



FAILURE INFORMATION

SEIZURE ON THE PISTON SKIRT

Description of the Failure

As the image of the pistons removed from the engine is seen in Figure 1, there are marks of seizure with specific intervals only at the skirt area.

Such failures usually occur in a short time following the engine overhauling operation.



Causes of the Failure

There are two causes for the piston to fail in a manner similar to the image in figure 1. These are;

1-Seizure due to lack of space resulting from excessive heating

The space between the Piston and the Liner is reduced due to a failure and problem in the cooling system of the engine. Since the aluminum piston expands 2 times more than the iron cast, seizure failure shall occur in excessive forces and heats.

Factors causing failure in the cooling system are;

- The water pump is faulty.
- The belt is broken off or the belt is loose.
- The thermostat is faulty,

-The coolant water level is very low.

-The air discharge is faulty.

-The air in the engine coolant water is not taken adequately.

2-Seizure due to lack of space resulting from Manufacture and Assembly defect

The amount of space between the piston and the liner is reduced as the inner diameter of the cylinder is not processed properly.

3- Faulty engine overhauling operation

The engine cover is assembled defectively. The bolts of the engine cover are tightened more than the torque values recommended by the engine's manufacturer and the shape of the engine block is changed. In such failures, seizure occurs in the piston in the first housing of the engine.

Recommendations

1-Measurement of the piston and the cylinder should be checked for accuracy. The piston diameter and piston space measurements and cylinder diameter measurements stated on the piston crown should be adjusted.

2- Checks with regard to the cooling system should be performed.

- Thermostat
- Coolant water level
- Circulation pump
- Fan belt should be checked. (Worn, defective belt should be replaced.) Tension of the fan belt

should be in a manner to stretch for 1-1,5 cm. If it is more loose, the engine overheats.

- Air discharge must be performed and the air discharge system should be checked.

-Radiator cap and radiator cores should be checked.

3- You should take the air in the coolant water inside the cooling system.

4- Bolt torque values of the engine's top cover should be adjusted with the torque wrench at the values described by the engine's manufacturer.

