

# Service Bulletin

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Engine type **2, 3 and 4**

Subject **LEANOX setting  
New maintenance intervals**



**SB-108 | May 19, 2017**

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The Service Bulletin SB-108 contains updated maintenance plans for the LEANOX settings for Type 2, 3 and 4 engines of the Jenbacher gas engine family.

## AFFECTED ENGINES / SCOPE OF THIS BULLETIN

Jenbacher Type 2, 3 and 4 gas engines with maintenance plans A, B, C, D and E.

	Type 2	Type 3	Type 4
<b>Maintenance Schedule A [30/60]</b>	Standard valid for: Version C85 and C86 with Natural gas  Additional valid for: Version C81 with Biogas and Landfillgas, applicable if gas quality criteria are met - see General remarks	Standard valid for: Version C85 and C86 with Natural gas Version C87 with Associated petroleum gas  Additional valid for: Version C81 and C82 with Biogas respectively Landfillgas, applicable if gas quality criteria are met - see General remarks	Standard valid for: Version C05 and C611 with Natural gas  Additional valid for (only applicable if gas quality criteria are met - see General remarks): Version C325 with Biogas
<b>Maintenance Schedule B [20/40/60]</b>	Standard valid for: Version C25, C28, C81 and C225 with Biogas Version C21 and C81 with Landfillgas	Standard valid for: Version C81 and C82 with Biogas/Landfillgas Version D21 and D121 with Landfillgas Version D25, D28, D225 and D121 with Biogas Version C76 with Natural gas	Standard valid for: Version B25, B28, B81, B82, B225, C325 with Biogas Version B21, B81, and B82 with Landfillgas
<b>Maintenance Schedule C [40/80]</b>	Standard valid for: Version C01, C02 and C05 with Erdgas Version C05 and C25 with Coalminegas  Additional valid for: Version C21 with Landfillgas and Version C25, C28 and C225 with Biogas, applicable if gas quality criteria are met - see General remarks	Standard valid for: Version D01 with Natural gas/Associated petroleum gas Version C76, C77, D02, D05, D08, D09, D205 and D501 with Natural gas Version D05, D25, D105 and D121 with Coalminegas  Additional valid for (only applicable if gas quality criteria are met - see General remarks): Version D21 and D121 with Landfillgas Version D25, D28, D225 and D121 with Biogas	-
<b>Maintenance Schedule D [20/30/40/60]</b>	-	Standard valid for: Version C345, D45, D47 and D745 with Woodgas	Standard valid for: Version B45, B47, B345 and B745 with Woodgas
<b>Maintenance Schedule E [3333/30/60]</b>	-	-	Standard valid for: Version B02, B05, B06, B09, B11, B76, B77, B85, B68, B411 and B611 with Natural gas Version B01, B23, B33, B91, B93 and B333 with Associated petroleum gas Version B05 and B25 with Coalminegas  Additional valid for (only applicable if gas quality criteria are met - see General remarks): Version B25, B28, B81, B82 and B225 with Biogas Version B21, B81 and B82 with Landfillgas
Consultation with the Product Management is necessary for all versions not listed!			

## DESCRIPTION OF THE CONTENT / PURPOSE OF THIS BULLETIN

Internal combustion engines are generally subject to emissions control regulations. The regulatory authorities lay down the emission limits in the exhaust stack where the exhaust gas passes from the plant to the environment.

Jenbacher gas engines are fitted with indirect emission control and their NOx emissions are controlled indirectly. The emissions can potentially drift due to deposits and wear. As well as wear, other factors can affect emissions and must be taken into account in the engine setting. These influencing factors include the gas quality, gas/air moisture content, blow-by filter care, engine cooling water temperature, temperature of the low-temperature circuit, knock control, and deposits in the combustion chamber.

Consequently, the emissions must be checked at the recommended intervals and the engine adjusted as regards NOx emissions if necessary (by adjusting the LEANOX controller), and maintenance work must be carried out on the exhaust gas treatment unit as necessary. You can find the prescribed maintenance interval under the **"MAINTENANCE INTERVAL – LEANOX setting"**.

The necessary interval and parameters for the LEANOX setting may vary depending on the NOx drift factors described above.

GE is ready to assist you in carrying out the maintenance work.

You are welcome to engage GE or a company authorised by GE to carry out this measuring and adjustment. GE naturally also offer training, including a technical course on the subject of LEANOX settings, leading to a qualification (Level 15) in measuring and setting the parameters on the engine.



## MAINTENANCE INTERVAL – LEANOX setting

We advise the following maintenance intervals for the LEANOX setting to compensate for any NOx drift that may occur:

- In maintenance plans A, B and D:**

- Every 4,000 operating hours and
- 1,000/2,000/4,000/6,000/8,000 operating hours after commissioning, piston/cylinder liner replacement and combustion chamber cleaning

Maintenance Schedule A		Type 2, 3 and 4																			
[30/60]		1000	2000	4000	6000	8000	10000	12000	14000	16000	18000	20000	22000	24000	26000	28000	30000	31000	32000	34000	36000
NOx measurement and LEANOX adjustment		x	x	x	x	x		x		x		x		x		x		x		x	

Maintenance Schedule B		Type 2, 3 and 4																			
[20/40/60]		1000	2000	4000	6000	8000	10000	12000	14000	16000	18000	20000	21000	22000	24000	26000	28000	30000	32000	34000	36000
NOx measurement and LEANOX adjustment		x	x	x	x	x		x		x		x		x		x		x		x	

Maintenance Schedule D		Type 3 and 4																			
[20/30/40/60]		1000	2000	4000	6000	8000	10000	12000	14000	16000	18000	20000	21000	22000	24000	26000	28000	30000	31000	32000	34000
NOx measurement and LEANOX adjustment		x	x	x	x	x		x		x		x		x		x		x		x	

■ Main/Major overhaul  
x Maintenance interval

- In maintenance plans C and E:**

- Every 3,333 operating hours and
- 1,000 operating hours after commissioning, piston/cylinder liner replacement and combustion chamber cleaning

Maintenance Schedule C		Type 2 and 3																			
[40/80]		1000	2000	3333	4000	5000	6666	7000	8000	9000	10000	11000	12000	13333	14000	15000	16666	17000	18000	19000	20000
NOx measurement and LEANOX adjustment		x		x		x				x				x			x			x	

		41000	42000	43333	44000	45000	46666	47000	48000	49000	50000	51000	52000	53333	54000	55000	56666	57000	58000	59000	60000

Maintenance Schedule E		Type 4																			
[3333/30/60]		1000	2000	3333	4000	5000	6666	7000	8000	9000	10000	11000	12000	13333	14000	15000	16666	17000	18000	19000	20000
NOx measurement and LEANOX adjustment		x		x		x				x				x			x			x	

		31000	32000	33333	34000	35000	36666	37000	38000	39000	40000	41000	42000	43333	44000	45000	46666	47000	48000	49000	50000

■ Main/Major overhaul  
x Maintenance interval



## RELEVANT DOCUMENTS

When working on GE Jenbacher modules, all applicable local regulations must of course be observed in addition to our documentation. We would particularly like to emphasise observation of the following documents in connection with this Service Bulletin:

- Technical Instruction TA 1100-0111: General conditions – Operation & maintenance
- Technical Instruction TA 1400-0300: Instructions on NOx measurements and LEANOX settings (*provided after completing training*)
- Technical Instruction TA 1503-0041: Engine adjustment instruction, extended LEANOX control, Type 2/3 engines gas mixer for DIA.NE XT
- Technical Instruction TA 1503-0042: Engine adjustment instruction, extended LEANOX control, Type 2/3 engines TecJet for DIA.NE XT
- Technical Instruction TA 1503-0043: Engine adjustment instruction, extended LEANOX control, Type 4 engines for DIA.NE XT
- Technical Instruction TA 2300-0005: Safety regulations
- Inspection and Maintenance Instruction IW 8057 M0: NOx measurement

## REVISION CODE

INDEX	DATE	DESCRIPTION / REVISION SUMMARY
01	May. 19, 2017	First version of this document

**Table 01:** Revision history