



OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
141404 - TROPICAL SHIPPING

Component
3 Slewing Gearbox

Fluid
LIEBHERR GEAR HYPOID 90 EP (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			LM0001424	---	---
Sample Date	Client Info			16 Mar 2024	---	---
Machine Age	hrs	Client Info		20172	---	---
Oil Age	hrs	Client Info		0	---	---
Oil Changed	Client Info			Changed	---	---
Sample Status				NORMAL	---	---

CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method		>0.2	NEG	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>500	15	---	---
Chromium	ppm	ASTM D5185m	>5	<1	---	---
Nickel	ppm	ASTM D5185m	>5	<1	---	---
Titanium	ppm	ASTM D5185m		<1	---	---
Silver	ppm	ASTM D5185m		0	---	---
Aluminum	ppm	ASTM D5185m		2	---	---
Lead	ppm	ASTM D5185m	>5	<1	---	---
Copper	ppm	ASTM D5185m	>35	2	---	---
Tin	ppm	ASTM D5185m	>5	1	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
Cadmium	ppm	ASTM D5185m		<1	---	---

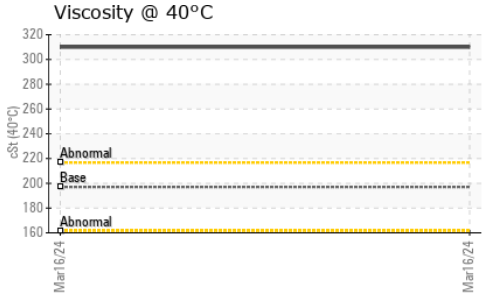
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		171	---	---
Barium	ppm	ASTM D5185m		<1	---	---
Molybdenum	ppm	ASTM D5185m		<1	---	---
Manganese	ppm	ASTM D5185m		<1	---	---
Magnesium	ppm	ASTM D5185m		3	---	---
Calcium	ppm	ASTM D5185m		16	---	---
Phosphorus	ppm	ASTM D5185m		843	---	---
Zinc	ppm	ASTM D5185m		10	---	---
Sulfur	ppm	ASTM D5185m		23628	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	6	---	---
Sodium	ppm	ASTM D5185m		2	---	---
Potassium	ppm	ASTM D5185m	>20	2	---	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---
Precipitate	scalar	*Visual	NONE	NONE	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---
Free Water	scalar	*Visual		NEG	---	---



OIL ANALYSIS REPORT

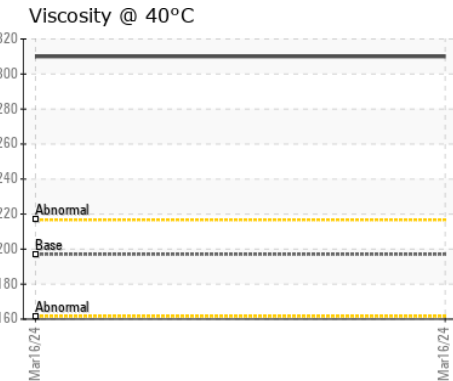
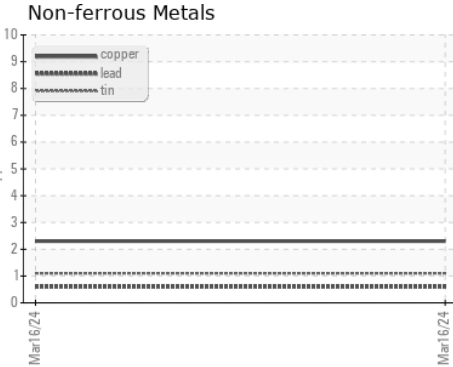
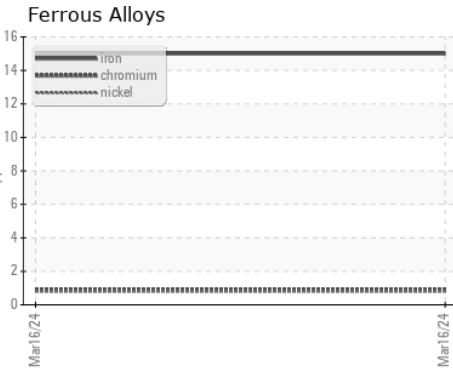


FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 197	310	---	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color				no image	no image	no image
Bottom				no image	no image	no image

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LM0001424
Lab Number : **06143431**
Unique Number : 10968239
Test Package : CONST

Received : 09 Apr 2024
Tested : 10 Apr 2024
Diagnosed : 12 Apr 2024 - Jonathan Hester

LIEBHERR USA CO - Maritime Cranes
 15101 NW 112TH AVE
 HIALEAH GARDENS, FL
 US 33018
 Contact: RONNY FUNK
 ronny.funk@liebherr.com
 T: (305)817-7566
 F:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)