



Service Letter

No: SL89-251/UM
May, 1989

MC-Engines
Camshaft Lubrication System

Dear Sirs,

We have recently experienced four cases where damaged cams and roller guides on the larger MC-engines have led to rather extensive consequential damage.

The sequence of events leading to the breakdowns have not been fully clarified in all cases. In at least two cases malfunctioning lube oil filters allowed wear particles and parts of broken-down filter mesh to circulate in the camshaft lube oil system and in this way accelerated the wear process in all units, leading to the damage to roller guides, rollers and cams.

Based on this experience, we give below our recommendations for measures to be taken to prevent such incidents on MC-engines in service.

Mechanical System

60-70-80-90MC

During operation of these engines, both the exhaust valve cams and fuel pump cams dip into an oil tray without a drain. The original intention with this design was to ensure a certain amount of lubrication in the event of lube oil failure.

However, we have experienced that these oil trays collect dirt and wear particles, which can deposit on the surfaces of cams and rollers. As no similar problems have been experienced on the smaller engine types, which are not equipped with such oil trays, we recommend that the oil trays be punctured as shown in Enclosures 1.a & 1.b or just removed.

HEAD OFFICE (& postal address)
Stamholmen 161
DK-2650 Hvidovre (Copenhagen)
Telephone: + 45 31 49 25 01
Telex: 16573, 16592 manbw dk
Telex: 16483 manpur dk
Telecopy: + 45 31 49 20 66/41 72

DIESEL SERVICE
Stamholmen 161
DK-2650 Hvidovre (Copenhagen)
Telephone: + 45 31 49 25 01
Cables: manbandw
Telex: 31197 manbw dk
Telecopy: + 45 31 49 43 97

PRODUCTION
Tegholmegade 35
DK-2450 Copenhagen SV
Telephone: + 45 31 31 44 33
Telex: 31593 manbw dk
Telecopy: + 45 31 31 79 20

FORWARDING & RECEIVING
Tegholmegade 35
DK-2450 Copenhagen SV
Telephone: + 45 31 31 44 33
Telex: 19023 bwforw dk
Telex: 19042 bwforw dk
Telecopy: + 45 31 31 55 22

MAN B&W Diesel A/S
Denmark
Reg. No.: 24 231

Lub Oil System

We draw your attention to the specified ranges for the camshaft lube oil pressure and temperature, see Enclosure 2. Operation outside the nominal values will provoke a risk of reduced safety of the lubrication. The installed full-flow filter should be inspected at regular intervals.

To counteract the potential damage risk inherent in the present lube oil filtering system, we recommend the introduction of further safety measures, in addition to the regular full-flow filter.

To prevent magnetic wear particles circulating in the camshaft oil system, we recommend that a magnetic filter is installed as shown in the enclosed schematic drawing No. 786262-9, Enclosure 2. The magnetic filter should be checked and cleaned regularly.

In addition to this, we recommend to arrange for by-pass filtration of the lube oil, as shown in drawing No. 786262-9, Enclosure 2, in the form of a separate fine filter of the CJC type, or similar. The filter should comprise a positive displacement pump to secure a fixed flow.

In principle, a connection to the lube oil centrifuge would enable periodical cleaning of the oil charge in the camshaft system. However, in order to provide a continuous by-pass treatment of the oil, the solution based on a fine filter is to be preferred.

Further to this, it is recommended that an alarm device is installed for indicating both 'no differential pressure', and 'too large differential pressure' across the regular full-flow filter.

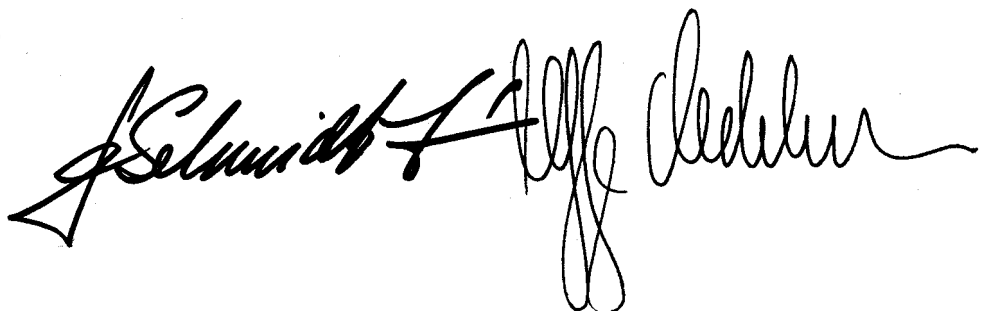
In the period until the above modifications have been introduced, we recommend to decrease the interval between inspecting the cams and rollers through the inspection covers on the camshaft housings, and the oil filter as well, to approx. 1000 hours.

It should be noted that the above recommendations regarding the camshaft lube oil filtration may be applied to all engine types.

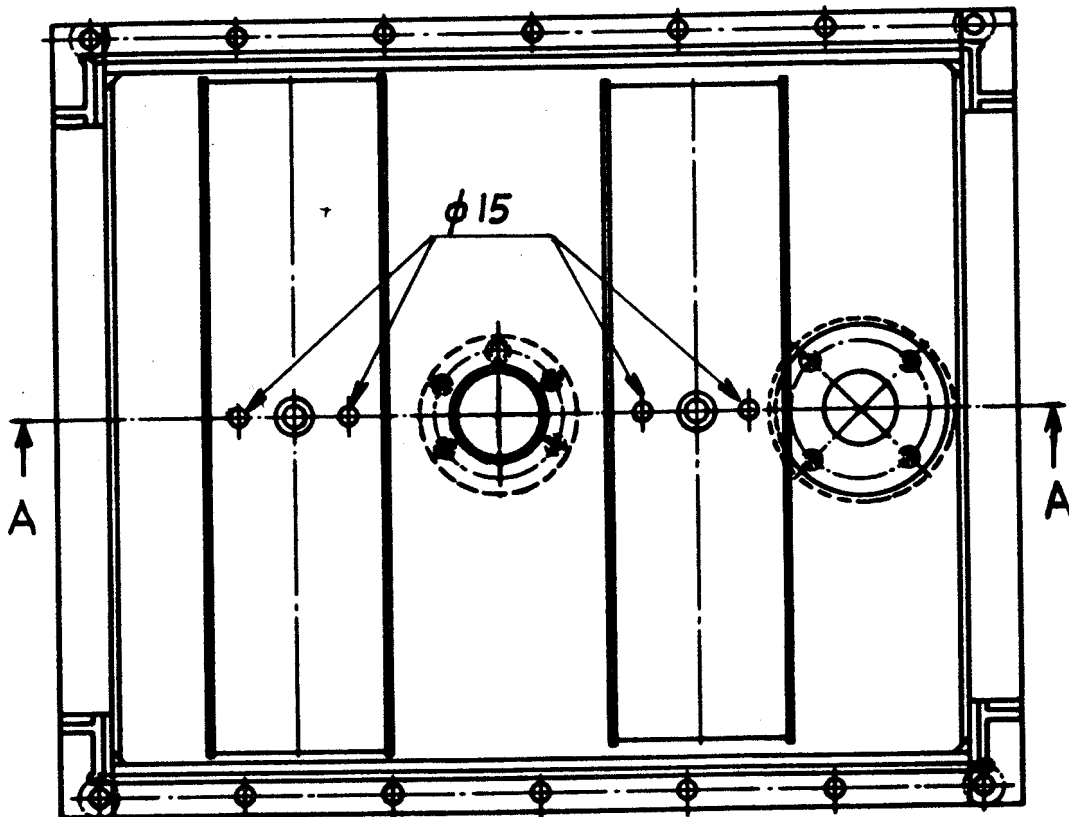
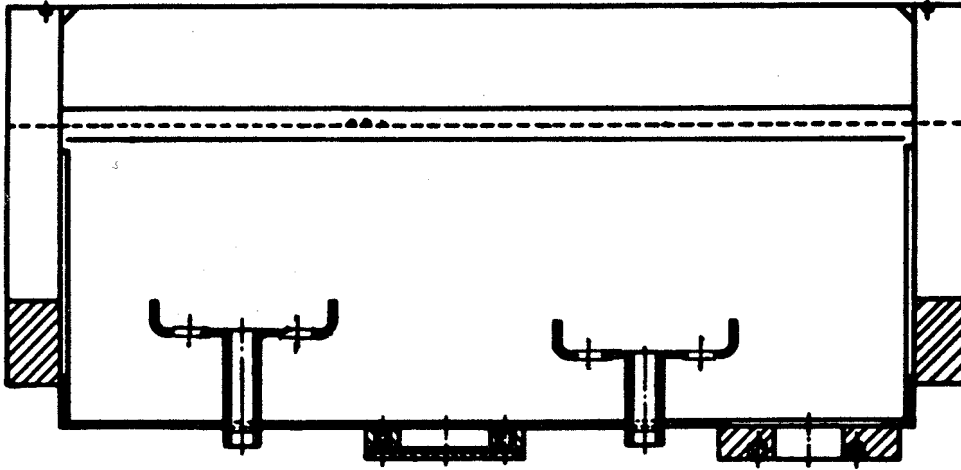
Yours faithfully,

MAN B&W Diesel A/S

3 Enclosures

A large, stylized handwritten signature in black ink, appearing to read "J. Schmidt". The signature is written in a cursive, flowing style with a long horizontal tail.

A-A



MAN B&W DIESEL A/S

OIL PAN - welded execution

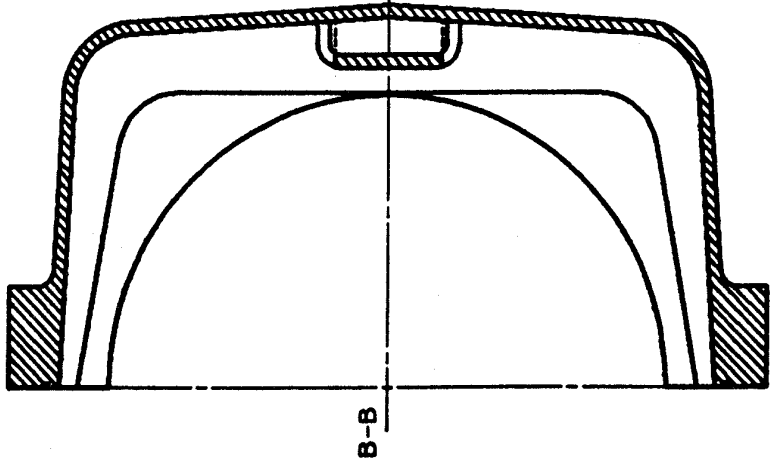
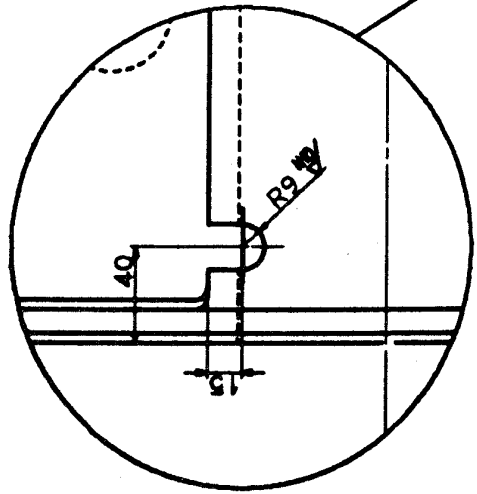
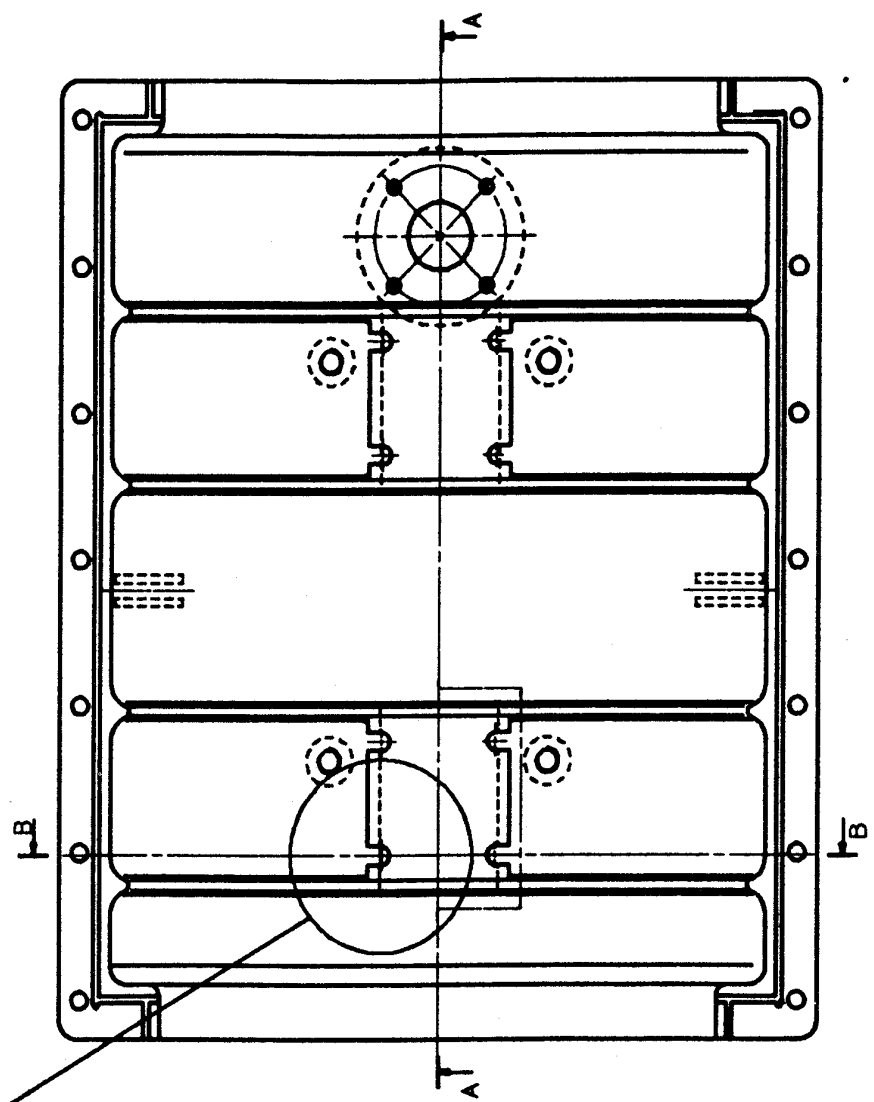
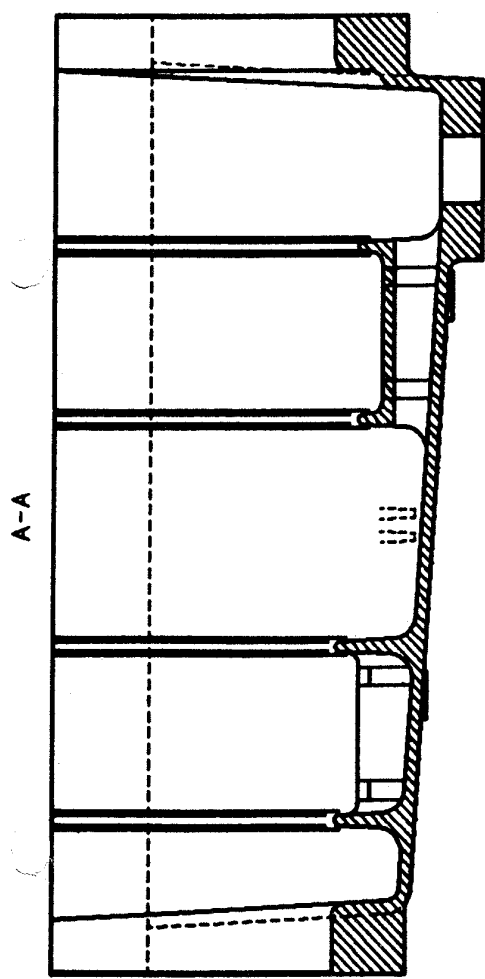
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OIL PAN - cast
- execution

Enclosure 1b

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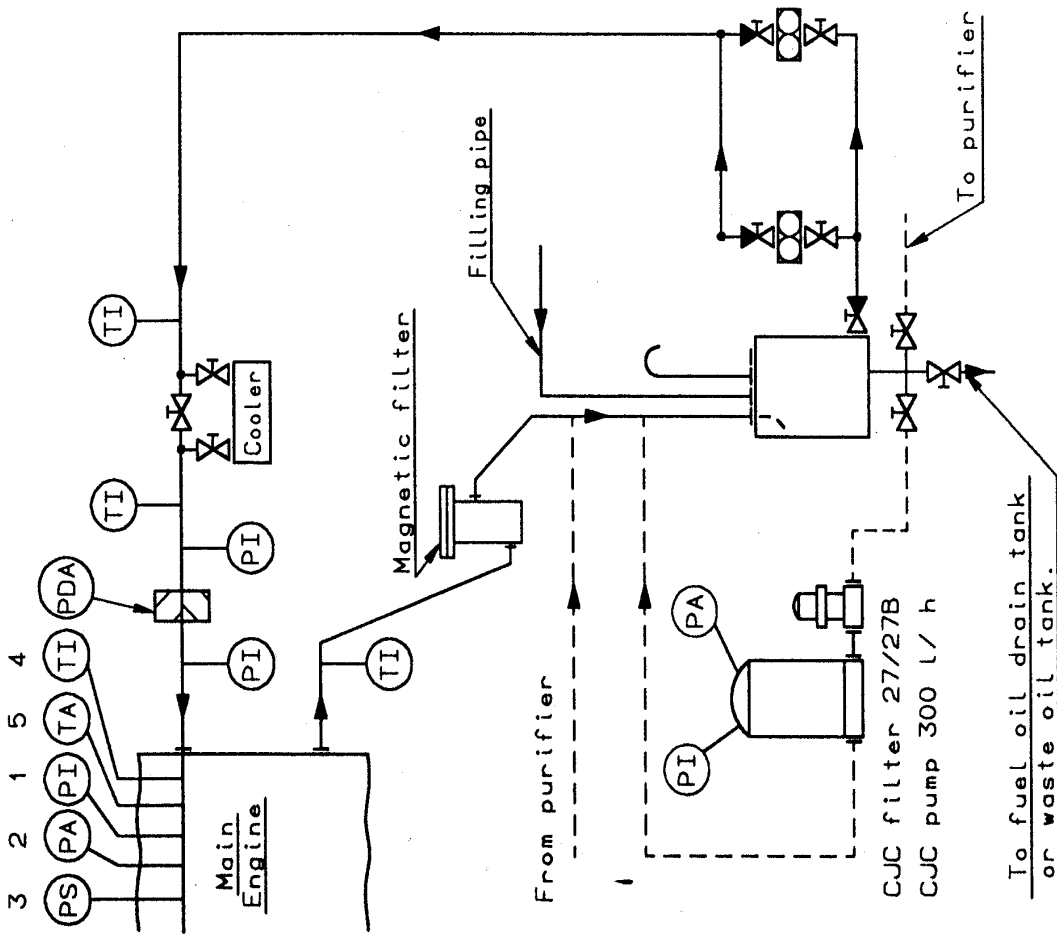


Treatment of Lub.oil

Alt.1: By installation of CJC pump & fine filter with alarm for filter blocking
 Alt.2: By purifier from main lub.oil system

Camshaft Lub.oil system

1. Normal service value = 2.5-3.0 bar
2. Alarm point min.=2.0 bar
3. Shut down point = 1.5 bar
4. Normal service value= 40-50°C
5. Alarm point max = 60°C



Surface roughness and tolerances see B&W Diesel Standards ed.1982 SB, EN21C and EN21F.
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Suppl. Drawing No.:	Sticker No.:	Material:					
	Scale:	Blank:					
	Mass (kg):						
Date	Chk.	Appd.	Photo	Prod	P.A.C.	Replaced by	Ident No.
890411	EGJPAEPAE				*		Replacement for ident.no.:
BWE Info No.:	Type:						
376655	A	Description:					
	3	Camshaft Lub.oil system					
Final User Info No.:		Final User Description:					
		Final User Ident No.:					
		B&W DIESEL A/S					
		Ident No. 786262-9					
		Final User Ident No.:					