

Dear Sir or Madam

Based on the latest service experience and engine development, we now offer a three-ring configuration for low-speed engine types with bore sizes designed with the configuration: one high and three low piston rings.

To increase the margin against scuffing damage to piston rings and cylinder liners, we have incorporated cermet coating on the running surface of all piston rings. The cermet coating provides a seizure resistant surface against the liner, efficiently avoiding micro seizures and thereby lowering the scuffing risk.

The cermet-coated rings are designed to perform satisfactory even after an incident with momentary oil film breakdown, provided the oil film is subsequently restored, which ensures that the engine can continue in normal operation until the next planned overhaul.

For engines already in service, a ring pack identical to the above described can be ordered by the shipowner and supplied as a spare part.

If you have any questions or inquiries regarding this Service Letter, contact our Operation Department at Operation2S@man-es.com.

For most engines in service, the new three piston ring configuration is available as spare part from Q1 2021. For further information about delivery times, please contact PrimeServ Spare Part Department at Primeserv-cph@man-es.com.

Yours faithfully



Mikael C Jensen
Vice President, Engineering



Stig B Jakobsen
Senior Manager, Operation

Action code: WHEN CONVENIENT

CPR piston ring pack
- three-ring configuration

SL2020-698/KAMO
July 2020

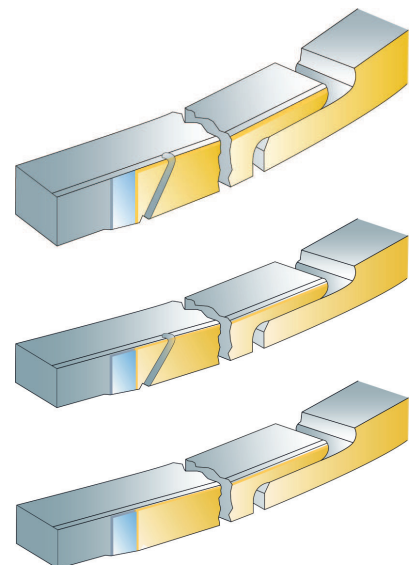
Concerns

Owners and operators of MAN B&W two-stroke marine diesel engines
Type: MAN B&W two-stroke engines
Mk. 8 or higher

Summary

A new CPR three-ring pack is available for retrofit on engines with bore sizes designed with one high and three low piston rings.

Other relevant Service Letters are:
SL2019-685/JAP
SL2018-659/JAP
SL2016-611/JAP



Introduction

By introducing the controlled pressure relief (CPR) piston ring design with gas tight finger locks on all piston rings, the gas leakage through the piston ring pack is controlled by controlled leakage (CL) grooves.

Fitting a gastight piston ring in the third ring position makes the complete piston ring pack gastight. Thereby gas leakage is reduced to a minimum. Reducing the gas leakage will reduce the SFOC and at the same time reduce the deposit buildup between the piston rings (ring lands), behind the piston rings in the grooves and to some extent on the top land.

The two upper piston rings will have CL grooves and the third piston ring will be gastight (no CL grooves).

Cermet-coated piston rings

Cermet-coated piston rings were introduced as a scuffing preventive countermeasure. Cermet-coated piston rings are now standard on most large-bore engines and recommended for all engines.

Engines already in service with four-groove piston crowns will continue as four-ring-groove piston crowns with the CPR piston ring pack shown in Fig. 1 (i.e., one high and two low piston rings) leaving the lowest piston ring groove empty.

Cermet is a composite coating material, which is partly ceramic and partly metallic. The two components combine into a material with high elastic durability from the metallic part and high-temperature and seizure resistance from the ceramic part. These properties improve the overall wear resistance.

Improvements

The combination of the design with three piston rings with CPR finger locks and the cermet coating gives a highly durable piston ring pack. Installing this ring pack can lead to a reduced SFOC as it is a more gastight ring pack.

To order a three-ring configuration with one high and two low piston rings for piston crowns with four grooves, see the attached plate 8872-2272-0011 on pages 3 and 4. When using a three-ring configuration for a crown with four grooves, the lowest groove must be left empty, see Fig. 1.

The overhaul criteria of the cermet coating can be found in SL2019-685/KAMO.

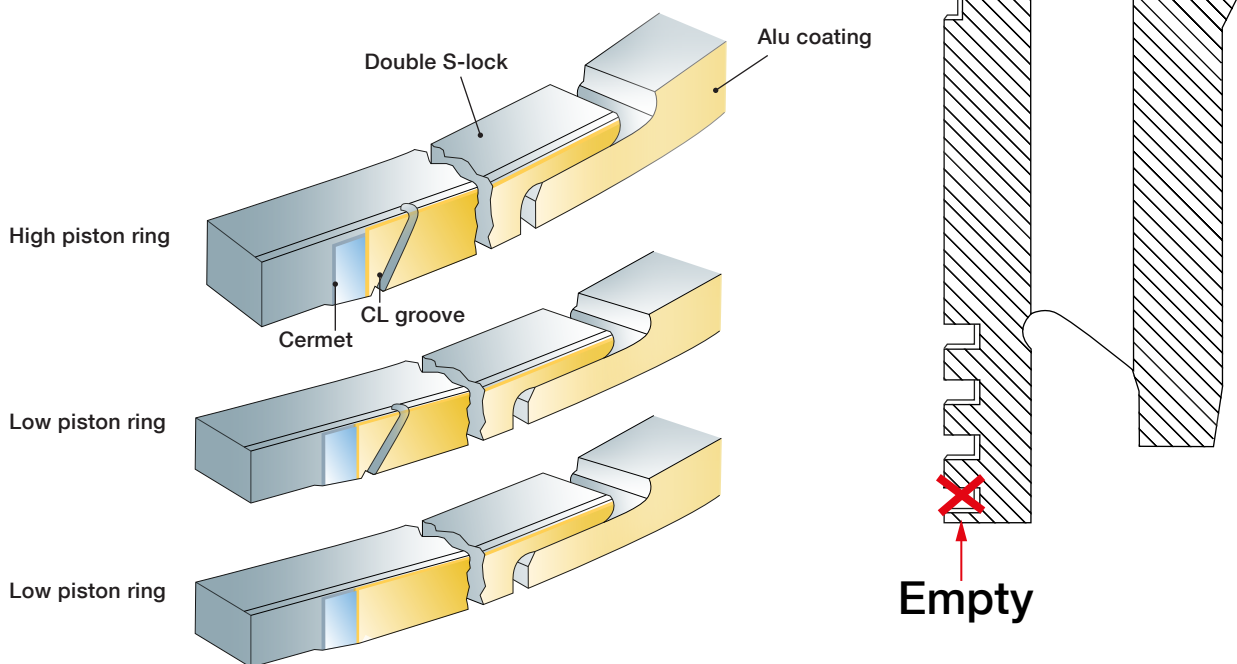
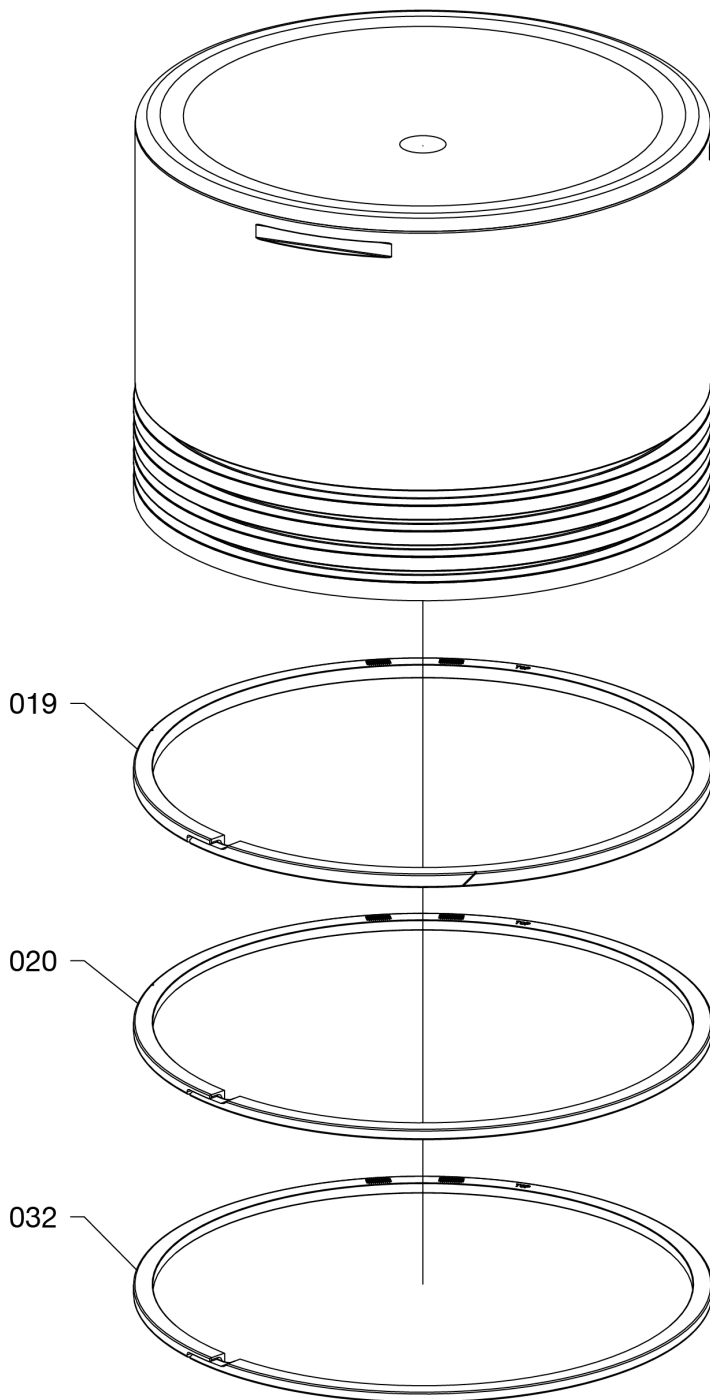


Fig. 1: Piston crown with four piston ring grooves and the corresponding CPR ring pack (i.e., one high and two low piston rings)

Operation on very-low and ultra-low sulphur fuel oil



Special Instruction

Plate
8872-2272-0011

2018-03-22 - en

8872-2272-0011

MAN Energy Solutions

Special Instruction

Item No.	Qty	Item Designation
019	-	Piston ring, high, cermet type ¹⁾
020	-	Piston ring, low, cermet type ¹⁾
032	-	Piston ring, low, cermet type ¹⁾

Note: ¹⁾ When ordering, please state IMO no., engine type and height of each ring.

Plate

8872-2272-0011