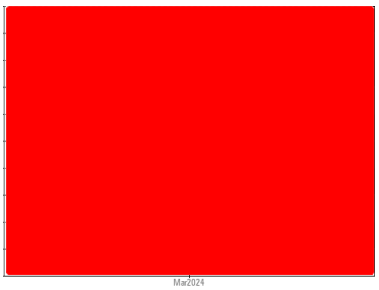
PROBLEM SUMMARY

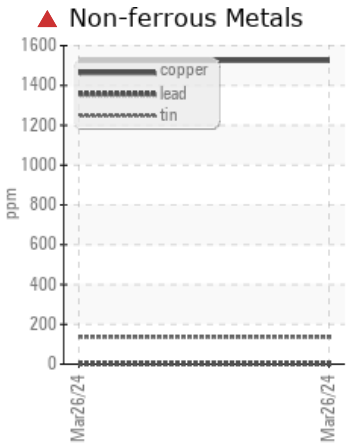
Sample Rating Trend

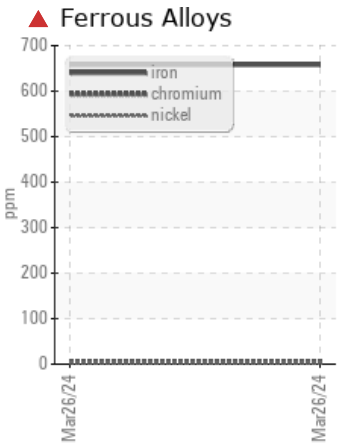


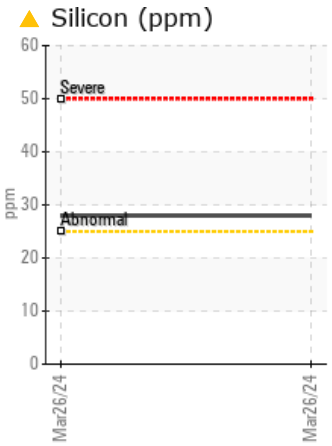
WEAR

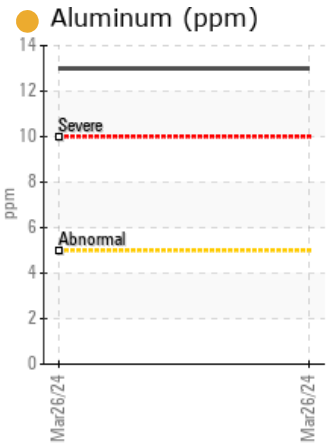
Machine Id
141325
Component
Hoist Winch
Fluid
LIEBHERR GEAR HYPOID 90 EP (--- GAL)

COMPONENT CONDITION SUMMARY









RECOMMENDATION

We advise that you check all areas where dirt can enter the system. We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	---	---
Iron	ppm	ASTM D5185m	>150	▲ **658**	---	---
Copper	ppm	ASTM D5185m	>80	▲ **1525**	---	---
Tin	ppm	ASTM D5185m		▲ **136**	---	---
Silicon	ppm	ASTM D5185m	>25	▲ **28**	---	---

Customer Id: LIEHIA
Sample No.: LM0001412
Lab Number: 06143423
Test Package: CONST

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

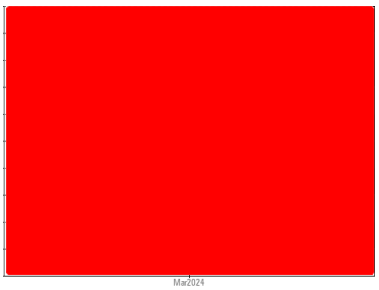
RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Inspect Wear Source	---	---	?	We advise that you inspect for the source(s) of wear.
Change Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Dirt Access	---	---	?	We advise that you check all areas where dirt can enter the system.

HISTORICAL DIAGNOSIS

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
141325
Component
Hoist Winch
Fluid
LIEBHERR GEAR HYPOID 90 EP (--- GAL)

DIAGNOSIS

▲ Recommendation
We advise that you check all areas where dirt can enter the system. We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

▲ Wear
Bearing and/or gear wear is indicated.

▲ Contamination
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition
The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**LM0001412**	---	---
Sample Date		Client Info		**26 Mar 2024**	---	---
Machine Age	hrs	Client Info		**17083**	---	---
Oil Age	hrs	Client Info		**0**	---	---
Oil Changed		Client Info		**N/A**	---	---
Sample Status				**SEVERE**	---	---

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	>150	▲ **658**	---	---
Chromium	ppm	ASTM D5185m	>10	**6**	---	---
Nickel	ppm	ASTM D5185m	>10	**3**	---	---
Titanium	ppm	ASTM D5185m		**<1**	---	---
Silver	ppm	ASTM D5185m		**0**	---	---
Aluminum	ppm	ASTM D5185m	>5	● **13**	---	---
Lead	ppm	ASTM D5185m	>15	**<1**	---	---
Copper	ppm	ASTM D5185m	>80	▲ **1525**	---	---
Tin	ppm	ASTM D5185m		▲ **136**	---	---
Vanadium	ppm	ASTM D5185m		**<1**	---	---
Cadmium	ppm	ASTM D5185m		**<1**	---	---

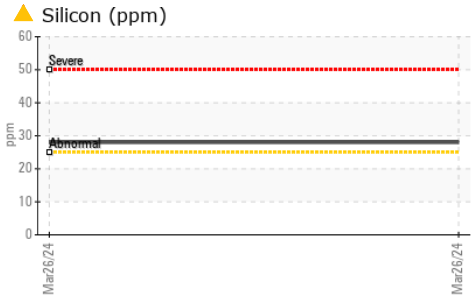
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**36**	---	---
Barium	ppm	ASTM D5185m		**<1**	---	---
Molybdenum	ppm	ASTM D5185m		**2**	---	---
Manganese	ppm	ASTM D5185m		**6**	---	---
Magnesium	ppm	ASTM D5185m		**7**	---	---
Calcium	ppm	ASTM D5185m		**30**	---	---
Phosphorus	ppm	ASTM D5185m		**543**	---	---
Zinc	ppm	ASTM D5185m		**197**	---	---
Sulfur	ppm	ASTM D5185m		**17373**	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ **28**	---	---
Sodium	ppm	ASTM D5185m		**<1**	---	---
Potassium	ppm	ASTM D5185m	>20	**2**	---	---

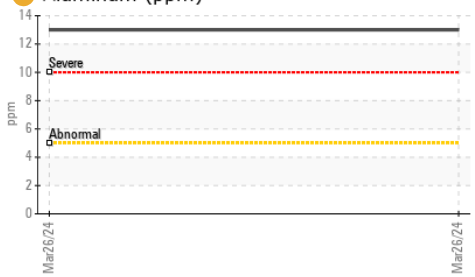
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	---	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	---	---
Precipitate	scalar	*Visual	NONE	**NONE**	---	---
Silt	scalar	*Visual	NONE	**NONE**	---	---
Debris	scalar	*Visual	NONE	**NONE**	---	---
Sand/Dirt	scalar	*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

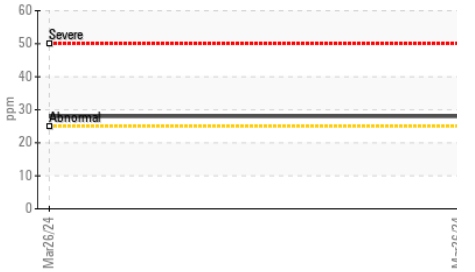
Silicon (ppm)



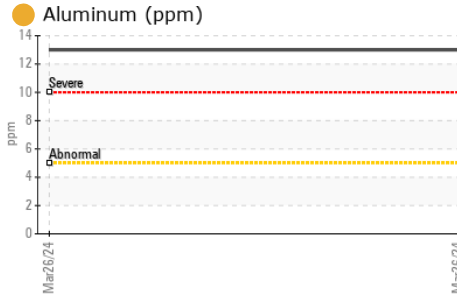
Aluminum (ppm)



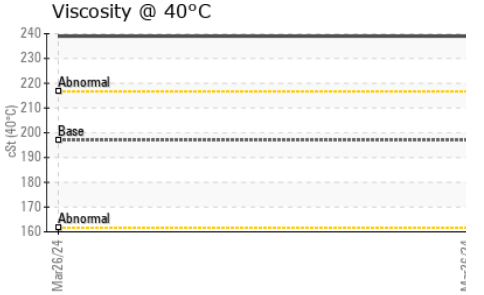
Silicon (ppm)



Aluminum (ppm)



Viscosity @ 40°C

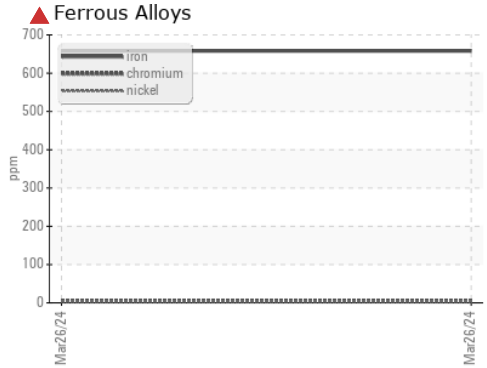


FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	197	**239**	---	---

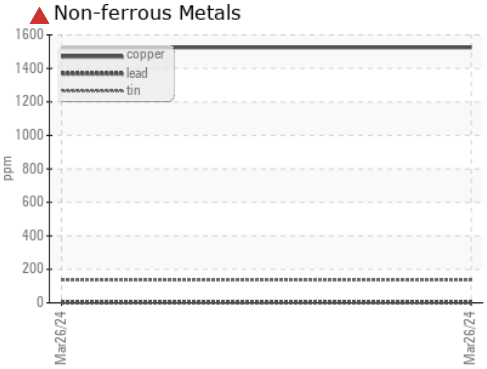
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color			*no image*	*no image*	*no image*
Bottom			*no image*	*no image*	*no image*

GRAPHS

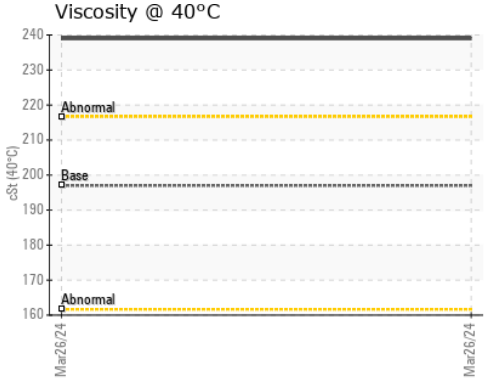
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 40°C



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LM0001412
Lab Number : 06143423
Unique Number : 10968231
Test Package : CONST

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

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)

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