

Service Information No. 16 / 05

Date: 18.11.2005

Experience with Ring Groove Wear - Update

M 43

Two months ago we published the good operational results of our M43 engine after 30,000 operating hours in the technical press. These also included the low value of specific ring groove wear. In the meantime we have received feedback from our customers and agencies providing wear values of a few hundred pistons. We have evaluated this data and would like to share the result with you.

In our last Service Information No. 11/05 on this topic we provided a diagram of average specific wear values depending on operating time. This allowed to make an estimate on the remaining time until next maintenance.

The amount of data that is now available to us allows a more accurate forecast under constant operating conditions.



In the attached diagram considerably more than 90 % of the mean values measured at 4 points in the ring groove are below the lower green line. (measured 2mm from the outside, as shown on the standardized Measuring Sheet "Piston")

As long as the values obtained through different checks remain within this range, a wear value of 10.8 mm will only be reached after more than 30,000 operating hours.

If wear values are between the first and the second line, it is to be assumed that a value of 10.9 mm will most probably not be exceeded before 30,000 operating hours.

Service Information No. 16 / 05

Date: 18.11.2005

Experience with Ring Groove Wear - Update

M 43

However, in such a case the operating conditions should be critically analyzed. It cannot be excluded that operational reasons are playing a role in this slightly increased wear. This particularly includes the area of combustion, notably fuel quality, viscosity at the engine, and the condition of the nozzles.

Nevertheless, according to our experience, this creates practically no negative conditions such as increase in lube oil consumption or increased liner wear.

If the wear values are above the red line, we urgently recommend to investigate into the cause and possibly pull another piston to validate the result.

Summary:

As long as the measured wear values are below the green line, it can be assumed that earliest at 30,000 operating hours a normal piston maintenance will be necessary.

Piston crowns only have to be exchanged when a wear with an average value of 10.8 mm in the first ring groove is reached, unless other reasons call for an earlier exchange.