azbil

Proximity Switches

Direct detection of alteration in equipment

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

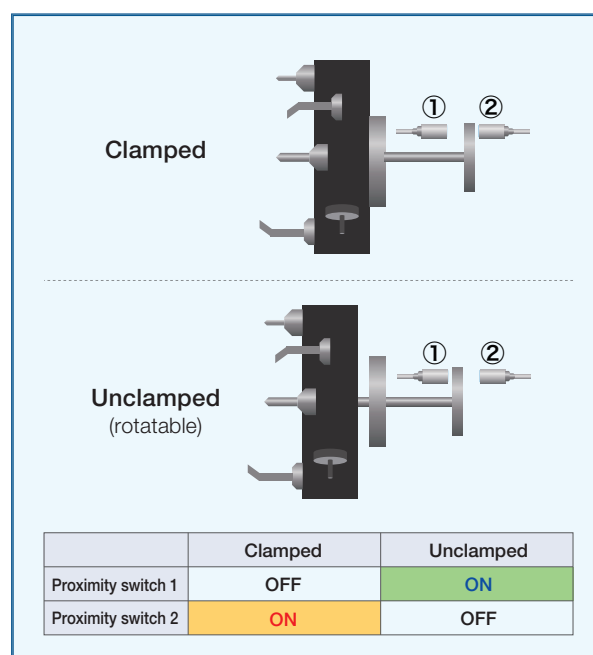|	
Product	**Discrete sensor** Adjustable Proximity Sensor
Model	H3C

Process/ Equipment	CNC lathe

Current Situation

■ When a tool is changed, the state of the turret changes from Clamped to Unclamped, the turret is rotated to use the desired tool, and the state returns to Clamped.

■ To identify whether the turret is Clamped or Unclamped, two proximity switches are used to detect the dog position in combination with hydraulic signals and timer conditions.

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 finding space to install them and route the cables is difficult.

■ Using hydraulic signals and a timer for detection lengthens the cycle time, decreasing production efficiency.

Clamped

Unclamped (rotatable)

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

Azbil Corporation

Solutions

Solution 1

Save space and raise productivity

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

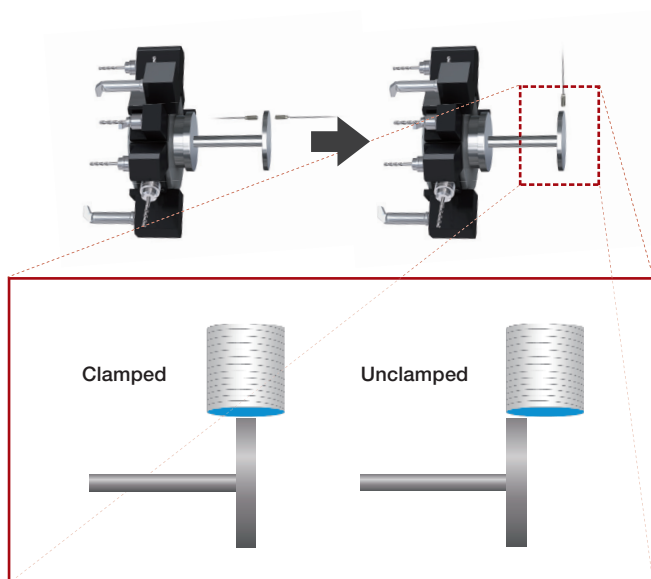**Solution 2**

Easy adjustment and reduced man-hours

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

Solution 3

## Configuration Tool makes detection levels easily visible

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

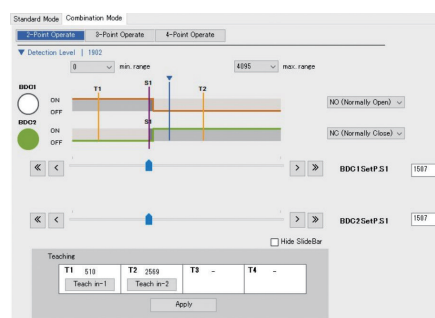**Solution 1** Sample proximity switch installation

Clamped   Unclamped

	Clamped	Unclamped
Output 1	OFF	ON
Output 2	ON	OFF

Solution 2 Set by auto-tuning
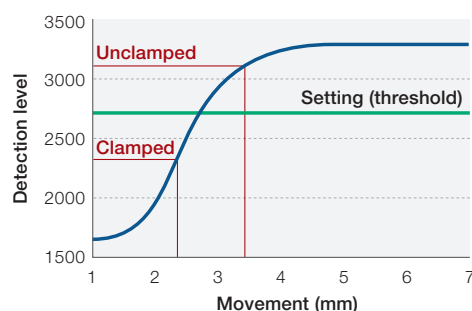
Solution 2 Configuration Tool

CP-PC-9030-004E