



TMAC

TOOL MONITORING ADAPTIVE CONTROL

BLUM
focus on productivity



TMAC

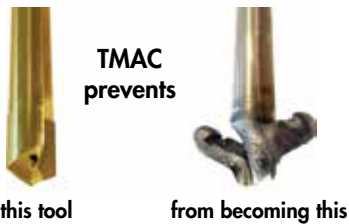
TOOL MONITORING ADAPTIVE CONTROL

TMAC – efficient and reliable tool monitoring

TMAC monitors the spindle horsepower in real-time and compares it with limits preset by the customer. If the limits are exceeded, the actions programmed by the operator are executed, and consequently tool breakage and wear are detected on the basis of an increase in the current motor horsepower (of spindles and/or feed axes). A true highlight of TMAC is the Adaptive Control feature. By optimising the machining conditions, it can shorten the cycle time by 20 to 60 percent.

Features & benefits:

- Reliable detection of tool breakage, wear and defects
- Real-time monitoring of the machining process and display of the actual cutting parameters
- Preventive maintenance of the machine spindle through analysis of the horsepower data
- Slope monitoring: Enables tool monitoring for lathe machines even at a constant cutting speed
- Recording of data and provision of information for optimisation of the machining process (TMAC Viewer)
- Browser-based user interface enables access from many end devices
- Optimisation of the machining conditions with Adaptive Control (option)
- Monitoring of 4 separate channels for coolant flow and pressure (option)
- Spindle speed monitoring (option)



Adaptive Control (option)

Adaptive Control regulates your machine’s feed rate, maintaining a constant spindle motor horsepower during machining.

Your benefit:

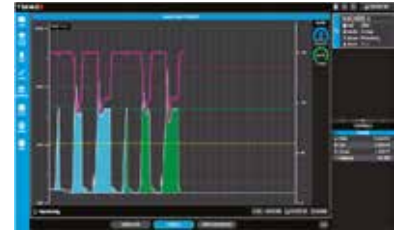
- Reduction in the cycle time by 20 to 60 % due to machining with an optimal feed rate
- Automatic adjustment of the feed rate according to material conditions
- Extended tool life due to machining at optimum horsepower at all times
- Avoidance of damage to tool, machine and workpiece

Further benefits:

- Easy integration and programming of the system
- High resolution of horsepower monitoring (down to .001 kw) with real-time display
- Fast response time (less than 10 ms)
- Parallel, serial and Ethernet machine interface
- Logging of all TMAC actions (with date and time)
- Data export in various formats
- Connection of vibration sensors to monitor the spindle bearing condition
- GE P11TF12 compliant



TMAC monitors multiple processes and sensor channels at once



Adaptive Control: Visualisation of the feed rate setting & actual cut



The TMAC power transducer measures the spindle motor horsepower.



The TMAC IPC processes the horsepower data from the power transducer as well as the CNC commands, and communicates them to the front-end PC.