

Service Information

Caterpillar Motoren GmbH & Co. KG product support information for medium-speed engines

Engine platform: M43
Engine section: Cylinder head

Engine type: all variants of M43; no DF
Validity: until further notice

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Information for all recipients of Service Information

Action: for your information



New exhaust valve without vanes

So far, the M43 exhaust valve had a unique design compared to all other Caterpillar Motoren products with vanes to drive the valve rotation in combination with a freewheel.

As a part of continuous product development, we are introducing new M43 exhaust valves without vanes as standard for the serial production and as spare part. The rotation of the new exhaust valves will be achieved by valve rotators.

The rotator is installed below the valve spring and, contrary to vaned valve spindles, creates a rotation independent of the exhaust gas flow. With this variant, rotation depends on valve stroke and not on engine load or exhaust mass flow, as with vaned valve spindles. Rotation only starts when the valve spindle is already slightly open in the opening cycle.

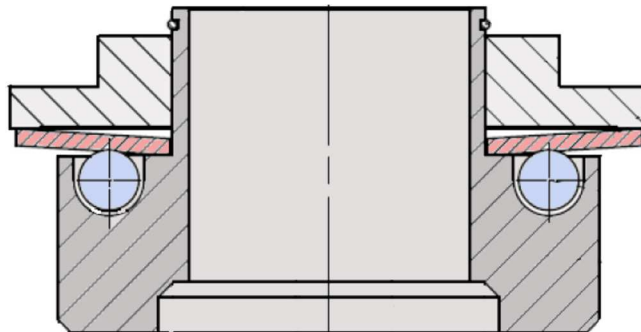


Figure 1: Sectional view of the valve rotator



Figure 2: Valve rotator installed on an M46DF cylinder head, exhaust valve



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Please be informed that all currently delivered engine type variants of M 43 are equipped with the new exhaust valve type and that exhaust valves with vanes are not available as spare parts any longer. The last batch of vane valves was recently produced and delivered.

The new exhaust valve has been available for some time already. End of 2016 we introduced exhaust valve conversion kits for cylinder head overhauls for a special price. Several engines were retrofitted since.

The conversion kit included in delivery following parts:

- 2x Valve spindle, exhaust;
- 2x Valve rotators;
- 2x Spring plate

Engine overhauls are a good opportunity for shifting to the new exhaust valve style. We recommend having all cylinder units of engine exchanged. However, an operation with a mix of old and new style exhaust valves on one engine is permissible. But both exhaust valves of one cylinder head have to be of the same style.

Please note the following:

- Different valve rotation speed behavior of both valve types when checking the valve rotation. At constant engine speed but different loads the rotation speed of the valves with vanes would vary. With the new exhaust valves, the valve rotation speed will be rather constant.
- Independent of the valve type used we take the occasion to remind that when operating the engine with alternating types of fuel (HFO, MDO, MGO, LNG) we recommend checking the valve wear at inlet and outlet valves on a regular basis by measuring the valve height according to job card "valve projection" A5.05.01.01.02.00. Start new valve wear tracking when the engine is commissioned and after cylinder head overhauls. Use the MaK excel spread sheet for easy tracking of wear.

Please contact you MaK service representative in case you are looking for parts, job card, the excel spread sheet or for any other questions in this regard.