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HYPER PROBING

FAST & PRECISE

MARPOSS

Description

CNC machines, like human beings, are all different. That is why Marposs has created Hyper Probing, a software package that can operate any machine to its maximum production capacity by drastically reducing the cycle time.

100% compatible with all Marposs probes, Hyper Probing guarantees the best possible cycle time performance by observing the workpiece dimension tolerance limits.

Currently available only for FANUC, it requires just two parameters to be entered:

- Repeatability range
- Workpiece positioning tolerance

Benefits

- Maximisation of good/reject workpiece ratio
- Minimisation of cycle time for each workpiece
- Up to an 80% reduction in measuring cycle time
- Required repeatability threshold guaranteed*
- Machine limits observed, which guarantees maximum productivity

(*) = The repeatability threshold is guaranteed within the limits of the measuring solution (type of probe, type of pen and type of transmission) and the characteristics of the machine on which the system is mounted.
*The compliance and length of the pen, determined by the type of application, may also affect the repeatability error obtained. This is why Marposs offers a line of high precision probes that can operate with ultra-slim pens.*

The graphs below indicate the cycle time trends regarding a single point measurement mapped according to two Hyper Probing cycle input parameters: the repeatability tolerance chosen and workpiece positioning uncertainty.

The graphs show that compared to a standard probe, a high precision one offers superior performance, especially if a fast skip is used.

If two types of skip - Standard and Fast - are compared, the most notable difference is in terms of cycle time saving. Vice versa, if two types of probe - High Precision and Standard - are compared, the former, even when operating below the required repeatability range of 4 μm, performs high speed (individual) touches that maintain the highest level of performance in terms of both cycle time and repeatability.

High Precision Probe
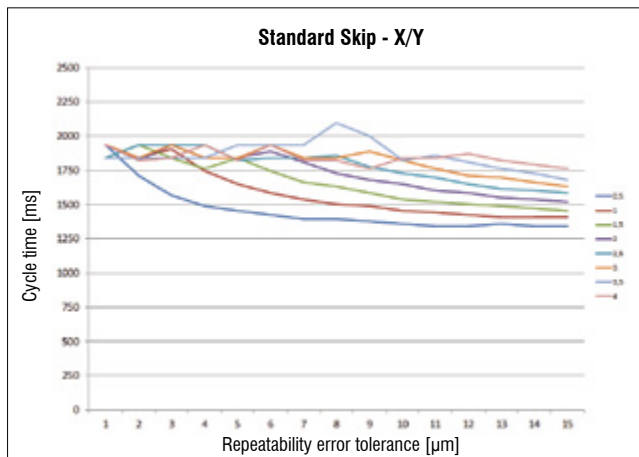

Standard Probe
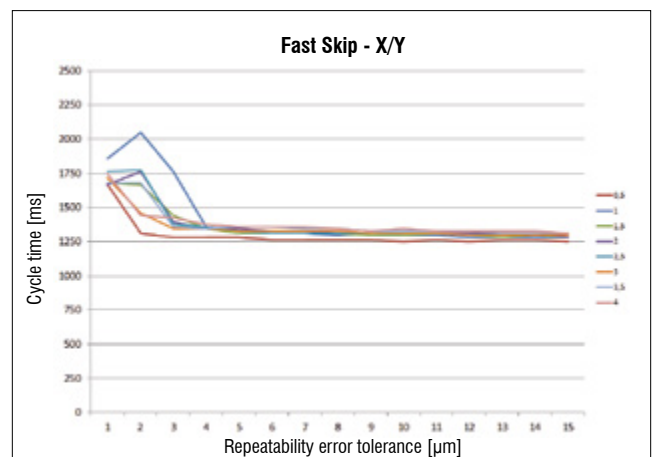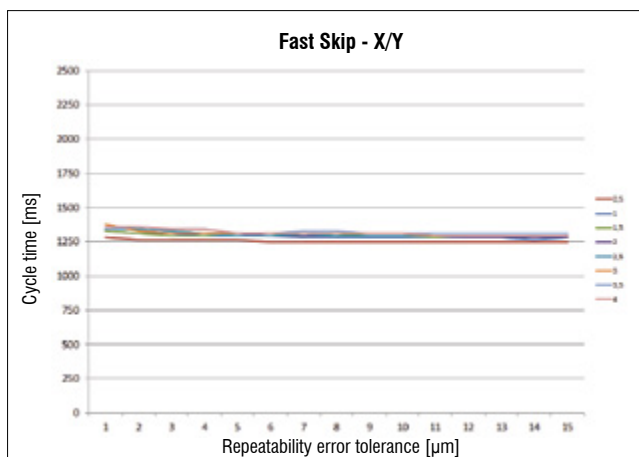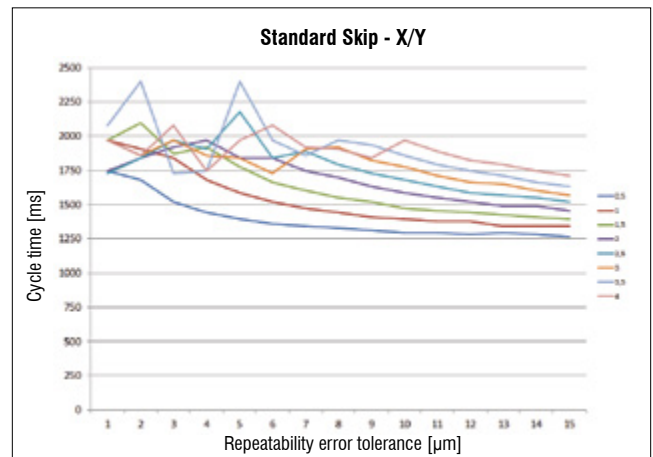
Hyper Probing keypoints

How does *Hyper Probing* achieve the highest level of performance on any machine?

Hyper Probing calculates machine performance starting from a preliminary system calibration (Smart Calibration). Then, during the measuring cycle, Hyper Probing decides which measuring strategy to use - single or double Smart Touch - and in the latter case, it also has an option for establishing which Smart Retraction to perform after the fast approach to workpiece touch. All this optimises the cycle time by guaranteeing system repeatability.

The key Hyper Probing functions are therefore:

1. **Smart Calibration** - Thanks to an Auto-Learning algorithm, the measuring cycle parameters are customised for each machine by optimising cycle time and productivity
2. **Smart Touch** - Thanks to the two different measuring strategies (single or double touch), and by always maintaining the required repeatability threshold, the system can independently choose the fastest touch solution. The cycle time is reduced by up to 80% compared to standard cycles, as shown in the graph below
3. **Smart Retraction** - Used with the double touch algorithm, this ensures that the probe exits the workpiece and returns to the idle position. This allows useless probe open alarms to be avoided and measurements can be made during axes acceleration ramps
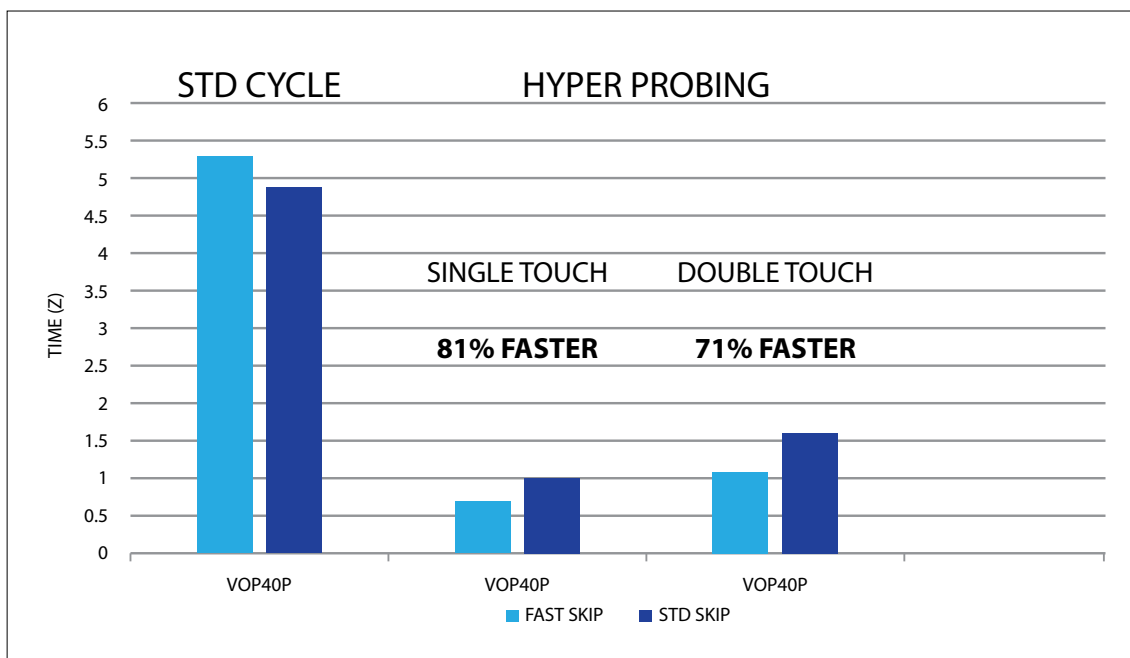
Cycle time for measuring an individual point

Hyper Probing code

C092*1C00C for FANUC CN

= varies according to the language (D=German; E=Spanish; F=French; G=English; I=Italian)

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Marposs has an integrated system for Company quality, environmental and safety management, with ISO 9001, ISO 14001 and OHSAS 18001 certification.

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