

ISSOKU

# Bee-1

Automatic Tapped Hole  
Inspection Device

Automatically  
inspects  
tapped holes



เครื่องตรวจสอบเกลียวอัตโนมัติ

Before

After

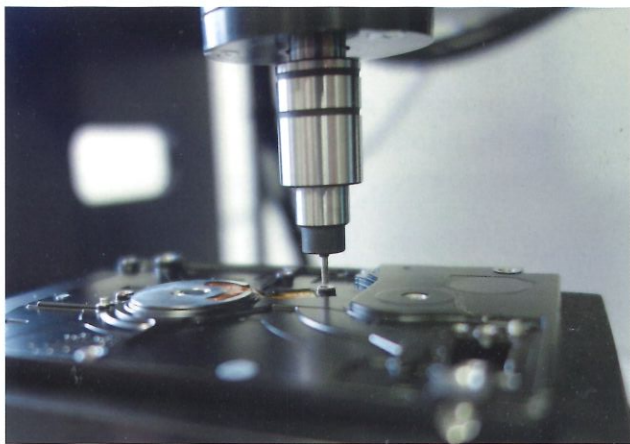
Inspection  
takes about  
**2** seconds  
per hole

POINT

Automatic 100% inspection without  
any omission  
Dramatic reduction in the inspection time

- Quick inspection
- Floating mechanism  
(radial compensation, angular compensation)
- Inspection torque setting of your choice
- Highly reliable thread plug gauge
- System building  
(Communication with external devices is optionally available)

(Patent pending)



Inspection example: M1.6x0.35 holes on 2.5" HDD case

### Quick inspection

It takes only about 2 seconds to inspect a hole, thus significantly reducing the inspection time (M1.4, depth 3 mm). Through setting the data for up to fifty spots, the user can continuously check threaded holes of different depths (for instruments with an XY positioning table).

### Floating mechanism (radial compensation, angular compensation)

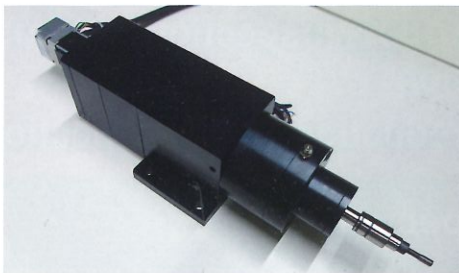
The floating mechanism ensures precise screwing motion regardless of the positional accuracy or inclination of holes. The system monitors the floating amount with a sensor to measure the depth of threaded holes with high precision.

### Inspection torque setting of your choice

Conventional manual inspection using thread gauges can be automated, enabling the inspection at more stable torques. Inspection (screwing) torque can be set to best suit each product. Because the internal rotation resistance has been reduced to the minimum, the user can also select an ultra-low torque for micro screws and soft material products. Its plug gauge can be screwed out at high speeds and high torques, thus leading to a shorter inspection time.

### The automatic inspection head and its controller are also available

Use them after integrating them into your system.



The photo shows the automatic inspection head with a thread gauge.

### Original internal structure (patent pending) and sensors

Because the instrument precisely measures a threaded hole depth based on the screwing rotation angle, the pass/fail evaluation of the depth can be made with high reliability. (You can also inspect through holes). It flexibly supports switching to a small pitch thread. Inspections can be made with a no-go plug gauge, as well as with a go gauge.



Thread gauges dedicated to Bee-1

### Highly reliable thread plug gauge (patent pending)

The incomplete thread is removed from its tip, which allows for precise measurement of depths while keeping smooth motion of the gauge. The dedicated gauge has eliminated the need for phase matching and position adjustments when the gauge is replaced because of wear or for other reasons. Special gauges can be made upon request. [Note] Use a thread gauge dedicated to the Bee-1. Otherwise, malfunction or defects may occur.

### System building

From ten program settings of workpieces, the user can select a setting for one workpiece and load it to conduct threaded hole inspections of up to 50 spots per workpiece. As a manufacturer of measuring instruments, we develop and produce transferring machines and positioning machines that meet the specifications of our customers' products. The communication (I/O, RS-232C, and Ethernet) with external devices is optionally available.

### Main Unit Specifications

Applicable screw size	M1.4-M10 (or equivalent)
Thread pitch	Pitch: 0.3-1.5 (84-17 threads/inch) The gauge can be switched for each thread pitch. Contact us for a special pitch.
Max. threaded hole depth	20 mm
Inspection torque	0.01-0.11 Nm
Rotation speed	60-2000 rpm
Z-axis movable range	100 mm
Floating	Radial compensation: $\phi 0.3$ , Angular compensation: 5 minutes
Measurement accuracy of threaded hole depth	0.1 mm 0.01 mm (High precision specs.)
Inspection time	Approx. 2 seconds (depends on the rotation speed and threaded hole depth)
I/O control input	Measurement start, Emergency stop, Home return, Measurement stop, Suspended, Servo ON
I/O control output	Measuring, OK, NG, err, Measurement complete, Home return complete, Servo ON complete
Power supply	100-240 V
Dimensions	528 (H) x 316 (D) x 263 (W)
Weight	Approx. 30 kg

\*The photo on the cover page shows a machine fitted with a positioning table. Movable parts can be customized upon request.  
\*The specifications are subject to change without notice. (October, 2017)

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