

Machine Id SHAWBOX 80N0314D26 C0164 - TROLLEY MOTOR (S/N 99NDF23867) Component Gearbox Fluid

GEAR OIL (PAG) ISO 460 (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

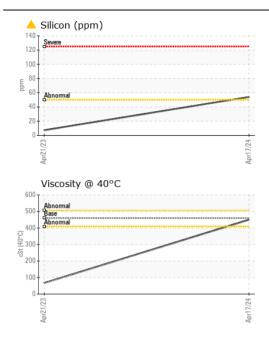
Elemental level of silicon (Si) above normal indicating ingress of seal material.

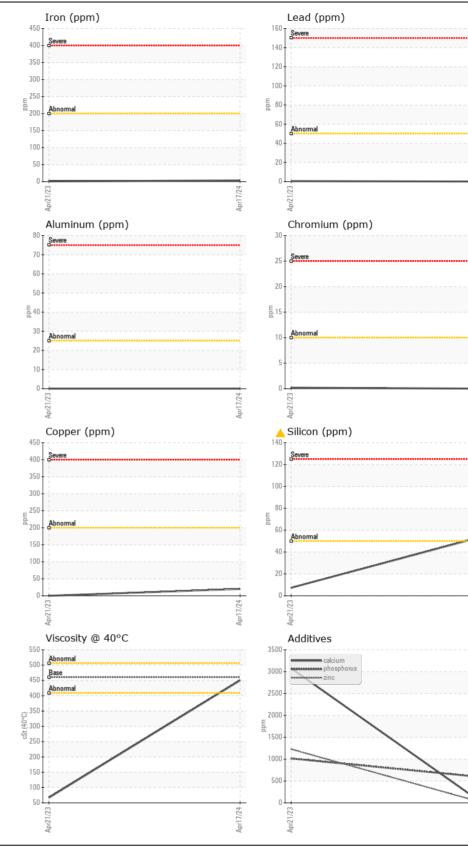
FLUID CONDITION

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

TestUOMMethodLinklahCurrentHistory1History2Sample NumberClient InfoDC0036865DC0024770Sample DateClient InfoIT Apr 202421 Apr 2023Machine AgehrsClient Info00Oil AgehrsClient InfoO0Filter AgehrsClient InfoNot ChangeN/AOil ChangedClient InfoNot ChangeN/ASample StatusClient InfoNot ChangeN/AFinter ChangedpmASTM05185m>2003<1GhroniumppmASTM05185m>1000NickelppmASTM05185m>1000NickelppmASTM05185m>1000SilverppmASTM05185m>20000AluminumppmASTM05185m>20000QanadiumppmASTM05185m>1002VanadiumppmASTM05185m>1002ValadiumppmASTM05185m>20010ValadiumppmASTM05185m>20010ValadiumppmASTM05185m>20010ValadiumppmASTM05185m>20010 <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>							
Sample DateClient InfoI7 Apr 202421 Apr 2023Machine AgehrsClient Info00Oil AgehrsClient Info00Filter AgehrsClient InfoNot ChangdN/AOil ChangedClient InfoNot ChangdN/AFilter ChangedClient InfoNot ChangdN/ASample StatusClient InfoNot ChangdN/AIronppmASTM 05185m>2003<1NickelppmASTM 05185m>100NickelppmASTM 05185m>100NickelppmASTM 05185m>100SilverppmASTM 05185m>500AluminumppmASTM 05185m>500LeadppmASTM 05185m>102<1VanadiumppmASTM 05185m>102<1VanadiumppmASTM 05185m>102<1Vellow Metalscalar*VisualNONENONENONESiliconppmASTM 05185m>2011VanadiumppmASTM 05185m>2011Vellow Metalscalar*VisualNONENONENONESiliconppmASTM 05185m>2011 <td< th=""><th>Test</th><th>UOM</th><th>Method</th><th>Limit/Abn</th><th>Current</th><th>History1</th><th>History2</th></td<>	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine AgehrsClient InfoOOCil AgehrsClient InfoOOFilter AgehrsClient InfoNot ChangedN/AOil ChangedClient InfoNot ChangedN/AFilter ChangedClient InfoNot ChangedN/ASample StatusClient InfoNot ChangedN/AIronppmASTM D5185>2003<1NickelppmASTM D5185>10O<1NickelppmASTM D5185>10O<1SilverppmASTM D5185>10O<1AluminumppmASTM D5185>10O<1AluminumppmASTM D5185>200<1VanadiumppmASTM D5185>10200VanadiumppmASTM D5185>102<1VisualNONENONENONENONESiliconppmASTM D5185>2011SiliconppmASTM D5185>2011SiliconppmASTM D5185>2011SiliconppmASTM D5185>2011SiliconppmASTM D5185>2011SiliconppmASTM D5185>20 <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>DC0036865</th> <th>DC0024770</th> <th></th>	Sample Number		Client Info		DC0036865	DC0024770	
Cli Age Filter Age HrsClient Info00Filter Age Oil ChangedClient InfoNot ChangedN/AGli ChangedClient InfoNot ChangedN/AFilter ChangedClient InfoNot ChangedN/ASample StatusClient InfoNot ChangedN/AIronppmASTM D5185>2003<1NickelppmASTM D5185>100<1NickelppmASTM D5185>100<1SilverppmASTM D5185>100<1SilverppmASTM D5185>100<1AluminumppmASTM D5185>2000LeadppmASTM D5185>20200VanadiumppmASTM D5185>10200VanadiumppmASTM D5185>201Yellow Metalscalar*VisualNONENONESiliconppmASTM D5185>2011Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185>2011SiliconppmASTM D5185>2011SiliconppmASTM D5185>20NONESiliconppm <th>Sample Date</th> <th></th> <th>Client Info</th> <th></th> <th>17 Apr 2024</th> <th>21 Apr 2023</th> <th></th>	Sample Date		Client Info		17 Apr 2024	21 Apr 2023	
Filter Age Ins Client Info O 0 Filter Age Nis Client Info Not Changed N/A Filter Changed Client Info Not Changed N/A Sample Status Client Info Not Changed N/A Iron ppm ASTM D5185m >200 3 <1 Chromium ppm ASTM D5185m >10 0 Nickel ppm ASTM D5185m >10 0 0 Silver ppm ASTM D5185m >10 0 0 Aluminum ppm ASTM D5185m >50 0 Copper ppm ASTM D5185m >200 20 0 Vanadium ppm ASTM D5185m >10 2 1 Vanadium ppm ASTM D5185m >10 2 1 Vanadium ppm ASTM D5185m >0 1 1	Machine Age	hrs	Client Info		0	0	
Oil Changed Filter ChangedClient Info Client InfoNot ChangdN/AFilter ChangedClient InfoNot ChangdN/ASample StatusABNORIALNORMALIronppmASTM D5185m>2003<1ChromiumppmASTM D5185m>100<1NickelppmASTM D5185m>1000SilverppmASTM D5185m>2000AluminumppmASTM D5185m>2000LeadppmASTM D5185m>20200CopperppmASTM D5185m>20200YanadiumppmASTM D5185m>20200VistalppmASTM D5185m>20200Yellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185m>2011YatafppmASTM D5185m>2011SiliconppmASTM D5185m>2011Yellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185m>2011PotassiumppmASTM D5185m>2011Soliconscalar'VisualNORMNO	Oil Age	hrs	Client Info		0	0	
Filter Changed Client Info Not Changed N/A Sample Status . ABNORMAL NORMAL Iron ppm ASTM D5185m >200 3 <1 Chromium ppm ASTM D5185m >10 0 <1 Nickel ppm ASTM D5185m >10 0 0 Titanium ppm ASTM D5185m >10 0 0 Aluminum ppm ASTM D5185m >20 0 0 Lead ppm ASTM D5185m >20 20 0 Vanadium ppm ASTM D5185m >20 20 0 Vanadium ppm ASTM D5185m >10 2 Vanadum ppm ASTM D5185m >10 2 Vyite Metal scalar 'Visual NONE NONE NONE Valadum ppm ASTM D5185m >20 1 Valadum ppm ASTM D5185m >20 1 Valadum ppm ASTM	Filter Age	hrs	Client Info		0	0	
Sample StatusVertical statusASTM D5185m>CORASTM D5185m>CORASTM D5185m>CORASTM D5185m>CORASTM D5185m>CORASTM D5185m>CORASTM D5185m>CORASTM D5185m>CORASTM D5185m>CORASTM D5185mPORASTM D5185mPORASTM D5185mPORASTM D5185mPORASTM D5185mPORASTM D5185m>CORACTMASTM D5185m>CORACTMASTM D5185m>CORACTMASTM D5185m>CORACTMACTMASTM D5185m>CORACTM<	Oil Changed		Client Info		Not Changd	N/A	
IronppmASTM D5185m>2003<1	Filter Changed		Client Info		Not Changd	N/A	
ChromiumppmASTM D5185m>100<1	Sample Status				ABNORMAL	NORMAL	
ChromiumppmASTM D5185m>100<1	Iron		ACTM DE105m	. 200	o	.1	
Nickel ppm ASTM D5185m >10 0 0					-		
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m 0 0 Aluminum ppm ASTM D5185m >25 0 0 Lead ppm ASTM D5185m >20 0 Copper ppm ASTM D5185m >200 20 0 Vanadium ppm ASTM D5185m >10 2 <1 Vanadium ppm ASTM D5185m >10 2 <1 Vanadium ppm ASTM D5185m >10 2 <1 Vanadium ppm ASTM D5185m >10 ASTM NONE NONE NONE Vanadum ppm ASTM D5185m >20 1 1 Vellow Metal scalar *Visual NONE NONE NONE Silicon ppm AS					-		
SilverppmASTM D5185mO0AluminumppmASTM D5185m>25O0LeadppmASTM D5185m>5000<1CopperppmASTM D5185m>200200TinppmASTM D5185m>102<1VanadiumppmASTM D5185m>102<1White Metalscalar*VisualNONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>50 A 547PotassiumppmASTM D5185m>2011WatervisualNONENONENONESilitscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONEAppearancescalar*VisualNORMNORMLNORMLAppearancescalar*VisualNORNORMLNORMLSodiumppmASTM D5185m501104BariumppmASTM D5185m50111MolybdenumppmASTM D5185m50<-1ManganeseppmASTM D5185m50<11MagnesiumppmASTM D5185m<				210	-		
AluminumppmASTM D5185m>2500LeadppmASTM D5185m>5000<1CopperppmASTM D5185m>200200TinppmASTM D5185m>102<1VanadiumppmASTM D5185m>102<1White Metalscalar*VisualNONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>50 A 547Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>2011WaterwC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONEAppearancescalar*VisualNORNORMLNORMLQdorscalar*VisualNORNORMLNORMLGodrscalar*VisualNORNORMLNORMLAppearancescalar*VisualNORNORMLNORMLGdorscalar*VisualNORNORMLNORMLBoronppmASTM D5185m50111BariumppmASTM D5185m					-		
LeadppmASTM D5185m>500<1	••			>25	-		
CopperppmASTM D5185m>200200TinppmASTM D5185m>102<1VanadiumppmASTM D5185m>100<1White Metalscalar*VisualNONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>50A 547PotassiumppmASTM D5185m>2011WaterWC Method>0.2NEGNONESilitscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORHNORMLNORMLGodrscalar*VisualNORHNORMLNORMLSodiumppmASTM D5185m50104BoronppmASTM D5185m5011ManganeseppmASTM D5185m50111MagnesiumppmASTM D5185m5026					-		
TinppmASTM D5185m<>102<1					•		
VanadiumppmASTM D5185m00<1					-		
White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONENONESiliconppmASTM D5185m>50▲ 547PotassiumppmASTM D5185m>2011WaterWC Method>0.2NEGNEGSilitscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMNORMLNORMLOdorscalar*VisualNORMNORMLNORMLSodiumppmASTM D5185m5.00104BoronppmASTM D5185m5011MalybeenumppmASTM D5185m5011ManganeseppmASTM D5185m50<11ManganeseppmASTM D5185m50<11				210	_		
Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>50▲ 547PotassiumppmASTM D5185m>2011WaterWC Method>0.2NEGNEGSilitscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLSodiumppmASTM D5185m5.00104BoronppmASTM D5185m5011MolybdenumppmASTM D5185m50<11ManganeseppmASTM D5185m50<11ManganeseppmASTM D5185m50<11				NONE	-		
SiliconppmASTM D5185m>50▲ 547PotassiumppmASTM D5185m>2011WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m50114BariumppmASTM D5185m5011ManganeseppmASTM D5185m50<11MagnesiumppmASTM D5185m5026							
PotassiumppmASTM D5185m>2011WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m50114BariumppmASTM D5185m50111ManganeseppmASTM D5185m50<11MagnesiumppmASTM D5185m5026							
WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m501104BariumppmASTM D5185m50<11ManganeseppmASTM D5185m50<11MagnesiumppmASTM D5185m50<11ManganeseppmASTM D5185m50<1ManganeseppmASTM D5185m50<1ManganeseppmASTM D5185m50<1<ManganeseppmASTM D5185m50<1<ManganeseppmASTM D5185m50<1<ManganeseppmASTM D5185m50<1<ManganeseppmASTM D5185m50<1<ManganeseppmASTM D5185m50<1<ManganeseppmASTM D518	Silicon	ppm	ASTM D5185m	>50	4 54	7	
Siltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m50104BariumppmASTM D5185m5011MolybdenumppmASTM D5185m50<1ManganeseppmASTM D5185m50<1MagnesiumppmASTM D5185m50<1	Potassium	ppm	ASTM D5185m	>20	1	1	
Debrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m50104BoronppmASTM D5185m5011BariumppmASTM D5185m50<11MolybdenumppmASTM D5185m50<1ManganeseppmASTM D5185m50<1MagnesiumppmASTM D5185m5026	Water		WC Method	>0.2	NEG	NEG	
Sand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m99BoronppmASTM D5185m5001104BariumppmASTM D5185m500111MolybdenumppmASTM D5185m500<1ManganeseppmASTM D5185m500<1MagnesiumppmASTM D5185m50026	Silt	scalar	*Visual	NONE	NONE	NONE	
Appearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m99BoronppmASTM D5185m50104BariumppmASTM D5185m5011MolybdenumppmASTM D5185m50<11ManganeseppmASTM D5185m50<1MagnesiumppmASTM D5185m50<1		scalar	*Visual	NONE	NONE	NONE	
Odorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m99BoronppmASTM D5185m50104BariumppmASTM D5185m5011MolybdenumppmASTM D5185m50<11ManganeseppmASTM D5185m50<1MagnesiumppmASTM D5185m5026	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Emulsified Water scalar *Visual >0.2 NEG NEG Sodium ppm ASTM D5185m 9 Boron ppm ASTM D5185m 5 0 104 Barium ppm ASTM D5185m 5 0 111 Molybdenum ppm ASTM D5185m 5 0 <11 Manganese ppm ASTM D5185m 5 0 <1 Magnesium ppm ASTM D5185m 5 0 <1	Appearance	scalar		NORML		NORML	
Sodium ppm ASTM D5185m 9 9 Boron ppm ASTM D5185m 5 0 104 Barium ppm ASTM D5185m 5 0 111 Molybdenum ppm ASTM D5185m 5 0 <11 Manganese ppm ASTM D5185m 5 0 <1 Magnesium ppm ASTM D5185m 5 0 <1		scalar	*Visual	NORML			
Boron ppm ASTM D5185m 5 0 104 Barium ppm ASTM D5185m 5 0 11 Molybdenum ppm ASTM D5185m 5 0 <1 Manganese ppm ASTM D5185m 5 0 <1 Magnesium ppm ASTM D5185m 5 0 <1	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Boron ppm ASTM D5185m 5 0 104 Barium ppm ASTM D5185m 5 0 11 Molybdenum ppm ASTM D5185m 5 0 <1 Manganese ppm ASTM D5185m 5 0 <1 Magnesium ppm ASTM D5185m 5 0 <1	Sodium	maa	ASTM D5185m		9	9	
Barium ppm ASTM D5185m 5 0 11 Molybdenum ppm ASTM D5185m 5 0 <1				5			
Molybdenum ppm ASTM D5185m 5 0 <1							
Manganese ppm ASTM D5185m <1							
Magnesium ppm ASTM D5185m 5 0 26	-						
	Magnesium		ASTM D5185m	5	0	26	
Calcium ppm ASTM D5185m 5 0 3078	Calcium		ASTM D5185m	5	0	3078	
Phosphorus ppm ASTM D5185m 775 587 1015	Phosphorus		ASTM D5185m	775	587	1015	
Zinc ppm ASTM D5185m 5 7 1228	Zinc		ASTM D5185m	5	7	1228	
Sulfur ppm ASTM D5185m 2000 2385 7607	Sulfur	ppm	ASTM D5185m	2000	2385	7607	
Visc @ 40°C cSt ASTM D445 460 450 67.0		0.1		400	450	07.0	

Contact/Location: JASON WILDE - CRAASHMA







CRANEWORKS INC - MID-ATLANTIC Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. Received 11089 LEADBETTER ROAD : DC0036865 : 10 May 2024 Lab Number : 06176321 ASHLAND, VA Tested : 13 May 2024 Unique Number : 11022374 : 14 May 2024 - Sean Felton US 23005 Diagnosed Test Package : MOB 1 Contact: JASON WILDE Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jcwilde@vacraneworks.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Contact/Location: JASON WILDE - CRAASHMA Page 2 of 2

T:

F: