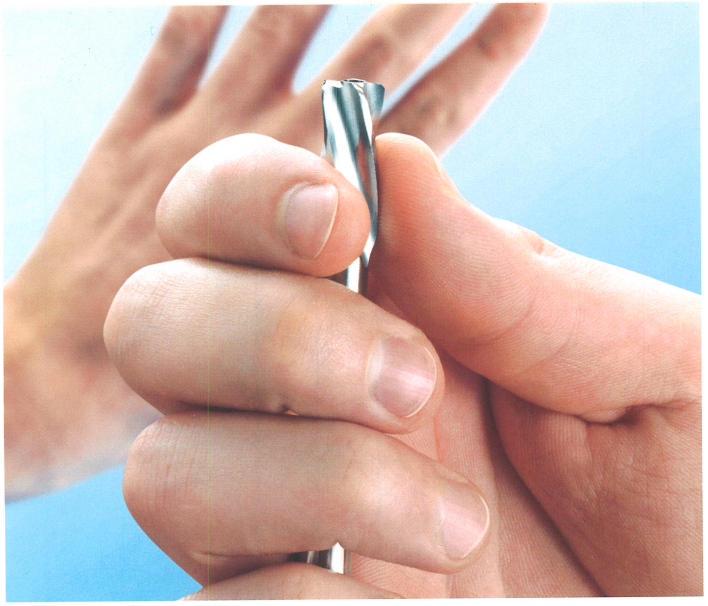
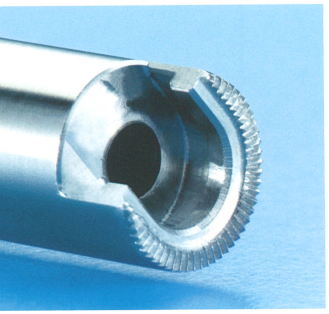
Today's sophisticated medical technology demands faster, more precise and simpler manufacturing techniques. MOTOREX's ᵛmax Technology and ORTHO NF-X can help.



Well in hand: boosting process parameters



The precision remains – a result of ᵛmax machining with ORTHO NF-X.

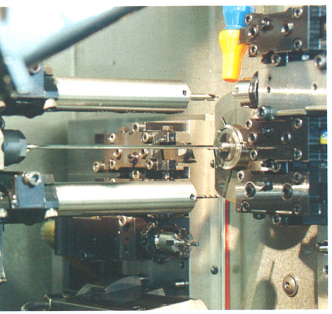
A good example is the production of highly challenging stainless steel bone rasps, used to shape the prosthetic support inside the bone tissue. The manufacturer approached MOTOREX with the following objectives (see box below).

ORTHO NF-X as a process parameter

As a process parameter, the cutting oil performs the important functions of cooling the workpiece and tool, lubricating the point of contact between tool and workpiece and removing swarf.

MOTOREX AG LANGENTHAL, the Swiss lubrication technology company specializing exclusively in the needs of the metalworking industry, has a tradition of carrying out tests that closely reflect reality, since this is the only way to reliably determine the performance capabilities of a cutting oil.

In a side-by-side test for a producer of medical device components and tools, MOTOREX recently demonstrated the benefits of its MOTOREX ORTHO NF-X cutting oil in production in a quantifiable and verifiable manner. Participants were particularly interested in the enhanced cutting data (vc = cutting speed) and extended service life of tools in deep boring and milling with reversible tips.

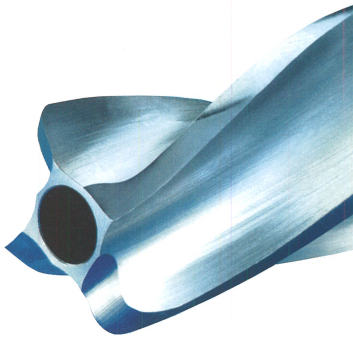


ORTHO NF-X allows flawless boring (to a depth of 108 mm) at only 40 bars of cutting oil pressure.

Aim	Action(s)
Boost productivity	Increase process speed (MOTOREX ᵛmax technology), optimize machining fluid
Use the same cutting oil to machine all materials	Switch from conventional cutting oil to MOTOREX ORTHO NF-X, ISO 15
Enhance surface quality	MOTOREX ᵛmax technology and optimization of tools
Improve safety in production	Longer intervals between tool changes and reduced tool damage through improved tool generation and ORTHO NF-X
New data on realistic optimization potential	Record process parameters in machine tool logbook and MOTOREX cutting data sheet
Reduce costs	Through the actions listed above

Industry

Results with ORTHO NF-X Operation	Increase in cutting speed (vc)	Increase in tool service life
Deep boring	+ 40%	Up to 70%
Milling with reversible tool tips	+ 11%	Up to 154%
Total production time/workpiece	Up to 20% faster	–
Surface quality (R_a value)	50% improvement	–



Faster machining pays off

Deep boring cutting speed on the machine used in the test increased by a solid 40% in the first stage of testing with ORTHO NF-X, ISO 15. The milling test showed an 11% increase, also a very positive result given the toughness of the material used.

Cost optimization measures in modern production facilities are often feared rather than seen as opportunities. For this very reason it is a good idea to make machining companies aware of opportunities to increase cutting parameters and show them how to make the best use of this latent potential. Productivity diagrams in company figures can pinpoint the output from each machine and could be used as the basis for an employee bonus scheme, for example.

Really practical: MOTOREX cutting data sheet

How are cutting data measured and benchmarked in your company?

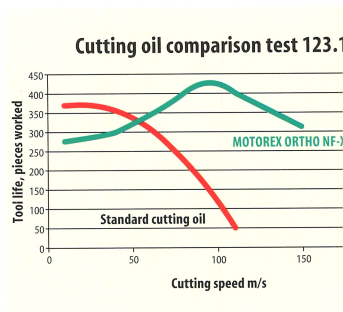
Once process figures have been set for a machine, experience shows that they are rarely optimized or benchmarked. Every part has different critical points during the machining process. These can be analyzed for fine-tuning of process parameters.

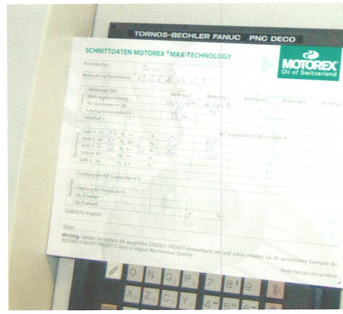
The MOTOREX cutting data sheet is a simple but effective tool for this purpose. It allows all relevant data to be recorded for comparison at any time. It also provides an incentive for machine operators to optimize production processes and increase tool life figures. Order the cutting data sheet from your MOTOREX representative.

ORTHO NF-X test results

Overall, the positive qualities of MOTOREX ORTHO NF-X had a direct impact on all parameters measured. The substantially increased tool service lives, improved surface quality and enhanced productivity are particularly striking.

Get in touch with your MOTOREX industry partner to learn more about the advantages of the MOTOREX ᵛmax technology!





The cutting data control sheet developed by MOTOREX is used to record and easily compare all relevant parameters.