

# SIEMENS

*Ingenuity for life*

## Top Surface- A class apart performance for mold & die

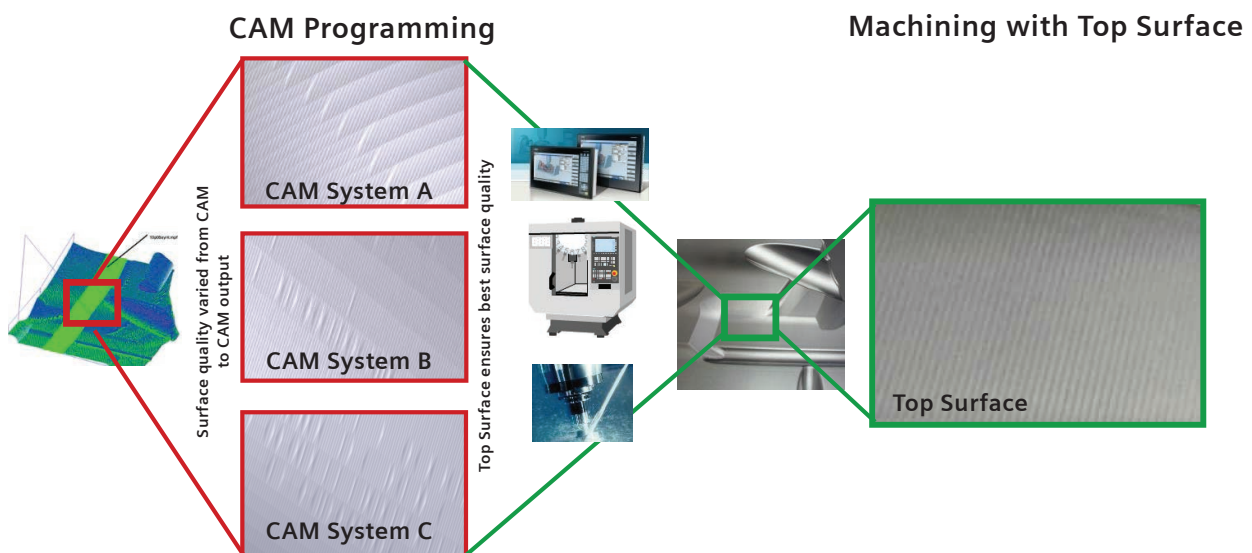
Best surface quality & accuracy independent from CAD/CAM errors

[siemens.com/sinumerik](http://siemens.com/sinumerik)

Machining of work-pieces with complex free form surfaces is always been a challenge with balanced performance results like accuracy, surface quality and speed. Most often one of these performance parameters is achieved at the cost of the other two. So all the conventional CNC algorithms try to give balanced output, thereby restricting the scope of performance in all performance parameters. This becomes a major hurdle for machines made for high accuracy. To overcome this hurdle Siemens introduces state-of-the-art mold making functionality called Top Surface. The work-pieces produced with Top Surface, can not only be very accurate but can give excellent surface finish.

These intelligent motion control algorithms give optimum work-piece surfaces while at the same time providing maximum machining velocity. These functions contribute to an optimized Look Ahead function, giving a perfect surface quality through reproducible results in adjacent milling paths, accuracy and increased speed. Intelligent jerk limitation reduces the stress on the machines mechanical system and allows soft acceleration and braking of the axes, therefore extending the machine service life.

The newly developed Top Surface function helps in achieving better surfaces even with demanding CAD/CAM programs. This also means perfect similar looking surfaces are achieved largely independent from CAD/CAM input.



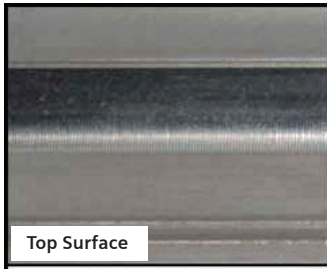
In addition to this Top Surface function brings in the new compressor especially compensates the potential negative impact on the surface quality for a homogeneous point distribution, even in the case of inclined line-by-line finishing programs and for bidirectional milling.

Top Surface also allows users to select between very high accuracy and very smooth surface. With selectable 'Smoothing ON' function, perfect surface quality is achieved with an increase in productivity. If 'Smoothing' function is OFF, work-piece is produced at highest possible accuracy by the machine. Thus work piece structures in micron range and engravings are clearly visible.

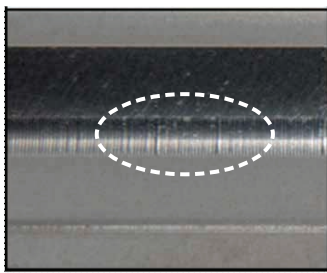
That's not all, as Top Surface is seamlessly integrated in high speed cutting cycle (CYCLE 832). The user can quickly choose Top Surface from the cycle itself. Even 'Smoothing' function can be selected in CYCLE 832 just by selection.

Top Surface gives excellent results for high performance die and mold machines which not only increase productivity but also eliminate the negative effects of irregularities in CAD/CAM programs. This innovative and highly advanced function sets a new benchmark for productivity in high speed milling machines.

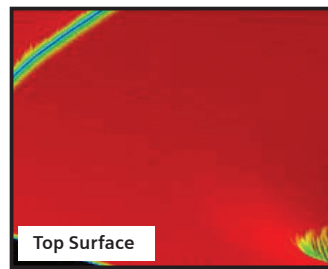
### Surface quality



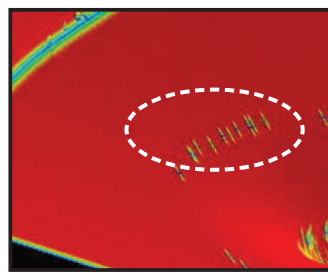
↑ Best surface quality largely independent from CAM input



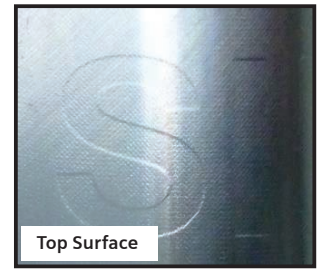
### Velocity



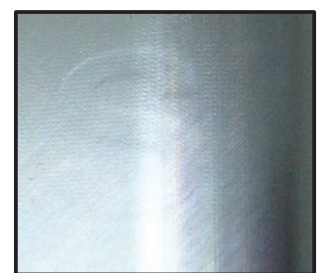
↑ Avoid unexpected stops



### Accuracy



↑ Bring to light high precision contours perfectly



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