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TECHNICAL ANNOUNCEMENT No. 12 - 2003

3rd December 2003

Model: Frame hydraulic tappets - California engine < see table

Subject: Noisiness of the timing system

Dear Dealers,

in case of noisiness of the timing system for the California p.i. models with a frame number preceding the numbers listed below, the camshaft may be worn.

Titanium	ZGUKDC1203M133654
Titanium Usa	ZGUKDD0074M133659
EV - EV Touring	ZGUKDC1203M112261
EV Touring USA	ZGUKDD0024M112346
Stone	ZGUKDC4203M111687
Stone USA	ZGUKDD0164M111418

Therefore, if the above mentioned components are seriously damaged (some material is clearly missing) and if metal residuals are found inside the oil sump, the camshaft and the 4 closings must be replaced, and the engine must be overhauled completely, if needed.

In the following pages the procedure for assembling the new camshaft is described, with particular reference to the measuring of the timing system clearance.

We also point out that measuring the clearance and readjusting it by means of a calibrated pad is absolutely necessary when assembling the engine, in order to ensure the system reliability, since, in case of an excessive clearance which cannot be recovered through the hydraulic tappets, the camshaft lobes will be subjected to impacts during engine operation, resulting in a quick wear.

Vehicles with a higher frame number

On vehicles with a frame number higher than those listed above, the clearance check has already been carried out when assembling the engine; therefore this operation is not longer required, except when assembling the engine after a revision.

On engines mounted on these vehicles, the clearance has been readjusted by means of rocker arms having different cap heights; therefore make sure to place all timing system components (rocker arms-rods-closings-engine mount) in their original seats.

It is also recommended to check the clearance according to the procedure described below.

Reimbursement of intervention costs

The camshaft replacement and the timing system clearance check will be handled as a standard warranty request.

The request should be entered into A2D by filling in the required fields as described:

- Position code: AC05
- Defect code: HB
- Operation code: 01

Spare part codes

- Camshaft 03 05 33 32
- Closings (4) 03 04 58 30
- Front cover gasket 12 00 12 00
- Valve cover gasket (2) 14 02 37 60
- Calibrated pad 03 04 83 30

PROCEDURE FOR MEASURING THE TIMING SYSTEM CLEARANCE OF THE 1100 p.i. ENGINE

The procedure described below concerns the timing system clearance measurement after the engine has been assembled.

In case of camshaft replacement, the step order will be different from the one reported below; as a consequence, the engine assembling sequence to be followed will be: 3-4-5-1-5-6-7

1

BRING THE LEFT PISTON TO TDC, DURING THE IGNITION STROKE.

2

REMOVE THE ROCKER ARMS, THE TIMING SYSTEM RODS AND THE HYDRAULIC TAPPETS.

3

DRAIN THE 2 HYDRAULIC TAPPETS BY APPLYING AN AXIAL LOAD OF ABOUT 100 KG, OR UNTIL THE OIL SPILLS OUT AND THE TAPPET CLOSES (USE A PRESS OR A BENCH VICE WITH JAW CAPS MADE OF SOFT MATERIAL).

THE TAPPET IS DRAINED WHEN IT CAN BE MOVED BY USING THE FINGERS ONLY.

4

FIT THE CALIBRATED PAD INTO THE CLOSINGS

NOTE :

IF A SIMPLE CHECK IS REQUIRED, THE CALIBRATED PAD CAN BE FITTED INTO THE CLOSING DIRECTLY FROM THE HEAD, WITHOUT DISASSEMBLING THE CAMSHAFT AND THE CLOSINGS.

IN THIS CASE, ATTACH THE CALIBRATED PAD TO THE TAPPET (BOTTOM PART), GREASING IT WITH ENGINE OIL IN ORDER TO STICK IT TO THE TAPPET AND TO EASILY INSERT THE TAPPET WITH THE CALIBRATED PAD INTO THE CLOSING.

BY USING A LIGHT SOURCE, CHECK THAT THE CALIBRATED PAD IS FITTED INTO THE CLOSING.



5

FIT THE CLOSINGS, THE PADS AND THE **DRAINED** HYDRAULIC TAPPET INTO THE BLOCK; REASSEMBLE THE CAMSHAFT AND THE TIMING SYSTEM (GEARS-CHAIN-RODS-ENGINE MOUNT-ROCKER ARMS).

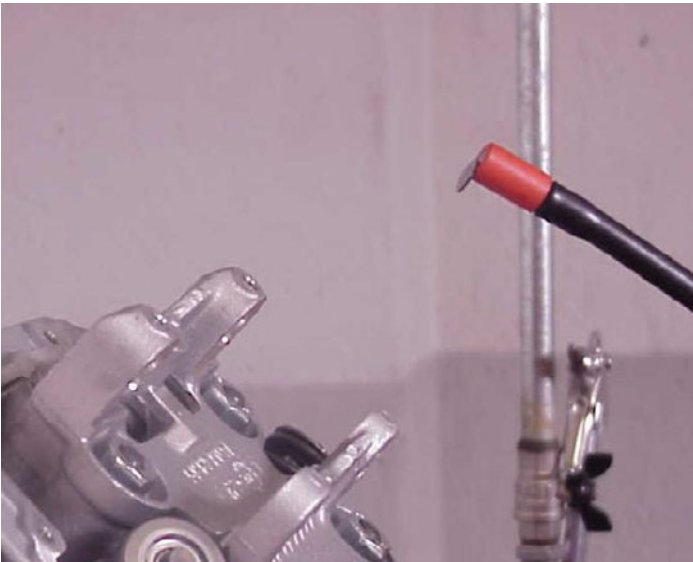
6

MEASURE THE CLEARANCE BETWEEN THE ROCKER ARM AND THE VALVE, BY HAVING CARE TO PUSH THE ROCKER ARM TOWARDS THE TIMING SYSTEM ROD (PERFORM THE SAME OPERATION ON BOTH VALVES)



IF > 1.1 mm THE CLEARANCE IS CORRECT, LEAVE THE CALIBRATED PAD IN POSITION

IF < 1.1 mm REMOVE THE CALIBRATED PAD (USE A MAGNET; SEE PHOTOGRAPH)



7

PERFORM THE SAME OPERATION ON THE RIGHT CYLINDER AFTER BRINGING THE PISTON TO TDC DURING THE IGNITION STROKE.