

AUTO-INSPECT CORPORATION

World's first ! Succeeded in developing technology to automate visual inspection of internal scratches on small-diameter long pipe with excellent cost performance ratio.

- Automatic internal scratch inspection for various pipes becomes possible-

Company Profile



Company Name AUTO-INSPECT CORPORATION

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Capital 4million YJPN

Product

Automation is becoming the most important task in the manufacturing industry. Especially, **Visual Inspection** is carried out at various manufacturing sites of high-quality parts,

Problems;

- 1) It takes many time,
- 2) It takes time to improve the inspection skills of the inspectors,
- 3) Criteria for judgment is ambiguous,
- 4) Data accumulation for quality improvement is impossible.

At **various pipe manufacturers**, for example,

Visual Inspection has been carried out to inspect the inner surface of pipes,

Because it is difficult for usual cameras to acquire sharp images of a pipe inside over a long range because the in-focus area is short.

Unique “General-purpose High-speed Movable Focus Method”

solves this problem for various pipes with excellent cost performance ratio.

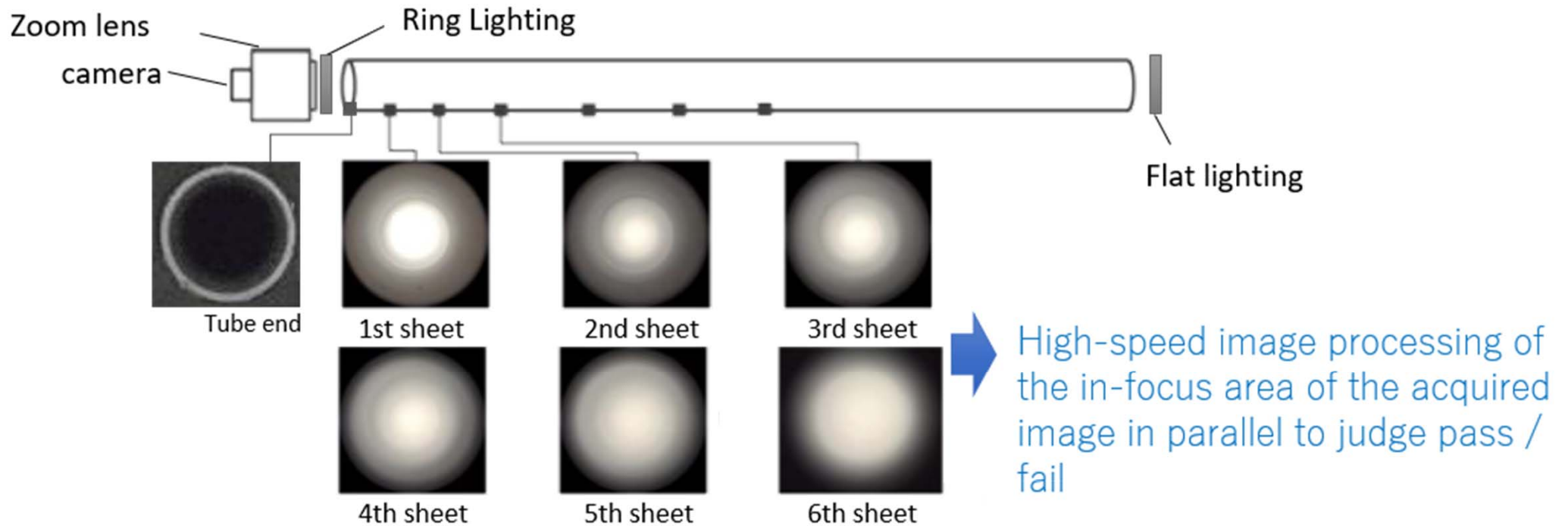
Novelty; Unique “General-purpose High-speed Movable Focus Method

- Proprietary automatic inspection technology of pipe internal surface flaws, that acquires plural pipe inner surface images by a camera with the zoom lens , cuts out the in-focus area thereof, and performs high-speed image processing in parallel to judge the quality.
- Compared to the conventional method of inserting a fiber camera on the inner surface of a pipe, it is remarkably high speed and low cost.

Feature

- ✓ **Simple structure, high speed, and low cost**
 - ⇒ Especially effective for internal scratch inspection of elongated pipe.
- ✓ **Speeding inspection speed with distributed / parallel image processing technology**
 - ⇒ Enables speedup of 10 seconds per pipe.
- ✓ **Generalized automatic inspection equipment by new technology controlling a distance between camera and pipes**
 - ⇒ This makes it easy to switch between models of various pipes.
 - ⇒ Small footprint can be achieved and installation and movement of the apparatus becomes easy, because the light shielding mechanism becomes unnecessary.

Original self-inspection technology for pipe internal scratches by "General Purpose High-speed Movable Focus Method"



Advantage

Advantage of “General Purpose High-speed Movable Focus Method” over "other inspection method"

	Prior art (Visual examination)	This technology	Prior art (Ultrasonic method)	Prior art (Eddy current method)	Prior art (Insert fiber optic camera)
Accuracy	△	○	×	×	○
Speed	△	○	○	○	×
Risk of damage	○	○	○	○	×
Production responsiveness	×	○	○	○	×
Facility convenience	○	○	○	○	△
Cost	×	○	○	○	×
Ease of failure analysis	×	○	△	×	○

Demonstration machine of internal defect inspection equipment by proprietary "General Purpose High-speed Moving Focus Method"

