



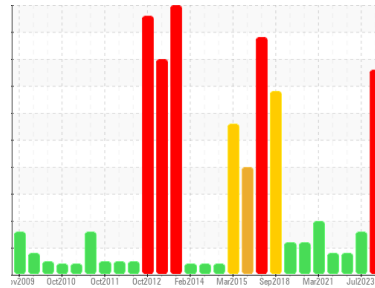
# PROBLEM SUMMARY

Sample Rating Trend

ISO

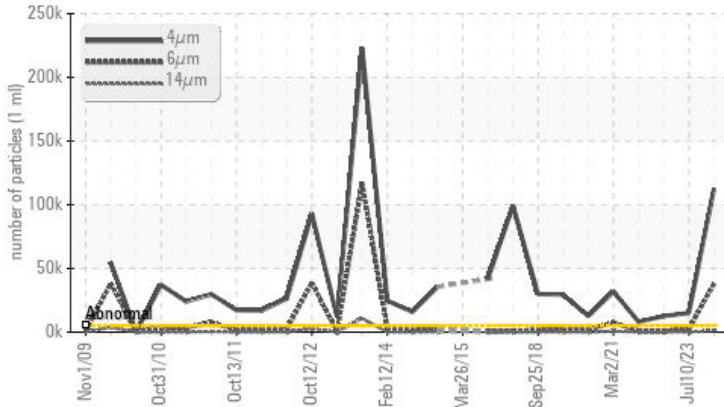


Area  
**Lockring Roughing**  
 Machine Id  
**Mori Seiki Lock Ring Roughing # 293 - cc4031**  
 Component  
**Hydraulic System**  
 Fluid  
**FUCHS RENOLIN AW ISO 32 (2 LTR)**

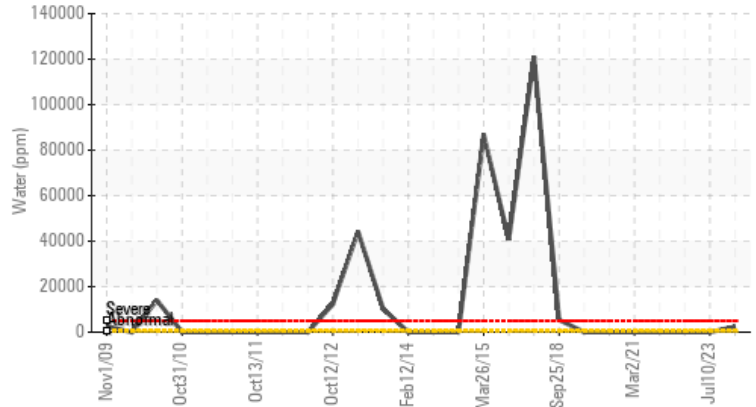


## COMPONENT CONDITION SUMMARY

### Particle Trend



### Water (KF)



## RECOMMENDATION

Check seals and/or filters for points of contaminant entry. We advise that you check all areas where contaminants can enter the system. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you follow the water drain-off procedure for this component. We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. Resample in 30-45 days to monitor this situation.

## PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	ABNORMAL
Water	%	ASTM D6304*	>0.05	▲ <b>0.241</b>	---	---
ppm Water	ppm	ASTM D6304*	>500	▲ <b>2417</b>	---	---
Particles >4µm		ASTM D7647	>5000	● <b>112705</b>	▲ 15036	▲ 12591
Particles >6µm		ASTM D7647	>1300	● <b>38075</b>	▲ 2448	551
Particles >14µm		ASTM D7647	>160	▲ <b>1165</b>	61	25
Particles >21µm		ASTM D7647	>40	▲ <b>127</b>	10	7
Oil Cleanliness		ISO 4406 (c)	>19/17/14	● <b>24/22/17</b>	▲ 21/18/13	▲ 21/16/12
Emulsified Water	scalar	Visual*	>0.05	▲ <b>1%</b>	NEG	NEG
Free Water	scalar	Visual*		▲ <b>&gt;10%</b>	NEG	NEG

Customer Id: HUSBOLED  
 Sample No.: WC0888615  
 Lab Number: 02602275  
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
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 Gloria Gonzalez +1 (289)291-4643 x4643  
[gloria.gonzalez@wearcheck.com](mailto:gloria.gonzalez@wearcheck.com)

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Water Drain-off	---	---	?	We advise that you follow the water drain-off procedure for this component.
Resample	---	---	?	Resample in 30-45 days to monitor this situation.
Check Breathers	---	---	?	The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather.
Check Dirt Access	---	---	?	We advise that you check all areas where contaminants can enter the system.
Check Seals	---	---	?	Check seals and/or filters for points of contaminant entry.
Filter Fluid	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

## HISTORICAL DIAGNOSIS

### VISCOSITY



#### 10 Jul 2023 Diag: Kevin Marson

We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. The fluid was specified as FUCHS RENOLIN AW ISO 68, however, a fluid match indicates that this fluid is ISO 32 AW Hydraulic Oil. Please confirm the oil type and grade on your next sample. All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. Viscosity of sample indicates oil is within ISO 32 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

[view report](#)



### VISCOSITY



#### 13 Feb 2022 Diag: Kevin Marson

We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. The fluid was specified as FUCHS RENOLIN AW ISO 68, however, a fluid match indicates that this fluid is ISO 32 AW Hydraulic Oil. Please confirm the oil type and grade on your next sample. All component wear rates are normal. Particles >4µm are abnormally high. Viscosity of sample indicates oil is within ISO 32 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

[view report](#)



### VISCOSITY



#### 04 Oct 2021 Diag: Kevin Marson

We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. The fluid was specified as FUCHS RENOLIN AW ISO 68, however, a fluid match indicates that this fluid is ISO 32 AW Hydraulic Oil. Please confirm the oil type and grade on your next sample. All component wear rates are normal. There is a light amount of silt (particulates < 14 microns in size) present in the oil. Viscosity of sample indicates oil is within ISO 32 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

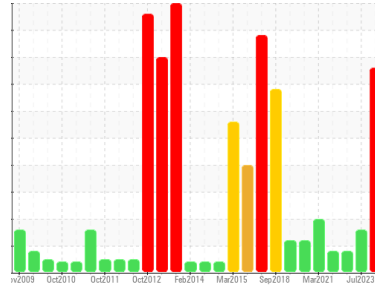
[view report](#)





# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area  
**Lockring Roughing**  
 Machine Id  
**Mori Seiki Lock Ring Roughing # 293 - cc4031**  
 Component  
**Hydraulic System**  
 Fluid  
**FUCHS RENOLIN AW ISO 32 (2 LTR)**

## DIAGNOSIS

### Recommendation

Check seals and/or filters for points of contaminant entry. We advise that you check all areas where contaminants can enter the system. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you follow the water drain-off procedure for this component. We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. Resample in 30-45 days to monitor this situation.

### Wear

All component wear rates are normal.

### Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil. There is a moderate concentration of water present in the oil. Excessive free water present.

### Fluid Condition

The AN level is acceptable for this fluid.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0888615</b>	WC0837813	WC0667061
Sample Date	Client Info		<b>10 Dec 2023</b>	10 Jul 2023	13 Feb 2022
Machine Age	days	Client Info	<b>0</b>	0	0
Oil Age	days	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>SEVERE</b>	ABNORMAL	ABNORMAL

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >20	<b>2</b>	<1	<1
Chromium	ppm	ASTM D5185(m) >20	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	0
Aluminum	ppm	ASTM D5185(m) >20	<b>0</b>	<1	0
Lead	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	0	<1
Copper	ppm	ASTM D5185(m) >20	<b>5</b>	6	4
Tin	ppm	ASTM D5185(m) >20	<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m)	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	<b>7</b>	<1	1
Barium	ppm	ASTM D5185(m)	<b>&lt;1</b>	0	<1
Molybdenum	ppm	ASTM D5185(m)	<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)	<b>1</b>	<1	<1
Calcium	ppm	ASTM D5185(m)	<b>36</b>	38	40
Phosphorus	ppm	ASTM D5185(m)	<b>325</b>	358	340
Zinc	ppm	ASTM D5185(m)	<b>384</b>	403	404
Sulfur	ppm	ASTM D5185(m)	<b>2125</b>	2243	2250
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	<1

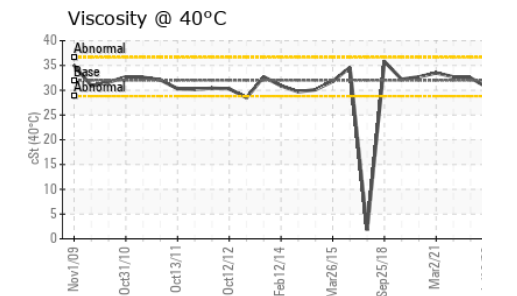
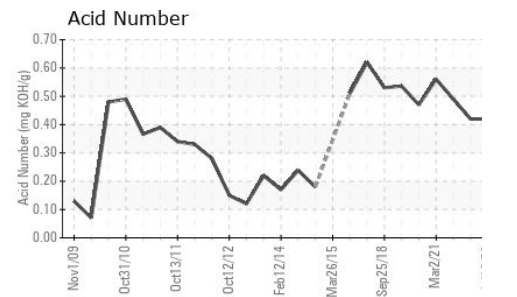
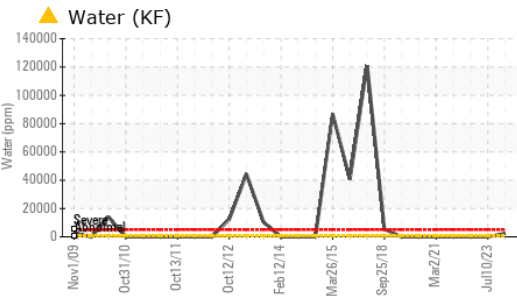
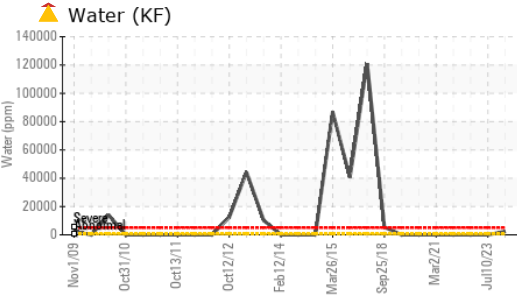
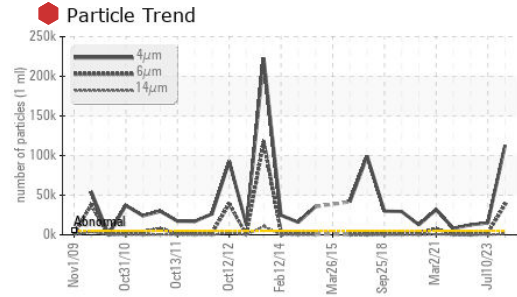
## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >15	<b>&lt;1</b>	0	<1
Sodium	ppm	ASTM D5185(m)	<b>3</b>	0	0
Potassium	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	<1	<1
Water	%	ASTM D6304* >0.05	<b>▲ 0.241</b>	---	---
ppm Water	ppm	ASTM D6304* >500	<b>▲ 2417</b>	---	---

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	<b>▲ 112705</b>	▲ 15036	▲ 12591
Particles >6µm	ASTM D7647	>1300	<b>▲ 38075</b>	▲ 2448	551
Particles >14µm	ASTM D7647	>160	<b>▲ 1165</b>	61	25
Particles >21µm	ASTM D7647	>40	<b>▲ 127</b>	10	7
Particles >38µm	ASTM D7647	>10	<b>3</b>	1	0
Particles >71µm	ASTM D7647	>3	<b>1</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	<b>▲ 24/22/17</b>	▲ 21/18/13	▲ 21/16/12

# OIL ANALYSIS REPORT

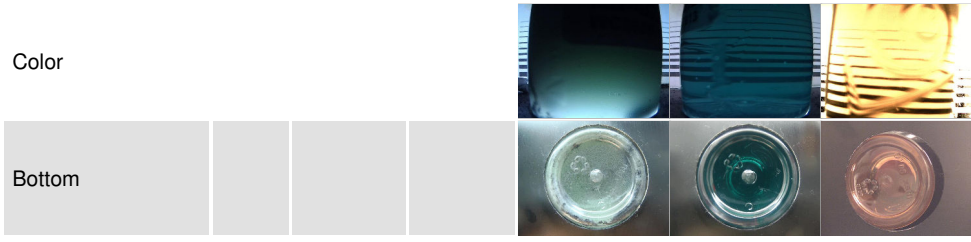


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		<b>0.15</b>	0.42	0.42

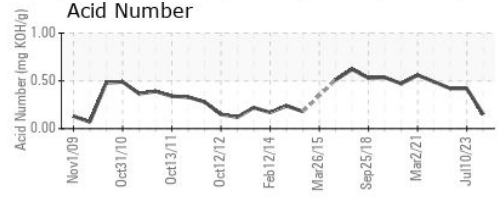
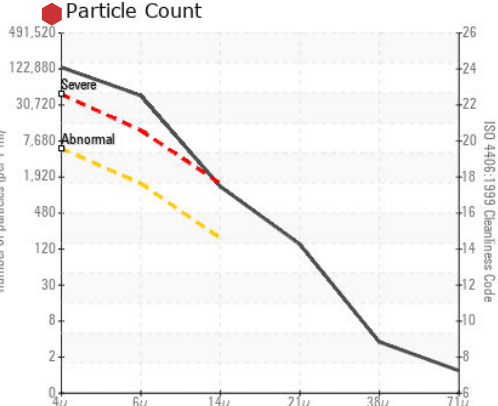
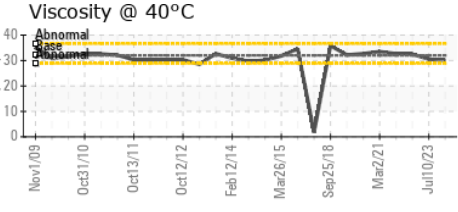
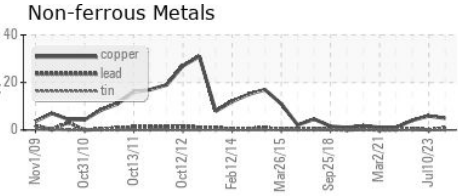
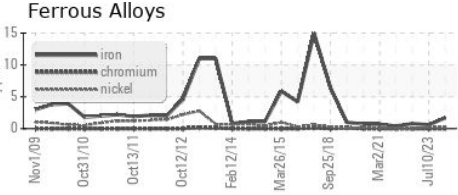
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>VLITE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	<b>▲ 1%</b>	NEG	NEG
Free Water	scalar	Visual*		<b>▲ &gt;10%</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	32	<b>30.1</b>	▲ 30.5	▲ 32.5

SAMPLE IMAGES		method	limit/base	current	history1	history2
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## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 HUSKY INJECTION MOLDING SYSTEMS LTD

**Sample No.** : WC0888615 **Received** : 11 Dec 2023 **530 QUEEN STREET SOUTH**

**Lab Number** : 02602275 **Diagnosed** : 13 Dec 2023 **BOLTON, ON**

**Unique Number** : 5695360 **Diagnostician** : Kevin Marson **CA L7E 5S5**

**Test Package** : IND 2 ( Additional Tests: KF, TAN Man ) **Contact: Robert Cameron**

*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.*

*Validity of results and interpretation are based on the sample and information as supplied.*

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