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MARINE SOLUTIONS

Smart Ship Solutions
Connecting People

DS Camera

Applicable to cylinder with bore of 35 or larger

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

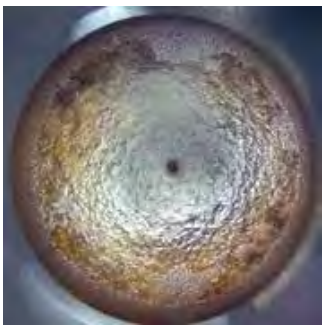
Benefits

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.

DS Camera, 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 DS Camera, 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.

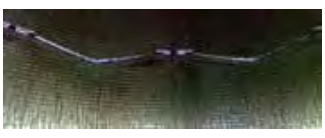
- No need to open up the engines.
  - ・Ease the burden on workers. ・Removes the risk of reassembling.
- Photographing is available when vessels are in ports.
  Data of changes over time for each cylinder can be acquired.
  - ・Preventive maintenance detecting a sign of failure is available.

＜ Images of a Combustion Chamber ＞



Exhaust Valve (Fire Side)

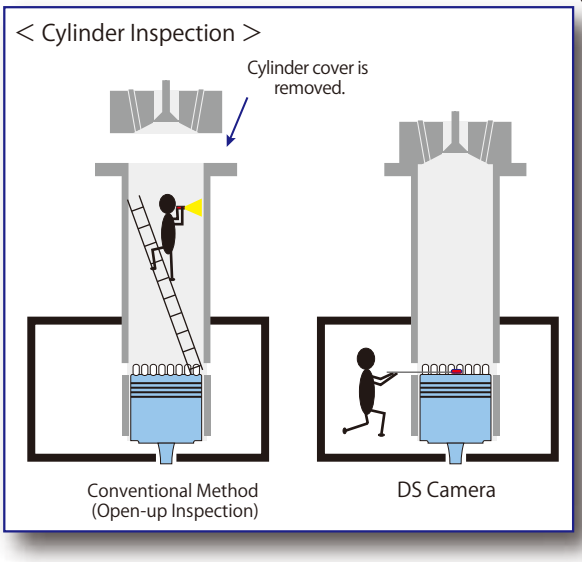
Top Dead Center



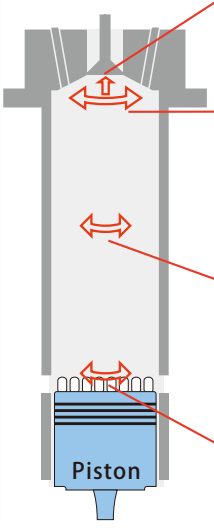
Oil Feed Hole

Bottom Dead Center

＜ Cylinder Inspection ＞



Camera points in a cylinder



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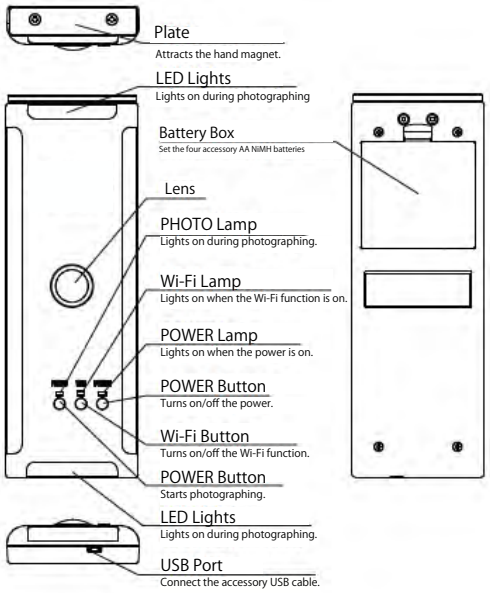
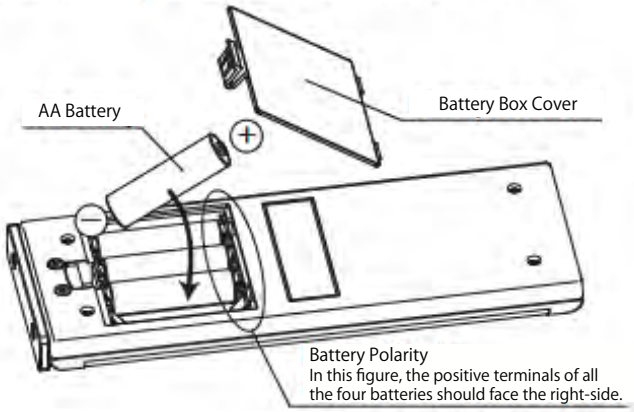
Parts and Names



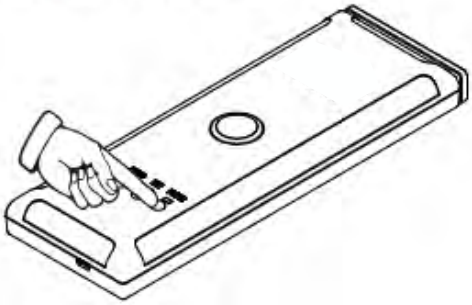
1 Installing the Batteries

Open the cover of the battery box.
Install the four accessory AA NiMH batteries, and close the cover.



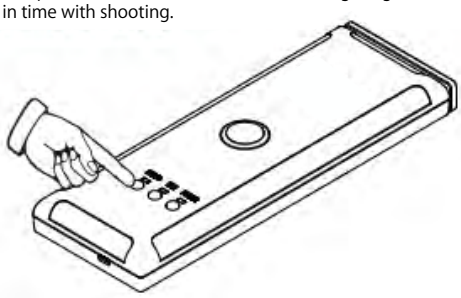
2 Turning Power ON

Press and hold the POWER button for a few seconds to turn on the power.
The POWER lamp (green) lights up.
The POWER lamp (green) flushes when the power is low.
When the lamp flashes, charge the batteries.



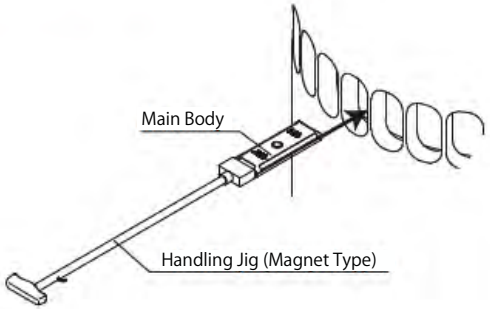
3 Turning PHOTO Switch ON

Press the PHOTO button to start photographing. The PHOTO lamp (red) lights up.
Images are captured in 8-seconds interval, and LED lighting
lights up in time with shooting.



4 Loading/Unloading and Photographing

Load the activated DS Camera into the cylinder to capture images inside.
After photographing, press the PHOTO buttom to end.
Press and hold the POWER button to turn off the power.

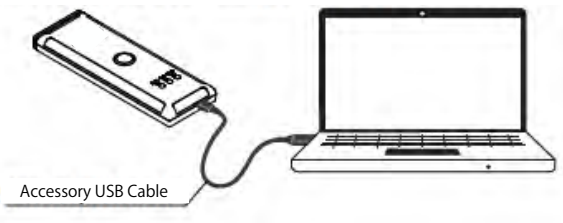


⚠ CAUTION

1. Before using this product, use the dummy box and perform pre-inspection.
   For more details, refer to the User's Manual.
2. This product should be used in the environment, not exceeding the maximum temperature of 70℃
3. One shooting cycle should be within 10 minutes.
   When using it continuously, unload it after one cycle ends and turn off the power to cool down (at least 5 minutes) before next use.
4. Magnet attraction is used for the handling jig. It could fall down and be broken if the main body hits other objects or it is handled violently.
   Be sure to hold by both hands and carefully load and unload the main body.

5 Exporting Image to PC

1. After photographing and power is turned off, connect the product and PC with the accessory USB cable.
2. Turn on the power of the product, and check the images captured.



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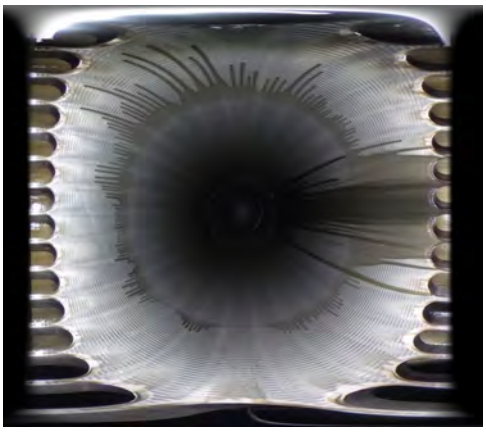
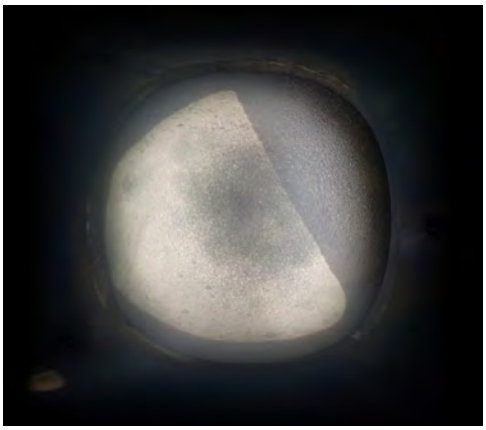
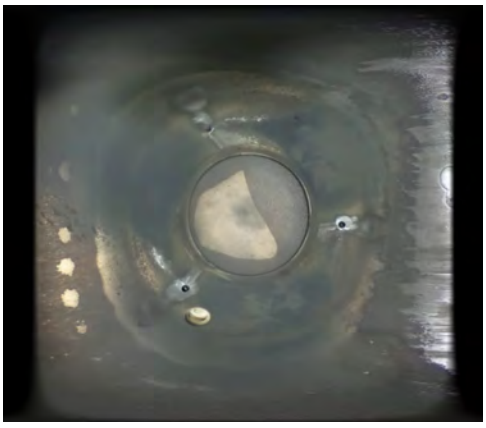


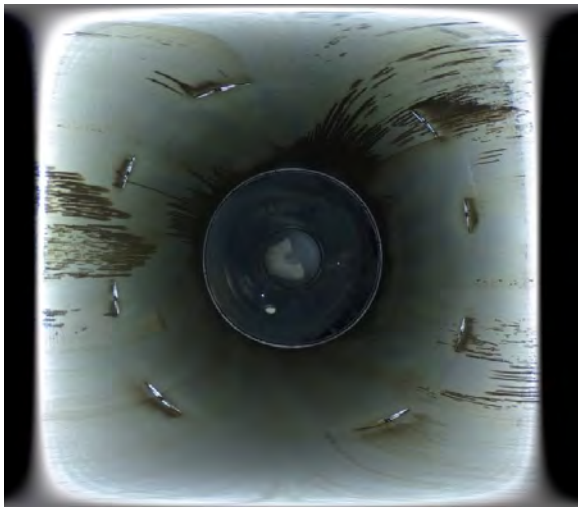
DBC Area

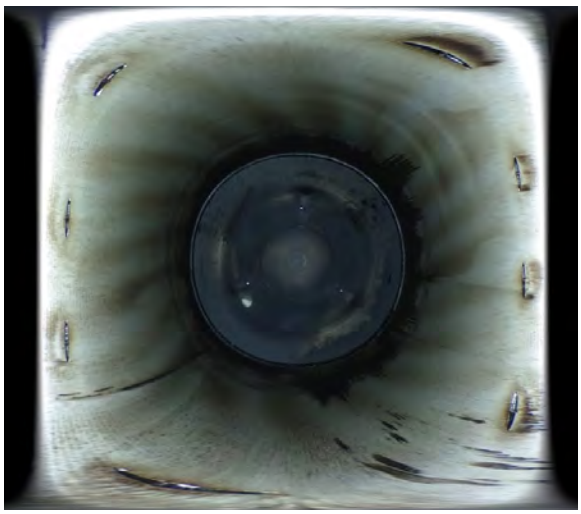


Exhaust Valve



Combustion Chamber Indicating underside of Cylinder Head , Exhaust Valve , Injectors Tips





Lubricating Quill Areas - Easily Visible Quill and Oil Flow Check

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