finishing of dental parts which set innovative standards in the industry and achieve optimal process reliability. The automation of manual processing steps delivers optimal results of consistent quality and minimal process times.

Smooth surfaces even in hard-to-reach areas, a perfect shine and homogeneous, repeatable results are crucial for ensuring comfort for patients. OTEC is your partner for surface finishing and helps you to automate time-consuming, manual tasks in your laboratory.

The OTEC solutions for dental laboratories are “Made in Germany” and stand for high-end process results, high-quality components and low-maintenance operation.

Splints p. 12 | 13

EFFICIENCY IN PERFECTION
THE OTEC ELECTRO FINISHING APPLICATIONS



SUSTAINABLE PRODUCTION

The OTEC Electro Finishing Technology for cobalt-chromium offers high-end quality with absolute process reliability

The high dental technology requirements for homogeneous, high-gloss surfaces can be easily met even in hard-to-reach areas using the compact OTEC Electro Finishing Machine EF-Smart T. It enables precise finishing of dental objects – smoothing, polishing and deburring – without the smallest of scratch marks and waviness in a repeatable process without compromising tolerances or geometries. With this process, OTEC has developed a gentle, precise and reliable solution to meet the high requirements of the industry – with a considerably more cost-effective result. Both process costs and workload can be drastically reduced.

A process tailored to the specific material and the machine ensures that the EF-Smart T delivers perfect results for meeting the most diverse requirements for dentures, implant systems or orthodontic workpieces. The process smooths and polishes the surface of the workpieces, increases corrosion resistance and reduces surface roughness. The result achieves significant added value thanks to machining. The unique OTEC Electro Finishing Process replaces three manual work steps in the dental technician's workflow: buffing, pre-polishing and electrofinishing. The resulting time saving is huge and can significantly increase the added value in the laboratory.

See the benefits for yourself and test the successful OTEC Electro Finishing Technology

- No manual work such as buffing, pre-polishing and electrofinishing
- Process time reduced by 70%
- Uniform polishing even in hard-to-reach areas
- No compromise on tolerances or geometries
- Reproducible, stable and sustainable processes
- Compact, cost-effective and ergonomic machine
- Uncontaminated working conditions thanks to acid-free processes

As experienced solution providers, the OTEC experts develop the ideal process with the right parameters and the required abrasives for your specific workpiece! Send us your workpieces and get on-site advice from our worldwide sales partners.

Electro Finishing Applications

Removable dentures
No compromise on geometries required for that perfect fit. Homogeneous smoothing and polishing of the entire component, particularly on the inner surfaces of clasps. Processing even in the smallest corners and details.
Process time: 15-20 minutes
Capacity: 3 workpieces/process

Crowns and bridges
Excellent smoothing and polishing of occlusal surfaces – even fissures. Removal of milling grooves. But the side facing the dentine is not processed.
Process time: 15-20 minutes
Capacity: 12 workpieces/process

Orthodontics
Fast smoothing and polishing of delicate structures. Stable processes ensure repeatably accurate results. Gentle processing prevents any damage to components.
Process time: 15-20 minutes
Capacity: 16 parts/process

Suprastructures
Gentle, selective processing allows the removal of milling grooves and protects the areas that ensure a perfect fit. Minimal removal of material without compromising the fit.
Process time: 5-10 minutes
Capacity: 3 workpieces/process

Working on pre-veneered surfaces
Pre-veneered dentures can be polished because only metallic conductive surfaces are processed, depending on the process. Acrylic-veneered areas are unaffected.
Process time: 15-20 minutes
Capacity: 3 workpieces/process

EF-SMART T – ADDED VALUE FOR YOUR LABORATORY

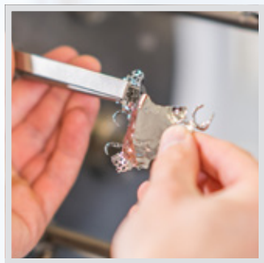
SIMPLE,
PRECISE AND
RELIABLE

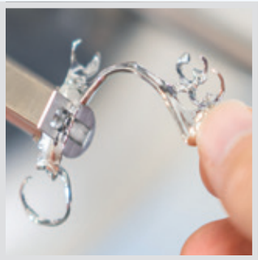
OTEC EF-Smart T at a glance

The OTEC EF-Smart T is impressive with its compact design, low operating noise and intuitive operation. It delivers reproducible high-quality results. The Plug & Play principle allows fast and easy integration in your laboratory.

Homogeneous, perfectly smooth surfaces are obtained with a significantly reduced workload. The EF-Smart T is the perfect precursor for automated processes. Thanks to the Industry 4.0 Ready package, which is integrated as standard, the processes can be monitored and controlled digitally.

- Up to 12 workpieces/process
- Process time of 10-30 minutes
- 3 process steps in 1
- Intuitive operation
- Industry 4.0 Ready
- Low-noise process
- Sustainable processes
- Plug & Play principle





Easy to use

Load and start the machine in less than 1 minute

The EF-Smart T was designed so that it can be integrated easily into the technician's existing workflow. In addition to its low operating noise and intuitive operation, the focus was also on simple and ergonomic handling. As a result, the machine can be loaded with 3 workpieces and the process can be started in less than 1 minute:

- Clamp workpieces
- Close the cover
- Select program

Clear time saving for the technician thanks to fast and easy handling.

Precise, fast and gentle on workpieces

High-gloss in less than 30 minutes

The process, which is designed for cobalt-chromium alloys, gives a precise surface finish after a process time of just 10-30 minutes. The shape of the workpieces is untouched, and tolerances are not compromised. The abrasive circulates gently and homogeneously around the surfaces, thereby achieving smoothing and polishing effects even in hard-to-reach areas and on the inner surfaces of the clasps.

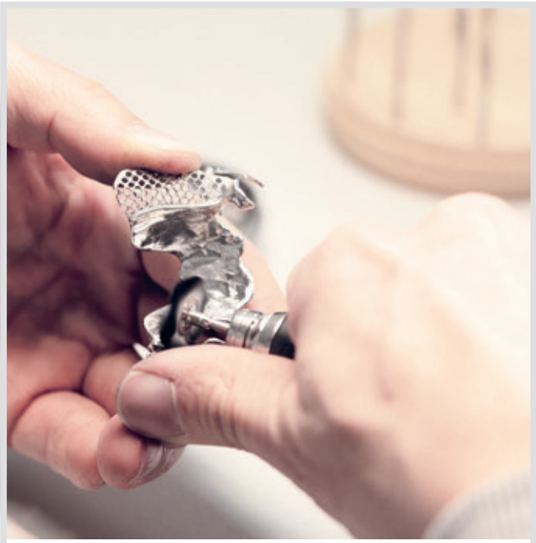
Work in the laboratory can be performed in parallel using the OTEC EF-Smart T. Up to 3 RPD´s or 12 crows can be processed at the same time.

Reliable and digitalised

Ready for standardised processes

The OTEC EF-Smart T enables constant, reproducible production processes for standardising and automating the high quality requirements of the dental industry. Digital features such as Media Monitoring guarantee maximum process control. Other digital features include Media Activation for guaranteed machine, process and operating reliability.

- **Intuitive operation via touch panel**
- **Automated program sequences**
- **Remote control and remote maintenance**
- **Media Activation**



Reduces manual preparation of components to a minimum

Manual preparation reduced by more than 70%

The optimised process sequence of the EF-Smart T reduces pre- and post-processing of the workpieces to a minimum and saves expendable tools.

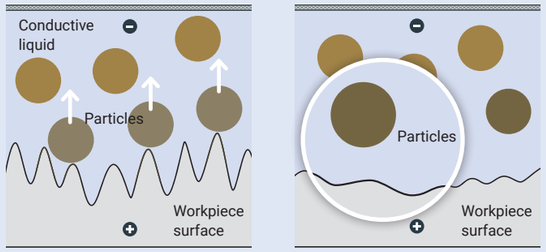
Recommended preparation of parts

- Remove cast channels and support structures
- Blast the workpiece to remove the oxide layer
- Homogenise and activate the surface

The EF-Smart T replaces three very time-consuming manual work steps – buffing, pre-polishing and electro-finishing – reducing preparatory work in the laboratory by more than 70%.

ELECTRO FINISHING
A SHINING SUCCESS WITH SUSTAINABLE TECHNOLOGY

The process in detail



It is based on a specially developed suspension made up of functional particles and ionic liquids in a process container in which the workpiece is immersed. When a defined power source is applied, this produces an electrical potential between the cathode (-) and anode/workpiece (+).

This results in a electrochemical reaction (ion transfer). Ions are released from the surface of the workpiece and absorbed by the electrolyte and the functional particles. The perfectly matched abrasives and the defined size of the functional particles ensure that roughness peaks are mainly reduced.

The controlled chemical reactions and the targeted circulation allow perfect smoothing and produce a homogeneous shine even on the smallest radii.

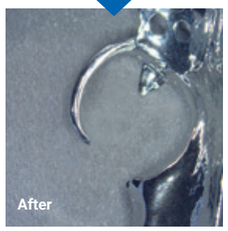
The OTEC Electro Finishing Process for CoCr – high-gloss results in the dental industry

Unlike conventional electrochemical polishing, this technology involves the workpieces moving (rotating) through the abrasive, thereby ensuring that the abrasive is circulated uniformly around them.

The OTEC Electro Finishing Technology uses special polymer particles that are in suspension with an ionic conductive liquid. The OTEC portfolio includes a range of perfectly matched products in order to guarantee optimal and efficient processes.

EF-Smart T set-up

Accessories
Quick-Release-Holders,
Holder for crowns and bridges,
Holder for telescopes and structures



The inner areas of RPD's are also smoothed and polished by the EF-Smart T.

→ Precise smoothing in hard-to-reach areas

→ Homogeneous shine over the entire component

→ Critical geometries are maintained, no loss of shape

→ Gentle process, perfect for delicate components

THE OTEC MASS FINISHING APPLICATIONS
SPEED AND PRECISION

APPROVED 25 years TECHNOLOGY

SUSTAINABLE PRODUCTION

Automate manual tasks in your laboratory with the OTEC grinding and polishing systems

Smoothly polished surfaces and rounded edges on splints, aligners and dentures are essential for ensuring comfort for patients. These essential properties are achieved even in hard-to-reach areas using the time-saving OTEC Mass Finishing Machines.

Previous manual and often very time-consuming processes can be substituted in this way and can be performed using automated processes in future – with consistent high-end results.

The perfect interaction of highly efficient machine technology and specially adapted abrasives and parameters means that many workpieces can be cleaned, smoothed and polished precisely at the same time. Milling grooves and 3D printing structures are reliably removed, and the surface is smoothed and polished. This saves a considerable amount of time for the technician when it comes to performing often very time-consuming tasks.

Successful OTEC Mass Finishing Processes are impressive with their precise high performance

- Machining with no manual rework
- Targeted polishing of hard-to-reach areas
- Reproducible and stable processes
- Ergonomic design and easy-to-handle machines
- Quick return on investment thanks to low process costs and automation of manual processes
- Compact design as table-top and stand-alone machine
- Sustainable production by reducing the workload for employees and substituting processes that pose health risks
- Technology that has been tried and tested thousands of times – now validated for the workflow in dental laboratories

As experienced solution providers, the OTEC experts develop the ideal process with the right parameters and the required abrasives for your specific workpiece! Send us your workpieces and get on-site advice from our worldwide sales partners.

Mass Finishing Technology applications

Splints
Smoothing and polishing of splints, a two step process ensures the removal of remaining structures in the surface, edges are rounded and the surface is polished.
Process time: approx. 2 hours

Aligners
Smooth surfaces and edge rounding through automated deburring, for a perfect and comfortable fit.
Process time: approx. 2 hours

Dentures
Manual finishing is significantly reduced by smoothing and pre-polishing the fissures and interdental spaces. Areas relevant to the fit are preserved.
Process time: approx. 2 hours

MAXI-DENTAL – CONVINCINGLY VERSATILE
COST-EFFECTIVE AND EFFICIENT

OTEC BESTSELLER

→ Splints

→ Dentures

OTEC Maxi-Dental at a glance

The compact table-top machine is impressive with low acquisition costs and a convenient Plug & Play principle. The modular design concept of the Maxi-Dental is ideal for up to 15 workpieces per day.

The CF-Series is recommended for larger batches because it can process up to 30 workpieces/batch (p. 14/15).

- Up to 5 workpieces/process
- 1 machine for 2 indications
- Process time of 2 hours
- Easy to use
- Fast container changes
- Plug & Play principle

Maxi-Dental application video

Finishing small batches economically and efficiently

Maxi-Dental

With the Maxi-Dental, 3 manual work steps can be performed in one machine – pre-grinding, fine grinding and polishing. Post-processing is automated, and a perfect finish is guaranteed.

Advantages of the Maxi-Dental system

- Maximum flexibility – several processes with just one machine
- Switch quickly between the various processes thanks to tool-free container changes
- Plug & Play principle
- Compact table-top machine
- Cost-effective even when processing only a few workpieces per day

Cost-effective solution, recommended for laboratories processing up to 15 workpieces/day

Perfect workpiece surfaces of consistent quality

Splints | Dentures
2 workpieces in 1 machine

Maximum comfort for patients is the primary processing objective. The surfaces are smoothed and polished gently and homogeneously even in the smallest angles. Shape-retaining elements are not compromised.

Comfort results with OTEC

- Smoothing and polishing bite splints – a two-step process removes structures in the surface without a trace and rounds the edges
- Pre-polishing of dentures - manual finishing can be significantly reduced by machine processing of the surface even in fissures and interdental spaces.

Reproducible, consistently high-quality results

CF-TECHNOLOGY – POWER FOR SERIES PRODUCTION
HIGHLY EFFICIENT AND RELIABLE

Material-independent, reproducible and first-class surface finishing for splints

100 % machining and efficiency for series production

Excellent occlusal – even of fissures. For perfect wearing comfort, without changing the shape of the dental arch and fit-relevant areas. After manual cutting and grinding of the connectors/supports, the splint is automatically smoothed and polished in the Maxi-Dental in two process steps. The added value is clear: a 100 % reduction in manual activities ensures significantly increased added value in your production.

Proven OTEC Technology for the most demanding requirements

- One machine for 2 processes
- Consistent and Reliable and consistent results
- High quality and minimal price per piece
- Repeatable results and maximum output
- 100 % automation in smoothing and polishing

Industrial, cost-effective standard in dental laboratories

Established, highly efficient and reliable system for series production of aligners

Configure the number of containers you need depending on your production volume

Deburring and targeted edge rounding for aligners - the perfect tuned process eliminates the burr from cutting and achieves a defined edge rounding. This provides the patient a perfect and comfortable fit without losing transparency. Automated deburring replaces time-consuming manual labour and significantly increases the added value in your production. The price per piece is significantly reduced while the output is maximised.

Advantages of the CF-Machines

- 100 % Automation by machine deburring
- Increased wear comfort thanks to edge rounding
- Transparency of material is maintained
- Minimum cost per piece
- Maximum output: up to 100 parts/batch

Reproducible, consistently high-quality results

OTEC CF-Machines at a glance

The company originally started with the proven OTEC CF-Technology, which has been in existence now for more than 25 years. The high-quality and carefully selected components and the perfected design ensure low-maintenance operation. The workpiece surfaces are finished cleanly and highly efficiently. With its modular machine concept, OTEC offers solutions tailored to a wide variety of customer requirements.

The CF-Machines allow efficient processing of very sensitive workpieces in large quantities. Up to 30 bite splints or aligners can be processed in each process container. This high-performance, intuitive machine is the perfect and reliable new addition to your laboratory. The proven OTEC CF-Machines are available with 1, 2 or 3 containers, depending on the number of workpieces.

CF Series Application Video

CF 1x18

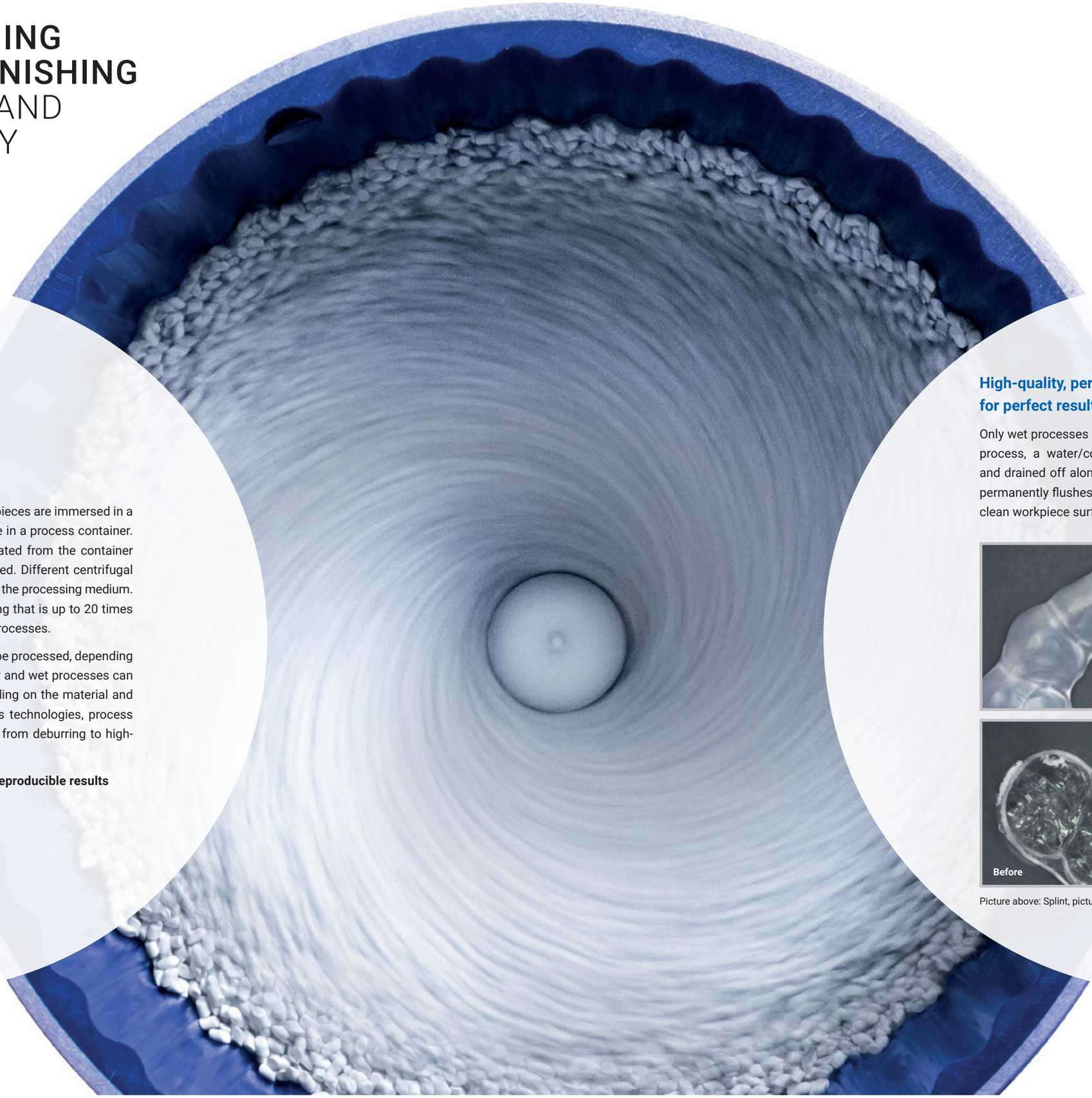
- Up to 30 workpieces/batch
- 1 machine for 2 processes
- 1 to 3 process containers
- Intuitive operation
- Ergonomic handling
- Industry 4.0 Ready
- Low-maintenance machine

Operation via HMI touch panel

Easy-to-empty container

Reliable separation of workpieces

MASS FINISHING WITH DISC FINISHING
HIGH-SPEED AND HIGH-QUALITY



CF-Technology

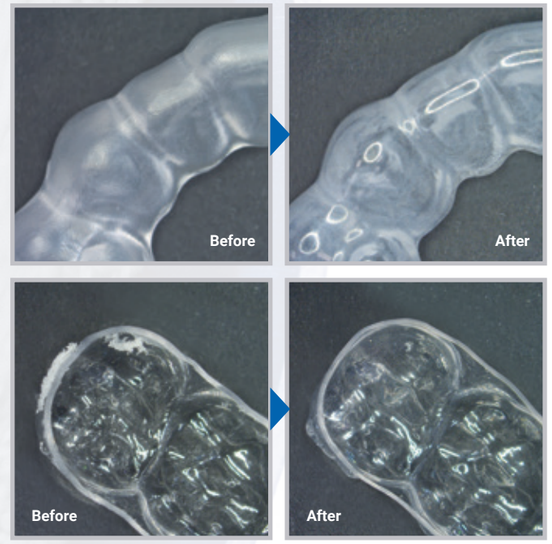
With the OTEC CF-Machines, the workpieces are immersed in a rotating grinding or polishing granulate in a process container. The bottom of the container is separated from the container wall by an adjustable gap and is rotated. Different centrifugal forces act between the workpieces and the processing medium. This results in very intensive processing that is up to 20 times more effective than other machining processes.

A very wide range of components can be processed, depending on the technological concept. Both dry and wet processes can be performed in one machine. Depending on the material and the required processing result, various technologies, process parameters and abrasives are used – from deburring to high-gloss polishing.

OTEC Disc Finishing – fast, reliable, reproducible results

High-quality, perfectly matched abrasives for perfect results

Only wet processes are used for dental applications. For a wet process, a water/compound mixture is continuously added and drained off along with the grinding/polishing bodies. This permanently flushes out the removed dirt particles to ensure a clean workpiece surface.



Picture above: Splint, picture below: Aligner

PRECISION FINISHING SOLUTIONS
A SHINING SUCCESS – EXACTLY WHAT YOU WANT




OTEC Finishing Center

OTEC is “Made in Germany”

We provide a solution tailored to your requirements
OTEC has three machine series in its portfolio for the dental industry in order to provide the best possible solution in terms of quality and value for money. With more than 25 years of experience, OTEC is the right partner if you have questions about machine surface finishing of dental applications.

Optimal processes tailored to
- Production volume
- Workpiece geometry and material
- Workpiece requirements

OTEC machines stand for reliable processes
OTEC machines are developed, designed and made entirely in Germany. The technology has been tried and tested over many years and is used reliably in many industries. The OTEC solutions include an overall concept tailored specifically to individual customer applications as well as abrasives and process parameters. The process specialists work together with the customer as part of their free, non-binding sample processing service to develop the best possible solutions for every application. OTEC is your reliable partner for perfect results.

Sales partners worldwide

Customer proximity and competence thanks to experienced dental retailers
OTEC relies on qualified partners with the objective of developing synergies between surface processing and dental technology. Competence, reliability and experience are combined to guarantee the best possible workflow in the laboratory.

Competence on site
- Qualified experts for individual needs
- Competence based on experience
- The latest technologies on site

OTEC is always interested in expanding its network of partners in this area. If you are interested in collaborating with us in the area of sales and marketing, please contact us.

Find your local partner

EF-Smart T

Maxi-Dental

CF 3x18

Made in Germany

OTEC focuses on sustainability

Better working conditions and sustainable processes for your laboratory
Avoiding disturbing sources of noise and hazardous substances (gases, dust, fumes) are important factors for ensuring a good working environment. Both dust and toxic substances as well as the time and effort required for manual polishing are significantly reduced by substituting manual work steps and toxic electropolishing baths. This also involves using “silent” equipment that does not interfere with everyday laboratory work.

Corrosion-resistant and biocompatible
In addition to smoothing and polishing the surface, the Electro-finishing Technology also increases its corrosion resistance. This increases its durability and quality. The machines and technologies also comply with all required standards in the medical technology field in that they do not bring about any change in material properties. This means that the biocompatibility* of the alloys as guaranteed by the manufacturers remains unaffected.

Safety is assured through tested processes
The Medical Device Regulation (MDR) stipulates the need to fully document all procedures and processes. The OTEC range of machines gives you the ideal basis for this. By identifying an optimal process sequence with all the relevant parameters, it is possible to create processing routines and comply with the required standards at the same time.

* Materials or assemblies that do not have a negative effect on a living system in its environment are referred to as biocompatible. The biocompatibility of implants is particularly relevant because they are in direct contact with living tissue over a long period of time.

Full service partner

Looking for training and advice?
Regular events organised as part of the OTEC Campus, such as seminars, in-house training courses, lectures and other events provide customers with information about the latest developments as well as tips and tricks for the various applications. This know-how in perfecting surfaces is backed by 25 years of experience and gives customers a decisive competitive advantage. Keep up-to-date with the latest news and developments with the OTEC Newsletter!

Digitalised production
With the OTEC Industry 4.0 digitalisation packages, there is nothing standing in the way of transparent and monitored production. Whether you want remote maintenance or individual condition monitoring, the digital integration of the machines offers the ideal basis for optimising your production.

On-site and digital service
OTEC as an established partner, even at the customer site, stands for close proximity and fast response times. Direct contact with the service experts guarantees fast and sustainable problem-solving for the individual needs of customers.

All services can be found at: www.otec.de/en

SUSTAINABLE PRODUCTION · OTEC CAMPUS · DIGITALISED PRODUCTION · APPROVED 25 years TECHNOLOGY