

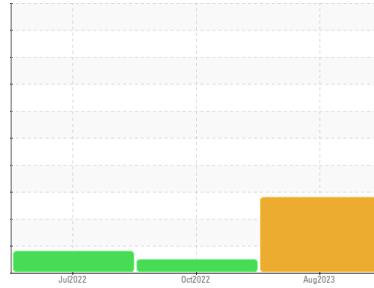


# PROBLEM SUMMARY



Machine Id  
**LIEBHERR LH60 132164**  
 Component  
**Swing Drive**  
 Fluid  
**GEAR OIL LS 80W90 (--- GAL)**

Sample Rating Trend

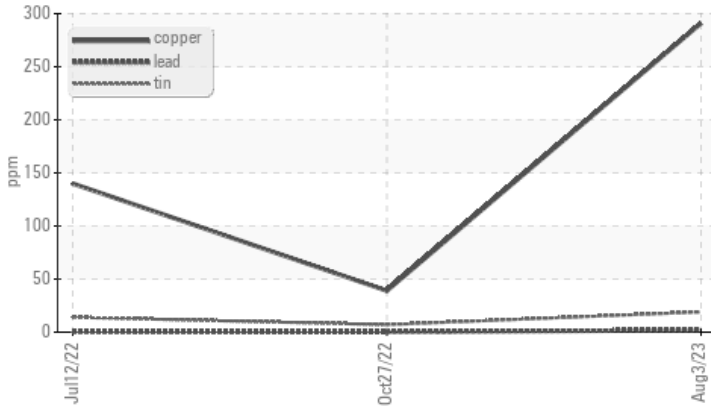


## VISUAL METAL



### COMPONENT CONDITION SUMMARY

#### ▲ Non-ferrous Metals



### RECOMMENDATION

We advise that you inspect for the source(s) of wear.  
 Resample at the next service interval to monitor.

### PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	NORMAL	ABNORMAL
Copper	ppm	ASTM D5185m	>300	▲ <b>291</b>	39	140
Tin	ppm	ASTM D5185m	>15	▲ <b>19</b>	7	14
Yellow Metal	scalar	*Visual	NONE	▲ <b>MODER</b>	MODER	MODER

Customer Id: DAVJACTN  
 Sample No.: DJJ0021041  
 Lab Number: 05922945  
 Test Package: MOBCE



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Sean Felton +1 919-379-4092  
[sfelton@wearcheckusa.com](mailto:sfelton@wearcheckusa.com)

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

## HISTORICAL DIAGNOSIS

**27 Oct 2022 Diag: Don Baldrige**

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

view report



**12 Jul 2022 Diag: Don Baldrige**

WEAR



No corrective action is recommended at this time. Resample at the next service interval to monitor. Gear wear is indicated. All other component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

view report



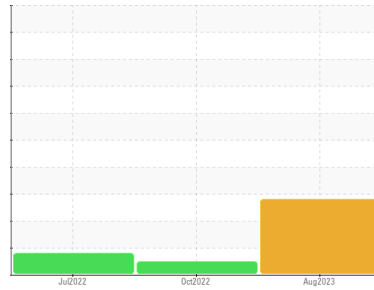


# OIL ANALYSIS REPORT



Machine Id  
**LIEBHERR LH60 132164**  
 Component  
**Swing Drive**  
 Fluid  
**GEAR OIL LS 80W90 (--- GAL)**

Sample Rating Trend



**VISUAL METAL**



## DIAGNOSIS

### ▲ Recommendation

We advise that you inspect for the source(s) of wear. Resample at the next service interval to monitor.

### ▲ Wear

Moderate concentration of visible metal present. Bearing and/or bushing wear is indicated.

### 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		<b>DJJ0021041</b>	DJJ0017449	DJJ0005572
Sample Date	Client Info		<b>03 Aug 2023</b>	27 Oct 2022	12 Jul 2022
Machine Age	hrs	Client Info	<b>5715</b>	2761	1553
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>ABNORMAL</b>	NORMAL	ABNORMAL

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >350	<b>303</b>	168	▲ 658
Chromium	ppm	ASTM D5185m >15	<b>2</b>	<1	4
Nickel	ppm	ASTM D5185m >5	<b>0</b>	0	2
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m >5	<b>&lt;1</b>	<1	2
Lead	ppm	ASTM D5185m >10	<b>2</b>	0	<1
Copper	ppm	ASTM D5185m >300	▲ <b>291</b>	39	140
Tin	ppm	ASTM D5185m >15	▲ <b>19</b>	7	14
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	<1

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 150	<b>5</b>	16	6
Barium	ppm	ASTM D5185m	<b>0</b>	0	6
Molybdenum	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1
Manganese	ppm	ASTM D5185m	<b>3</b>	2	6
Magnesium	ppm	ASTM D5185m 10	<b>4</b>	<1	8
Calcium	ppm	ASTM D5185m 70	<b>16</b>	23	88
Phosphorus	ppm	ASTM D5185m 2000	<b>537</b>	775	2288
Zinc	ppm	ASTM D5185m 50	<b>36</b>	20	42
Sulfur	ppm	ASTM D5185m 20000	<b>22793</b>	29786	30563

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >15	<b>4</b>	2	3
Sodium	ppm	ASTM D5185m	<b>2</b>	2	8
Potassium	ppm	ASTM D5185m >20	<b>&lt;1</b>	0	2

## VISUAL

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

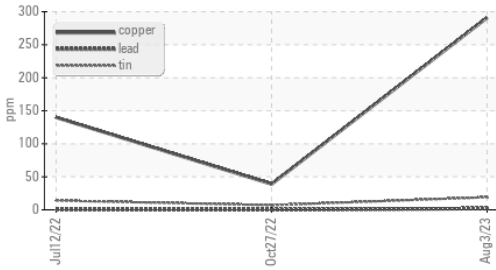
## FLUID PROPERTIES

	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 140	<b>122</b>	137	211



# OIL ANALYSIS REPORT

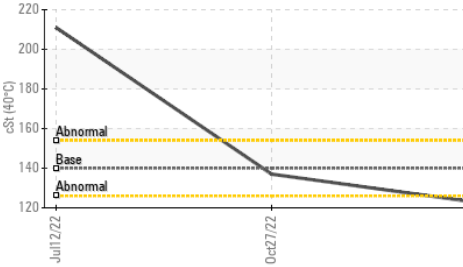
### ▲ Non-ferrous Metals



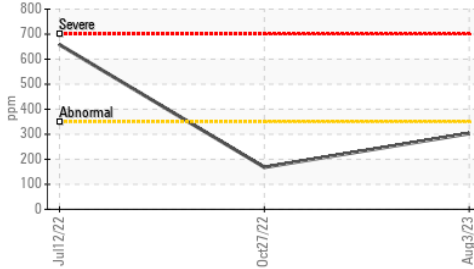
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color			no image	no image	no image
Bottom			no image	no image	no image

### GRAPHS

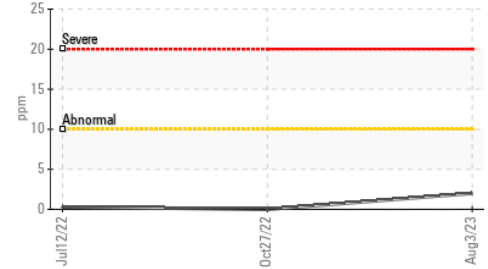
### Viscosity @ 40°C



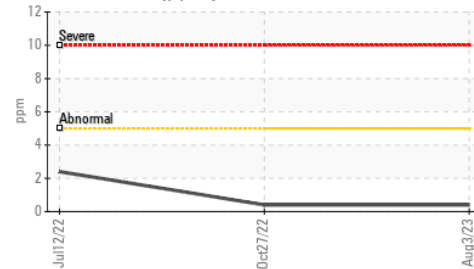
### Iron (ppm)



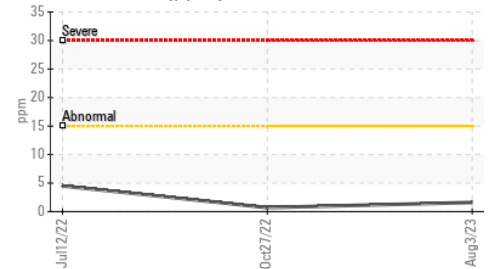
### Lead (ppm)



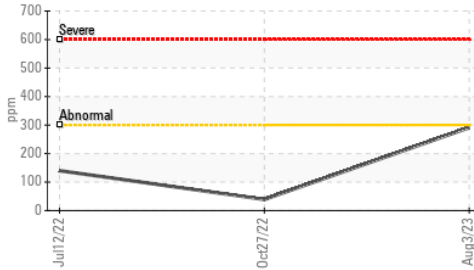
### Aluminum (ppm)



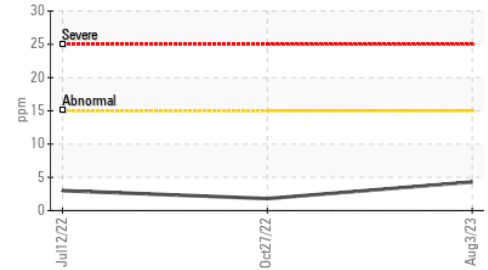
### Chromium (ppm)



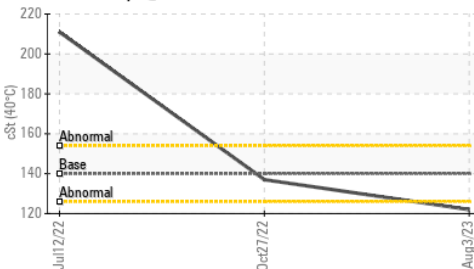
### ▲ Copper (ppm)



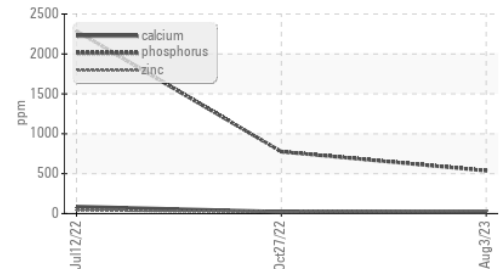
### Silicon (ppm)



### Viscosity @ 40°C



### Additives



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : DJJ0021041 **Received** : 11 Aug 2023  
**Lab Number** : 05922945 **Diagnosed** : 14 Aug 2023  
**Unique Number** : 10602892 **Diagnostician** : Sean Felton  
**Test Package** : MOBCE

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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)