

【Question】



We produce about 10,000 M6x1 tapped parts every month. While delivering a 1,000 unit lot to our customer, they complained that the GO gauge: GP-6H found 12 pieces that were NG. We have not found any problems in our spot sampling when we check every 100 pcs. All the sample parts get a 100% inspection and are correct when using a thread gauge. We're not sure what else we can do unless we check every part which will add costs. Is there any other way to deal with this issue? I'm in big trouble.

【Answer】



You are probably experiencing small chips or chip welding that has been left in the internal threads. As a preventative measure for such occurrences, Yamawa proposes the introduction of a fully automated inspection system for measuring threads using a simple screw inspection tool "SITD" and a gauging robot. See below for an overview of the system.

For more details, please contact YAMAWA sales department.

【Description】

Simple Thread Inspection Tools-SITD(Tandem Type)

Chip groove

Go thread portion

Not GO thread portion

- The SITD has a shape that is for GO threads (GB-6H) and a Not GO threads (NB-6H) that are integrated on one gauge.
- The SITD has a chip groove so thread inspection can be performed while removing small debris inside the internal threads.
- The SITD can be attaching it on a gauging robot to build a 100% automatic inspection system.

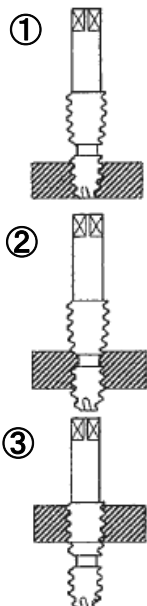


The fully automated inspection system for threads is produced by Nitto Seiko Co., Ltd. in association with the YAMAWA SITD.



Overview of the gauging system;

The image on the left is a Yamawa SITD that is inserted into an internal thread and is adapted to an automatic robot for automated inspection.



(1) The SITD is automatically inserted into the internal thread while it removes chips and dirt deposits with the relief groove.

- The SITD smoothly checks the internal thread all the way through the threaded hole.
- If the internal thread is NG, the gauging robot will automatically determine a No Good condition and it turns on the red light. The gauging robot then stops and reverses to return to the starting point.

*During the inspection with the SITD's GO section, if the rotational torque rises above the specified value, it will be judged as No Good and the robot reverses the rotation.

2) Then, the NO GO is inserted into the internal thread.

- The GO thread and the NO GO are manufactured on the same lead. Since there is no phase shift, the NO GO is smoothly inserted continuously into the internal thread.

- Once the NO GO reaches a specified torque value within the specified insertion depth range and stops the thread is judged as Stop OK.

(3) When the NO GO is inserted beyond the specified depth, the gauging robot automatically judges as a Stop No Good and turns on the red light to stop. The automatic robot then reverse and return to the starting point.

*The NO GO gauge will be determined No Good if it is inserted more than 2 turns. The specified insertion depth range is also set within the length of two rotations of the SITD.