

AH01.00-P-0300-01VA	General information on inspecting cylinder walls		
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Engine 112, 113, 137, 152, 155, 157, 166, 272, 273, 275, 277, 279, 285

General information for engines with Silitec cylinder barrels (aluminum-silicon cylinder barrels)

The following figures and notes assist in assessing the cylinder barrels so that a professional decision can be made concerning the condition and further use of the crankcase.

i A mechanical pressure test and a manual compression test must be conducted for an objective assessment of the cylinder condition or the cylinder barrel.

i If an increased pressure loss was found with the cylinder leakage tester, inspect engine by listening at cylinder head gasket, air intake area, exhaust system, oil filler opening and prechamber or spark plug bore of the cylinder or adjacent cylinders and thereby locate the area in which the pressure escapes. The smoke detector can be used to localize the cause of the problem.

Ideal condition

Matt gray surface, no honing pattern, dry cylinder barrel, no glossy sections or reflecting smooth spots.

Assess any irregularities individually.

i Reuse crankcase.

i A score mark that can be felt with your fingernail is not permitted as a sole criterion for exchange.

i A significant degree of scoring in the cylinder barrel with material accumulation can justify an engine replacement.

A score mark in the cylinder barrel with significant material accumulation should be documented with representative pictures.



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Individual score marks up fields of score marks

Caused by initial dirt or soiling during operation, e.g. through back pulsation of particles from the catalytic converter or the exhaust system.

i Reuse crankcase.

Ring shaped imprints

Visible in the upper and lower piston ring reversal area are not a cause for concern.

i Reuse crankcase.



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Little hammer-like structures

Combustion-related or geometric factors that could lead to the ends of piston rings being pressed onto the barrel.

i Reuse crankcase.

Brown coloration of cylinder barrels

Brown coloration (oil varnish) over large areas of the cylinder barrels indicate that the engine has been operated at a very high temperature level. This is normal and not a cause for complaint.

i Reuse crankcase.



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Glazing, smooth spots

Individual blank points, e.g. in middle of cylinder or in area of cylinder head bolts. Full circle impression at the upper and lower piston ring reversing points.

i Reuse crankcase.



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Optical steaks, friction marks

Starting from first, second or third piston ring, tapering off after approx. 30 mm. Imperceptible friction marks caused by soot particles and the oil film being washed off by fuel, e.g. during frequent cold starts during short-distance driving. These traces of friction marks which occur principally in area of cylinder head bolts and pressure side are not a problem provided they are smoothed.

i Reuse crankcase.



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Noticeable change in valve cooling bore

The cooling bore in the crankcase shows a different coloration to the cylinder barrel.

i Reuse crankcase.



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Corrugated wear of the cylinder barrel

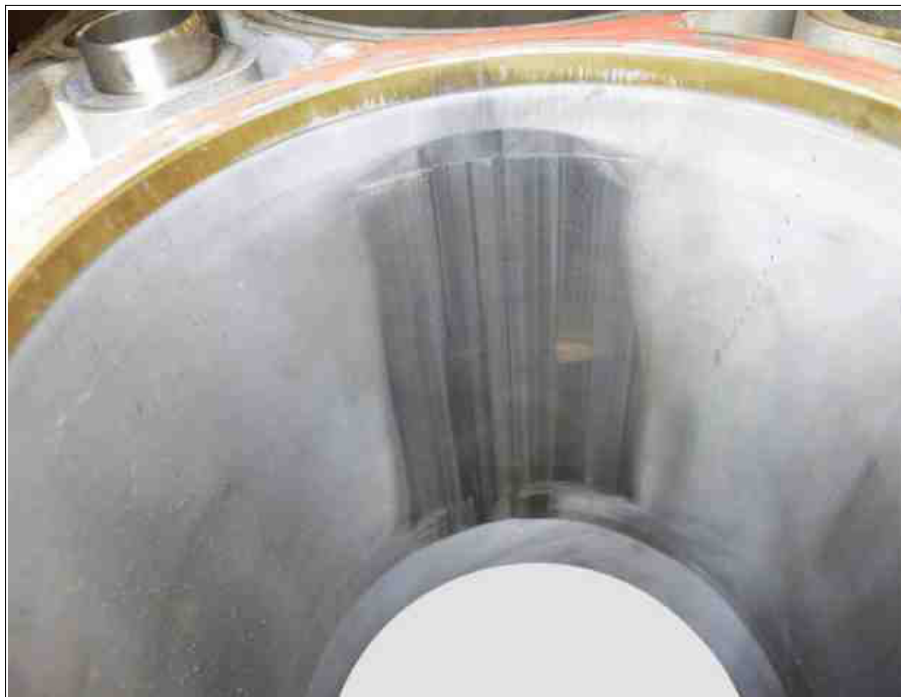
A washboard type surface structure of the cylinder barrel, partially or full perimeter.

i Do not use crankcase again.

Rough streaks, friction scoring

Starting from first, second or third piston ring, tapering off only in bottom part of cylinder. Friction marks as described under "Optical streaks, friction marks" which have advanced to friction scoring.

i Do not use crankcase again.



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Piston seizure, ring seizure

Most of cylinder wall perceptibly roughened over the entire length. Material deposits and perceptible scoring marks on cylinder wall and at piston skirt.

Cylinder barrel unusable.

i Do not use crankcase again.

Defect in cylinder barrel
Defect in barrel of any one cylinder.
Cylinder barrel unusable.
i Do not use crankcase again.



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P01.00-3763-79

Individual score marks up to score mark fields with material accumulation
Caused by initial dirt or soiling during operation, e.g. through back pulsation of particles from the catalytic converter or the exhaust system.

i Do not use crankcase again.