

Critical feature reporting

AP403

Problem

On-machine inspection/verification can be a time-consuming process. Where many features are to be inspected on a component, a choice must be made between sacrificing cutting time on the machine tool, and getting critical information quickly.

Inspecting too many features (which do not have a critical effect on the process for this or future components) will result in too much time being used on the machine, reducing capacity for additional parts to be produced.

Inspecting too few features will result in critical problems remaining unidentified, and many of the corresponding benefits of detecting failures on the machine may be lost.

Solution

Select the critical features which are to be measured and reported, according to a set of criteria.

Features should be reported:

- where the failure of a feature would be indicative of a more serious process fault (e.g. the final feature machined with each tool)
- when the position or dimension of a feature is dependent on other measured features or 'in process' calculations

Report the selected features and store the data with other log information about the component (e.g. the decisions that were made by the machine during its processing, described in AP400 Process reporting).

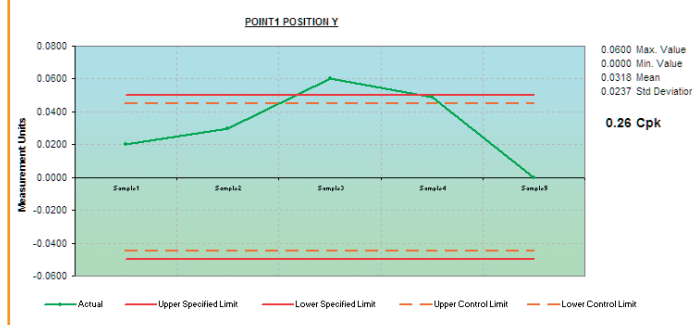
Benefits

- Only measure and report on features which need to be reported
- A significant time-saving on on-machine inspection

Measure critical feature

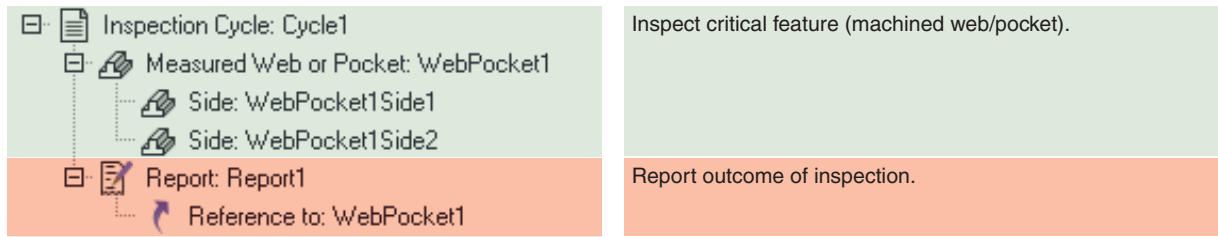
Report on critical feature

Track feature over time



Example: inspect a feature and report it

Sample Productivity+™ probe software program



Sample Inspection Plus software program

N10	
	Machining of critical feature
N20	
T1 M6	Select the probe
G54 X0. Y0.	Start position
G43 H1. Z100.	Select probe offset
G65 P9810 Z-10. F3000	Protected positioning move to point of measure
G65 P9814 X25. H0.3 W1.	Measuring cycle and report on the feature measured
G65 P9810 Z100. F3000	Protected positioning move clear of part/fixture
G28 Z0.	Home position
N30	
	Continue machining process

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