

Direct detection of alteration in equipment

## Easy setup for reliable detection of slight (5–6 mm) stroke changes in automatic tool changers



Product

Discrete sensor

Adjustable Proximity Sensor

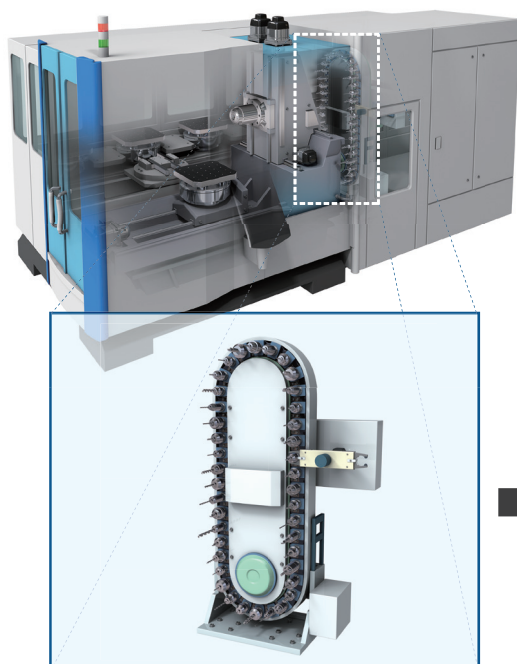
Model

H3C

Process/  
EquipmentMachining Center  
automatic tool changer

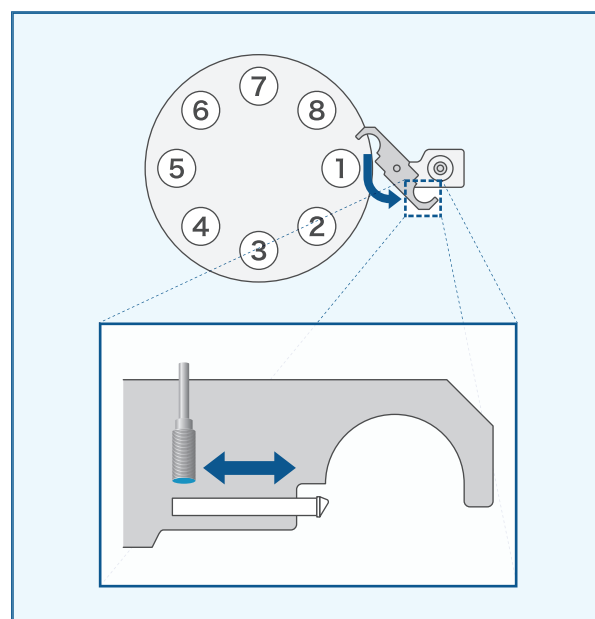
### Current Situation

- Proximity switches are used to detect the pin positions on both the main spindle and tool magazine to detect if the tool is properly locked.
- After the tool is locked on both the main spindle and tool magazine (each checked by a proximity switch), a 180° rotation changes the tool.



### Current Problems

- The pin stroke differentiating locked and unlocked positions is short (5–6 mm) and the space is narrow, so it is difficult to install proximity switches to detect locked/unlocked position in two locations.
- It is impossible to identify the two positions with the ON/OFF output of one proximity switch. Situations such as the pin getting stuck mid-stroke cannot be detected either.



## Solution 1

### Saving space

A single sensor can detect locked and unlocked positions as well as a pin stuck in an intermediate position based on a change in the detection level on half of the sensing surface.

## Solution 2

### Easy adjustment and reduced man-hours

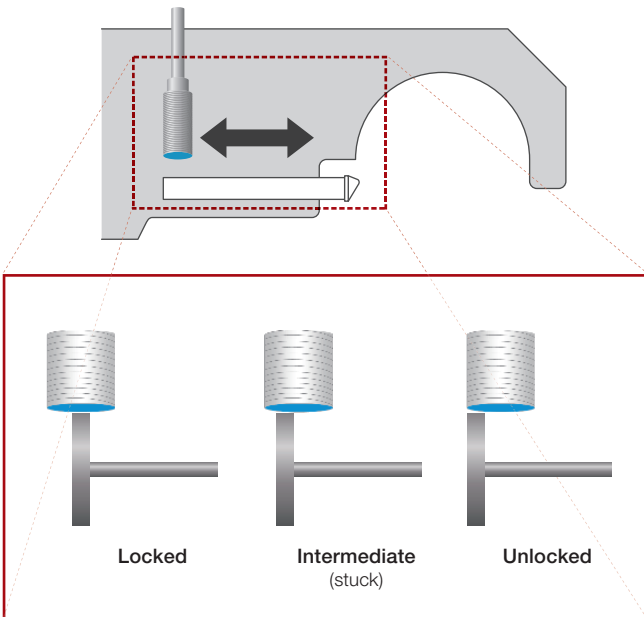
Tuning in the locked, intermediate, and unlocked states sets thresholds at the midpoints of the detection levels.

## Solution 3

### Configuration Tool makes detection levels easily visible

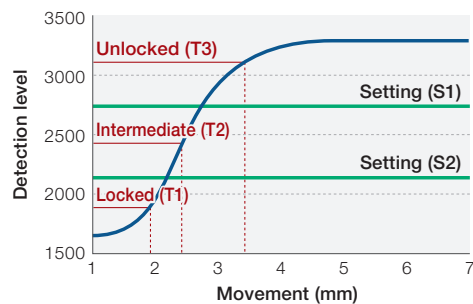
The special Configuration Tool makes it possible to monitor safety margins for sensing, allowing you to always know the optimum threshold and make adjustments.

### Solution 1 Sample proximity switch installation

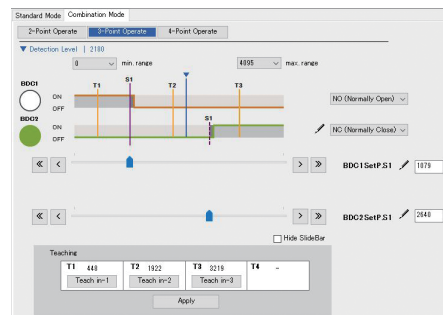


	Locked	Intermediate	Unlocked
Output 1	ON	ON	OFF
Output 2	OFF	ON	ON

### Solution 2 Set by auto-tuning



### Solution 2 Configuration Tool



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