MOTTA LUBRICATION | TECHNICAL GUIDANCE

Q GAS aceite de motor SERIES Q1000 / Q3000 — SAE 40

OPERATION AND HANDLING INSTRUCTIONS

N.º de documento	Revisión	Fecha de emisión	Release status
MOTTA-Q-OHI-ES	REV.02	2026-09-13	Emitido para use

Use con the current producto TDS, SDS y the fabricante del motor's aceite specification. Emitido by MOTTA Lubricants. The current Revisión de Este documento is published at motta-lube.com/documentos/ — if your copy differs, that list governs.

1 Alcance

Este documento applies to the selection, filling, in-service monitoring y aceite change de MOTTA Q1000 y Q3000 gas engine oils in stationary four-stroke gas engines, including cogeneration y gas compression. For use only by trained personnel.

Not covered: two-stroke gas engines, dual-fuel y motores diésel (see MOTTA-LIKING-OHI), gas compressors' separate lubrication sistemas, y engines whose manufacturer specifies an approved aceite list that does not include el producto.

The fabricante del motor's aceite specification, el producto TDS y SDS y local regulations take precedence. Where requisitos conflict, apply the stricter condition.

- User responsibility: know the fuel composition — natural gas, biogas, landfill gas or associated gas — y whether the engine has exhaust after-treatment.
- Operator responsibility: record running hours, aceite added, aceite-analysis results y abnormal events.
- Technical boundary: Este documento does not replace the fabricante del motor's manual or professional engineering judgement.

MOTTA productos covered by this handbook

Producto	grados	Standards y nivel de desempeños	Formatos de envase
MOTTA Q1000	SAE 40	—	18L / 200L
MOTTA Q3000	SAE 40	—	18L / 200L

grados, standards y Formatos de envase as published on each producto's Ficha técnica at motta-lube.com/productos/. Where a data sheet y this table differ, the data sheet governs.

Q1000 y Q3000 are formulated to stationary gas-aceite de motor practice, as stated on their data sheets. No engine-manufacturer approval is claimed unless separately documentoed. Seleccionar by the ash y alkalinity level the fabricante del motor requires.

Traducción de la versión inglesa. En caso de diferencia, prevalece la versión inglesa.

2 Selección (crítico: fuel, ash level y after-treatment)

Important: Q1000 y Q3000 are not a basic y a premium Versión. They are built para opposite conditions. The fabricante del motor's aceite specification — ash level, alkalinity y any approved aceite list — decides, not the grado de viscosidad.

Producto	Data-sheet profile	Built para	Check Antes del uso
Q1000	High TBN (typical 8.5 mg KOH/g); sulphated ash typical 1.1 %	Fuels carrying hydrogen sulphide or halogens, such as biogas, landfill gas or associated gas	That the fabricante del motor allows this ash level y that after-treatment, if fitted, accepts it
Q3000	Low ash (typical 0.5 %); low zinc y phosphorus	limpieza natural gas in high-output engines con catalysts y low-emission designs	That the alkalinity reserve is enough para the fuel; sour fuel consumes it quickly

- Catalyst-equipped engines: phosphorus y zinc from the aceite, y silicon from siloxanes in biogas or landfill gas, are the main catalyst poisons. Choose the aceite the fabricante del motor lists para the catalyst.
- Sour fuels: hydrogen sulphide y halogens form acids in the aceite. Too little alkalinity reserve lets them attack cylinder liners, valves y bearings.
- No use a aceite para motor diésel in a gas engine: combustion, deposit formation y ash tolerance are different.
- Verify producto name, SAE grade, batch number y intact seal. Store Q1000 y Q3000 apart y label them clearly.

3 Filling y aceite level

- Check the level by the fabricante del motor's Método — engine stopped para the stated time, or running donde the engine has an automatic make-up sistema.
- Keep the level between the marks; top up in stages y re-verificar. On engines con an automatic make-up tank, fill the tank con the same producto only.
- Replace the aceite filter con the especificado element at each aceite change.
- At the first fill de a producto, take a new-aceite sample y record TBN, acid number y viscosity as the reference.

4 Start-up

- Pre-lubricate donde the engine has a pre-lube pump; run until aceite pressure y temperatura are stable antes de load.
- After an aceite change or overhaul, watch para noise, leaks, aceite pressure y exhaust temperaturas.

Seguridad: low aceite pressure or an aceite-pressure alarm means stop the engine y investigate. No reset y continue.

5 In-service monitoring

Gas engines run long hours at steady load; aceite condition is managed by analysis against running hours, not by the calendar.

Item	Minimum requisito	Key judgement point
aceite consumption	Record aceite added per running hour	A rising rate points at ring, liner or valve-guide wear, or a leak
aceite pressure y temperatura	Watch readings y trend	A falling pressure trend needs investigation antes de an alarm
aceite analysis	At the interval the fabricante del motor sets, same sampling point each time	Judge TBN, acid number, oxidation, nitration y viscosity against the new-aceite reference

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Item	Minimum requisito	Key judgement point
Catalyst y exhaust	At the fabricante del motor's interval	Loss de catalyst efficiency: verificar silicon y phosphorus in the aceite

6 aceite-change judgement

No aceite-change interval is promised independent de fuel y load. Alkalinity is consumed at very different rates on natural gas y on sour gas. The fabricante del motor's aceite-change criteria take precedence.

Parameter	Continue in service	Precaución / investigate	Change aceite
TBN (ASTM D2896)	Above 50 % de new aceite	Approaching 50 % de new aceite: acortar the sampling interval	Below 50 % de new aceite
Acid number (ASTM D664)	Well below TBN	Rising toward TBN	Equal to or above TBN
Oxidation y nitration (FTIR)	Stable against the engine's history	Rising trend	At the fabricante del motor's limit
Viscosidad at 100 °C	Within ±10 % de new aceite	10–20 % above new aceite	More than 20 % above new aceite
refrigerante (glycol)	Not detected	—	Any glycol: find the leak antes de refilling

> Nota: these are field-screening starting points donde no engine-specific limit is available. They are not a producto guarantee. The fabricante del motor's aceite specification governs.

Recommended Métodos: TBN ASTM D2896 or D4739; acid number ASTM D664; viscosity ASTM D445; oxidation y nitration by FTIR; wear y contaminant elements, including silicon, by ICP; water ASTM D6304; glycol ASTM D2982 or by FTIR.

7 Top-up, Mezcla y aceite change

- Top up only con el producto already in the engine. Q1000 y Q3000 must not be mixed or used para each other's top-up.
- Changing producto: drain completely, change the filter, y sample early in the next interval to set a new reference.
- Where water, refrigerante or heavy contamination is found, find the engine cause first, then decide the aceite-change plan.

8 Abnormal-condition Manejo

Situation	Primary action
Low aceite pressure or alarm	Stop the engine y investigate; No continue
TBN falling unusually fast	Check fuel hydrogen sulphide y halogen content; review el producto choice y interval
Silicon rising in the aceite	Check fuel-gas treatment para siloxanes y the air-intake filtration
Glycol or water in the aceite	Stop at the next safe opportUnidady; trace the cooler, liner seals or head gasket
Catalyst efficiency falling	Check phosphorus, zinc y silicon in the aceite analysis; confirm the aceite is the one especificado
Leakage	Isolate the source; select protective equipo y limpieza-up measures per the SDS

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9 Valores de referencia — indicativos, no una especificación de MOTTA

The figures below are published industry references, given so that a reading can be judged on site when the máquina documentación is not to hand. They are screening prompts, not scrap limits. Where the fabricante del equipo, the component manufacturer or your aceite analysis laboratory states a figure, that figure governs y this table does not apply.

Specification reference

Reference	What it covers	Published by
SAE J300	aceite de motor grado de viscosidads — SAE 40 in this series	SAE
ASTM D2896 / ASTM D664	Base number y acid number de in-service aceite de motor	ASTM

When a reading is worth investigating

What is measured	Prompt to investigate	Why this figure
Base number (TBN)	Below 50 % de the new-aceite Valor	A widely used gas-engine screening point: below it the reserve against acids from the fuel is running out
Acid number against base number	Acid number equal to or above base number	The crossover: acids are no longer being neutralised
Cinemática viscosity at 100 °C	More than 10 % above the new-aceite Valor	Oxidation y nitration thicken gas-aceite de motor; the rise usually comes antes de the limit in the engine specification
Oxidation y nitration (FTIR)	A rising trend on the same engine	Limits are set in the fabricante del motor's aceite specification; the trend on one engine is the early signal
Silicon	A rise against the engine's history	From siloxanes in biogas y landfill gas, or dust; it forms abrasive deposits y poisons catalysts
Water y glycol	Water above 0.2 %, or any glycol	A common engine-aceite alert level para water; glycol at any level means a refrigerante leak

The fabricante del motor's aceite specification sets the limits para your engine; donde it gives a figure, that figure governs.

A single result is a reason to look, not a reason to drain. Establish the new-aceite reference para el producto actually in use, trend against it, y find the cause antes de changing the aceite — changing the aceite does not remove a contamination source or a mechanical fault.

10 Almacenamiento y residuos aceite

- Keep in the original sealed container in a cool, dry, ventilated area away from ignition sources.
- Store Tambors under cover, or on their side con the bungs at the 3 y 9 o'clock positions.
- Keep Q1000 y Q3000 in separate, clearly labelled locations y transfer equipo.
- Residuos aceite y aceite-contaminated materials must be collected separately y handed to a compliant Eliminación organisation under local regulations.

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Use y documento information

Precaución: Este documento provides general operating orientación. It is not engineering design, legal advice or a guarantee de results para any specific engine, fuel, country or site.

- Conditions de use: confirm el producto meets the fabricante del motor's aceite specification para the fuel used. Any unconfirmed substitution requires a written technical assessment first.
- Data y limits: intervals, analysis limits y other figures are governed by the fabricante del motor's documentos, el producto TDS y SDS y your laboratory. Este documento sets no general guaranteed Valores.
- Limitation: to the extent permitted by aplicable law, MOTTA gives no warranty para loss arising from incorrect selection, unconfirmed Mezcla, fuel contamination, engine defects or failure to follow the fabricante del motor's requisitos. This does not exclude liability that cannot be excluded or limited by law.

Revisión 02: moved to the current MOTTA documento format; corrected the cause de catalyst poisoning; added selection by fuel, ash level y exhaust after-treatment; added aceite-analysis parameters para gas engines — TBN, acid number, oxidation, nitration, silicon y refrigerante; added reference Valores, the table de MOTTA productos covered, y the copyright y trademark notice.

Recommended Records to Retain

Record	Details to retain
Motor	Unidad number, manufacturer, model, fuel type, after-treatment, running hours.
Producto	Full producto name, SAE grade, batch number, new-oil TBN y acid number.
Operation	aceite changes, filter changes, aceite added, running hours, person responsible.
aceite analysis	Sample date y hours, TBN, acid number, oxidation, nitration, viscosity, silicon, glycol, action.
Abnormal event	aceite-pressure alarms, refrigerante in aceite, catalyst problems, action taken.

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