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TECHNICAL REPORT

Clearance valve adjustment
Renault E5F / E7F / E6J / E7J
engines



PURPOSE

Clearance adjustment procedure between valves and rockers in Renault E6J and E7J engines.

INTRODUCTION

In E6J and E7J 4-cylinder Renault engines, we find **a single camshaft that drives the 8 valves** (two per cylinder) with the **help of a single rocker arm shaft**.

This engine type of engine does **not have any kind of lifters**, whether mechanical or hydraulic, so the adjust between the cam system, rocker arms and valve heads must be done manually to calibrate the clearance between said parts.

This **clearance shall be as specified by the manufacturer**; while excessive clearance can cause not be carried out valve opening in time or completely, a lack of this clearance could cause the valves remain open, in both cases leading to an engine malfunction and even major damage.

DESCRIPTION

To replace the camshaft in the engine, is needed to take off the rocker shaft and corresponding rockers and remove the camshaft by the side of the cylinder head, therefore, after replacing it, the shaft must be mounted introducing each of the rockers in its corresponding position.

Once installed both rocker shafts, always set the clearance between the rocker and the valve.

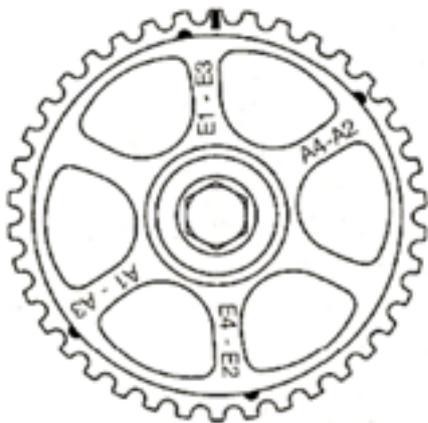
It is not only necessary to adjust the clearance in case of camshaft replacement, but also in the following cases:

- Replacement of any of the following components: rocker, valve guide, spring or pin.
- In case of grinding the valve seats.
- In the case we have noise from the rocker arms due to the clearance caused by wear.

There are 3 possible ways to adjust the clearance of the rocker arms:

1 Engines equipped with camshaft pinion with 5 marks on its outer face.

The rectangular mark on the face of a tooth represents the TDC (top dead center), and the other 4 marks are used to Adjust the clearance as follows.



- 1st Mark** | Exhaust 1 and Exhaust 3
- 2nd Mark** | Intake 1 and Intake 3
- 3rd Mark** | Exhaust 2 and Exhaust 4
- 4th Mark** | Intake 2 and Intake 4

2 Engines equipped with camshaft pinion without marks.

In this case there are 2 methods of regulating the rocker arms clearance. Setting values cold, are (mm):

Intake: 0,10

Exhaust: 0,25

a) The second method involves placing each exhaust valve in maximum opening position and regulate as indicated in the following table:

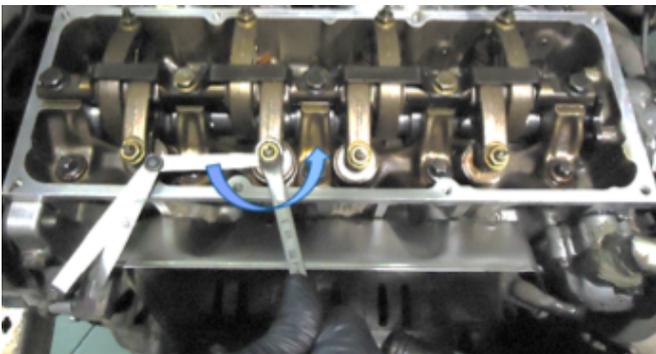
Exhaust valve maximum opening	Adjust intake valve	Adjust Exhaust valve
1	3	4
3	4	2
4	2	1
2	1	3

b) Finally, the third method involves placing valves of each cylinder in position “exhaust-end/intake-start” and regulate as indicated in the following table:

Place valves on “exhaust-end/intake-start”	Adjust rocker clearance of cylinder (both valves)
1	4
3	2
4	1
2	3

Whit this method, the process will be as follows, using the step marked **in yellow as example**:

- 1 Turn the crankshaft clockwise** to place the 3rd cylinder valves in “exhaust-end/intake-start” position.
- 2 Loosen the rocker nut of the 2nd cylinder**, then adjust clearance with the corresponding gauge between the valve stem and the rocker.



- 3 Act on central screw tightening-loosening** until adjusting clearance left by the gauge used (0,10mm intake valves and 0,25mm on exhaust valves).
- 4 Finally, tighten the nut holding central screw fixed.**

With this **process clearance of rockers from cylinder 2 is adjusted** both exhaust and intake. Adjust all other rocker following the sequence of the attached table to this method.