



FAILURE INFORMATION

CRACKING IN THE PISTON CROWN

Description of the Failure

The piston is broken towards the pin bores. (Figure 1)
There are cracks in the piston combustion chamber.



Figure 1

Causes of the Failure

Microcracks occur on the piston due to the tension as a result of high temperature and sudden cooling. These cracks progress in time and break the piston. The causes of cracking and breaking at the piston crown are;

- The engine brake of the vehicle is faulty or inaccurate engine brake adjustment causes the failure.
- The vehicle is driven at high speeds with low rpm downhill. When the vehicle goes downhill, it should not be declutched. It should not be driven at high speeds.
- Inaccurate injection nozzle adjustment causes the failure.

- Correct piston appropriate for the engine specifications is not used. Utilization of a normal piston, instead of a piston with reinforced piston crown, utilization of a normal piston, instead of a piston with oil cooling gallery or utilization of pistons with different combustion chamber volumes (utilization of Euro-series engines instead of each other) may cause the failure. Machining on the piston crown can also cause the problem (Shortened stroke and length)

Recommendations

- The injection nozzle and the fuel pump should be adjusted at the values specified by the manufacturer.
- The engine brake should not be used frequently on the vehicle.

- Correct pistons should be used for the engine.
- Modifications about compression and ignition systems of the vehicle should be performed by experts.



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