SEBE1006600

Shop Manual

KOMATSU®

Perkins 1000 Series

Diesel Engine

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To assemble

1 Ensure that the location thimble (A8) in the rear of the lubricating oil pump is 5,6/6,4 mm (0.220/0.252 in) above the rear face of the pump. Clean the contact faces of the lubricating oil pump and the balancer frame. Fit the lubricating oil pump (A16) to the balancer frame and tighten the setscrews to 22 Nm (16 lbf ft) 2,2 kgf m.

2 Assemble the lubricating oil relief valve, operation 19A-09.

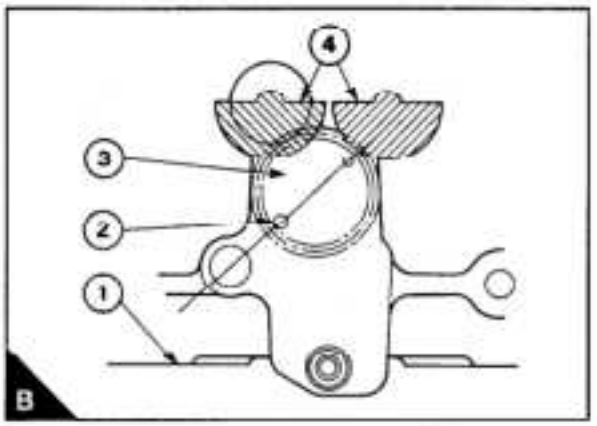
3 Lubricate the needle roller bearings (A7 and A10) with clean engine lubricating oil. Fit the drive shaft (A9) and engage the splines for the lubricating oil pump with the pump rotor. Ensure that the needle roller bearing at the front of the balancer frame is not damaged by the splines on the drive shaft.

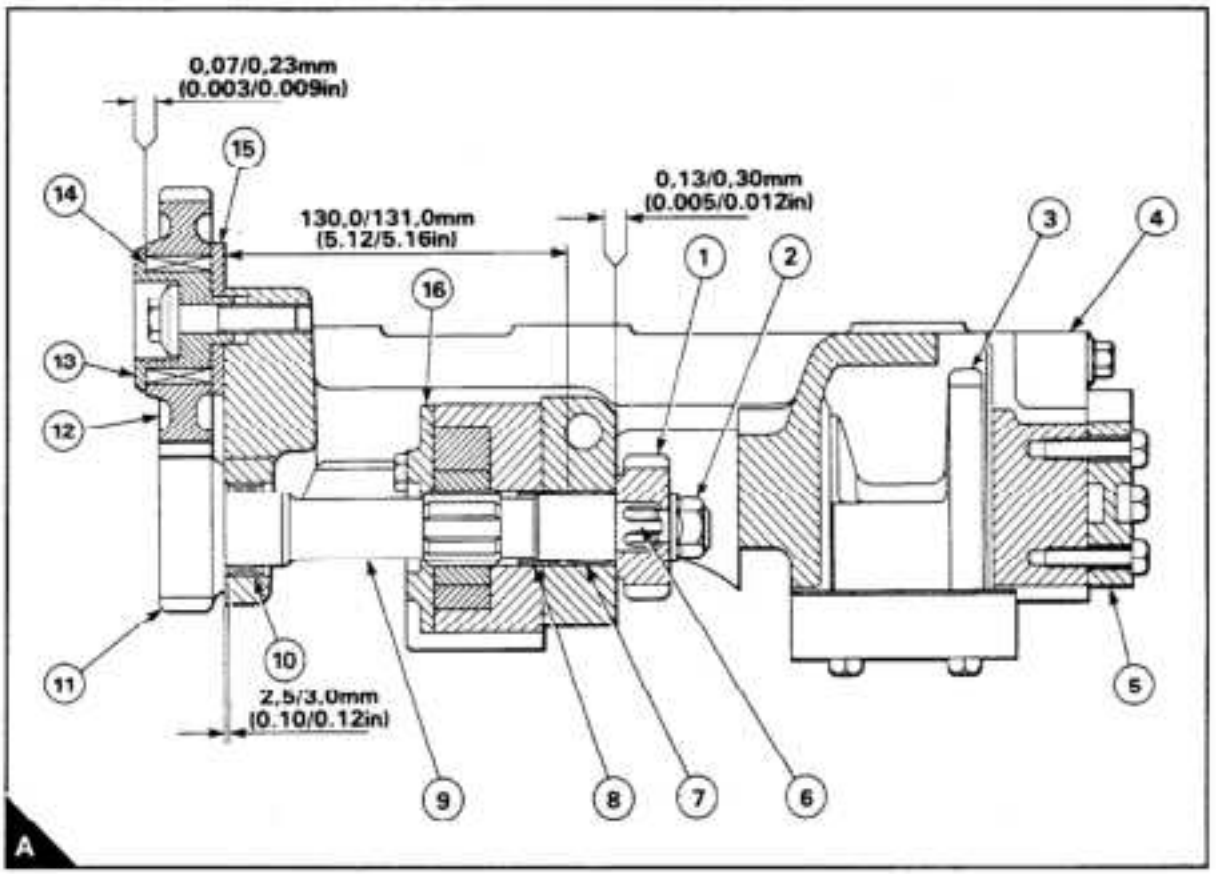
4 Clean and dry the splines (A6) and the thread on the end of the drive shaft. Apply a small amount of Loctite 'Nutlock' to the splines and to the thread. Fit the drive gear of the balance weights (A1) with the flat face of the gear towards the rear of the balancer unit. Fit and tighten the nut (A2) to 85 Nm (63 lbf ft) 8,7 kgf m. To tighten the nut, a peg spanner must be made to fit into the two holes in the front of the drive shaft and be suitable for use with a torque wrench. Fit the peg spanner to the front of the drive shaft. Hold the nut with a suitable spanner and apply the torque to the peg spanner.

5 Ensure that the drive shaft turns freely. Check the end-float of the drive shaft with feeler gauges between the front face of the drive gear for the balance weights and the frame (A).

6 With the balancer frame upside down on the bench (B1), turn the gear of the drive shaft (B3) until the larger of the two outer holes (B2) in the front face of the drive gear is in the position shown in figure B. Ensure that the drive shaft will not move from this position. Lubricate the bushes in the rear of the balancer frame with clean engine lubricating oil and fit the balance weights in the position shown in figure B. Ensure that the flats on the balance weights are level with each other (B4). With the balance weights in the correct position, check that the drive shaft is still in the correct position.

7 Fit the two dowels to the rear face of the balancer frame. Lubricate the bushes in the rear cover of the balance frame with clean engine lubricating oil. Put the rear cover (A4) in position with the rear spigots of the balance weights in the bushes of the cover. Hit lightly the rear cover with a soft face hammer to fit the cover onto the dowels. Fit the cover setscrews and tighten them to 54 Nm (40 lbf ft) 5,5 kgf m. Check the end-float of the balance weights with feeler gauges between the rear face of the balance weights and the front face of the rear cover (14A.13/B). The correct end-float is given in section 11C. Check the backlash between the drive gear of the balance weights and the driven gear on the balance weight. The correct backlash is given in section 11C.





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INTRODUCTION

This Fault Finding Guide should assist in the identifying of the probable cause of the problems which can occur. Having identified the problem, a remedy can be applied.

The fuel injection equipment fitted to diesel engines is manufactured to extremely tight tolerances and cannot tolerate the ingress of any dirt particles. Therefore, if the fuel injection equipment, such as the lift pump, the fuel injection pump or the atomisers are suspect, then the equipment should be removed from the engine to the specialised fuel injection equipment workshop for testing and repair, or new replacement components fitted.

WARNING

Removal of the seals, or the breaking of the seals, on fuel injection pumps. will render any warranty claim on an engine, null and void.

Before commencing any work on a Perkins engine, ensure that you understand what the complaint is. For example, if the user complains that the engine is knocking, can **you** hear the knock which is being complained about.

If it becomes necessary to use new parts, ensure that the parts you use are genuine Perkins Parts. Your authorised Perkins parts counter will supply the proper part against the Perkins engine serial number.

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