

Applicable to cylinder with bore of 35 or larger

Kirari NINJA[®] -DS

Automatic Photographic Device for Marine Engine Cylinder

- ◆ Thin structure, measuring only approximately 25 mm in height
- ◆ No cooling material needed
- ◆ Easy to operate using only the buttons on the body
- ◆ Contribution to make inspection of engine cylinders more efficient
- ◆ Image transfer to PC by an external USB port or Wi-Fi



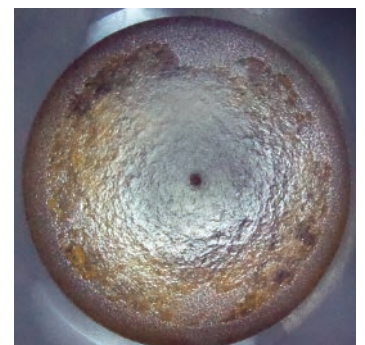
Benefits

In conventional methods for inspecting the inside of cylinders, a worker enters inside (open-up inspection) or inspects the inside by viewing from scavenging ports. Open-up inspection, however, takes long time, and workload is high. Furthermore, a test run (or re-assembly in some cases) may be required after the re-assembly.

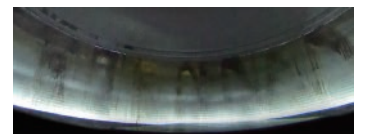
Kirari NINJA[®]-DS, once set on top of a piston, can photograph all 360-direction in the cylinder automatically in one round of the piston movement. By using the Kirari NINJA[®]-DS, workload and time can be drastically reduced. Captured images make it possible to see the inside condition of the combustion chamber in detail and analyze the condition.

- No need to open up the engines.
 - Ease the burden on workers.
 - Removes the risk of reassembling.
- Photographing is available when vessels are in ports.
 - Data of changes over time for each cylinder can be acquired.
 - Preventive maintenance detecting a sign of failure is available.

< Images of a Combustion Chamber >



Exhaust Valve (Fire Side)



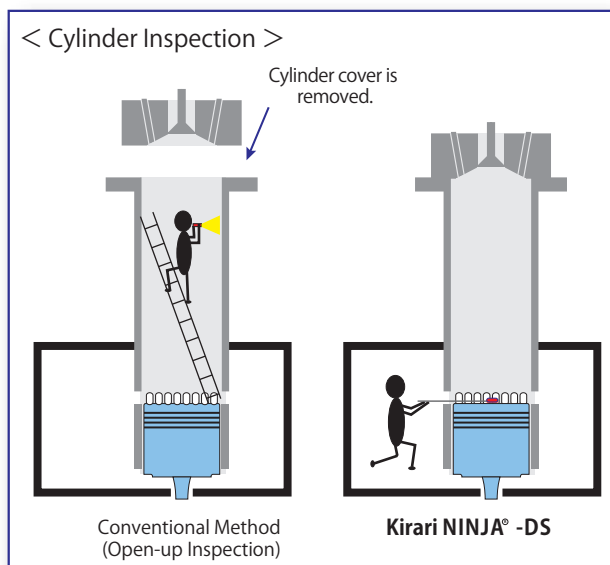
Top Dead Center



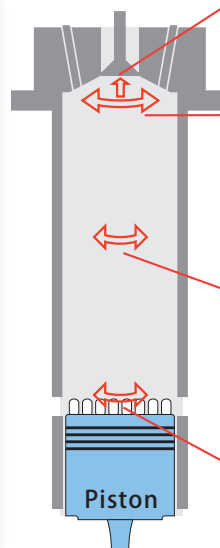
Oil Feed Hole



Bottom Dead Center



Camera points in a cylinder



Basic Specifications

Operating Requirement	Capable to insert from the scavenging port of the cylinder	Internal Memory	Approx. 8GB Image size: 5376× 2688 (approx. 1600 images) Image size: 2048× 1024 (approx. 9000 images)
Heat Resistance	Max. temperature in cylinder : 70° C or less		
Lighting Range	Cylinder I.D. Max. 980 mm	Accessories	<ul style="list-style-type: none"> • Handling jig (magnet-type) • Charger, AA NiMH batteries (4 pcs) • Album software (in accessory USB memory) • Manual (in accessory USB memory) • Dummy box • Quick Start Guide
Battery Life	Approx. 90 min/fully charged*		
Camera Mode	Still image mode		
Dimensions	H25× W74× D215mm (not including protruding parts)		
Weight	Approx. 350g (with batteries)		
Image	Still image Jpeg (Exif Ver.2.3 DCF 2.0 compliant)		

* Under recommended operating conditions

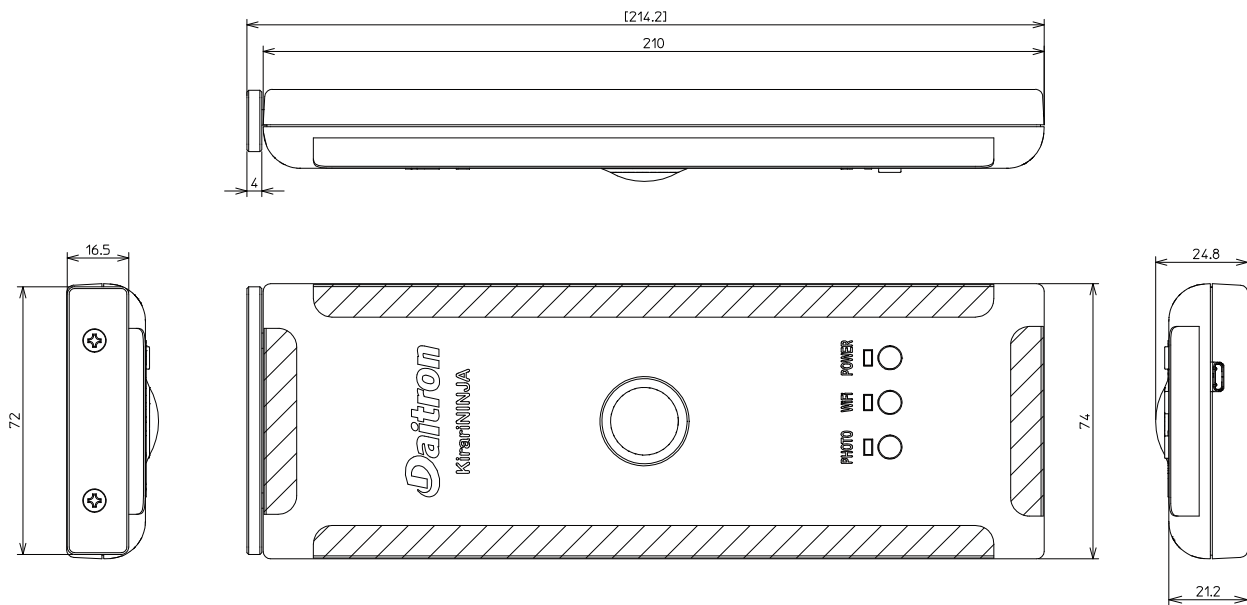
- Kirari NINJA® is the system name.
- Kirari NINJA® used herein is a registered trademark of Daitron Co., Ltd.

• "Wi-Fi" is a registered trademark of Wi-Fi Alliance.

- All other product and company names are general registered trademarks of their respective companies.
- The specifications are subject to change without prior notice.

Dimensions

(Unit : mm)



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