### LIEBHERR

## **OIL ANALYSIS REPORT**

Sample Rating Trend

NORMAL

# LIEBHERR 184-713

Left Swing Drive Fluid GEAR OIL SAE 80W90 (--- 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.

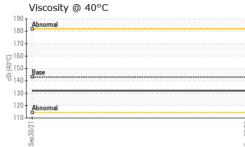
#### Fluid Condition

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

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		LH0200475		
Sample Date		Client Info		30 Sep 2021		
Machine Age	hrs	Client Info		8339		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>400	83		
Chromium	ppm	ASTM D5185m	>10	<1		
Nickel	ppm	ASTM D5185m		0		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m		0		
Aluminum	ppm	ASTM D5185m	>25	0		
Lead	ppm	ASTM D5185m	>50	0		
Copper	ppm	ASTM D5185m	>200	3		
Tin	ppm	ASTM D5185m	>10	0		
Antimony	ppm	ASTM D5185m		0		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
	le le		limit/booo		biotoryd	biotory ()
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	400	371		
Barium	ppm	ASTM D5185m	200	0		
Molybdenum	ppm	ASTM D5185m	12	2		
Manganese	ppm	ASTM D5185m		1		
Magnesium	ppm	ASTM D5185m	12	0		
Calcium	ppm	ASTM D5185m	150	71		
Phosphorus	ppm	ASTM D5185m	1650	1545		
Zinc	ppm	ASTM D5185m	125	12		
Sulfur	ppm	ASTM D5185m	22500	17648		
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	10		
Sodium	ppm	ASTM D5185m	>170	4		
Potassium	ppm	ASTM D5185m	>20	0		
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**



		RTIES	method	limit/base	current	history1	history2
	Visc @ 40°C	cSt	ASTM D445	143	132		
	SAMPLE IMAGE	ES	method	limit/base	current	history1	history2
	Color				no image	no image	no image
Sep30/21	Bottom				no image	no image	no image
	GRAPHS						
10	Iron (ppm)			20	Lead (ppm)		
8	800 - Severe			15	0 - Severe		
udo	600 - Abnormal			특 10	0-		
4				5	0 - Abnormal		
	0						
	Sep 30/21			Sep30/21	Sep 30/21		
	Aluminum (ppm)	)		3	Chromium (p	opm)	
	60 -			2			
Wdd	40 -			<u>a</u> 1	5		
	20 - Abnormal			1	0 - Abnormal 5 -		
	0 21 0			0/21	0 31 32		
	Sep30/21			Sep30/21	Sep 30/21		
5	Copper (ppm)			14	Severe		
	400 - Severe 300			12	0		
md	200 - Abnormal			u <sup>8</sup> dd 6	0 - Abnormal		
1	100			4	1		
	Sep30/21			Sep30/21	Sep 30/21		
	<sup>₿</sup> Viscosity @ 40°C	2		Set	∂ dditives		
	Abnormal	-		200	calcium	1	
	100			150	sessesses ZINC	us	
cSt (40°C) 1				툍 100			
	120 - Abnormal			50	0		
1	Sep 30/21			Sep30/21-	Sep30/214		

Contact/Location: DON FITZGERALD - LEC0033