

Machine Id LIEBI Componen Rear L Fluid

RECOMMENDATION

Resample at the next service interval to monitor.

LIEBHERR LH50M 1203-88008

Component Rear Left Wheel Hub

LIEBHERR GEAR BASIC 90 LS (--- GAL)

WEAR

All component wear rates are normal.

CONTAMINATION

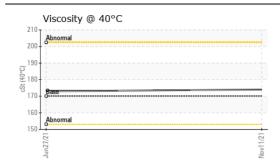
There is no indication of any contamination in the oil.

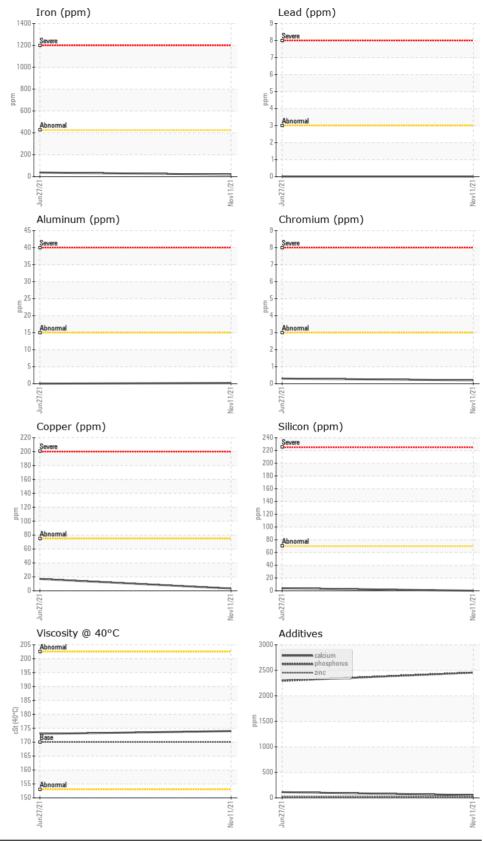
FLUID CONDITION

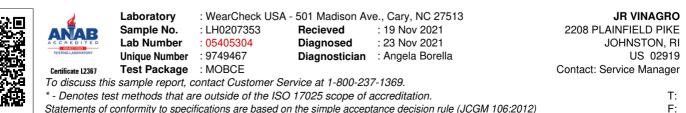
The condition of the oil is acceptable for the time in service.

TestUOMMethodLimit/MCurrentHistory1History2Sample NumberClient InfoIH0207353LH0184637Sample DateClient Info11 Nov 202127 Jun 2021Machine AgehrsClient Info51594041Oil AgehrsClient Info45900Oil ChangedIclient InfoK5900Filter AngehrsClient InfoK14NoneSample StatusClient InfoK14NORMALNORMALIronppmASTM D5185>4251837IchromiumppmASTM D5185>2200NickelppmASTM D5185>2200SilverppmASTM D5185>200JuminumppmASTM D5185>300AuminumppmASTM D5185>300VanadiumppmASTM D5185>300VanadiumppmASTM D5185>70317VanadiumppmASTM D5185>70317VanadiumppmASTM D5185>70<14VanadiumppmASTM D5185>200<VanadiumppmASTM D5185>200<-1Vanadiu	(GAL)						
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Oil AgehrsClient Info4591000Filter AgehrsClient Info4590Oil ChangedClient InfoN/ANoneFilter ChangedMClient InfoN/ANoneSample StatusVClient InfoN/ANoneIronppmASTM D518s54251837ChromiumppmASTM D518s5200NickelppmASTM D518s5200SilverppmASTM D518s51<1<1AluminumppmASTM D518s5300LeadppmASTM D518s5300VanduimppmASTM D518s5300VanduimppmASTM D518s5300ValduimuppmASTM D518s5300ValduimuppmASTM D518s5300ValduimuppmASTM D518s5300ValduimuppmASTM D518s5300SiliconppmASTM D518s500SiliconppmASTM D518s500<SiliconppmASTM D518s52NORENORESiliconppmASTM D518s500	Sample Date		Client Info		11 Nov 2021	27 Jun 2021	
Filter Age Oli Changedr.sClient Info4590Oil ChangedClient InfoN/ANoneFilter ChangedClient InfoN/ANoneSample StatusVNORMALNORMALIronppmASTM D5185m>42.51837ChromiumppmASTM D5185m>200NickelppmASTM D5185m>200SilverppmASTM D5185m>200AluminumppmASTM D5185m>15<10LeadppmASTM D5185m>300CopperppmASTM D5185m>300VanadiumppmASTM D5185m>300Vellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185m>70<14Yellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185m>200<1SiliconppmASTM D5185m>70<14Yellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185m>200<1SoliconppmASTM D5185m>20NORENONESilicon <th>Machine Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>5159</th> <th>4041</th> <th></th>	Machine Age	hrs	Client Info		5159	4041	
Oil ChangedClient InfoChangedChangedFilter Changed(Client InfoN/ANoneSample StatusNORMALNORMALIronppmASTM D5185n>4251837ChromiumppmASTM D5185n>2400NickelppmASTM D5185n>200SilverppmASTM D5185n>200AluminumppmASTM D5185n>300LeadppmASTM D5185n>300CopperppmASTM D5185n>300YanadiumppmASTM D5185n>300Yellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185n>70C4Yellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185n>70C4Siliconscalar'VisualNONENONENONESiliconppmASTM D5185n>70C1SiliconppmASTM D5185n>70CNONESiliconppmASTM D5185n>70C1SoliconppmASTM D5185n>70C1SoliconppmASTM D5	Oil Age	hrs	Client Info		459	1000	
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Sample Status NORMAL NORMAL Iron ppm ASTM D5185m >-425 18 37 Chromium ppm ASTM D5185m >-2 0 0 Nickel ppm ASTM D5185m >-2 0 0 Titanium ppm ASTM D5185m >2 0 0 Silver ppm ASTM D5185m >15 <1 0 Aluminum ppm ASTM D5185m >3 0 0 Lead ppm ASTM D5185m >3 0 0 Vanaduium ppm ASTM D5185m >3 0 0 Yellow Metal scalar 'Visual NONE NONE NONE Yellow Metal scalar 'Visual NONE NONE Silicon ppm ASTM D5185m >20 0 <1 <t< th=""><th>Oil Changed</th><th></th><th>Client Info</th><th></th><th>Changed</th><th>Changed</th><th></th></t<>	Oil Changed		Client Info		Changed	Changed	
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Chromium ppm ASTM D5185m >2 0 <1	Sample Status				NORMAL	NORMAL	
Chromium ppm ASTM D5185m >2 0 <1				405	40	07	
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TitaniumppmASTM D5185m00SilverppmASTM D5185m>15<1<1AluminumppmASTM D5185m>15<10LeadppmASTM D5185m>300CopperppmASTM D5185m>300TinppmASTM D5185m>300VanadiumppmASTM D5185m>300White Metalscalar*VisualNONENONEVLITEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>70<14PotassiumppmASTM D5185m>200<1WaterWC Method>0.2NEGNEGSilitscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMNORMLNORMLGodrscalar*VisualNORNORMNORMLMappearancescalar*VisualNORNORMLNORMLGodrscalar*VisualNORNORMLNORMLMappearancescalar*VisualNORNORMLNORMLManusified Waterscalar*VisualNOR <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
SilverppmASTM D5185m<1				>2	-		
Aluminum ppm ASTM D5185m >15 <1						-	
Lead ppm ASTM D5185m >3 0 0 Copper ppm ASTM D5185m >75 3 17 Tin ppm ASTM D5185m >3 0 0 Vanadium ppm ASTM D5185m >3 0 0 White Metal scalar *Visual NONE NONE VLITE Yellow Metal scalar *Visual NONE NONE NONE Silicon ppm ASTM D5185m >70 <1 4 Vater WC Method >0.2 NEG NEG Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NORE Appearance scalar *Visual NORH NORML NORML Sodium ppm ASTM D5185m 0							
Copper ppm ASTM D5185m >75 3 17 Tin ppm ASTM D5185m >3 0 0 Vanadium ppm ASTM D5185m >3 0 0 White Metal scalar *Visual NONE NONE VLITE Yellow Metal scalar *Visual NONE NONE NONE Silicon ppm ASTM D5185m >70 <1 4 Potassium ppm ASTM D5185m >20 0 <1 Water WC Method >0.2 NEG NEG Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NORML NORML Appearance scalar *Visual NORML NORML NORML Godium ppm ASTM D5185m 0		ppm					
TinppmASTM D5185m>300VanadiumppmASTM D5185mC00White Metalscalar*VisualNONENONEVLITEYellow Metalscalar*VisualNONENONENONENONESiliconppmASTM D5185m>70<14PotassiumppmASTM D5185m>200<1WaterWC Method>0.2NEGNEGSilitscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONEAppearancescalar*VisualNORHNORMLNORMLAppearancescalar*VisualNORNORMLNORMLSodiumppmASTM D5185m02925BariumppmASTM D5185m0<11MaganeseppmASTM D5185m0<11MagnesiumppmASTM D5185m0<1<1PhosphorusppmASTM D5185m<124542294SulfurppmASTM D5185m2143245422436		ppm			-		
Vanadium ppm ASTM D5185m 0 0 White Metal scalar *Visual NONE NONE VLITE Yellow Metal scalar *Visual NONE NONE NONE NONE Silicon ppm ASTM D5185m >70 <1 4 Potassium ppm ASTM D5185m >20 0 <1 Water WC Method >0.2 NEG NEG Debris scalar *Visual NONE NONE NONE Appearance scalar *Visual NOR NORML NORML Appearance scalar *Visual NOR NORML NORML Godor scalar *Visual NORML NORML NORML Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m	Copper	ppm	ASTM D5185m	>75	3	17	
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Yellow Metal scalar *Visual NONE NONE NONE NONE Silicon ppm ASTM D5185m >70 <1 4 Potassium ppm ASTM D5185m >20 0 <1 4 Water WC Method >0.2 NEG NEG Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NONE NORE NOREL Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Boron ppm ASTM D5185m 0 29 25 Barium ppm ASTM D5185m 0 <11 Malganese ppm	Vanadium	ppm	ASTM D5185m		0	0	
SiliconppmASTM D5185m>70<1	White Metal	scalar	*Visual	NONE	-	VLITE	
PotassiumppmASTM D5185m>200<1	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m02925BoronppmASTM D5185m000MolybdenumppmASTM D5185m0<11MagnesiumppmASTM D5185m<1<1<PhosphorusppmASTM D5185m<1424542294ZincppmASTM D5185m<14245422436SulfurppmASTM D5185m2143245622436	Silicon	ppm	ASTM D5185m	>70	<1	4	
Siltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m02925BoronppmASTM D5185m000MolybdenumppmASTM D5185m0<11ManganeseppmASTM D5185m<1<11CalciumppmASTM D5185m<1<11PhosphorusppmASTM D5185m<1<242294ZincppmASTM D5185m<1424422436	Potassium	ppm	ASTM D5185m	>20	0	<1	
Debrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m02925BoronppmASTM D5185m000MolybdenumppmASTM D5185m0<11MagnesiumppmASTM D5185m0<11MagnesiumppmASTM D5185m<1<11PhosphorusppmASTM D5185m<1424542294ZincppmASTM D5185m<14245422436	Water		WC Method	>0.2	NEG	NEG	
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Odorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m1314BoronppmASTM D5185m02925BariumppmASTM D5185m000MolybdenumppmASTM D5185m0<111ManganeseppmASTM D5185m0<11<11MagnesiumppmASTM D5185m<1<1<1PhosphorusppmASTM D5185m<154112PhosphorusppmASTM D5185m<1242294SulfurppmASTM D5185m<34682505622436	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Emulsified Water scalar *Visual >0.2 NEG NEG Sodium ppm ASTM D5185m 13 14 Boron ppm ASTM D5185m 0 29 25 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 <11 Manganese ppm ASTM D5185m 0 <11 Magnesium ppm ASTM D5185m 0 <11 Calcium ppm ASTM D5185m <1 <1 Phosphorus ppm ASTM D5185m <1 <1 Zinc ppm ASTM D5185m <14 2454 2294 Sulfur ppm ASTM D5185m <1 24 22	Appearance	scalar	*Visual	NORML	NORML	NORML	
Sodium ppm ASTM D5185m 13 14 Boron ppm ASTM D5185m 0 29 25 Barium ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 1 Manganese ppm ASTM D5185m 0 <1 <1 Magnesium ppm ASTM D5185m <1 <1 <1 Calcium ppm ASTM D5185m <1 <11 <1 Phosphorus ppm ASTM D5185m <1 <11 <1 Zinc ppm ASTM D5185m <143 2454 2294 Sulfur ppm ASTM D5185m <1 24 22	Odor	scalar	*Visual	NORML	NORML	NORML	
Boron ppm ASTM D5185m 0 29 25 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 C 1 1 Manganese ppm ASTM D5185m 0 <1 1 Magnesium ppm ASTM D5185m 0 <1 <1 Calcium ppm ASTM D5185m <1 <1 Phosphorus ppm ASTM D5185m <1 <1 Zinc ppm ASTM D5185m <1 2454 2294 Sulfur ppm ASTM D5185m <1 24 22	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Boron ppm ASTM D5185m 0 29 25 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 1 Manganese ppm ASTM D5185m 0 <1 1 Magnesium ppm ASTM D5185m 0 <1 <1 Calcium ppm ASTM D5185m <1 <1 <1 Phosphorus ppm ASTM D5185m <1 <1 <1 Zinc ppm ASTM D5185m <1 <24 2294 Sulfur ppm ASTM D5185m <1 24 22	Sodium	ppm	ASTM D5185m		13	14	
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 <1	Boron		ASTM D5185m	0	29	25	
Manganese ppm ASTM D5185m 0 <1	Barium		ASTM D5185m	0	0	0	
Magnesium ppm ASTM D5185m <1	Molybdenum	ppm	ASTM D5185m	0	<1	1	
Calcium ppm ASTM D5185m <1	Manganese	ppm	ASTM D5185m	0	<1	<1	
Calcium ppm ASTM D5185m <1	Magnesium			<1	<1	<1	
Phosphorus ppm ASTM D5185m 2143 2454 2294 Zinc ppm ASTM D5185m <1	Calcium		ASTM D5185m	<1	54	112	
Zinc ppm ASTM D5185m <1	Phosphorus		ASTM D5185m	2143	2454	2294	
Sulfur ppm ASTM D5185m 23468 25056 22436							
	•		ASTM D5185m	<1	24	22	
	Zinc	ppm					

Submitted By: MIKE MACKINNON







Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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Page 2 of 2