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New piston rings developments using laser hardening

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For piston rings, the performance is given by the ring capacity of sealing and scrapping. These performances can be measured in an engine using the results of lube oil consumption and blow-by. The main intention of this work is to provide support for new piston rings developments using laser hardening parameters optimization, reducing the wear degradation. Hence, the aim of this work was to evaluate the influence of laser hardening on contact surface from the second ring and verify the microstructure modification and ring's shape distortion due to heat input. The results indicate that the laser parameters can be tailored in order to achieve adequate macrostructures and micro constituents distribution.