

Machine Id LIEBHI Component Rear Le

## LIEBHERR LH50M 1203-88008

Component Rear Left Wheel Hub

LIEBHERR GEAR BASIC 90 LS (--- GAL)

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RECOMMENDATION	
Resample at the next service interval	to monitor.

## WEAR

All component wear rates are normal.

## CONTAMINATION

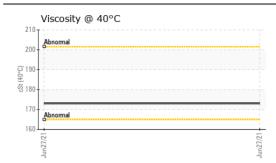
There is no indication of any contamination in the oil.

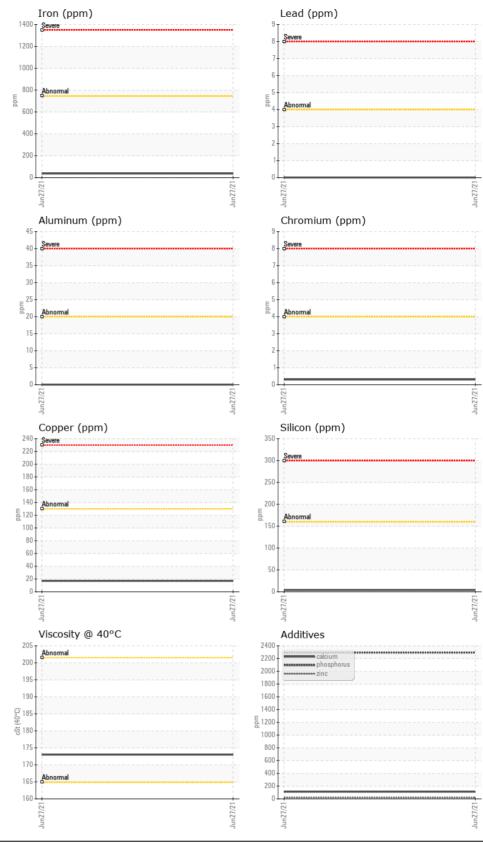
## FLUID CONDITION

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

TestUOMMethodLimit/ACurrentHistory1History1Sample NumberCClient InfoZ7 Jun 2021Sample DateClient InfoZ7 Jun 2021Machine AgehrsClient InfoI000Oil AgehrsClient InfoI000Filter AgehrsClient InfoChangedSample StatusClient InfoKoreTronpmASTM D5185>74537ChromiumpmASTM D5185>220NickelpmASTM D5185>220SilverpmASTM D5185>220SilverpmASTM D5185>220SilverpmASTM D5185>220AuminumpmASTM D5185>220SilverpmASTM D5185>200CopperpmASTM D5185>1001YanadiumpmASTM D5185>1001YanadiumpmASTM D5185>1001YanadiumpmASTM D5185>1001YanadiumpmASTM D5185>20c1YanadiumpmASTM D5185>20<							
Sample DateClient InfoZ Jun 2021	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine AgehrsClient Info4041Oil AgehrsClient Info0Filter AgehrsClient InfoNoneOil ChangedClient InfoNoneFilter ChangedClient InfoNoneSample StatusClient InfoNoneTronppASTM D5185m>74537ChromiumppASTM D5185m>20NickelppASTM D5185m>20NickelppASTM D5185m>2AluminumppASTM D5185m>20AluminumppASTM D5185m>10CopperpmASTM D5185m>30VanadiumppASTM D5185m>30VanadiumppASTM D5185m>30VanadiumppASTM D5185m>160AVanadiumppASTM D5185m>160ASiliconppASTM D5185m>10SiliconppASTM D5185m>160ASiliconppASTM D5185m>20<1SiliconppASTM D5185m>20<1Siliconpp<	Sample Number		Client Info		LH0184637		
Oil Age Filter AgeIriseClient InfoIo00Filter AgeIriseClient InfoOGil ChangedClient InfoNoneSample StatusNORMALIronppmASTM D5185>74537ChromiumppmASTM D5185>244<1NickelppmASTM D5185>220SilverppmASTM D5185>22<1AluminumppmASTM D5185>200LeadppmASTM D5185>200CopperppmASTM D5185>200VandaiumppmASTM D5185>200VandaiumppmASTM D5185>13017ValdauppmASTM D5185>130160ValdauppmASTM D5185>1604SiliconppmASTM D5185>160ASTM D5185SiliconppmASTM D5185>20ASTM D5185SiliconppmASTM D5185>20ASTM D5185SiliconppmASTM D5185>20ASTM D5185SoliconppmASTM D5185>2	Sample Date		Client Info		27 Jun 2021		
Filter Age Oil ChangedhrsClient InfoOnnnGlient InfoChangednnnnnFilter ChangedQClient InfoNonennnSample StatusNoremNORMALnnnIronppmASTM D5185n>74537nIronppmASTM D5185n>2441nNickelppmASTM D5185n>20nnNickelppmASTM D5185n>211nnSilverppmASTM D5185n>211nnLeadppmASTM D5185n>3011nLeadppmASTM D5185n>3011nVanadiumppmASTM D5185n>3011nVanadiumppmASTM D5185n>101111Valdedscalar'VisualNONE1111Valdedscalar'VisualNONENONE111Valdedscalar'VisualNONENONE111Valdedscalar'VisualNONENONE111Valdedscalar'VisualNONENONE111Siliconscalar'VisualNORMNORM111<	Machine Age	hrs	Client Info		4041		
Oli ChangedCilent InfoChangedFilter ChangedCilent InfoNoneSample StatusVNorRMALIronppmASTM D5185>74537ChomiumppmASTM D5185>74537NickelppmASTM D5185>7404NickelppmASTM D5185>20SilverppmASTM D5185>21AluminumppmASTM D5185>40LeadppmASTM D5185>30CopperppmASTM D5185>30VanadiumppmASTM D5185>30VanadiumppmASTM D5185>101ValdervisualNONENONEValdervisualNONENONEValdervisualNONENONESiliconpmASTM D5185>1604ValdervisualNONENONESiliconpmASTM D5185>1604SiliconpmASTM D5185>1604Siliconscalar'visualNONESiliconscalar'visualNONESiliconscalar'	Oil Age	hrs	Client Info		1000		
Filter Changed Sample StatusClient IntoNoneSample StatusClient IntoNOREMALIronppmASTM D5185m574537IronppmASTM D5185m520NickelppmASTM D5185m-2-0NickelppmASTM D5185m-220SilverppmASTM D5185m-2-1AluminumppmASTM D5185m-2-0LeadppmASTM D5185m-2-0CopperppmASTM D5185m-3-00TinppmASTM D5185m-3-00VanadiumppmASTM D5185m-5-00VisualNONENONESiliconppmASTM D5185m>1604VaterVisualNONENONESiliconppmASTM D5185m>20<-1SiliconppmASTM D5185m>20<-1SiliconppmASTM D5185m>20<-1SiliconppmASTM D5185m>20<-1SiliconppmASTM D5185m>20<-1SiliconppmASTM D5185m>20<-1SoliconppmASTM D5185m>20<-1Soliconppm	Filter Age	hrs	Client Info		0		
Sample StatusNORMALIronppmASTM D5185m>74537ChromiumppmASTM D5185m>20NickelppmASTM D5185m>20TitaniumppmASTM D5185m>2<1SilverppmASTM D5185m>2<1AluminumppmASTM D5185m>2<1LeadppmASTM D5185m>20CopperppmASTM D5185m>30VanadiumppmASTM D5185m>30VanadiumppmASTM D5185m>1604Vellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>1604SiliconppmASTM D5185m>20<1SiliconppmASTM D5185m>20<1Silitonscalar*VisualNONENONESilitonscalar*VisualNORENONESolidumscalar*VisualNORENORE	Oil Changed		Client Info		Changed		
IronppmASTM D5185m>74.5 <b>37</b> ChromiumppmASTM D5185m>4<1NickelppmASTM D5185m>20TitaniumppmASTM D5185m>2<1SilverppmASTM D5185m>2<1AluminumppmASTM D5185m>2000LeadppmASTM D5185m>40CopperppmASTM D5185m>10017TinppmASTM D5185m>30VanadiumppmASTM D5185m>30Yellow Metalscalar*VisualNONEVLITESiliconppmASTM D5185m>1604Yellow Metalscalar*VisualNONENORESiliconppmASTM D5185m>1604SiliconppmASTM D5185m>20<1Siliconscalar*VisualNONENORESoliconppmASTM D5185m>20<1Siliconscalar*VisualNORENORESoliconscalar*VisualNORENORESolicon <th>Filter Changed</th> <th></th> <th>Client Info</th> <th></th> <th>None</th> <th></th> <th></th>	Filter Changed		Client Info		None		
ChromiumppmASTM D5185m>4<1	Sample Status				NORMAL		
ChromiumppmASTM D5185m>4<1							
NickelppmASTM D5185m>20TitaniumppmASTM D5185m>2SilverppmASTM D5185m>200AluminumppmASTM D5185m>200LeadppmASTM D5185m>40CopperppmASTM D5185m>130177TinppmASTM D5185m>30VanadiumppmASTM D5185m>30White Metalscalar'VisualNONEVLITEYellow Metalscalar'VisualNONE4SiliconppmASTM D5185m>1604WatervisualNONENONESiliconppmASTM D5185m>1604SiliconppmASTM D5185m>20Siliconscalar'VisualNONESiliconscalar'VisualNONEIncrSolar/ Otriscalar'VisualNONEIncrSolar/ Diftscalar'VisualNOREIncrSolar/ Diftscalar'VisualNOREIncrSolar'VisualNOREIncrSolarScalar'VisualNOREIncrSolarppmASTM D5185mIncr <th>-</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	-						
TitaniumppmASTM D5185m0SilverppmASTM D5185m>200AluminumppmASTM D5185m>200LeadppmASTM D5185m>40CopperppmASTM D5185m>30177TinppmASTM D5185m>300VanadiumppmASTM D5185m>300White Metalscalar*VisualNONEVLITEYellow Metalscalar*VisualNONE44SiliconppmASTM D5185m>1604WaterWC Method>0.2NEGSilitscalar*VisualNONENONESolitscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMNORMSodiumppmASTM D5185m>0BoronppmASTM D5185m14BariumppmASTM D5185m14MolybdenumppmASTM D5185m14ManganeseppmAST		ppm					
Number of the second				>2	-		
AluminumppmASTM D5185m>200LeadppmASTM D5185m>440CopperppmASTM D5185m>13017TinppmASTM D5185m>30VanadiumppmASTM D5185m>30VanadiumppmASTM D5185m>100Vhite Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONEMONESiliconppmASTM D5185m>1604Yellow Metalscalar*VisualNONEMONESiliconscalar*VisualNONENONEYetarWC Method0.2NEGSilitscalar*VisualNONENONEDebrisscalar*VisualNORENONEAppearancescalar*VisualNORESodiumppmASTM D5185m-14BoronppmASTM D5185m-0ManganeseppmASTM D5185m-11MagnesiumppmASTM D5185m-11MagnesiumppmASTM D5185m-112 <th></th> <th></th> <th></th> <th></th> <th>-</th> <th></th> <th></th>					-		
LeadppmASTM D5185m>40CopperppmASTM D5185m>13017TinppmASTM D5185m>30VanadiumppmASTM D5185m>30White Metalscalar*VisualNONEVLITEYellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>1604Yellow Metalscalar*VisualNONEASiliconppmASTM D5185m>20<1Yellow Metalscalar*VisualNONEASiliconppmASTM D5185m>20<1WaterWC Method>0.2NEGSilitscalar*VisualNONENONESand/Dirtscalar*VisualNORMNORMLAppearancescalar*VisualNORMNORMLSodiumppmASTM D5185mI14SodiumppmASTM D5185mI11MolybdenumppmASTM D5185mIMaganeseppmASTM D5185mI112Magnesiumppm <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>							
Coopper         ppm         ASTM D5185m         >130         17             Tin         ppm         ASTM D5185m         >3         0             Vanadium         ppm         ASTM D5185m         >3         0             White Metal         scalar         *Visual         NONE         VLITE             Yellow Metal         scalar         *Visual         NONE         ASTM D5185m         >160         4             Yellow Metal         scalar         *Visual         NONE         ASTM D5185m         >160         4             Silicon         ppm         ASTM D5185m         >160         4             Water         WC Method         >0.2         NEG              Silt         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORM         NORML             Appearance         scalar         *Visual         NORML         NORM		ppm			-		
Tin         ppm         ASTM D5185m         >3         0            Vanadium         ppm         ASTM D5185m         >3         0             White Metal         scalar         *Visual         NONE         VLITE             Yellow Metal         scalar         *Visual         NONE         NONE             Silicon         ppm         ASTM D5185m         >160         4             Potassium         ppm         ASTM D5185m         >160         4             Water         WC Method         >0.2         NEG              Silt         scalar         *Visual         NONE         NONE             Silt         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORM         NORML             Appearance         scalar         *Visual         NORML         NORML                Godr         scalar         *Visu		ppm			-		
VanadiumppmASTM D5185mI0White Metalscalar*VisualNONEVLITEYellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>1604PotassiumppmASTM D5185m>20<1WaterWC Method>0.2NEGSilitscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORNORMLAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLSodiumppmASTM D5185m>0SodiumppmASTM D5185m114BoronppmASTM D5185m11ManganeseppmASTM D5185m<11ManganeseppmASTM D5185m<112PhosphorusppmASTM D5185m<222SuffurppmASTM D5185m<222SodiumppmASTM D5185m<21SodiumppmASTM D5185m<21SodiumppmASTM D5185m<21Manganeseppm<		ppm		>130			
White Metal Yellow Metalscalar*VisualNONEVLITEYellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>1604PotassiumppmASTM D5185m>20<1WaterWC Method>0.2NEGSilitscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLSodiumppmASTM D5185m>0.2NEGBoronppmASTM D5185m2011ManganeseppmASTM D5185mI1ManganeseppmASTM D5185m<<11MangensiumppmASTM D5185m<<11PhosphorusppmASTM D5185m<2294SulfurppmASTM D5185m<22SulfurppmASTM D5185m<2294SulfurppmASTM D5185m22SulfurppmASTM D5185m22<		ppm		>3	-		
Yellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>1604PotassiumppmASTM D5185m>20<1WaterWC Method>0.2NEGSiltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNOREAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLSodiumppmASTM D5185m114BoronppmASTM D5185m0ManganeseppmASTM D5185m11MagnesiumppmASTM D5185mMagnesiumppmASTM D5185mPhosphorusppmASTM D5185mPhosphorusppmASTM D5185mMarganeseppmASTM D5185mPhosphorusppmASTM D5185mPhosphorusppmASTM D5185m		ppm	ASTM D5185m				
SiliconppmASTM D5185m>1604PotassiumppmASTM D5185m>20<1WaterWC Method>0.2NEGSilitscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMNORMLOdorscalar*VisualNORMLNORMLSodiumppmASTM D5185m>0.2NEGBoronppmASTM D5185m-14MalganeseppmASTM D5185m-11ManganeseppmASTM D5185mMangensiumppmASTM D5185mMangensiumppmASTM D5185mPhosphorusppmASTM D5185mMangensiumppmASTM D5185mPhosphorusppmASTM D5185mMangensiumppmASTM D5185mPhosphorusppmASTM D5185m <trr< th=""><th></th><th>scalar</th><th>*Visual</th><th>NONE</th><th>VLITE</th><th></th><th></th></trr<>		scalar	*Visual	NONE	VLITE		
PotassiumppmASTM D5185m>20<1	Yellow Metal	scalar	*Visual	NONE	NONE		
WaterWC Method>0.2NEGSiltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*VisualNORMLNORMLSodiumppmASTM D5185m14BariumppmASTM D5185m11MagnesiumppmASTM D5185m<11MagnesiumppmASTM D5185m<112PhosphorusppmASTM D5185m112SiturppmASTM D5185m112MagnesiumppmASTM D5185m112SiturppmASTM D5185m2294SiturppmASTM D5185m222436SiturppmASTM D5185m22436SiturppmASTM D5185m22436SiturppmASTM D5185mSiturppmASTM D5185mSiturppmASTM D5185m <th>Silicon</th> <th>ppm</th> <th>ASTM D5185m</th> <th>&gt;160</th> <th>4</th> <th></th> <th></th>	Silicon	ppm	ASTM D5185m	>160	4		
Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMNORMLOdorscalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185mBoronppmASTM D5185m14BariumppmASTM D5185m0MolybdenumppmASTM D5185m-11MaganeseppmASTM D5185m-<112PhosphorusppmASTM D5185m112PhosphorusppmASTM D5185m2294SulfurppmASTM D5185m222436	Potassium	ppm	ASTM D5185m	>20	<1		
Debrisscalar*VisualNONENONESand/Dirtscalar*VisualNORNOREAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m-14BoronppmASTM D5185m20.214MolybdenumppmASTM D5185m14MagnesiumppmASTM D5185m11MagnesiumppmASTM D5185m112PhosphorusppmASTM D5185m112PhosphorusppmASTM D5185m2294SulfurppmASTM D5185m22436SulfurppmASTM D5185m22436	Water		WC Method	>0.2	NEG		
Sand/Dirtscalar*VisualNONENOREAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m14BoronppmASTM D5185m25BariumppmASTM D5185m0MolybdenumppmASTM D5185m11MagnesiumppmASTM D5185mPhosphorusppmASTM D5185m112FincppmASTM D5185m2294SulfurppmASTM D5185m222SulfurppmASTM D5185m222436SulfurppmASTM D5185m22436	Silt	scalar	*Visual	NONE	NONE		
Appearancescalar*VisualNORMLNORMLIntermediateOdorscalar*VisualNORMLNORMLIntermediateIntermediateIntermediateEmulsified Waterscalar*Visual>0.2NEGIntermediateIntermediateSodiumppmASTM D5185mIntermediateIntermediateIntermediateIntermediateBoronppmASTM D5185mIntermediateIntermediateIntermediateIntermediateBariumppmASTM D5185mIntermediateIntermediateIntermediateIntermediateMolybdenumppmASTM D5185mIntermediateIntermediateIntermediateIntermediateManganeseppmASTM D5185mIntermediateIntermediateIntermediateIntermediatePhosphorusppmASTM D5185mIntermediateIntermediateIntermediateIntermediatePhosphorusppmASTM D5185mIntermediateIntermediateIntermediateIntermediateSulfurppmASTM D5185mIntermediateIntermediateIntermediateIntermediateSulfurppmASTM D5185mIntermediateIntermediateIntermediateIntermediateSulfurppmASTM D5185mIntermediateIntermediateIntermediateIntermediateSulfurppmASTM D5185mIntermediateIntermediateIntermediateIntermediateSulfurppmASTM D5185mIntermediateIntermediateInt	Debris	scalar	*Visual	NONE	NONE		
Odorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m14BoronppmASTM D5185m0BariumppmASTM D5185m0MolybdenumppmASTM D5185m1MagnesiumppmASTM D5185m<11MagnesiumppmASTM D5185m<112PhosphorusppmASTM D5185m112PhosphorusppmASTM D5185m2294SulfurppmASTM D5185m222436	Sand/Dirt	scalar	*Visual	NONE	NONE		
Emulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m14BoronppmASTM D5185m25BariumppmASTM D5185m0MolybdenumppmASTM D5185m1ManganeseppmASTM D5185m<11MagnesiumppmASTM D5185m<112CalciumppmASTM D5185m112PhosphorusppmASTM D5185m2294ZincppmASTM D5185m222436	Appearance	scalar	*Visual	NORML	NORML		
Sodium         ppm         ASTM D5185m         14            Boron         ppm         ASTM D5185m         25             Barium         ppm         ASTM D5185m         0             Barium         ppm         ASTM D5185m         0             Molybdenum         ppm         ASTM D5185m         1             Manganese         ppm         ASTM D5185m         <1             Magnesium         ppm         ASTM D5185m         <1             Calcium         ppm         ASTM D5185m         <11             Phosphorus         ppm         ASTM D5185m         112             Zinc         ppm         ASTM D5185m         2294             Sulfur         ppm         ASTM D5185m         22436	Odor	scalar	*Visual	NORML	NORML		
Boron         ppm         ASTM D5185m         25            Barium         ppm         ASTM D5185m         0            Molybdenum         ppm         ASTM D5185m         0            Manganese         ppm         ASTM D5185m         1            Magnesium         ppm         ASTM D5185m         <1            Calcium         ppm         ASTM D5185m         <1            Phosphorus         ppm         ASTM D5185m         112            Zinc         ppm         ASTM D5185m         2294            Sulfur         ppm         ASTM D5185m         22436	Emulsified Water	scalar	*Visual	>0.2	NEG		
Barium         ppm         ASTM D5185m         0            Molybdenum         ppm         ASTM D5185m         1            Manganese         ppm         ASTM D5185m         1            Magnesium         ppm         ASTM D5185m         <1	Sodium	ppm	ASTM D5185m		14		
Molybdenum         ppm         ASTM D5185m         1            Manganese         ppm         ASTM D5185m         <1	Boron		ASTM D5185m		25		
Manganese         ppm         ASTM D5185m         <1	Barium	ppm	ASTM D5185m		0		
Magnesium         ppm         ASTM D5185m         <1	Molybdenum	ppm	ASTM D5185m		1		
Calcium         ppm         ASTM D5185m         112            Phosphorus         ppm         ASTM D5185m         2294             Zinc         ppm         ASTM D5185m         22             Sulfur         ppm         ASTM D5185m         22	Manganese	ppm	ASTM D5185m		<1		
Phosphorus         ppm         ASTM D5185m         2294             Zinc         ppm         ASTM D5185m         22             Sulfur         ppm         ASTM D5185m         22436	Magnesium	ppm	ASTM D5185m		<1		
Zinc         ppm         ASTM D5185m         22             Sulfur         ppm         ASTM D5185m         22436	Calcium	ppm	ASTM D5185m		112		
Sulfur         ppm         ASTM D5185m         22436	Phosphorus	ppm	ASTM D5185m		2294		
	Zinc	ppm	ASTM D5185m		22		
	Sulfur	ppm	ASTM D5185m		22436		
	Visc @ 40°C		ASTM D445		173		

Submitted By: BILL RICHARDSON







 Sample No.
 : LH0184637
 Recieved
 : 12 Jul 2021
 2

 Lab Number
 : 05299643
 Diagnosed
 : 13 Jul 2021
 2

 Unique Number
 : 9578603
 Diagnostician
 : Don Baldridge

 Certificate L2367
 Test Package
 : MOBCE
 Co

 To discuss this sample report, contact Customer Service at 1-800-237-1369.
 \*
 Co

 \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
 Co

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

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

JR VINAGRO 2208 PLAINFIELD PIKE JOHNSTON, RI US 02919 Contact: Service Manager

> T: F:

Laboratory

Submitted By: BILL RICHARDSON

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