

Two-stroke

Copenhagen, September 2026

Action code: AT FIRST OPPORTUNITY

Inspection of piston crown

- update of procedure

Concerns

Owners and operators of Everllence B&W two-stroke marine combustion engines.

Engine types: All Mk. 9 and Mk. 10 engines

Summary

Everllence has experienced an increase in the number of reported cracks in piston crowns. In case a crack develops and the crown is not replaced in due time, this could lead to consequential damage, posing a potential risk to property and persons. Ship crews must follow the updated procedure for port inspection and inspection of piston crowns during maintenance work.

Contact details

EngineSupport@everllence.com, technicaldocumentation-cph@everllence.com

References

SL2023-747

Relevant instructions: 6645-0320-XXXX, 2265-0401-XXXX, and 2245-0100-XXXX

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Fig. 1: Example of cracks in piston crowns as observed during scavenge port inspections with the oil pump running and after overhaul and cleaning

Everllence
Teglhølmegade 41
2450 Copenhagen SV, Denmark
P +45 33 85 11 00
info-cph@everllence.com
www.everllence.com

Everllence PrimeServ
Teglhølmegade 41
2450 Copenhagen SV, Denmark
P +45 33 85 11 00
PrimeServ-cph@everllence.com

Production
Teglhølmegade 35, Denmark
P +45 33 85 11 00
manufacturing-dk@everllence.com

Forwarding & Receiving
Teglhølmegade 35, 2450 Copenhagen SV,
Denmark
P +45 33 85 11 00
shipping-cph@everllence.com

Everllence
Filial af Everllence SE, Tyskland
CVR No.: 31611792

A Danish registered branch of Everllence SE
German Reg.No.: HRB 22056
Amtsgericht Augsburg

Failed piston crowns

We take safety issues relating to our products very seriously. We are continuously monitoring the performance of our products in the field. As a manufacturer of premium quality products, Everllence is committed to keeping you informed of any significant changes in the perceptions of risk, as they relate to the safe operation of our products.

Everllence has experienced an increase in the number of reported cracks in piston crowns. In case a crack in the piston crown develops through to the outside of the crown, it may lead to system oil leaking through the crack. Furthermore, high-pressure and high-temperature combustion gas mixed into the piston cooling oil may flow into the crankcase and could potentially pose a risk of a crankcase explosion. Such an incident poses a potential danger to persons and property and can lead to personal injuries.

The piston crown is a component with high requirements and quality deviations may lead to failures in service. For that reason, piston crowns must be produced by approved vendors and only qualified workshops are allowed to carry out repairs.

Everllence would like to highlight the following detection methods and mitigating actions.

Detection methods

Cracks in the piston crown can be found by these indications during engine operation:

- Increased/deviating piston cooling oil temperature
- Increased oil mist level
- Decreased BN level in scavenge drain oil analysis
- Increased system oil consumption
- Increased scavenge drain flow
- Increased crankcase pressure
- Leaking or dripping oil from crankcase relief valve on the back of the frame box
- Leakage of system oil through crankshaft sealing arrangement (at the flywheel).

Cracks in the piston crown can be found by these indications after standstill:

- After more than 6 hours of standstill, turn the engine one revolution with the turning gear and open indicator valves to detect the oil leak and to avoid crankshaft slip when starting air is applied.
- Increased frequency of system oil auto-filter backflushing may be an early indication of combustion gas passing into the piston cooling oil circuit.

Indications of a cracked piston crown during port inspection

- Keep the cooling oil system running during scavenge port inspections.
- If a crown is cracked through to the outside, piston cooling oil will be visible flowing through the crack.
- If a crack leakage is detected, the piston must be replaced.

Inspections of a piston crown during piston overhaul (see 2245-0100-XXXX and 2265-0401-XXXX)

- For all piston overhauls, the piston crown and piston skirt should be dismantled and a thorough NDT inspection of the piston crown, both inside and outside, should be conducted.

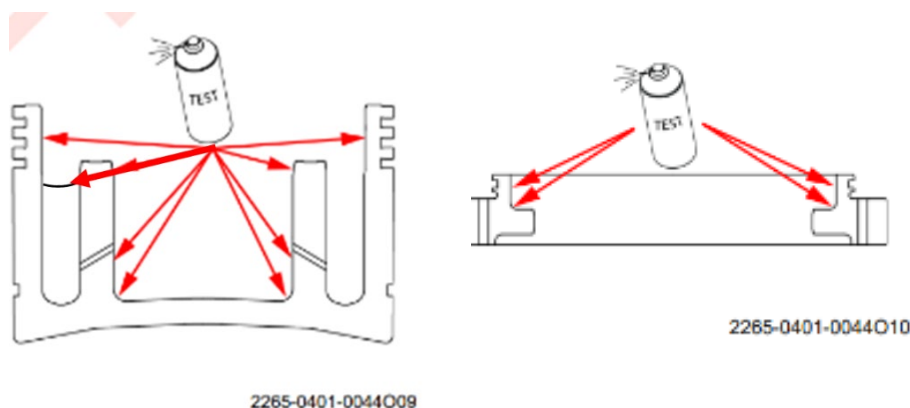


Fig. 2: NDT inspection according to instruction

Mitigating actions

- When dismantling a piston, use the procedure applying additional slings that was released with SL2023-747.
- If detecting or suspecting a cracked piston crown, the piston crown must be replaced immediately. In case the vessel is at sea, emergency running mode 'case A' must be used until the next port, see instruction 6645-0320-XXXX Running with Cylinders or Turbochargers out of Operation. Inform Everllence EngineSupport@everllence.com in case of emergency running and if observing cracks in piston crowns.

As a result of this product safety monitoring, we have updated our instructions which must be used in the future.

It is essential that the engine room personnel are fully acquainted with the contents of the engine manual. Operation and maintenance of Everllence B&W engines is to be carried out exclusively by qualified professional personnel.

Updated revised instructions can be downloaded from our [Nexus extranet platform](#), or by writing to EngineSupport@everllence.com or technicaldocumentation-cph@everllence.com. Please replace the pages in your Instruction Manual and inform your crew of the update. Our highest priority is a safe and reliable machinery operation. If you have any questions, do not hesitate to contact us for further assistance.

Yours sincerely,

Ole Pyndt Hansen
Senior Vice President,
Research & Development

Kim Blichfeldt Kirkeby
Senior Manager,
Engine Support