

IMPROVED CRANKSHAFT MAIN BEARING AND MAIN BEARING LUBRICATION

CATEGORY: Mandatory At Next Maintenance

Summary: Following a review of the crankshaft main bearings and their lubrication, the two crankshaft main bearings (Main bearing & quill Bearing) have been redesigned by CarnaudMetalbox Engineering with improved lubrication characteristics which increases the volume of oil flowing through them. The main bearings are hydrodynamic and so rely on the volume of oil flowing through them to maintain a hydrodynamic pressure wedge which supports the crankshaft and lubricates the bearing surfaces. This increased flow also helps to maintain the correct bearing temperature by removing heat from the bearings more efficiently.

Note - Both quill and main bearing fitted in a machine must be of the same type and should not be mixed with earlier types.

Redesign Information

The low pressure oil system currently feeds the two main bearings, the push rod bearings front and rear, power take off gearbox, cam face sprays, cam follower spindle bearings and on some early machines primary con rod big end bearings.

In order to supply the increased volume of oil now required for the main bearings it is necessary to make the following changes to the existing low pressure oil system.

The system pressure is increased to 160 - 180 psi (11 - 12.5 Bar) by adjusting the low pressure relief valve, which is fitted to the manifold inside the crankcase on earlier machines or on the hydrolube unit on later machines. The low pressure oil system pressure switch will

require resetting for the new operating pressure and should be set for operating at 150psi (10.5 Bar) rising pressure, with the differential set to a minimum. A new pressure switch may be required depending upon the type already fitted. (The Allen Bradley 800T-T253J will not need changing)

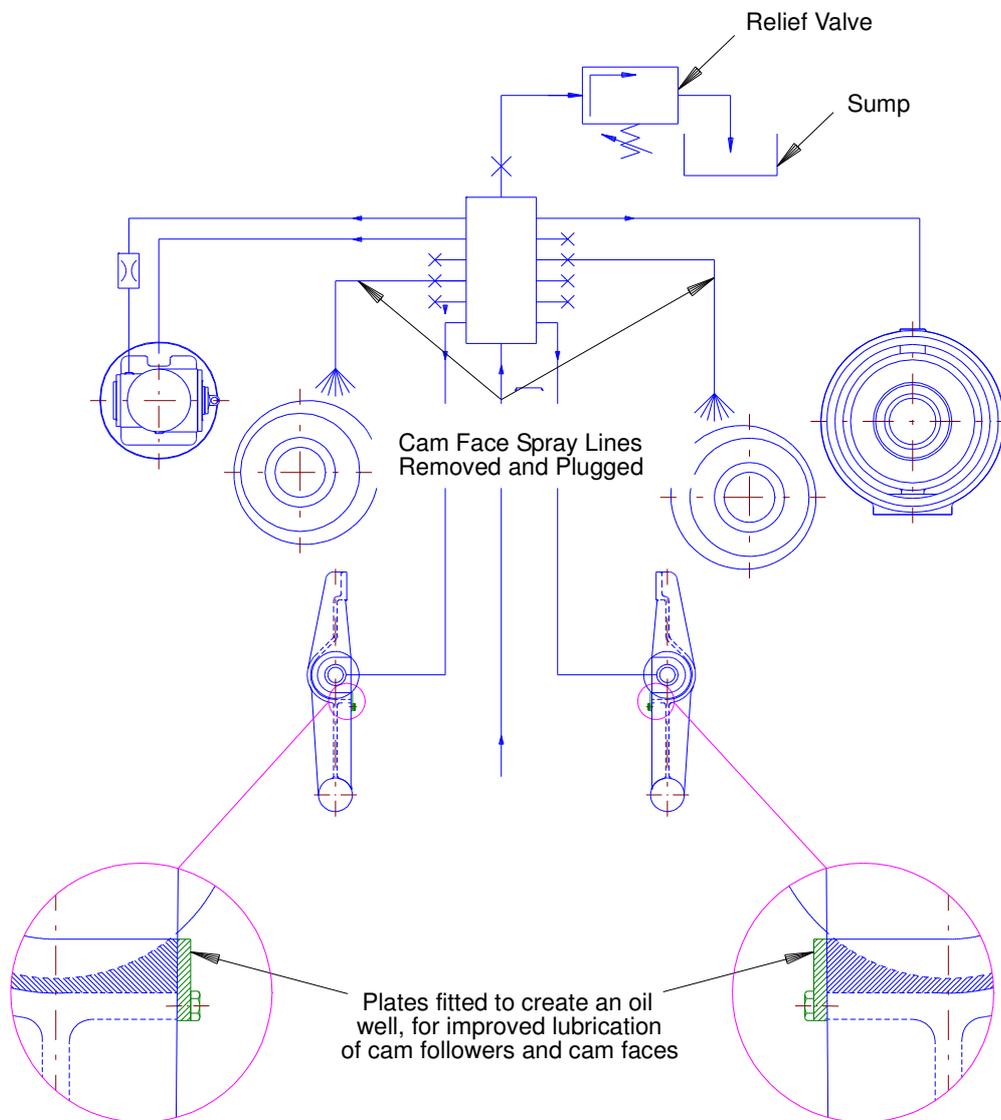
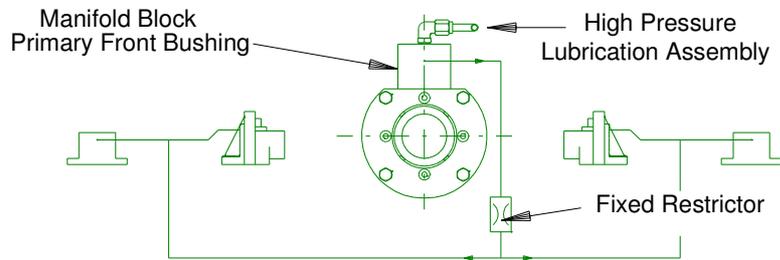
The current oil supplies to the push rod bearings and the cam face sprays are disconnected and plugged at the manifold in the crankcase. A new oil supply to the push rod bearings being taken from the high pressure oil system through a single 0.75mm restrictor. The cam spray is replaced by the addition of two plates, one attached under each cam follower on the rear of the hold down levers forming an oil 'well' in which the external diameter of the cam followers run.

The increased pressure is standard on 5000 Bodymakers from machines serial No 112s. The cam spray and revised oil feed to the push rod bearings is standard for 5000 Bodymakers from machine serial No 192s.

A complete update to improve crankshaft main bearing and main bearing lubrication should take approximately 2 to 3 days to complete.

For further information about the improvement to the crankshaft main bearings and their lubrication, please contact either of the references at CarnaudMetalbox Engineering detailed below, quoting the technical bulletin number **TB5000-011**

Note: A complete Library of Technical Bulletins is accessible on the Company Web Site.



CarnaudMetalbox Engineering Plc,
Dockfield Road, Shipley,
West Yorkshire, BD17 7AY, UK
Tel: +44 1274 846200, Fax: +44 1274 846201
email: sales@CMBEcanmaking.com

CarnaudMetalbox Engineering Plc,
79 Rockland Road, Norwalk,
Connecticut 06854, USA
Tel: +1 203 853 7325, Fax: +1 203 866 7627
email: sales@CMBEcanmaking.com