

FOCUS ON APPLICATIONS

WITH ACCURACY DOWN TO THE LAST MICRON, SURFACE PROBLEMS ON STABILISED KNEE IMPLANTS ARE A THING OF THE PAST

TARGETED PRECISION GRINDING AND POLISHING WITH STREAM FINISHING



The knee joint is a hinge joint that also allows a certain degree of rotation. It's also the largest hinge joint in the human body.

Knee prostheses come in various forms, but for patients with unstable ligaments or bone loss, doctors use the stabilised type, also known as axially supported. The two components (the femoral implant and the metal platform) are joined by a stabilising hinge.

The functional feature of these prostheses is a "box" with inner geometry (see image, left). And therein lies the mechanical processing challenge, because conventional techniques quite literally can't hit the target.

It's all about the angle

OTECH Präzisionsfinish has the solution: stream finishing – the technology behind a whole new generation of mass finishing machines. In this procedure, the workpieces are clamped in a holder and lowered into a rotating container filled with an abrasive or polishing medium. The workpiece rotates and is processed as the medium circulates around it. SF is capable of performing multiple processing steps very quickly in a single operation, which means a workpiece can be rapidly deburred, rounded, smoothed and polished in sequence and with no additional workload. When it comes to inner geometries like those on stabilised knee implants, this has two key advantages: first, a contour-controlled motion sequence and second, an adjustable workpiece angle. These features make it possible to target the media flow at specific sections of a workpiece for particularly intensive processing. And that translates to effective results in minimal time. Material abrasion can be controlled and it's also possible to set precise roughness parameters based on the process: with initial workpiece values of Ra 0.8–1.2 μm you can achieve outstandingly smooth target values of up to Ra 0.01 μm .



FOCUS ON APPLICATIONS

The benefits at a glance: processing stabilised knee implants with OTEC stream finishing technology on the SF-3/3:

- Uniform surfaces
- Consistent workpiece quality
- Process reliability
- No manual finishing
- Up to three knee joints in one pass
- Process/process time in two steps:
 1. Wet grinding approx. 40–60 min; 2. Dry polishing approx. 16–20 min
- No programming required

It runs like clockwork: SF Series automation with Robot Loading System (RLS)



When processing large volumes of workpieces, short loading and set-up times make your operations far more efficient. That's where our automatic robot loading system comes in (the SF RLS, see left). SF Automation Series machines can be fitted with optional pulse finishing and work well, for example, in cyclic production lines. Depending on your requirements, the machines can either be set up for automatic loading or fitted with it as an integrated option. The machine design is modular and

therefore easy to adjust to cycle time. The SF Automation can thus be easily integrated as a key element of any production line.

Give your surfaces an OTEC precision finish

At OTEC, we aim to deliver not just the right machine and holder for each workpiece and surface finishing requirement, but also the ideal abrasive and a customised process. We adapt, or indeed develop, a specific solution based on your needs. Put us to the test: send us some samples and our in-house Finishing Center will specify your process free of charge. To ensure that



FOCUS ON APPLICATIONS

it's reproducible and efficient, with perfect surfaces every time, we'll establish and professionally document all the relevant process technology parameters.

Free sample processing: <https://www.otec.de/en/service/sample-processing/>

For comprehensive information on the OTEC SF & SF Automation Series
(videos, technology, models, accessories and downloadable brochures)

[click here >>](#)

➤ To browse all our videos on OTEC's YouTube channel, go to:

<https://www.youtube.com/user/OtecGmbH/videos>

About OTEC Präzisionsfinish

OTEC GmbH Präzisionsfinish provides precision technology for achieving perfect surfaces. OTEC machines are used for smoothing, precision edge-rounding, polishing and deburring a wide variety of workpieces, with the aim of improving surface quality. OTEC has a global presence supported by international business partners. OTEC's comprehensive, market-leading technical expertise in developing the perfect interplay of machine and abrasive benefits a wide range of industries including tooling, medical devices, jewellery, and automotive and aerospace.

Press contact

OTEC Präzisionsfinish GmbH | Heinrich-Hertz-Strasse 24 | 75334 Straubenhardt-Conweiler

Tel. + 49 (0) 70 82 - 49 11 20 | Fax + 49 (0) 70 82 - 49 11 29

info@otec.de | www.otec.de