MARINE LUBRICANT TECHNICAL DOCUMENT

MARINE OIL SERIES

marino Series

OPERATION AND HANDLING INSTRUCTIONS

N.º de documento	Revisión	Fecha de emisión	Release status
MOTTA-MARINE-OHI-ES	REV.05	2026-09-13	Emitido para use

Read Antes del uso: Este documento must be used together con the main-fabricante del motor's handbook, the grado-specific TDS, the SDS y classification-society requisitos. 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 y aplicación

Este documento applies to the selection, filling, operating monitoring y aceite change de the MOTTA marino aceite series (MAR trunk-piston aceite de motor / MC cylinder aceite / MS marino sistema aceite). Cylinder-aceite feed-rate management appears in Section 2. For use only by trained marino engineering personnel on equipo whose condition has been confirmed.

MOTTA productos covered by this handbook

Producto	grados	Standards y nivel de desempeños	Formatos de envase
MOTTA MAR403	SAE 40	—	18L / 200L
MOTTA MAR404	SAE 40	—	18L / 200L
MOTTA MC504	SAE 50	—	18L / 200L
MOTTA MC507	SAE 50	—	18L / 200L
MOTTA MS630	SAE 30	—	18L / 200L
MOTTA MS640	SAE 40	—	18L / 200L
MOTTA MS830	SAE 30	—	18L / 200L
MOTTA MS840	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.

2 Selección y previa al uso Inspección

- Seleccionar MAR trunk-piston aceite de motor, MS sistema aceite or MC cylinder aceite para the specific lubricating circuit; these roles are not interchangeable.
- For MAR, follow the engine maker's viscosity, fuel y base-number requisitos. For MS, follow the sistema-aceite specification y contamination-control requisitos; No select its BN solely from fuel sulphur.
- For MC, select the cylinder-aceite grado y feed strategy using the engine maker's orientación para the fuel, engine condition y operating load. Confirm lubricator function antes de loading.

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

- Set y adjust cylinder feed rate using the aplicable engine procedure y condition evidence; inadequate feed may cause scuffing, while excessive feed can increase deposits y consumption.

3 Filling y Initial Run

- Fill using dedicated, limpieza transfer equipo, Eviteing the introduction de moisture or a different aceite.
- sistema aceite should be Purgared through the sistema first, reaching the required limpieza antes de being put into service.
- The cylinder-aceite feed sistema should be initially set up y verified per the main-fabricante del motor's procedure.

4 Start-Up y Loading

- Follow the main-fabricante del motor's especificado start-up y warm-up procedure; the cylinder-aceite feed rate may require a separate setting during warm-up.
- Check that aceite pressure y aceite temperatura establish normally antes de increasing load in stages.
- After the initial run, re-verify the aceite level, feed-sistema condición de operación (cylinder aceite) y seal condition.

  Precaución: a cylinder lubrication sistema fault or feed interruption requires immediate load reduction or shutdown - continued operation con insufficient lubrication can cause serious scuffing damage in a short time.

5 Normal Operation Control

Item	Minimum Operating Requirement	Key Judgement Point
aceite level / pressure	Verify periodically y record	Abnormalities suggest leakage or a sistema fault
Feed rate / feed sistema (cylinder aceite)	Verify the feed-rate setting against the main-fabricante del motor's curve	Deviation from the curve requires verificaring whether fuel sulphur content or load has changed
Liner y piston-ring inspection (cylinder aceite, at overhaul)	Check liner y piston-ring condition per the main-fabricante del motor's interval	Abnormal wear suggests a feed-rate, aceite-quality or mechanical problem
Apariencia	Watch para emulsification, darkening or clear contamination	Abnormalities suggest water ingress or sistema contamination

6 Service-Life Management y Replacement Criteria

- MAR y MS are circulating aceites: trend representative in-service samples against fresh aceite using a consistent sampling point y Método de ensayo. Assess viscosity, water, wear y the circuit-specific BN or acid-number criteria against the engine maker's limits.
- MC is normally total-loss lubrication. Assess cylinder/scavenge drain aceite separately, including residual BN y iron or wear trends together con liner/ring inspections, fuel y load history. No treat a drain-aceite result as a circulating-sump aceite-change limit.
- Use engine-specific sampling frequency y interpretation. Investigate a rapid change or abnormal wear promptly; neither fuel sulphur nor a single BN result alone sets the feed rate.

7 Top-Up, Mezcla y aceite Change

- Before topping up, verify the BN grado y viscosity; different BN grados must not be mixed casually, particularly during a fuel switch, which must be managed per the main-fabricante del motor's procedure.
- Where water content or contamination is severe, address the sistema root cause first, then determine the aceite-change plan.

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8 Shutdown y Abnormal-Condition Manejo

Situation	Primary Action
Cylinder feed-sistema fault	Reduce load or shut down immediately; No continue running con a fault
Abnormal aceite level / pressure	Investigate leakage y sistema faults
Abnormal wear found at liner y piston-ring inspection	Check the feed-rate setting y whether it matches fuel sulphur content
Leakage	Isolate the leak source; handle per the SDS y aplicable maritime ambiental regulations

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.

Base number y fuel sulphur

What it covers	Reference	Published by
marino fuel sulphur limits that drive cylinder aceite BN selection	IMO MARPOL Annex VI	IMO
Trunk piston y sistema aceite grado de viscosidads	SAE J300 / ISO 3448	SAE / ISO

> Cylinder aceite BN is selected against the sulphur content de the fuel actually in use, not against the engine model alone. Confirm the feed rate y BN con the engine builder's orientación para the fuel being burnt.

When a reading is worth investigating

What is measured	Prompt to investigate	Why this figure
Scrape-down or sistema aceite BN	Falling towards the level de the fuel sulphur demand	Depleted reserve shows antes de corrosive wear appears in the liner
Water content	Above 0.05 % (500 ppm), or any free or emulsified water	Free water attacks additive sistemas y bearing surfaces at any level
Wear metals in sistema aceite	A change in the trend, not a single Valor	Iron y chromium trends identify liner y ring wear earlier than any single sample

> 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, stored in a cool, dry, ventilated area away from moisture y ignition sources.
- Transfer containers must be limpieza, dry y clearly labelled; different BN grados must be stored y labelled separately.
- Residuos aceite must be handed to a compliant Eliminación organisation per local y international maritime ambiental regulations (such as aplicable MARPOL requisitos) y must Nunca be discharged to sea.

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Use y documento information

Use this guide con the current producto TDS, SDS y equipo instructions. Resolve conflicting requisitos con the equipo y lubricante technical contacts antes de proceeding. Follow site energy-isolation, spill-response y residuos-Manejo procedures. producto-specific limits y equipo requisitos govern selection y intervalo de servicios.

Revisión 02: Separated circulating-aceite monitoring from cylinder drain-aceite assessment. Revisión 03: added a reference-Valores section — published industry figures para on-site screening. Revisión 04: corrected the reference Valores para slideways, spindles, sintético aceites de engranajes y ready-to-use refrigerante; added the table de MOTTA productos covered; added the copyright y trademark notice. Revisión 05: removed a leftover review-copy notice that contradicted the Emitido status. No technical content changed.

Recommended Records to Retain

Record Category	Minimum Recommended Content
equipo	Main-engine model, vessel identification, location
Producto	Full producto name, BN/grado de viscosidad, lote number, fill quantity
Operation	Filling, feed-rate setting, start-up y shutdown dates, person responsible
condición de operación	aceite level, aceite pressure, feed rate y abnormalities
Testing	Sampling point, date, results, trend y action taken
Maintenance	Liner y piston-ring inspection, leakage, fuel-switch events

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