

CORROSION N CONTAMINANTS S COOLANT CONDITION AB

NORMAL SEVERE

ABNORMAL

Area Mac LI Con Cc Fluit

[593756] Machine Id LIEBHERR HS8100HD 184996

Component Coolant Fluid

EXTENDED LIFE COOLANT (--- GAL)

RECOMMENDATION

Clean cooling system with an acid-based cleaner according to directions, and flush with water afterwards thoroughly. Refill with 50/50 premix of manufacturer recommended coolant. Resample in 30 days.

CORROSION

All metal levels are normal indicating no corrosion in the cooling system.

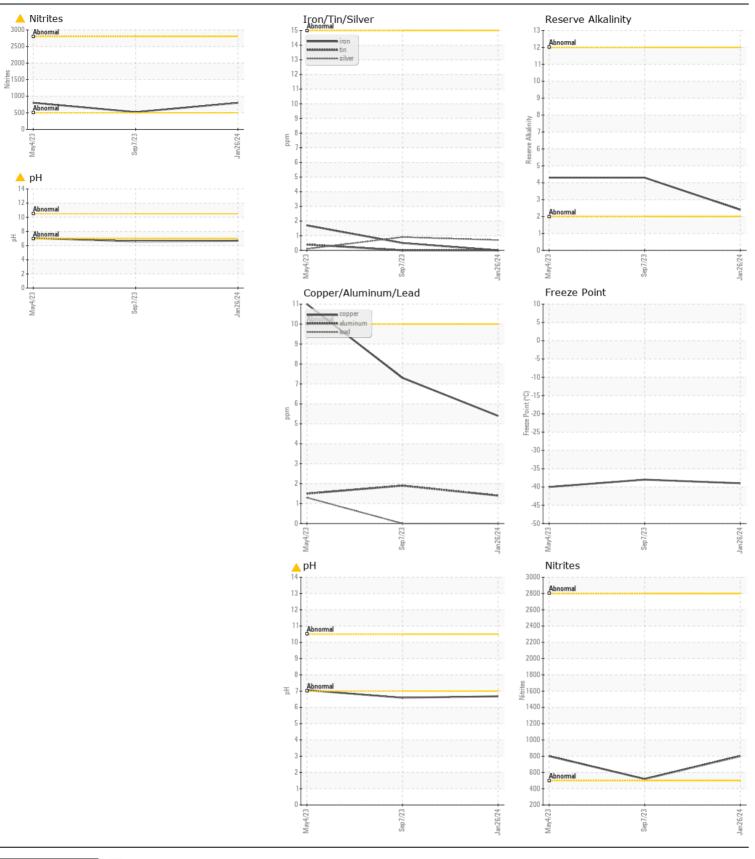
CONTAMINANTS

Hardness is critically elevated. Elevated hardness can allow scale formation that will reduce cooling system effectiveness.

COOLANT CONDITION

The coolant is cloudy indicating either an overconcentration of coolant additives, or a mixing of incompatible coolant technologies. The nitrite level is acceptable. The pH is low which causes rust formation. The reserve alkalinity of this fluid is acceptable.

GAL)						
Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0284985	LH0270413	LH0261255
Sample Date		Client Info		26 Jan 2024	07 Sep 2023	04 May 2023
Machine Age	hrs	Client Info		12043	11071	10190
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	Not Changd
Sample Status				SEVERE	SEVERE	SEVERE
Iron	ppm	ASTM D5185(m)	>15	0	<1	2
Aluminum	ppm	ASTM D5185(m)	>10	1	2	2
Copper	ppm	ASTM D5185(m)	>10	5	7	1 1
Lead	ppm	ASTM D5185(m)	>10	0	0	1
Tin	ppm	ASTM D5185(m)	>10	0	0	<1
Silver	ppm	ASTM D5185(m)	>10	<1	<1	<1
Zinc	ppm	ASTM D5185(m)	>10	6	6	8
Calcium	ppm	ASTM D5185(m)	>100	49	47	50
Magnesium	ppm	ASTM D5185(m)	>40	14	16	24
Magnesium Appearance	ppm scalar	ASTM D5185(m) Visual*	>40 NORML	14 NORML	16 NORML	24 NORML
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Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Appearance Odor	scalar	Visual* Visual*	NORML	NORML NORML	NORML NORML	NORML
Appearance Odor Coolant Appearance	scalar	Visual* Visual* Visual*	NORML	NORML NORML Clear	NORML NORML Cloudy	NORML NORML Clear
Appearance Odor Coolant Appearance Specific Gravity	scalar scalar	Visual* Visual* Visual* ASTM D1298*	NORML NORML Clear	NORML NORML Clear 1.069	NORML NORML Cloudy 1.069	NORML NORML Clear 1.070
Appearance Odor Coolant Appearance Specific Gravity pH	scalar scalar Scale 0-14	Visual* Visual* Visual* ASTM D1298* ASTM D1287*	NORML NORML Clear	NORML NORML Clear 1.069 • 6.68	NORML NORML Cloudy 1.069 • 6.59	NORML NORML Clear 1.070 7.06
Appearance Odor Coolant Appearance Specific Gravity pH Nitrites	scalar scalar Scale 0-14 ppm	Visual* Visual* Visual* ASTM D1298* ASTM D1287* Alcan Test Kit*	NORML NORML Clear	NORML NORML Clear 1.069 6.68 800	NORML NORML Cloudy 1.069 ▲ 6.59 520	NORML NORML Clear 1.070 7.06 800
Appearance Odor Coolant Appearance Specific Gravity pH Nitrites Reserve Alkalinity	scalar scalar Scale 0-14 ppm Scale 0-20	Visual* Visual* Visual* ASTM D1298* ASTM D1287* Alcan Test Kit* ASTM D1121*	NORML NORML Clear 9.0	NORML NORML Clear 1.069 6.68 800 2.4	NORML NORML Cloudy 1.069 6.59 520 4.3	NORML NORML Clear 1.070 7.06 800 4.3
Appearance Odor Coolant Appearance Specific Gravity pH Nitrites Reserve Alkalinity Percentage Glycol	scalar scalar Scale 0-14 ppm Scale 0-20 %	Visual* Visual* Visual* ASTM D1298* ASTM D1287* Alcan Test Kit* ASTM D1121* ASTM D3321*	NORML NORML Clear 9.0	NORML NORML Clear 1.069 6.68 800 2.4 51.9	NORML NORML Cloudy 1.069 6.59 520 4.3 51.7	NORML NORML Clear 1.070 7.06 800 4.3 52.1
Appearance Odor Coolant Appearance Specific Gravity pH Nitrites Reserve Alkalinity Percentage Glycol Freezing Point	scalar scalar Scale 0-14 ppm Scale 0-20 %	Visual* Visual* Visual* ASTM D1298* ASTM D1287* Alcan Test Kit* ASTM D1121* ASTM D3321*	NORML NORML Clear 9.0	NORML NORML Clear 1.069 6.68 800 2.4 51.9 -39	NORML NORML Cloudy 1.069 ▲ 6.59 520 4.3 51.7 -38	NORML NORML Clear 1.070 7.06 800 4.3 52.1 -40
Appearance Odor Coolant Appearance Specific Gravity pH Nitrites Reserve Alkalinity Percentage Glycol Freezing Point Carboxylate	scalar scalar Scale 0-14 ppm Scale 0-20 % °C	Visual* Visual* ASTM D1298* ASTM D1287* Alcan Test Kit* ASTM D1121* ASTM D3321*	NORML NORML Clear 9.0	NORML NORML Clear 1.069 6.68 800 2.4 51.9 -39	NORML NORML Cloudy 1.069 520 4.3 51.7 -38	NORML NORML Clear 1.070 7.06 800 4.3 52.1 -40
Appearance Odor Coolant Appearance Specific Gravity pH Nitrites Reserve Alkalinity Percentage Glycol Freezing Point Carboxylate Silicon	scalar scalar Scale 0-14 ppm Scale 0-20 % °C	Visual* Visual* Visual* ASTM D1298* ASTM D1287* Alcan Test Kit* ASTM D1121* ASTM D3321* ASTM D3321*	NORML NORML Clear 9.0	NORML NORML Clear 1.069 6.68 800 2.4 51.9 -39 -39 -12	NORML NORML Cloudy 1.069 6.59 520 4.3 51.7 -38 -38 15	NORML NORML Clear 1.070 7.06 800 4.3 52.1 52.1 -40 21
Appearance Odor Coolant Appearance Specific Gravity pH Nitrites Reserve Alkalinity Percentage Glycol Freezing Point Carboxylate Silicon Phosphorus	scalar scalar Scale 0-14 ppm Scale 0-20 % °C ppm	Visual* Visual* Visual* ASTM D1298* ASTM D1287* Alcan Test Kit* ASTM D1121* ASTM D3321* ASTM D3321* ASTM D3321*	NORML NORML Clear 9.0	NORML NORML Clear 1.069 6.68 800 2.4 51.9 -39 12 9	NORML NORML Cloudy 1.069 520 4.3 51.7 -38 15 11	NORML NORML Clear 1.070 7.06 800 4.3 52.1 -40 21 10
Appearance Odor Coolant Appearance Specific Gravity pH Nitrites Reserve Alkalinity Percentage Glycol Freezing Point Carboxylate Silicon Phosphorus Boron	scalar scalar Scale 0-14 ppm Scale 0-20 % °C ppm ppm ppm	Visual* Visual* Visual* ASTM D1298* ASTM D1287* Alcan Test Kit* ASTM D1121* ASTM D3321* ASTM D3321* ASTM D5185(m) ASTM D5185(m)	NORML NORML Clear 9.0	NORML NORML Clear 1.069 6.68 800 2.4 51.9 -39 12 9 16	NORML NORML Cloudy 1.069 6.59 520 4.3 51.7 -38 51.7 -38 15 11 20	NORML NORML Clear 1.070 7.06 800 4.3 52.1 4.3 52.1 21 10 27
Appearance Odor Coolant Appearance Specific Gravity pH Nitrites Reserve Alkalinity Percentage Glycol Freezing Point Carboxylate Silicon Phosphorus Boron Molybdenum	scalar scalar Scale 0-14 ppm Scale 0-20 % °C ppm ppm ppm ppm	Visual* Visual* Visual* ASTM D1298* ASTM D1287* Alcan Test Kit* ASTM D1121* ASTM D3321* ASTM D3321* ASTM D3321* ASTM D5185(m) ASTM D5185(m)	NORML NORML Clear 9.0 50	NORML NORML Clear 1.069 ▲ 6.68 800 2.4 51.9 -39 -39 -12 9 16 33	NORML NORML Cloudy 1.069 520 520 4.3 51.7 51.7 38 51.7 15 11 15 11 20 9	NORML NORML Clear 1.070 7.06 800 4.3 52.1 -40 21 10 27 10



HIGGS & HIGGS Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 CALA 回流 . Sample No. : LH0284985 Received : 05 Mar 2024 RR # 4 Lab Number : 02620048 Tested : 05 Mar 2024 ST THOMAS, ON ISO 17025:2017 Accredited Laboratory Unique Number : 5737158 : 06 Mar 2024 - Kevin Marson CA N5P 3S8 Diagnosed Test Package : COOL (Additional Tests: GlycolType) Contact: Bernie Higgs To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (519)631-4095 Validity of results and interpretation are based on the sample and information as supplied. F: (519)631-2745

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Contact/Location: Bernie Higgs - HIGSTT Page 2 of 2