

Machine Id LIEBHERR 22558 Component Left Final Drive Fluid AW HYDRAULIC OIL ISO 68 (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

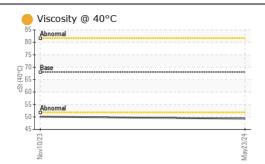
There is no indication of any contamination in the oil.

FLUID CONDITION

The oil viscosity is lower than normal. Confirm oil type.

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Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0924400	WC0810112	
Sample Date		Client Info		23 May 2024	10 Nov 2023	
Machine Age	hrs	Client Info		2111	1152	
Oil Age	hrs	Client Info		2000	1000	
Filter Age	hrs	Client Info		2000	0	
Oil Changed		Client Info		Changed	Not Changd	
Filter Changed		Client Info		Changed	N/A	
Sample Status				ATTENTION	NORMAL	
Iron	ppm	ASTM D5185m	>500	205	160	
Chromium	ppm	ASTM D5185m	>10	3	2	
Nickel		ASTM D5185m	>10	0	<1	
Titanium	ppm	ASTM D5185m	>10	۰ <1	<1	
Silver	ppm					
	ppm	ASTM D5185m	05	0	0	
Aluminum	ppm	ASTM D5185m	>25	11	4	
Lead	ppm	ASTM D5185m	>25	<1	0	
Copper	ppm	ASTM D5185m	>50	1	1	
Tin	ppm	ASTM D5185m	>10	0	0	
Vanadium	ppm	ASTM D5185m		<1	<1	
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Silicon	ppm	ASTM D5185m	>75	36	25	
Potassium	ppm	ASTM D5185m	>20	6	8	
Martan.		WC Method	>0.2	NEG	NEG	
Water		110 111001100				
Silt	scalar	*Visual	NONE	LIGHT	LIGHT	
	scalar scalar		NONE NONE	LIGHT	LIGHT	
Silt		*Visual				
Silt Debris	scalar	*Visual *Visual	NONE	NONE	NONE	
Silt Debris Sand/Dirt	scalar scalar	*Visual *Visual *Visual	NONE	NONE NONE	NONE	
Silt Debris Sand/Dirt Appearance	scalar scalar scalar	*Visual *Visual *Visual *Visual	NONE NONE NORML	NONE NONE NORML	NONE NONE NORML	
Silt Debris Sand/Dirt Appearance Odor Emulsified Water	scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual	NONE NORML NORML	NONE NORML NORML NEG	NONE NORML NORML NEG	
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	scalar scalar scalar scalar scalar ppm	*Visual *Visual *Visual *Visual *Visual ASTM D5185m	NONE NORML NORML >0.2	NONE NORML NORML NEG 4	NONE NORML NORML NEG 0	
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	scalar scalar scalar scalar scalar ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	NONE NORML NORML >0.2	NONE NORML NORML NEG 4 <1	NONE NORML NORML NEG 0 0	
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	scalar scalar scalar scalar scalar ppm ppm	*Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	NONE NORML NORML >0.2 5 5	NONE NORML NORML NEG 4 <1 0	NONE NORML NORML NEG 0 0 5	
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	scalar scalar scalar scalar scalar ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORML NORML >0.2	NONE NORML NORML NEG 4 <1 0 2	NONE NORML NORML NEG 0 0 5 2	
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	scalar scalar scalar scalar ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORML NORML >0.2 5 5 5	NONE NORML NORML NEG 4 <1 0 2 4	NONE NORML NORML NEG 0 0 5 2 3	
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese Magnesium	scalar scalar scalar scalar ppm ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORML NORML >0.2 5 5 5 5 25	NONE NORML NORML NEG 4 <1 0 2 4 83	NONE NORML NORML NEG 0 0 5 2 2 3 87	
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORML NORML >0.2 5 5 5 5 2 2 0 0	NONE NORML NORML NEG 4 <1 0 2 4 83 2755	NONE NORML NORML NEG 0 0 5 2 3 87 2986	
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORML NORML >0.2 5 5 5 5 2 2 0 0 300	NONE NORML NORML NEG 4 <1 0 2 4 83 2755 940	NONE NORML NORML NEG 0 0 0 5 2 3 87 2986 1023	
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Barium Molybdenum Manganese Magnesium Calcium Phosphorus	scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORML NORML >0.2 5 5 5 5 5 2 2 0 0 300 3 70	NONE NORML NORML NEG 4 <1 0 2 4 83 2755 940 1094	NONE NORML NORML NEG 0 0 5 2 3 87 2986 1023 1167	
Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese Magnesium Calcium	scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	*Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	NONE NORML NORML >0.2 5 5 5 5 2 2 0 0 300	NONE NORML NORML NEG 4 <1 0 2 4 83 2755 940	NONE NORML NORML NEG 0 0 0 5 2 3 87 2986 1023	

Contact/Location: CHRIS CALTON - MSCDURLH



Ferrous Alloys 220 200 180 160 140 120 mdd 100 80 40 20 0 Mav23/24 Non-ferrous Metals 10 • lead mdo Viscosity @ 40°C 82 80 78 76 74 72 70 (+0°C) 99 (40°C) 충 ₆₄ 62 60 58 56 54 52 Abnorma 50 48 Nov10/23 Aav73/74

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : WC0924400 Received : 30 May 2024 Lab Number : 06196057 Tested : 02 Jun 2024 Unique Number : 11058180 Diagnosed : 02 Jun 2024 - Don Baldridge Test Package : CONST

SULLIVAN EASTERN INC-LIEBHERR 2860 C SLATER RD MORRISVILLE, NC US 27560 Contact: CHRIS CALTON

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.

T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (919)484-2136

Certificate L2367

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Laboratory

Contact/Location: CHRIS CALTON - MSCDURLH Page 2 of 2