Everllence

Service Letter

SL2026-793/JAWI

Two-stroke

Copenhagen, November 2026

Action code: WHEN CONVENIENT

Large engine repairs

Design approval and continued compliance

Concerns

Relevant stakeholders involved in the repair, approval, and operation of Everllence B&W two-stroke engines.

Summary

The load-carrying components of a two-stroke engine are designed and approved as an integrated system. Repairs that change dimensions, geometry, material properties, heat treatment or other design characteristics may affect how loads are distributed, and may therefore require further technical assessment before the engine is returned to service.

This is relevant not only for the safe operation of the engine, but also for maintaining compliance with applicable classification, statutory and emissions requirements.

Contact details

LargeRepairTechService@everllence.com



Everllence Denmark A/S

CVR no. 46771451

www.everllence.com

Copenhagen (head office)
Teglholmsgade 41
2450 Copenhagen SV
Denmark
Phone: +45 33 85 11 00
info-cph@everllence.com

Frederikshavn
Niels Juels Vej 15
9900 Frederikshavn
Denmark
Phone: +45 96 20 41 00
info-frh@everllence.com

Holeby
H. Christoffersensvej 6
4960 Holeby
Denmark
Phone: +45 54 69 31 00
info-hol@everllence.com

Introduction

A repair that alters the previously approved design of a two-stroke engine, for example through changes to dimensions, geometry, material, heat treatment or load carrying welds, may require further assessment to determine whether the repair constitutes a substantive modification under the applicable classification requirements.

Where a repair constitutes a substantive modification, the effect of the change on the engine must be calculated, documented, and submitted to the relevant classification society for review and approval. This requirement applies to whoever performs the repair.

Why is this important

A repair that is subsequently determined to constitute a substantive modification may require approval by the relevant classification society and, where applicable, review by the responsible flag administration or other competent authorities. Failure to obtain any required approvals may affect the status of the vessel's class, statutory certification or other regulatory documentation. The consequences will depend on the circumstances of the case and the requirements of the relevant authorities.

Everllence is the designer and licensor of Everllence B&W two-stroke marine propulsion engines. This letter sets out when a repair to such an engine may affect its approved design, and what must then be calculated, documented, and approved before the repair is carried out. It is issued for information to relevant stakeholders involved in the repair, approval, and operation of Everllence B&W two-stroke engines.

Repair or substantive modification

The distinction below provides a general framework for assessing when further technical evaluation may be required.

Restoration to the approved design	**Deviation from the approved design**
The component is restored to the dimensions, geometry, material condition, and surface finish stated in the released design documentation, using an approved procedure.	The component is returned to service with dimensions, geometry, material, heat treatment or welding that differ from the released design documentation, or that fall outside the tolerances stated in it.
No new design approval is normally required. Normal survey, documentation and reporting requirements apply.	**Such deviations will normally require an assessment under the applicable classification requirements to determine whether they constitute a substantive modification and whether further approvals may be required.**

"Substantive modifications: Design modifications which lead to alterations in the stress levels, operational behaviour, fatigue life, or an effect on other components or characteristics of importance such as emissions." IACS UR M44

Repairs that may constitute a substantive modification

The assessment of whether a proposed repair constitutes a substantive modification depends on the specific circumstances of the repair and the applicable classification requirements. The following examples will often require further technical assessment and, depending on the circumstances and applicable classification requirements, may constitute a substantive modification:

- machining of main bearing saddles and crankshaft journals
- repair or modification of camshafts, camshaft drives, connecting rods, crossheads, and other running gear
- any material substitution, welding on load-carrying components or local heat treatment.

Please note that the list above is indicative and not exhaustive.

What must be calculated and documented

The classification society approves a substantive modification on the basis of the documentation submitted. The submission will typically need to demonstrate the effect of the proposed change on:

- fatigue life
- crankshaft alignment and bearing loads
- material properties and heat-treatment condition after repair
- the operational behaviour of the engine as a whole
- stress levels in the repaired component and in adjoining components.

This documentation is submitted together with the repair procedures, welding and heat-treatment specifications, NDT (non-destructive testing) scope, and dimensional verification applied.

Access to the design basis

Relevant design documentation and engineering calculations relating to repairs of this nature are maintained by Everllence, as designer and licensor, and by the licensed engine builder to the extent such documentation has been released for the specific engine concerned.

Required documentation and supporting measures

Where a repair constitutes a substantive modification, appropriate technical assessments, documentation and approvals should be completed before the work begins, irrespective of which party performs the repair. This would normally include:

- the calculations and documentation submitted to and approved by the classification society
- documented design basis, including the source and authenticity of the drawings, tolerances, and material specifications relied upon
- risk assessment covering the repaired component and its effect on the engine

- quality plan covering procedures, welding, heat treatment, NDT and dimensional verification
- design appraisal and type approval documentation
- change management and traceability system allowing repaired parts to be identified and recalled in service
- confirmation that the proposed repair will have an adverse effect on compliance with applicable engine and emission certificate requirements.

Consequences of proceeding without approval

Carrying out a substantive modification without approval may, depending on the circumstances, lead to:

- a recommendation or a Condition of Class
- review, suspension or withdrawal of class
- review, suspension or withdrawal of statutory certificates by the relevant authorities
- detention by port state control
- questions about insurance coverage if a claim is made later.

What to do when damage occurs

Everllence Technical Service can assist in assessing whether the proposed repair constitutes a substantive modification and, where relevant, identify the approvals and documentation that may be required. Everllence can also provide repair services and, where appropriate, undertake the repair ourselves.

Any questions regarding to this letter can be directed to Technical Service Two Stroke: LargeRepairTechService@everllence.com

Yours sincerely,

Jeppe Poulsgaard
Vice President
Technical Service Denmark

Jakel Winkler
Manager
Technical Service 2-Stroke