Novel Tribotester for Cylinder Liner/Piston Ring Contacts of Two Stroke Marine Diesel Engines - DTU Orbit (05/02/2019)

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A good tribological description for the cylinder liner and piston ring materials is always desired in order to achieve an improved combination of the materials. The piston ring package in a two-stroke-diesel engine operates in three lubrication regimes and the materials must be characterized in relation to this before a final selection is made. A tribo-test-apparatus is developed to study the tribological performance and to rank the different combinations of cylinder liner and piston ring materials of two stroke marine diesel engines. The test apparatus is based on the block-on-ring principle and is capable of studying the process of friction, oil film formation between cylinder liner, and piston ring surfaces and the corresponding wear. Two test procedures are developed to verify the reproducibility of the measurements obtained with this test apparatus. These reproducibility test procedures were then used together with the ISO 8251 standard to outline an upgraded set of test procedures for the characterization (or ranking) of different cylinder liner materials.

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