

Process and quality monitored threading

The process monitoring happens during the machining

The system

Due to the integrated measuring and evaluation system the process parameters are analyzed during the machining, what gives the possibility to automatically intervene in the process before the part or tool gets damaged.

The process optimization

Cutting speed and parameter optimization

Cutting oil and tool optimization

Tool life optimization

Cycle time optimization

Process analysis

Profits

No additional monitoring system necessary

Detection of errors and deficiencies

Higher productivity

Shorter cycle times

Reduction of material rejects

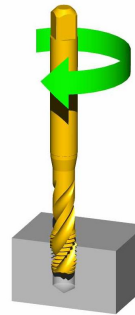
Tool protection

Lower tool wear

Process evaluation

Quality assurance

Reduction of costs



Examples: Process deviation and error during the machining.

Monitoring of the maximum torque is always active to protect the tool.

The minimum torque is optional adjustable.

Additional parameters are evaluated in combination with the torque, i.e.: Depth, time, feed orientation etc.

The torque is visualized as arrow around the tapping tool:

green → correct torque

red → torque too high

blue → torque too low

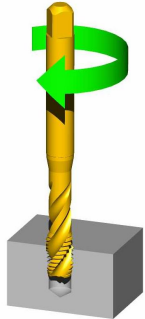
pink → torque decreased

violet → Error additional parameter

Application

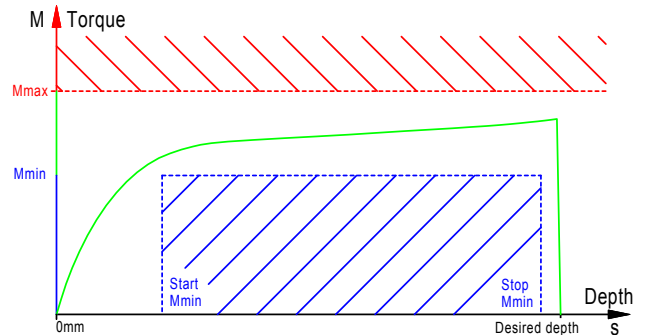
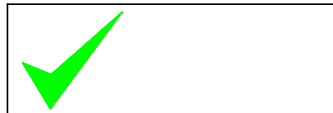
Message / indication

Torque curve of the thread machining



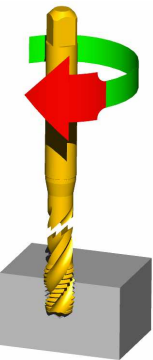
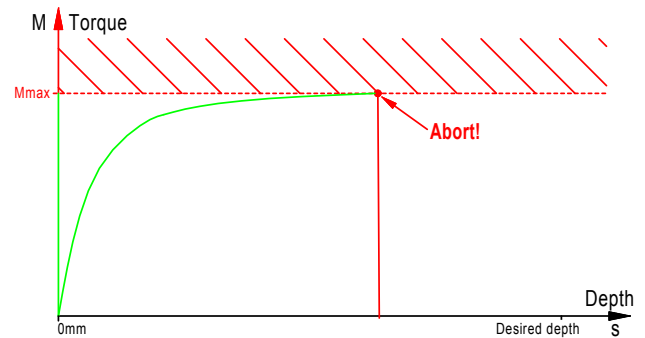
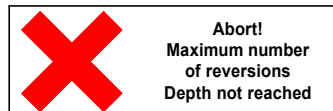
No Error

The thread complies with the required quality

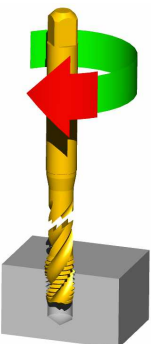
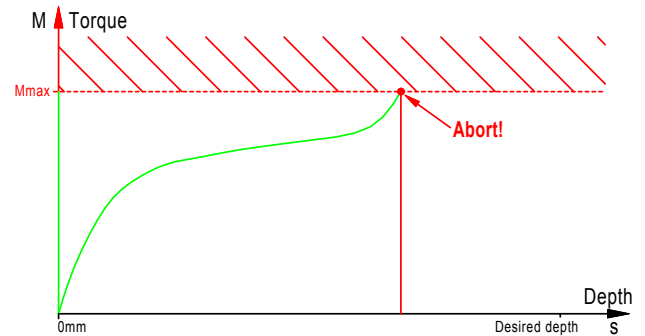
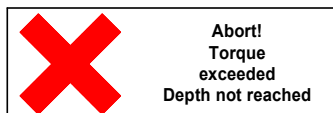


Tool wear

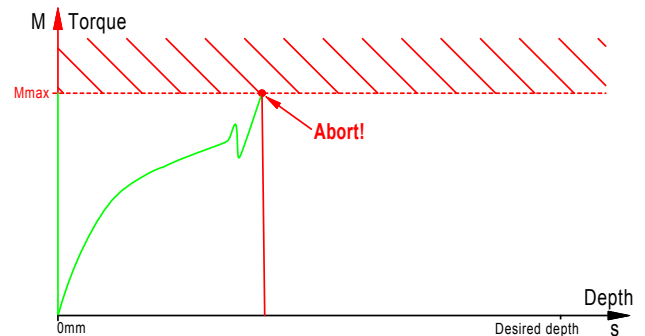
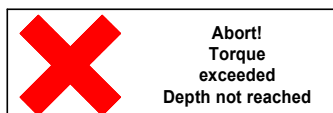
Detection of a worn tool



Prevention of tool breakage due to too low drilling depth



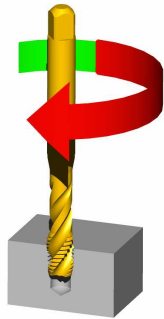
Prevention of tool breakage due to fatigue



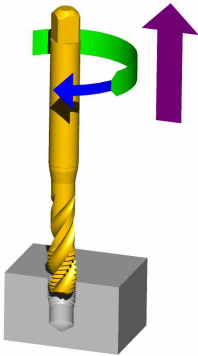
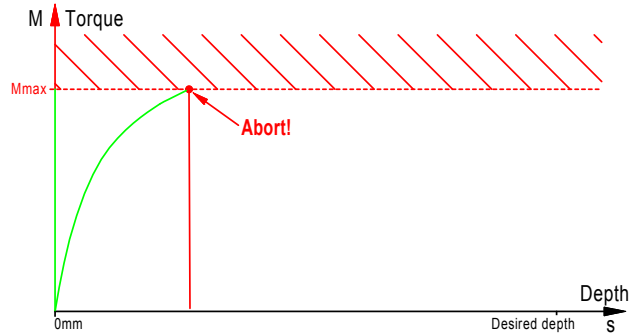
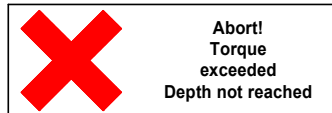
Application

Message / indication

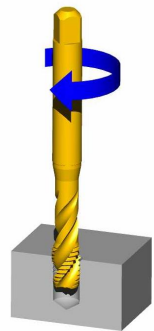
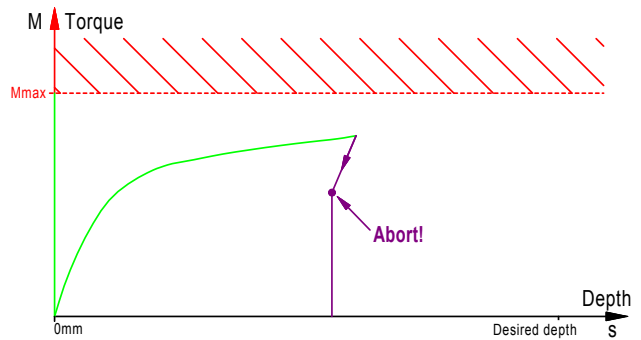
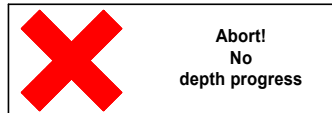
Torque curve of the thread machining



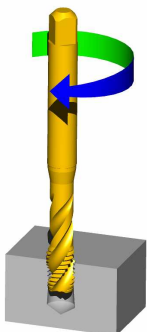
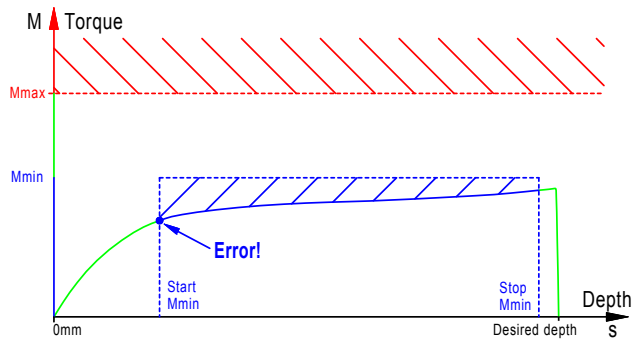
Drilling too small
Detection of a too small drilling



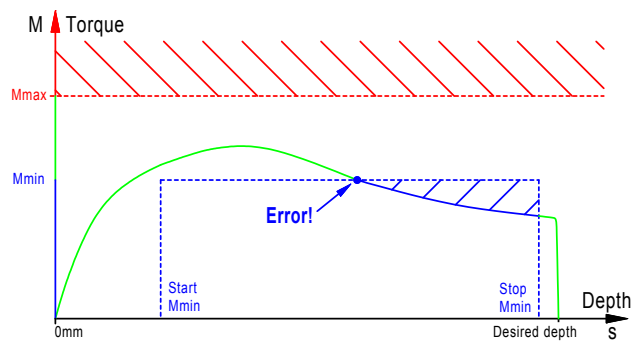
Detection of torn out threads



Drilling too large
Detection of a too large tap drill diameter



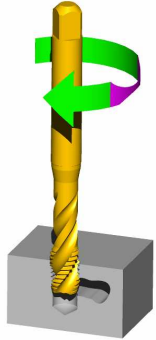
Detection of a conical drilling



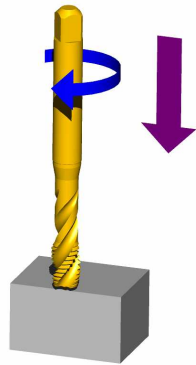
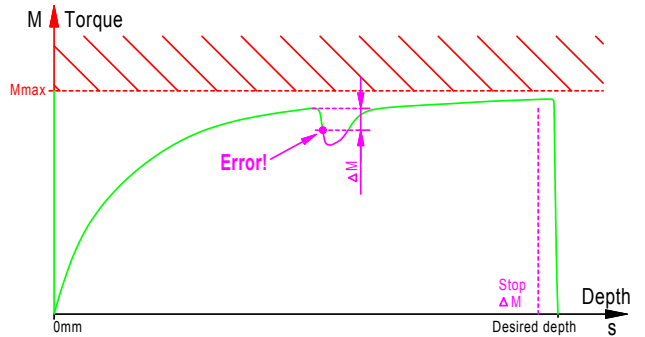
Application

Message / indication

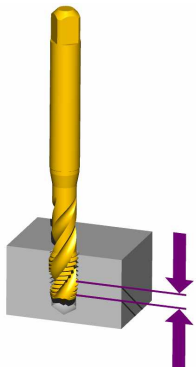
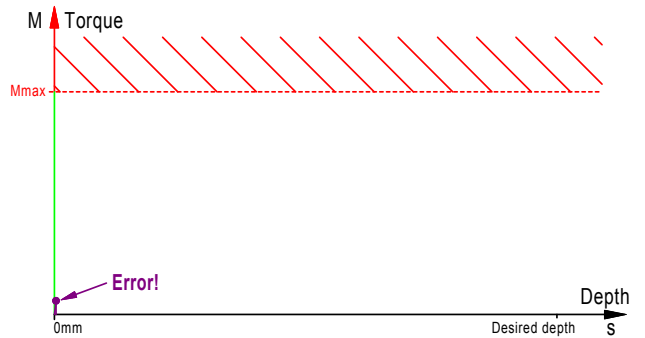
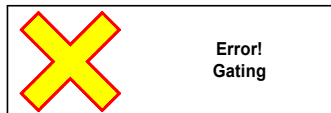
Torque curve of the thread machining



Detection of cavities (air pockets and blow holes) within castings



Detection of a missing drilling



Detection of a differing thread depth

