

Direct detection of alteration in equipment

Easy setup for reliable detection of slight (3–4 mm) stroke changes in collet chucks



Product

Discrete sensor

Adjustable Proximity Sensor

Model

H3C

Process/
Equipment

CNC lathe

Current Situation

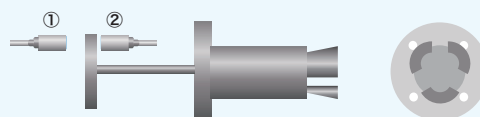
- Proximity switches are used to detect the position of a dog linked to the collet chuck to detect whether the workpiece is clamped.
- Two proximity switches are used to detect the position of the dog to distinguish Clamped and Unclamped states. Or, a combination of hydraulic signals and timer conditions are used to identify the state.

Current Problems

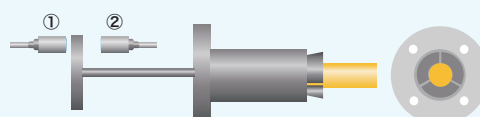
- When two proximity switches are used for detection, adjustment is very difficult because the stroke is short (3–4 mm). In addition, the switches face each other, so making space to install them and route the cables is difficult.
- Using hydraulic signals and a timer for detection requires a longer cycle time, decreasing production efficiency.



Unclamped



Clamped



	Unclamped	Clamped
Proximity switch 1	OFF	ON
Proximity switch 2	ON	OFF

Save space and raise productivity

Solution 1

A single sensor can output the Clamped/Unclamped state based on a change in the detection level on half of the sensing surface. If hydraulic signals and timer conditions have been used for detection due limited sensor space, direct detection will cut the cycle time and increase production efficiency.

Easy adjustment and reduced man-hours

Solution 2

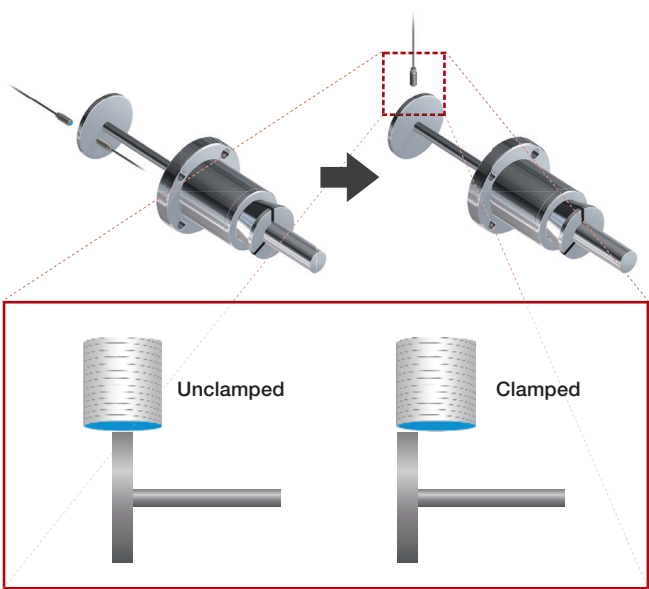
Tuning in both Clamped and Unclamped states sets the thresholds at the midpoint of the detection levels.

Configuration Tool makes detection levels easily visible

Solution 3

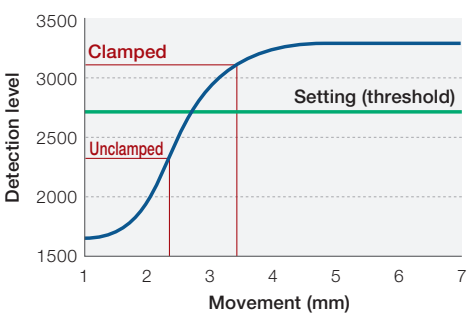
A special Configuration Tool makes it possible to monitor safety margins for sensing, allowing you to always know the optimum threshold and make adjustments.

Solution 1 Sample proximity switch installation

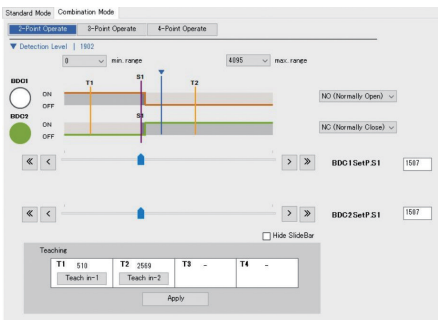


	Unclamped	Clamped
Output 1	OFF	ON
Output 2	ON	OFF

Solution 2 Set by auto-tuning



Solution 2 Configuration Tool



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