



Service Letter

SL08-491/AAB
January 2008

**Omission of Cylinder-Cover-Mounted Safety Valves
All MAN B&W Two-stroke Engines**
Action Code: WHEN CONVENIENT

Dear Sirs

MAN Diesel has decided to omit the so-called safety valve on all new engines delivered from 1 January 2007, as all engines of the MAN B&W design already have a built-in safety function with regard to excessive combustion pressure.

The cylinder pressure is controlled as a part of routine maintenance, and in the event that the cylinder pressure exceeds the design limit, the elasticity in the cylinder cover studs will allow the cylinder cover to lift, thereby ensuring relief of the high pressure gas. The safety valve used so far will not, in any case, be able to cater for such a situation.

Thus, the safety valve on engines in service can be omitted, pending the simple modification described in the following as well as approval from the relevant classification society.

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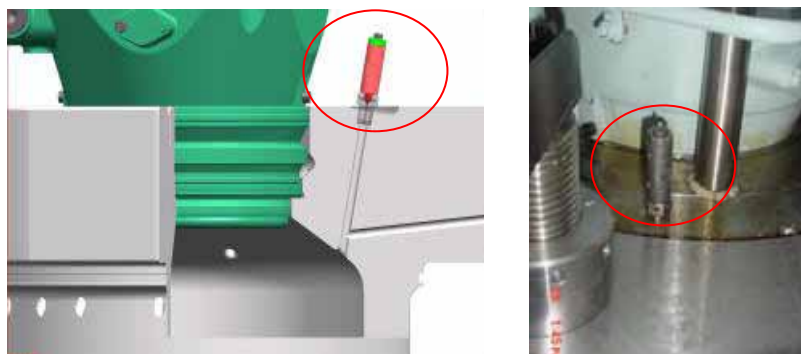
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The necessary modifications are listed below:

- substitute the valve with a plug in accordance with EN47AR22
- add a jacketed packing ring in accordance with EN14B2230.



Remove the safety valve



Substitute the safety valve with a plug in accordance with EN47AR22
Add a jacketed packing ring in accordance with EN14B2230

Engines in service before 2007

The above modification is also applicable to engines that entered service before 1 January 2007, based on the following argumentation:

Many years ago, all classification societies of IACS (International Associations of Classification Societies) introduced rules that required safety valves with the combustion chambers. The classification societies requested that the opening pressure be adjusted to approximate $p_{max} + 40\%$.

In order to fulfil this class rule, MAN Diesel A/S developed safety valves that were design approved, pressure tested and certified by the individual classification society



– even though MAN Diesel was aware that for reasons of design and space limitations, the opening area in the safety valve would be insufficient to relieve the cylinder pressure fast enough.

A safety valve complying with this requirement requires an opening area in the size of the exhaust valve opening area, which is impractical.

As a consequence, MAN Diesel initiated a dialogue with the class societies in the forum of IACS/CIMAC, with a view to omit such valves.

MAN Diesel has argued that the function of the safety valve is insufficient, and that too high a cylinder pressure is actually limited solely by the cylinder cover lifting.

IACS and the majority of the class societies have accepted our point of view and, subsequently, the text in the IACS Unified Rules has been changed. Therefore:

IACS and the major classification societies have now adjusted their rules so that a safety valve or a warning device is **no longer required**.

Despite the fact that the majority and major classification societies have approved the above change – a dialogue is still ongoing with a few class societies regarding their final approval. Therefore, owners and operators of MAN B&W two-stroke engines should obtain acceptance from the relevant class society prior to initiating the above modification.

Once approval has been obtained – the necessary parts described above can be ordered from MAN Diesel or the relevant engine builder.

Questions or comments regarding this SL should be directed to our Dept. LEO.

Yours faithfully

MAN Diesel A/S



Carl-Erik Egeberg



Stig B Jakobsen

Encl:
EN47AR22
EN14U2234

Completed:
1-2-31

Approved:
TJ

Amended:
EL
3mm 18-11-74

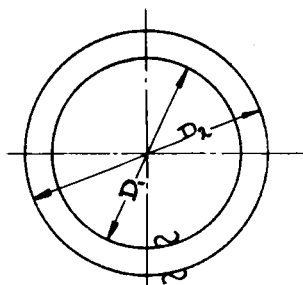
Replaced by:

Replaces:

Number of sheets:
1

Sheet no.:
1

(Extract of N 14 A-B, N 15 A-B, N 16 A-B, Special packing rings).



N14B		
D ₁	D ₂	t = 1 st /n
16	22	
17	25	
19	26	
21	28	
23	32	
27	32	
27	35	
30	38	
34	44	
38	48	
42	52	
48	54	
48	58	
52	58	
54	65	
60	70	

Example : a copper packing ring with D₁ = 27 mm and D₂ = 35 mm is specified :

1	Kobberpakning	1	N 14 B 2735			
Ant.	Benævnelse	Pos.	Mrk. nr.	Tegn. nr.	Materiale	Vægt kg

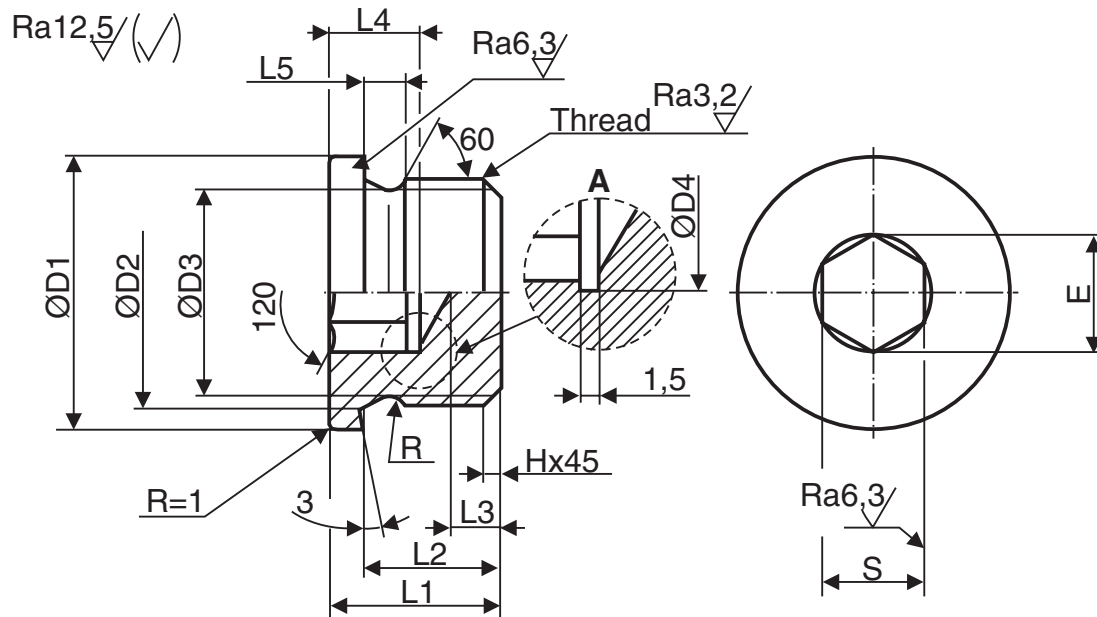
Plug screws

EN47AR

Approved:
19931202Amended:
20050322

Replaced by:

Replaces:

Page No.:
1 (1)

Dimensions in mm

Designation	10	12	14	16	18	20	22	24	26	30	33	36	42	48
Thread M*	*10x1	12x1.5	14x1.5	16x1.5	18x1.5	20x1.5	22x1.5	24x1.5	26x1.5	30x1.5	33x2.0	36x1.5	42x1.5	48x2.0
D1 h14	14.0	17.0	19.0	21.0	23.0	25.0	27.0	29.0	31.0	36.0	39.0	42.0	49.0	55.0
D2 $\begin{smallmatrix} 0 \\ -0.3 \end{smallmatrix}$	10.3	12.3	14.3	16.3	18.3	20.3	22.3	24.3	26.3	30.3	33.3	36.3	42.3	48.3
D3 $\begin{smallmatrix} 0 \\ -0.2 \end{smallmatrix}$	8.4	9.7	11.7	13.7	15.7	17.7	19.7	21.7	23.7	27.7	30.0	33.7	39.7	45.0
D4 $\begin{smallmatrix} +0.5 \\ 0 \end{smallmatrix}$	5.7	6.9	6.9	9.2	9.2	11.4	11.4	13.7	13.7	19.4	19.4	21.7	25.2	27.4
E min.	5.7	6.9	6.9	9.2	9.2	11.4	11.4	13.7	13.7	19.4	19.4	21.7	25.2	27.4
L1 \approx	11.0	15.0	15	15.0	16.0	18.0	18.0	18.0	20.0	20.0	21.0	21.0	21.0	21.0
L2 ± 0.2	8.0	12.0	12	12.0	12.0	14.0	14.0	14.0	16.0	16.0	16.0	16.0	16.0	16.0
L3 min.	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
L4 min.	6.5	8.5	8.5	9.0	9.0	9.0	9.0	9.0	10.5	10.5	10.5	12.0	12.0	12.0
L5 $\begin{smallmatrix} 0.3 \\ 0 \end{smallmatrix}$	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0
H \approx	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
R	1.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.6	1.2	1.2	1.6
S D12	5.0	6.0	6.0	8.0	8.0	10.0	10.0	12.0	12.0	17.0	17.0	19.0	22.0	24.0

This standard is in accordance with DIN 908 1992 and DIN 3852-1 form A 1992.

References: Plug screws with pipe thread, EN47R.

Material: S20R.

Execution: With or without the clearance shown in detail A.

Seating: To obtain seating against the bearing surface of the plug screw, the corresponding threaded hole must be chamfered or packing must be used.

Tolerances: Thread - EN48H, (SB-standard).

Geometrical tolerances - ISO 4759-1, December 1978, product grade B.

Packing rings: See EN14U and EN14S.

Designation: A plug screw with M10x1 thread, is specified:
EN47AR10