Fig. 7. Engine (horizontal section):

1 — cylinder head cover; *2* — head cover gasket; *3* — right-hand cylinder head with valves; *4* — cylinder head gasket; *5* — right-hand carburettor; *6* — cylinder; *7* — filler plug; *8* — rubber ring; *9* — rod housing; *10* — left-hand carburettor; *11* — carburettor gasket; *12* — left-hand cylinder head with valves; *13* — spark plug A10IT; *14* — generator gasket; *15* — emergency oil pressure transmitter; *16* — piston with rings and pin; *17* — piston-pin circlip; *18* — admission valve; *19* — exhaust pipe fastening nut; *20* — valve stem cap; *21* — right-hand rocker; *22* — exhaust valve; *23* — adjusting bolt; *24* — check nut; *25* — lower retainer; *26* — valve outer spring; *27* — valve inner spring; *28* — upper retainer; *29* — left-hand rocker; *30* — slide block

the case of major repairs, it is recommended that the crankpin bearing bushings be replaced. This will protect the crankpins from premature wear.

Connecting Rods Assembled with Bushings

The connecting rods are steel, forged, having an I-shaped cross-section. Pressed into the connecting rod small end is a bronze bushing whose opening is made with a great accuracy to ensure the correct fitting of the piston pin. The big end of the connecting rod is detachable, not symmetrical, with thin-walled interchangeable bushings. For correct installing of the connecting rods on the crankshaft, the connecting rod blades are provided with lugs which must be directed outwards with respect to the crankshaft web (for the right-hand connecting rod, the lug should be directed towards the flywheel; for the left-hand connecting rod, towards the centrifuge).

The connecting rod caps are not interchangeable. The nuts of the connecting rod bolts are tightened up and locked by cotter pins. The use of old cotter pins is inadmissible.

Piston, Piston Rings and Piston Pins

Engine piston *15* (Fig. 5) consists of a spherical head, skirt, and bosses. The piston is provided with four grooves in which the piston rings are fitted.

Two upper compression rings *14* provide the required air-tightness of the cylinder, thus preventing the gas leakage from the combustion-chamber into the crankcase. Two lower oil scraper rings *13* are used to remove excessive oil from the cylinder walls.

The axis of the piston pin hole is displaced by 1.5 mm from the piston centreplane. For this reason, the piston moves smoothly, without shocks, within the clearance between the piston skirt and the cylinder walls when the direction of movement is changed at the upper dead centre. Fitted on the piston head is a pointer to indicate the correct position of the piston in the cylinder. When mounting, see that the pointer, on the both pistons, is directed forward, i. e. towards the centrifuge.

The piston rings are manufactured from a special grade of cast iron and are provided with straight locks. When installing the piston with rings into the cylinder, ensure that piston ring gaps are within 0.25 and 0.5 mm.

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