



# CYLINDER LINER WEAR MEASUREMENT (VAK)

**APPROVED**  
by leading engine makers

With modern two-stroke marine engines optimized for high efficiency, they are increasingly complex to operate and maintain. At the same time, legislation demands lower emissions and pushes the use of new fuels, cylinder sensitivity increases and the risk of cylinder problems.

Hans Jensen Lubricators is a global leader in cylinder lubrication technology with expert knowledge of cylinder condition gathered over more than 100 years.

Using a Cylinder Gauge Insertable (CGI), we offer an accurate measurement of cylinder wear that shows the actual cylinder condition.

The VAK measuring process is time efficient. It takes one person approx. 1½ hour of work per unit and removal of cylinder cover is unnecessary, so cylinder condition can be determined quickly with minimal disruption.

In addition, using a Ninja DS-cam provides a clear and reliable picture of the entire combustion space with 3D images.

## Benefits:

- Determines true cylinder liner condition
- Detects abnormal wear early on
- Identifies type of cylinder wear
- A safe, time-efficient and accurate measurement method
- No need for lifting cover or exhaust valves
- Only one person required for the task
- Suitable for most two-stroke engines
- (see specs on the back)

## When to measure:

It's important to measure cylinder liner condition in a range of situations:

- Suspicion of abnormal cylinder wear
- Periodical slow steaming
- Retrofitting for green fuels
- Changing bunker supplier
- Inspection prior to dry dock
- Monitoring wear during new engine run-in

## How it works

The wear gauge is positioned on the piston crown and measures the inside of the cylinder. The depth gauge is placed under the piston and transmits the position data of wear gauge to the notebook.

Measurements can be executed immediately after arriving at the port, because the wear gauge is able to withstand up to 80 degrees Celsius in the top of the liner. The measurement tool will be inserted via the scavenge ports.

The CGI measures wear up to 0.8% of the diameter of the liner and reads 1/100 mm. It is suited for MAN/B&W engines, with a liner diameter of 500\* mm, 600 mm, 700 mm, 800 mm, 900 mm and 980 mm (except \*L500 and some Wärtsilä engines).

The Depth Gauge measures with a precision of about +/- 1 mm. The Wear Gauge measures with a precision of about +/- 1/100 mm.

## Our VAK service

Our engineers are expertly trained in measuring cylinder condition. We use the best tool on the market, recommended and used by leading engine makers. The service includes:

- Measurements on site
- Images of the liner
- Port inspection
- Final report with recommendations

After finalizing measurement onboard the vessel, our engineers analyze the data and share findings and recommendations in a written report.

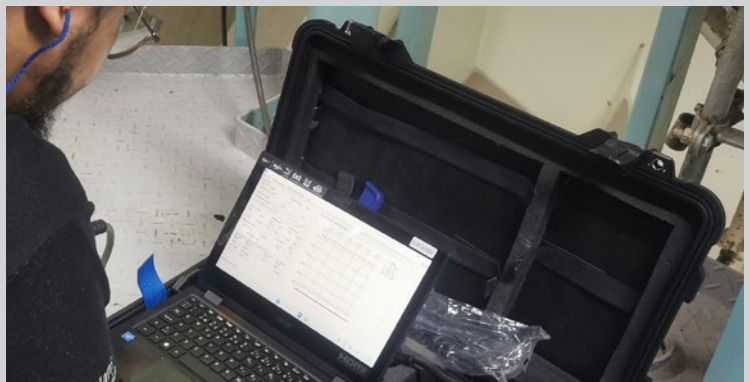
## Get in touch

To talk specifically about your vessel and to get an estimate of price and project duration, please contact Customer Support on:

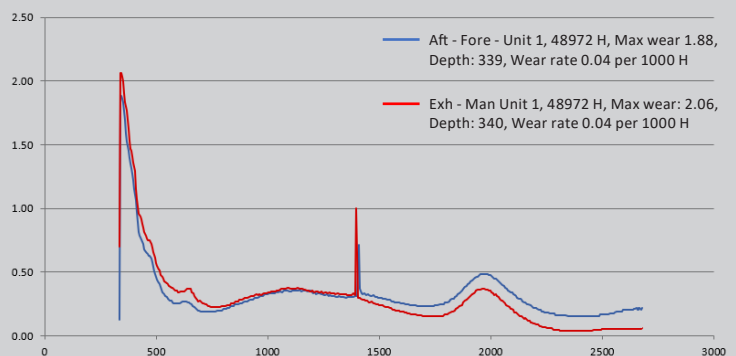
+45 9857 1911 or [technicalsupport@hjlubricators.com](mailto:technicalsupport@hjlubricators.com)



The stroke length and position of the piston is found by using laser.



Our engineer reads the liner wear data to be used in the final report.



Data graph sample - Fore/aft and Exh/Man (Unit 1)

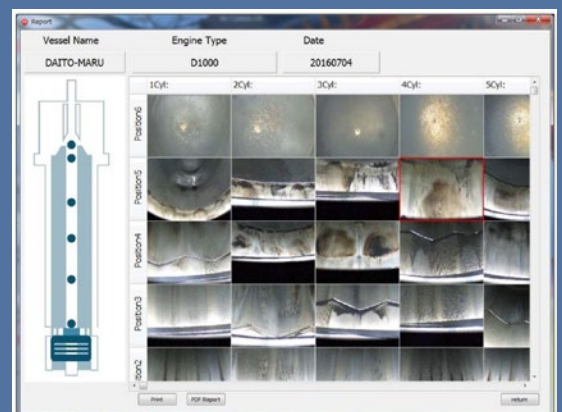
## 3D image analysis

Hans Jensen Lubricators offers additional visual documentation of the cylinder condition using a Ninja DS camera. Images are recorded inside the cylinder, moving the camera up and down through an entire piston cycle.

The camera provides detailed visual documentation parallel to the wear measurement data.

We recommend this visual 3D documentation as a supplement to the measurement data. The images are saved digitally for viewing later at your discretion.

Please contact us for further information.



**Your service partner:** Hans Jensen Lubricators offers a range of services on an ongoing basis to optimize cylinder condition and ensure maximum efficiency of your lubrication system. For more information, please go to: [www.hjlubricators.com/services](http://www.hjlubricators.com/services)