

Special machines in the CF Series

Performance data, equipment and optional extras

For special applications or processes, we supply special machines which are specifically tailored to a particular area of application. By combining standard components with specially designed ones, we can supply highly affordable customized systems. Send us details of your application requirements and we will build the right machine for you.

SEMI-AUTOMATIC CF MACHINES

The CF 50 MR Series is equipped with an automatic separator unit and a media return system. When the process container is emptied, the workpieces are automatically separated from the media. When the container swings back into position, the abrasive media is fed back into the process container. The abrasive media can be replaced simply by using an interchangeable media container. A sophisticated mechanism enables the separator screen to be replaced easily and quickly without the need for tools.

Technical specifications

Type	Width x Depth x Height [mm]	Weight [kg]	Power requirement [kVA/V]
CF 1 x 50	1457 x 2000 x 2300	550	3/230
CF 2 x 50	2890 x 2000 x 2300	1100	6/400



THE COMPANY

Founded in 1996, OTEC has established itself on the market as a technology leader by way of innovative machine concepts, new inventions and improvements. OTEC supplies machines specifically tailored to specific industries and individually customized machines which are not only truly impressive but superior to conventional systems in terms of cost-effectiveness, handling and precision. Some 80 employees at the company's corporate headquarters in Southern Germany and a worldwide sales network guarantee the best of service and top-quality results at all times.



Perfect surfaces. Worldwide.
Беттеср зһтәсәсә? Мотлқмдә?

CF-Serie



DISC FINISHING MACHINES



SEMI-AUTOMATIC CF 1X18

This customized machine incorporates a handling system for recycling the media and an automatic system for separating the workpieces from the abrasive media.

FULLY AUTOMATIC CF MACHINE

with separating system and media return



▶ OTEC-SERIE: DF
Drag finishing units for tools, with up to 60 tool holder clamps per unit.



▶ OTEC-SERIE: SF
(Stream Finishing) Drag finishing machines for better results for selective mass finishing. Ideally suited to processing complex geometries.



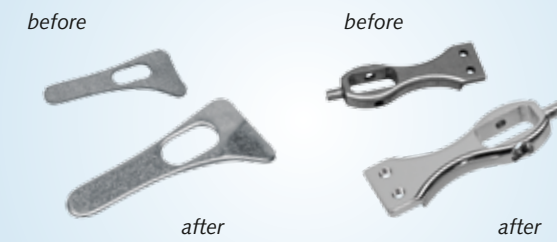
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Mass finishing for the most demanding requirements

The CF machines from OTEC work on the disc finishing principle, an extremely efficient mass finishing process. During this process, the workpieces are immersed in a rotating grinding or polishing granulate in an open, barrel-shaped process container. The medium is rotated by means of a rotating disc which forms the bottom of the container and which is separated from the container wall by an adjustable gap.

The effect of the different centrifugal forces acting on the workpieces and the abrasive medium gives a very intense finishing process. This can be up to 20 times more efficient than, for example, conventional vibrators. In the wet finishing process, a water/compound mixture is continuously added and drained off, taking with it the residues of the material removed. This gives the workpieces a clean and corrosion-free surface. Many years of experience have gone into the development of these machines, which explains why they are so popular with the customers.



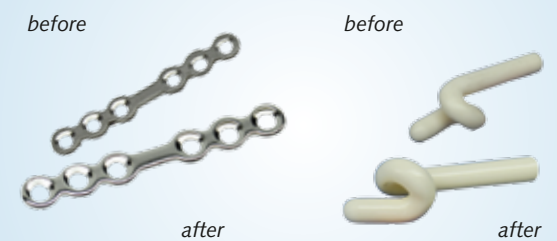
Industry – from deburring to polishing

Here, the main areas of application are fast and perfect surface finishing of stamped, milled and turned parts. In particular, the CF machines can even process very intricate and delicate workpieces. In industrial applications, the main focus is on the deburring and grinding of surfaces in qualities up to and including a mirror finish.



Jewelry – a brilliant shine even in the deepest recesses

For obtaining a high-luster finish in industrial jewelry production, whether with or without gemstones, or finishing complex, intricately designed items of fine jewelry, the CF machine can be used for all these applications. Using the right medium for the job and the appropriate accessories, such as ring holders, ensure brilliant and cost-effective results at each stage of the process.



Medical devices – high-precision finish for delicate items

Robust implant materials, ceramics and plastics. For medical devices, extremely smooth surfaces with very low roughness values (less than 0.02µm) are required. Here, the CF machines are so gentle and thorough that there is absolutely no deformation of the products during finishing.



Dental and more – mirror-finish polishing of non-precious materials

Acrylics, amorphous materials, glass porcelain and hard rubber – the CF machines polish all these materials to a high luster. For intricate contours and sensitive workpieces, both hard and soft. Deburring, burnishing and polishing in a single process.

THE PROCESS

Highlights:

- ▶ Fast, absolutely reliable and reproducible results
- ▶ Extremely cost-effective finishing, even for very small parts (e.g. turned parts 0,5 mm Ø, material thickness 0,08 mm)
- ▶ Simple handling
- ▶ Wide range of applications, from deburring to mirror-finish polishing

CF – low capital investment and low operating costs

Compact design, simple handling

A processing system which is fine tuned to each specific application sets the standards for efficient and economical deburring, grinding, burnishing and polishing. The CF Series of machines is a modular concept which can easily be extended. For example, up to six process containers can be set up next to one another in a single unit.



Advanced technology

The gap system is the key to the efficiency and cost-effectiveness of the disc finishing process. Machines in the CF Series are therefore available with the right gap system for all processing techniques (wet or dry). The advantages of this are:

- ▶ Low maintenance requirement
- ▶ Top-quality reproducible results
- ▶ Absolute reliability



SOPHISTICATED AND RELIABLE

Extremely user-friendly

Rotary speed, processing time, water/compound mixture concentration, rinse cycles and all other key process parameters can be set via the easy-to-navigate menu system on the Siemens touch screen control unit and up to 75 different finishing programs can be stored.

Absolute reliability

Only the very highest quality materials and components are used in order to ensure trouble-free operation and long service life.

Extremely cost-effective

Comparatively low capital investment and considerable potential for savings in terms of processing times make the CF Series excellent value for money.

Perfect process results

Deburring, burnishing, grinding and polishing – a single machine covers the entire range of applications.



Patent pending

Ceramic gap system

With this system, the gap can be set to a precision of 0.05 mm. This technology is preferred for dry finishing since the use of very fine polishing granulates gives the best polishing results.

Ceramic/polyurethane gap system

This standard system from OTEC is suitable for the most common wet finishing applications. The ceramic/polyurethane combination prevents anything from lodging in the gap and blocking the disc, thereby ensuring a high degree of process reliability and low maintenance requirement.

Zero gap system

For the wet finishing of very fine workpieces, the gap can be reduced to zero. This makes it possible to use very fine microfinishing media such as e.g. KXMA 24 and ensures that no workpieces can become lodged in the gap.

Zero gap system WITHOUT continuous water flow

This zero gap system works without a continuous flow of water through the gap. Especially effective when diamond is used as a polishing additive. This new system enables the diamond powder to be retained in the barrel throughout the whole process, thereby keeping finishing costs down. This process is used for applications such as the polishing of ceramic components.



The CF Series

Performance data, equipment and optional extras

The CF machines are available in jewelry and industrial versions. One of the main differences is the control system; the industrial version is supplied as standard with the Siemens 5 7-200 control unit. Modular disc finishing machines (supplied as standard) are available with 1 - 6 process containers.

CF SERIES (STAND-ALONE UNIT)

Type	Container volume [l]	Container diameter [mm]	Width x Depth x Height [mm]	Weight [kg]	Power requirement [kVA / V]
CF 1 x 9	1 x 9	257	810 x 1000 x 1620	118	1,2 / 230
CF 2 x 9	2 x 9	257	1240 x 1000 x 1620	182	1,8 / 230
CF 3 x 9	3 x 9	257	1670 x 1000 x 1620	220	3,0 / 230
CF 4 x 9	4 x 9	257	2200 x 1000 x 1620	254	3,6 / 400
CF 1 x 18	1 x 18	333	880 x 1000 x 1620	127	0,9 / 230
CF 2 x 18	2 x 18	333	1380 x 1000 x 1620	200	2,0 / 230
CF 3 x 18	3 x 18	333	1880 x 1000 x 1620	234	3,0 / 230
CF 4 x 18	4 x 18	333	2405 x 1110 x 1760	350	4,5 / 400
CF 1 x 32	1 x 32	410	1130 x 1120 x 1630	285	2,0 / 230
CF 2 x 32	2 x 32	410	1960 x 1120 x 1630	520	4,5 / 400
CF 3 x 32	3 x 32	410	2780 x 1120 x 1630	750	7,0 / 400
CF 4 x 32	4 x 32	410	3610 x 1120 x 1630	900	9,0 / 400
CF 1 x 50	1 x 50	485	1200 x 1535 x 1680	265	2,5 / 230
CF 2 x 50	2 x 50	485	2120 x 1535 x 1680	450	5,0 / 400
CF 3 x 50	3 x 50	485	3040 x 1535 x 1950	635	7,5 / 400
CF 4 x 50	4 x 50	485	3940 x 1535 x 1950	1050	10,0 / 400

CF-T SERIES (BENCHTOP UNIT)

Type	Container volume [l]	Container diameter [mm]	Width x Depth x Height [mm]	Weight [kg]	Power requirement [kVA / V]
CF 5 T	5	190	575 x 400 x 680	30	0,4 / 230
CF 2 x 5 T	2 x 5	190	990 x 505 x 720	63	0,8 / 230
CF 9 T	9	257	650 x 530 x 830	65	0,9 / 230
CF 2 x 9 T	2 x 9	257	1145 x 545 x 865	116	1,8 / 230
CF 18 T	18	333	725 x 600 x 845	80	0,9 / 230
CF 2 x 18 T	2 x 18	333	1285 x 575 x 845	140	1,8 / 230

Standard equipment, CF machine

- ▶ Process container with hot molded PU lining
- ▶ Aluminum profile chassis – easy to add on optional equipment
- ▶ Chassis in anodized aluminum profile (non-corroding)
- ▶ Speed control via frequency inverter
- ▶ PLC touch screen control unit or 2D control system (for jewelry applications) with digital display showing processing time, rotary speed, rinse cycles, dosage and other key process parameters, with the capacity to store up to 75 individual finishing programs

Standard equipment, CF-T machine

- ▶ High-quality gap system with ceramic rings to enable very fine grained polishing granulate to be used
- ▶ Speed control via frequency inverter
- ▶ Digital display showing preset time, elapsed time, rotary speed and faults

Optional extras for CF-T machine

- ▶ Dosing pump with automatic cut-out when empty
- ▶ Screens for separating workpieces from granulate

CF OIL SERIES

This series is specially designed for a mass finishing process which uses special grinding and polishing media together with oils in place of a water/compound mixture.

Application

Especially suitable for workpieces which only have a limited degree of burring (e.g. secondary burs after grinding)

Highlights of this system

- ▶ No additional costs or space requirement for processing waste water
- ▶ No need to degrease the workpieces before the mass finishing process
- ▶ Corrosion is not an issue
- ▶ No need for drying. Workpieces are still oily when passed on to the next stage of processing
- ▶ Ideal for use as a flexible finishing station in a production line

Technical specifications

Type	Width x Depth x Height [mm]	Weight [kg]	Power requirement [kVA/V]
CF 2 x 18	1380 x 1000 x 1620	200	1,8/230

Other machine sizes on request



Optional extras

Dosing unit with electronic programming of compound concentration and water flow rate

In addition to setting the compound concentration, this dosing unit enables the exact rate of water flow to be preset via the control unit. Furthermore, it is also possible to flexibly program the water flow rate and the compound concentration during the process cycle. For example:

- ▶ Low water flow rate, low compound concentration at start of process = very intense grinding.
- ▶ High water flow rate, high compound concentration, low speed at the end of the process = high-quality surface, high degree of process reliability.



Manual separating unit using manual screen

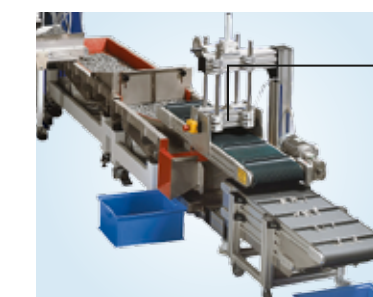


System for storing additional plastic containers for media



Unisepa

- ▶ Automatic separating system using screen separating machine with vibration motor
- ▶ Highly efficient
- ▶ Quick-change system for screen; vibration speed adjustable via frequency inverter
- ▶ Optionally available with rollers and/or rinse system



Automatic separation with integrated demagnetizer

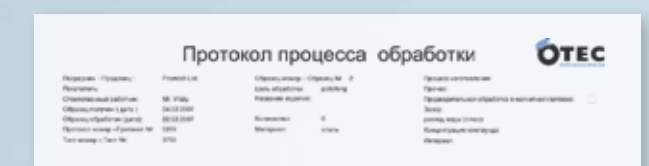
- ▶ Reliably separates ferromagnetic workpieces from the abrasive media
- ▶ The downstream demagnetizer automatically demagnetizes the workpieces

SERVICE

Proof is better than promises

Let us prove to you how advanced our technology is

We will be pleased to prove the claims we make with regard to our company and the efficiency of the CF series of disc finishing machines. On request, we will provide you with specific and detailed advice on the right finishing system for your application, including formulating the right grinding and polishing media for you. And what's more, we will also finish a sample of your product free of charge and without any obligation whatsoever - and provide a report of all relevant process parameters.



before



after

