

**Tool Monitoring
included!**

ACfeed[®]

Adaptive Feed Control
*without hardware
without sensor*

Lower Machining Time
Higher Process Assurance

Adaptive control system for feed optimization
Integrated software solution for SIEMENS 840D control
NO sensors • NO hardware • cost-efficient and easy retrofitting!

**Optimal for Manufacturing
of Tools and Large Parts:**

Torque measurement of main spindle and
feed control **for stable tool load**

great time savings

by feed optimization while simultaneously
increasing process safety

Customer-verified:

Certain milling operations are
up to 30% faster!

Savings in cycle time: **average 5%!**

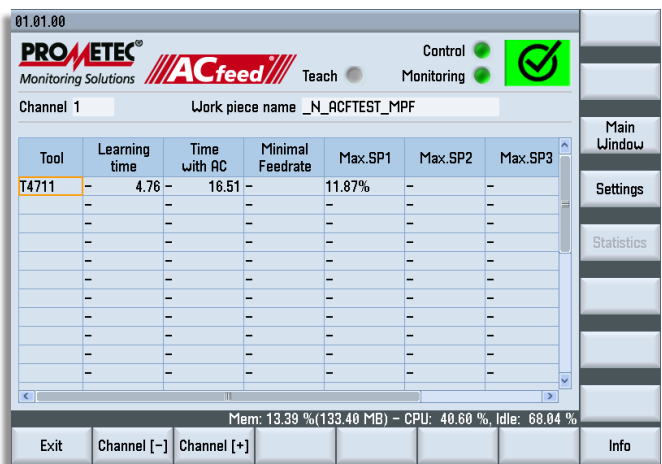
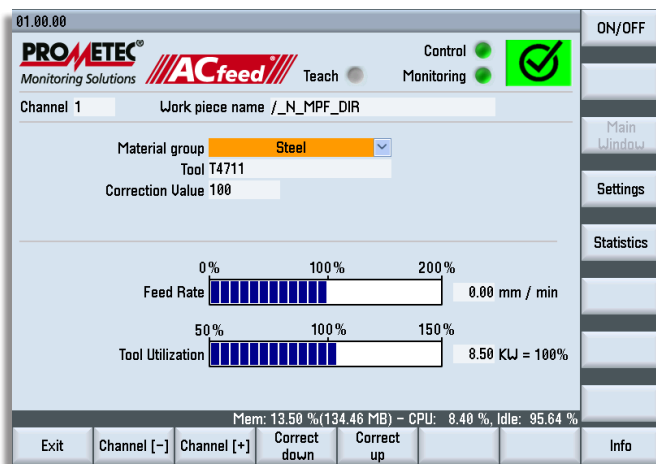
Safety for the Aircraft Industry:

constant **part precision**
just by feed minimization

Increase of machining safety

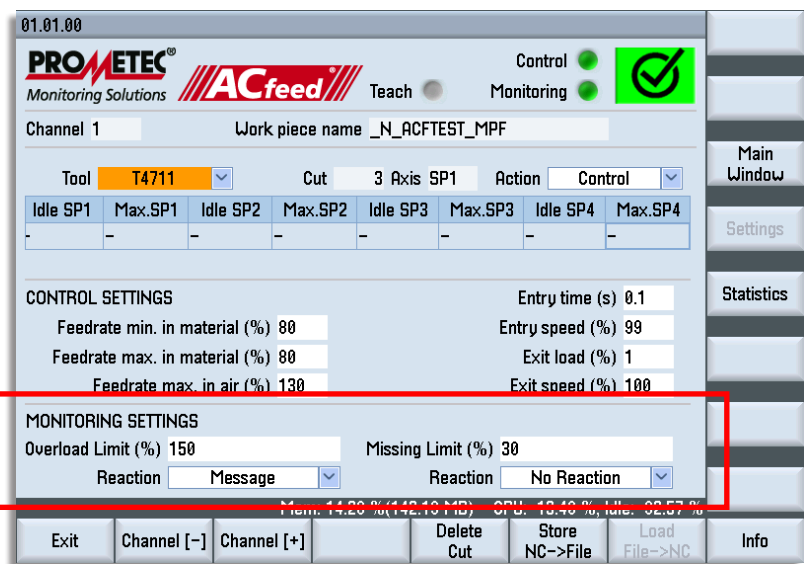
by avoidance of tool overload
and individually adjustable limiting of the
machining forces

- **intelligent feed control**
for compensation of tool load at:
 - allowance fluctuations
on castings and forgings
 - fluctuating material hardness
and material structure
 - contours with varying
chipping depth
 - heavily varying surface
(hard casting skin,
burned cutting edge)
 - varying cutting width
- **simple retrofitting**
- **protection of tool,
workpiece, and machine**
- **detection and avoidance
of tool breakage**
- **increase of tool life**



Intelligent feed control

Basis is the programmed feed rate which is set to 100%. By the measured tool load values the ACfeed system calculates the optimum feed rate at the present cutting conditions and **automatically sets the feed rate** up or down (e.g. 70% or 140%).



Requirements	SINUMERIK 810D/840D
Optimizable tools	All tools (except machine screw taps), whose machining power consumption differs from the idle power consumption.
Materials	All. From easy to hard machinable materials (e.g. stainless steels, tool steels).
Operation	Three clearly arranged screens: Main screen, Setup screen, and Statistic screen. Usually the operator just has to select the material group which shall be machined: All further steps work fully automatic. The results of single operations can be viewed on the CNS control's display (see also screenshots above).
Monitoring functions	
Overload Limit	Detects high tool load (e.g. caused by blunt tool, wrong clamping, wrong (= too hard) work piece material, wrong NC programming or operating error).
Missing Limit	Detects broken or missing tools.
Selectable reactions when limits are violated	<ol style="list-style-type: none"> 1. Instantaneous stop of machine 2. Alarm message 3. Stop after completion of machining procedure 4. Customer specific reaction (warning light, replacement tool ...)