

TA 1000-1109

Lubricating oil for type 2, 3, 4 and 6 Jenbacher engines

Technical Instruction

3 2 4 9 2 0 3 1 2 3 1 6 6 2 0 2 3 8 4 2 2 7 5 6 1 3 4 5 1 5 3 6 2 5 4 1

Tekniske anvisninger

Technical instruction

Technische Richtlijnen

技术指导

Indicazioni tecniche

Технические инструкции

Τεχνικές οδηγίες

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GE imagination at work



1	Scope	1
2	Purpose	2
3	Additional information.....	2
4	Effects on the lubricating oil and the oil service life	2
5	Lubricating oil requirements for Jenbacher engines.....	3
6	Lubricating oil tables – selection overview:.....	3
6.1	Note	3
6.2	Lubricating oil table for Type 2 and 3 Jenbacher engines.....	3
6.3	Lubricating oil table for Type 4 Jenbacher engines (versions A and B).....	6
6.4	Lubricating oil table for Type 4 Jenbacher engines (from version C).....	7
6.5	Lubricating oil table for Type 6 Jenbacher engines (versions C and E).....	8
6.6	Lubricating oil table for Type 6 Jenbacher engines (from version F).....	9
6.7	Lubricating oil for Jenbacher engines for special gas applications	10
6.8	Other products can be used for Type 2 and 3 engines, Type 4 engines (versions A and B) and Type 6 engines (versions C and E)	10
7	Revision code.....	12

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NOTE



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1 Scope

This Technical Instruction [TA] applies to the following Jenbacher - Gas Engines:

- Type 2 engines
- Type 3 engines
- Type 4 engines



- Type 6 engines

2 Purpose

This Technical Instruction [TI] describes the suitable lubricating oil products.

3 Additional information

When selecting a lubricating oil suitable for Jenbacher - Gas Engines, account must be taken of the engine's requirements and the requirements related to the fuel gas and - possibly - the exhaust gas treatment unit.

Relevant documents:

TI 1000-0099A – Approval procedure for various engine oils

TI 1000-0099B – Limit levels for used oil in GE Jenbacher gas engines

TI 1000-0099C – Procedure for testing the oil service life specific to the plant

TI 1000-0099D – Determining the initial pH value (ipH) for used lube oil as defined in TI 1000-0099B

TI 1000-0112 – Taking lubricating oil samples / lubricating oil sampling protocol

4 Effects on the lubricating oil and the oil service life

Fuel gases contain trace and accompanying elements which can cause deposits in the combustion chamber, acid attack of components and wear.

Experience shows that the following harmful substances have the greatest effects on the lubricating oil and the oil service life:

Chlorine, fluoride and sulphur cause the lubricating oil to acidify.
Organic silicon compounds cause wear.

Accordingly, fuel gases can be divided into the following classes:

- **Class A: Natural gas and gases that permanently comply with the restrictions regarding trace and accompanying elements in accordance with TA 1000-0300, TA 1000-0301 and TA 1000-0302**
Natural gas, associated petroleum gas, mine gas, biogas (sulphur < 200 mg/10 kWh).
- **Class B: Gases containing acid-forming trace elements or trace elements that primarily affect the oil condition**
biogas, sewage gas.
- **Class C: Gases containing acid-forming trace elements and additional trace elements causing wear**
Landfill gas
- **Class S: Special gases with a high probability of irregular combustion behaviour (backfiring, auto-ignition, etc.), which require special approval**
Thermoselect and steel plant gases as well as wood, synthesis or pyrolysis gases with high hydrogen content.

Lubricating oil can lose its corrosion protection characteristics due to impurities in the fuel gas. The results of regular lubricating oil analyses are indicative of fuel gas impurities. Refer as well to the following Technical Instructions:

TA 1000-0112

TA 1000-0099 A, B, C, D.



5 Lubricating oil requirements for Jenbacher engines

SAE 40

Additives suitable for four-stroke spark-ignition gas operation.


Release procedure successfully completed in acc. with TI 1000-0099A.

6 Lubricating oil tables – selection overview:

6.1 Note

- **Product names (in boldface)*** are suitable for extended oil change intervals in Jenbacher gas engines using class A fuel.
- **Mobil Pegasus 1005**** can be assessed using increased oil limit values (see TI 1000-0099B).
- **A, B, C, S:** fuel gas classes
- **CAT:** if an oxidation catalytic converter is included in the Jenbacher scope of supply

6.2 Lubricating oil table for Type 2 and 3 Jenbacher engines

Firma	Produktname	A	B	C	CAT
 RECOMMENDED BY GE	Pegasus 705	X			X
	Pegasus 805	X			X
	Pegasus 610			X	
	Pegasus 710		X		
	Pegasus 605 Ultra*		X	X	
	Pegasus 1005**	X			
Shell	Mysella S3N	X			X
	Mysella S3S		X	X	
	Mysella S5S		X	X	
	Mysella S5N	X			X
Texaco Chevron Caltex	Geotex LA 40	X			
	Geotex LF 40		X		
	HDAX 5500 LFG Gas Engine Oil 40		X	X	
	HDAX 5200 Low Ash Gas Engine Oil 40	X			X
	HDAX 6500 LFG Gas Engine Oil 40		X	X	
	HDAX 7200 Low Ash Gas Engine Oil 40	X			
Petro Canada	Sentron LD 5000*	X			X
	Sentron LD 8000*	X			
	Sentron CG 40 Plus		X	X	
	Sentron CG 40		X	X	



TA 1000-1109
Lubricating oil for type 2, 3, 4 and 6 Jenbacher engines

Firma	Produktname	A	B	C	CAT
Addinol	MG 40 Extra LA	X	X		X
	MG 40 Extra Synth*	X			X
	MG 40 Extra Plus		X	X	
	Gas Engine Oil LG 40		X	X	
	Gas Engine Oil NG 40	X	X		
Castrol	Duratec L	X	X		X
	Duratec MX		X	X	
	Duratec HPL	X			
Cenex	NGEO 2500 MA		X		
Cepsa	Troncoil Gas 40	X			
	Troncoil Gas LD 40	X			
	Troncoil Gas JGC	X			X
	Troncoil Biogas Low Ash*		X	X	
Eneos	NOC 440 (M)	X			
Fuchs	Titan Ganymet LA	X			X
	Titan Ganymet			X	
	Titan Ganymet Plus		X		
	Titan Ganymet Ultra*	X	X		X
	Titan Ganymet PRO MA*		X	X	
	Titan Ganymet PRO LA*	X	X		
LUKOIL	Efforse 4004	X			
	Efforse XDI 4004	X			
	Efforse HD 4009		X	X	
Mol	GMO MA		X		
OMV	Gas LEG SAE 40	X			
	Gas XDI SAE 40	X			
	Gas HD SAE 40		X	X	
PEAK	Navitus G4	X			X
	Navitus G5	X	X	X	X
	Navitus GR5*	X	X		X
	Navitus G8		X	X	
	Navitus HA 40		X	X	
Q8 Oils	Mahler G4	X			X
	Mahler G5	X	X	X	X
	Mahler GR5*	X	X		X
	Mahler G8		X	X	
	Mahler HA		X	X	
Repsol	Long Life Gas 4005	X			
	Long Life Biogas 4005		X	X	
	Super Motor Gas 4005	X			



TA 1000-1109
Lubricating oil for type 2, 3, 4 and 6 Jenbacher engines

Firma	Produktname	A	B	C	CAT
Roloil	Mogas G4	X			X
	Mogas G5	X	X	X	X
	Mogas GR5*	X	X		X
	Mogas G8		X	X	
	Mogas AC 40		X	X	
SRS	Mihagrun 40		X		
	Mihagrun LAX 40	X	X		
	Mihagrun X 40		X	X	
Total	Nateria MH 40	X			X
	Nateria ML 406		X		
	Nateria MJ 40		X		
	Nateria MP 40	X			X
Valvoline	GEO Plus LA Engine Oil SAE 40		X	X	
WIPA CHEMICALS INTERNATIONAL	Ecosyn GE 4004*	X			



6.3 Lubricating oil table for Type 4 Jenbacher engines (versions A and B)


Firma	Produktname	A	B	C	CAT
 RECOMMENDED BY GE	Mysella S3N	X	X	X	X
	Mysella S5N*	X			X
	Mysella S5S		X	X	
Mobil	Pegasus 705	X	X		X
	Pegasus 805	X	X		X
	Pegasus 1005*	X			
	Pegasus 605		X	X	
	Pegasus 605 Ultra*		X	X	
	Pegasus SR			X	
Texaco Chevron Caltex	HDAX 5200 Low Ash Gas Engine Oil40	X			X
	HDAX 6500LFG Gas Engine Oil40		X	X	
	HDAX 7200 Low Ash Gas Engine Oil40	X			
Petro Canada	Sentron LD 5000*	X			X
	Sentron LD 8000*	X			
	Sentron CG 40 Plus		X	X	
Addinol	MG 40 Extra LA	X	X		X
	MG 40 Extra Synth*	X			X
	Gas Engine Oil LG 40		X	X	
	Gas Engine Oil NG 40	X	X		
Castrol	Duratec HPL	X			
	Duratec L	X	X		X
	Duratec HPL	X			X
Cepsa	Troncoil Gas LD 40	X			
	Troncoil Gas JGC	X			X
	Troncoil Biogas Low Ash		X	X	
ENEOS	NOC 440 (M)	X			
Fuchs	Titan Ganymet LA	X			X
	Titan Ganymet Ultra*	X	X		X
	Titan Ganymet PRO MA		X	X	
	Titan Ganymet PRO LA	X	X		
LUKOIL	Efforse 4004	X			
	Efforse XDI 4004	X			
MOL	GMO Long Life	X	X	X	
OMV	Gas LEG SAE 40	X			
	Gas XDI SAE 40	X			
PEAK	Navitus G4	X			X
	Navitus G5	X	X	X	X
	Navitus GR5*	X	X		X



TA 1000-1109
Lubricating oil for type 2, 3, 4 and 6 Jenbacher engines


Firma	Produktname	A	B	C	CAT
Q8 Oils	Mahler G4	X			X
	Mahler G5	X	X	X	X
	Mahler GR5*	X	X		X
Repsol	Long Life Gas 4005*	X			
	Long Life Biogas 4005		X	X	
	Super Motor Gas 4005	X			
Roloil	Mogas G4	X			X
	Mogas G5	X	X	X	X
	Mogas GR5*	X	X		X
SRS	Mihagrün LAX 40	X	X		
	Mihagrün X 40		X	X	
Total	Nateria MP 40	X			X
	Nateria MH 40	X	X	X	X
Valvoline	GEO Plus LA Engine Oil SAE 40		X	X	
WIPA CHEMICALS INTERNATIONAL	Ecosyn GE 4004*	X			

6.4 Lubricating oil table for Type 4 Jenbacher engines (from version C)

Firma	Produktname	A	B	C	CAT
 RECOMMENDED BY GE	Mysella S5N*	X	X	X	X
	Mobil	Pegasus 705	X	X	X
Petro Canada	Pegasus 805	X	X	X	X
	Pegasus 605 Ultra*		X		
	Sentron LD 5000*	X	X	X	X
Galp	Sentron LD 8000*	X			
	GN LX4005	X	X	X	X
Repsol	Long Life Gas 4005*	X	X	X	
Texaco Chevron Caltex	HDAX 5200 Low Ash Gas Engine Oil	X	X	X	X
WIPA CHEMICALS INTERNATIONAL	Ecosyn GE 4004*	X			



6.5 Lubricating oil table for Type 6 Jenbacher engines (versions C and E)


Firma	Produktname	A	B	C	CAT
 RECOMMENDED BY GE	Mysella S3N	X	X	X	X
	Mysella S5N*	X			X
	Mysella S5S		X	X	
Mobil	Pegasus 705	X	X		X
	Pegasus 805	X	X		X
	Pegasus 1005*	X			
	Pegasus SR			X	
	Pegasus 605			X	
	Pegasus 605 Ultra*		X	X	
Texaco Chevron Caltex	HDAX 5200 Low Ash Gas Engine Oil40	X			X
	HDAX 6500LFG Gas Engine Oil40		X	X	
	HDAX 7200 Low Ash Gas Engine Oil40	X			
Petro Canada	Sentron LD 5000*	X			X
	Sentron LD 8000*	X			
	Sentron CG 40 Plus		X	X	
Addinol	MG 40 Extra LA	X	X		X
	MG 40 Extra Synth*	X			X
	Gas Engine Oil LG 40		X	X	
	Gas Engine Oil NG 40	X	X		
Castrol	Duratec L	X	X	X	X
	Duratec HPL	X			
Cepsa	Troncoil Gas LD 40	X			
	Troncoil Gas JGC	X			X
	Troncoil Biogas Low Ash		X	X	
ENEOS	NOC 440 (M)	X			
Fuchs	Titan Ganymet LA	X			X
	Titan Ganymet Ultra*	X	X		X
	Titan Ganymet PRO MA*		X	x	
	Titan Ganymet PRO LA*	X	X		
LUKOIL	Efforse 4004	X			
	Efforse XDI 4004	X			
MOL	GMO Long Life	X	X	X	
OMV	Gas LEG SAE 40	X			
	Gas XDI SAE 40	X			
PEAK	Navitus G4	X			X
	Navitus G5	X	X	X	X
	Navitus GR5*	X	X		X



TA 1000-1109
Lubricating oil for type 2, 3, 4 and 6 Jenbacher engines

Firma	Produktname	A	B	C	CAT
Q8 Oils	Mahler G4	X			X
	Mahler G5	X	X	X	X
	Mahler GR5*	X	X		X
Repsol	Long Life Gas 4005	X			
	Long Life Biogas 4005		X	X	
	Super Motor Gas 4005	X			
Roloil	Mogas G4	X			X
	Mogas G5	X	X	X	X
	Mogas GR5*	X	X		X
SRS	Mihagrun LAX 40	X	X		
	Mihagrun X 40		X	X	
Total	Nateria MH 40	X	X	X	X
	Nateria MP 40	X			X
Valvoline	GEO Plus LA Engine Oil SAE 40		X	X	
WIPA CHEMICALS INTERNATIONAL	Ecosyn GE 4004*	X			

6.6 Lubricating oil table for Type 6 Jenbacher engines (from version F)

Firma	Produktname	A	B	C	CAT
 RECOMMENDED BY GE	Mysella S5N*	X	X	X	X
	Mobil	Pegasus 705	X	X	X
		Pegasus 805	X	X	X
Texaco Chevron Caltex	HDAX 5200 Low Ash Gas Engine Oil 40	X	X	X	X
Petro Canada	Sentron LD 5000*	X	X	X	X
Galp	GN LX 4005	X	X	X	X
LUKOIL	Efforse 4004*	X			
PEAK	Navitus G5	X			X
	Navitus GR5*	X	X		X
Q8 Oils	Mahler G5	X			X
	Mahler GR5*	X	X		X
Repsol	Long Life Gas 4005*	X	X	X	
Roloil	Mogas G5	X			X
	Mogas GR5*	X	X		X



6.7 Lubricating oil for Jenbacher engines for special gas applications

Especially recommended: **WIPA CHEMICALS INTERNATIONAL Ecosyn GE 4004**

Products from the ⇒ Lubricating oil table for Type 6 Jenbacher engines (versions C and E) section may also be used.

6.8 Other products can be used for Type 2 and 3 engines, Type 4 engines (versions A and B) and Type 6 engines (versions C and E)

Firma	Produktname	A	B	C	CAT
Aral	Degasol NGL	X	X		X
Avia	Gasmotorenöl LA-XT 40	X	X		X
	Gasmotorenöl LA Plus 40	X	X	X	X
	Gasmotorenöl S40 SAE 40	X			X
	Gasmotorenöl LA-XD 40	X	X		
BayWa Ag	Tectrol Methaflexx NG	X			X
	Tectrol Methaflexx HC Premium*	X	X		X
Bellini S.p.A	THG OILEXTRA SAE 40		X	X	
Brad Penn Lubricants	Supreme DDO Low Ash Stat. GEO 40	X			
CITGO	Pacemaker LFG LA Gas Engine Oil		X	X	
Compagnia Italiana Lubrificanti	Vanguard Astra JM 40		X	X	
DA Lubricants Company	Blue Flame J 40		X	X	
De Oliebron	Tor GEO BG/LF 40		X	X	
Engen	GEO LL 40	X			
	GEO N 40	X	X		
	GEO BL - 40		X	X	
eni	GEUM NG	X	X		
	GEUM LFG		X	X	
Enoc	Khaura LA 40	X	X		
Exol	Taurus GEO G240	X	X		
	Taurus GEO LFG240		X	X	
Galp	Power Gas NGB 40	X	X		
	Power Gas SG 40		X	X	
	GNLX4005	X			X
Gazpromneft	G-Profi PSN 40	X	X		
GS Caltex	GS Generator LF 40		X	X	
Gulf oil	Gulfco LA Supreme	X	X		
	Gulfco LFG 40		X	X	
HILL Corporation LLC	Fastroil Gas Engine Oil SAE 40	X	X		
I.G.A.T.AG	Platin Cogeneration Oil SAE 40	X	X		
Lotos	Ibis NGO Super LA SAE 40		X	X	
Mabanol	Neon LAX 40	X	X		
Matrix	GE LA Oil	X	X		



TA 1000-1109
Lubricating oil for type 2, 3, 4 and 6 Jenbacher engines

Firma	Produktname	A	B	C	CAT
Morris Lubricant	GEO Ultra 40	X	X		
	GEO Ultra G-LF 40		x	x	
Motorex	Evolub NG SAE 40	X	X		
Nils	Burian Light SAE 40	X	X		X
	Burian Plus SAE 40		X	X	
North Sea Lubricants	Tidal Power LA 40	X	X		
Oilfino	Linogas LA	X	X		
	Linogas MA		X	X	
Ori-Techoil	Gas Engine Oil 40 C	X	X		
Orlen Oil	Delgas L 40	X	X		
	Delgas Premium L 40		X	X	
Pakelo	Geoterm LA EVO SAE 40		X	X	
Paramo	Mogulgas B	X	X		
PAZ Lubricants	Biogas 40		X	X	
Petromin	Petrogas Plus 40	X	X		
Petronas	GEO NG	X	X		
	GEO BLG		X	X	
PT. Pertamina Lubricants	NG Lube HSG	X	X		
Roloil	Mogas XNG	X	X		
Rowe Mineralölwerk GmbH	Hightec Powerplant SAE 40	X	X		
Rymco	Frya Gas LA Plus	X	X		
Sasol	Gas Engine Oil LA	X	X		
Sinopec Lubricant Co., Ltd	GS200-L Stationary Gas Engine (premium)-II	X	X		
Sinopec Lubricant Co., Ltd	GS200 Stationary Gas Engine Oil		X	X	
SRS	Mihagrun LAX 40	X	X		
	Mihagrun 40		X	X	
SynLube	GEO LD40	X	X		
TNB	Gas Engine Oil LA	X	X		
Unil Lubricants	Logas 6.6		X	X	
Wameco S.R.L.	NGE OILEXTRA SAE 40		X	X	
York	1034 Biogaz SAE40		X	X	
77 Lubricants	Gas Engine Oil LA 40	X	X		

The products below can only be used for Type 2 and 3 engines

Firma	Produktname	A	B	C	CAT
Agip	AUTOL BGJ 40		X	X	
Aral	Degasol LFM		X	X	
Avia	Gasmotorenöl HA SAE 40		X	X	
	Gasmotorenöl S40 SAE 40		X	X	



TA 1000-1109

Lubricating oil for type 2, 3, 4 and 6 Jenbacher engines

Firma	Produktname	A	B	C	CAT
BayWA Ag	Tectrol Methaflexx D		X	X	
	Tectrol Methaflexx HC Plus		X		
	Tectrol Methaflexx GE-M		X		
Eurolube	Gasmotorenöl HGM Plus		X		
Nils	Burian SAE 40		X		
Oilfino	Famagas HA 40		X	X	
Pakelo	Geoterm MA		X		
Phi Oil	Gas Engine Oil MA 40		X		
Zeller+Gmelin	Divinol Spezial Typ 4 SAE 40		X	X	
	Divinol SpezialHA SAE 40		X	X	

7 Revision code

Revision history

Index	Date	Description / Revision summary	Expert Auditor
17	30.11.2016	Ergänzungen in Kapitel 6.2, 6.5 und 6.8 / Additions in Chapter 6.2, 6.5 and 6.8	Chvatal S. <i>Waldron P.</i>
16	30.09.2016	Grundlegende Überarbeitung / Fundamental revision	Chvatal S. <i>Waldron P.</i>
15	02.11.2015	Überarbeitung Punkt 5.2/5.3/5.4/5.5 / Revision of point 5.2/5.3/5.4/5.5	Chvatal S. <i>Nota F.</i>
14	27.05.2015	Ergänzung „Klassifizierung – Potenzieller Kunde“ / Additional „Classification - Prospective Customers“	Bilek <i>Kelly</i>
13	29.01.2015	Grundlegende Überarbeitung/ fundamental revision	Bilek <i>Chvatal S.</i>
		Hinweis zur Einhaltung der Bedingungen / Information on observing the conditions	Bilek <i>Lippert</i>
12	19.02.2014	Grundlegende Überarbeitung / Fundamental revision	Bilek <i>Chvatal S.</i>