

More information on:

www.ceratizit.com/hdt

360°

Degrees of freedom

Different turning operations

with only one tool

Variable approach angles

outstanding chip control

The Revolution in Turning

High Dynamic Turning with FreeTurn Tools

Multi-award-winning:



CERATIZIT is a high-technology engineering group specialised in cutting tools and hard material solutions.

Tooling a Sustainable Future

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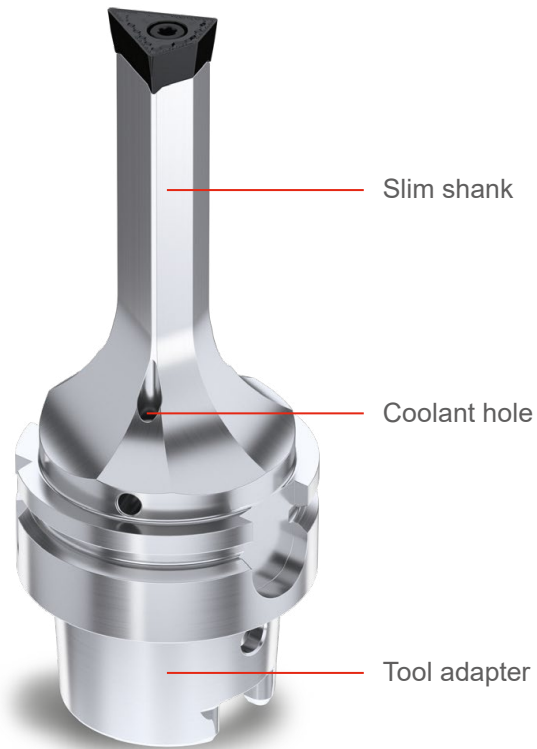
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GROUP

High Dynamic Turning (HDT)

With High Dynamic Turning, HDT for short, and the dynamic FreeTurn turning tools, CERATIZIT is turning the conventional method of turning completely on its head. All familiar turning operations such as roughing, finishing, contour turning, facing and longitudinal turning can now be completed using just one tool.



Conventional application:
5 tools



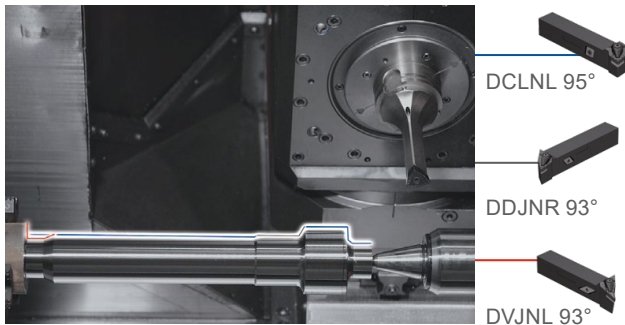
Application with FreeTurn:
1 tool

Time comparison

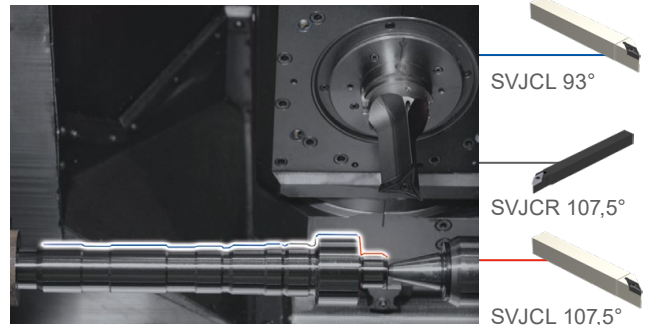
Material 42CrMo4

Dynamic cutting parameters in the process based on catalogue cutting data

Roughing



Finishing



Conventional production

Conventional production time for a single part with six different tools

= 3:32 minutes

Production with FreeTurn

Production time for a single part with the HDT

= 2:50 minutes

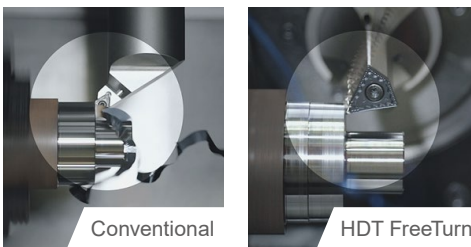
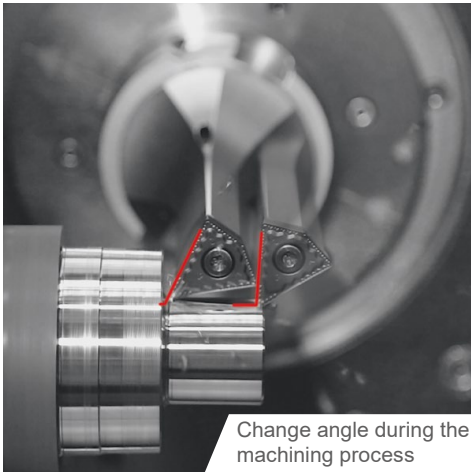
25%
Time savings

Follow our video: A time comparison between conventional machining and the HDT. You'll be amazed!



Variable approach angle

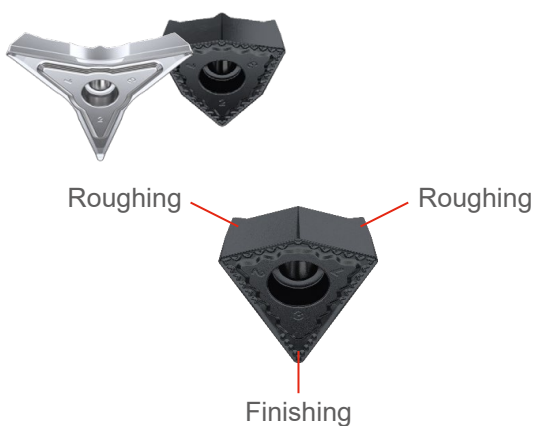
- ▲ Can be changed during machining
- ▲ Adjustable feed rates
- ▲ Perfect chip control
- ▲ Dynamic turning in all directions
- ▲ Pull and push cut



Comparison

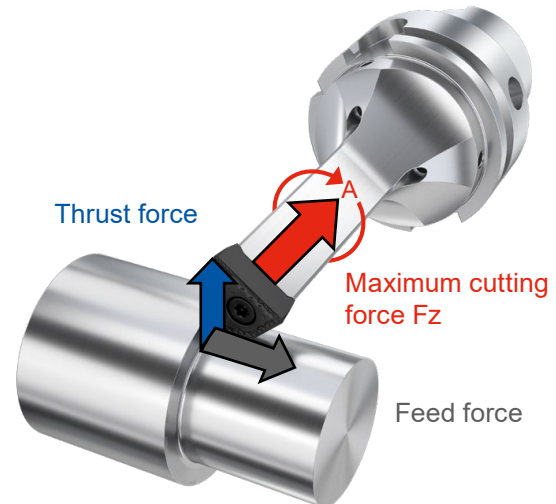
Flexibility

- ▲ Turning with just one tool
- ▲ Huge savings on tool types
- ▲ No tool changes = huge time savings
- ▲ Indexable inserts with up to three ISO geometries can be used on one holder
- ▲ An indexable insert with multiple cutters can consist of different point angles, flanging radii, chip breakers, coatings and cutting materials and can be customised for use.



Stability

- ▲ The main force occurring (cutting force F_z) is directed through the tool into the spindle
- ▲ Optimal force distribution



Productivity

- ▲ Almost all workpiece contours can be machined
- ▲ 40% higher feed rate value
- ▲ Up to 90% fewer empty runs
- ▲ Adjustable feed rates during the process
- ▲ Improved surface quality thanks to ideal adjustment of the approach angle
- ▲ The versatility of the FreeTurn means fewer tool changes
- ▲ Fewer tool spaces required in the machine





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CERATIZIT UK & IRELAND LTD
Europa Link \ UK-Sheffield S9 1XU
Tel.: +44 114 242 8 820
info.uk@ceratizit.com \ www.ceratizit.com



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