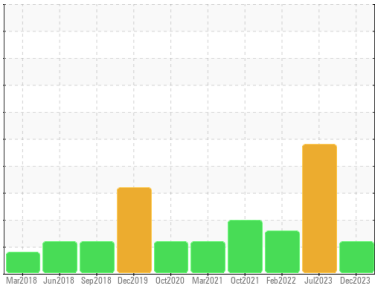
PROBLEM SUMMARY

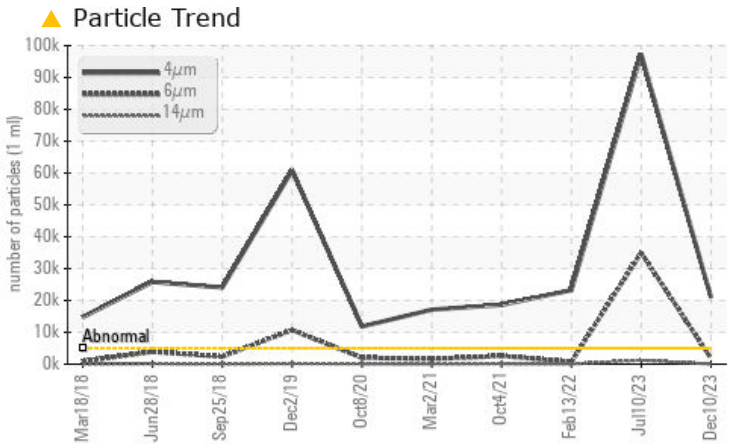
Sample Rating Trend



ISO

Area
Lockring Roughing
Machine Id
Mori Seiki Lock Ring #292-cc4031
Component
Hydraulic System
Fluid
FUCHS RENOLIN AW ISO 32 (2 LTR)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	SEVERE	ABNORMAL
Particles >4µm		ASTM D7647	>5000	▲ **20962**	⬢ 97310	▲ 23243
Particles >6µm		ASTM D7647	>1300	▲ **1836**	⬢ 34971	705
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **22/18/11**	⬢ 24/22/17	▲ 22/17/12

Customer Id: HUSBOLED
Sample No.: WC0888623
Lab Number: 02602279
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

ISO

10 Jul 2023 Diag: Kevin Marson

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. 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. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation. 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 high amount of particulates (2 to 100 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

WEAR

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 15 AW Hydraulic Oil. Please confirm the oil type and grade on your next sample.Copper ppm levels are noted. All other component wear rates are normal. Particles >4µm are abnormally high. Viscosity of sample indicates oil is within ISO 15 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

WEAR

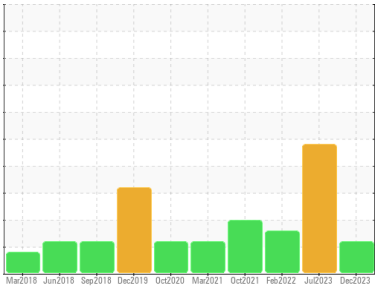
04 Oct 2021 Diag: Kevin Marson

We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. 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 15 AW Hydraulic Oil. Please confirm the oil type and grade on your next sample.Copper ppm levels are noted. All other component wear rates are normal. Particles >4µm are abnormally high. Particles >6µm are abnormally high. Viscosity of sample indicates oil is within ISO 15 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 #292-cc4031
Component
Hydraulic System
Fluid
FUCHS RENOLIN AW ISO 32 (2 LTR)

DIAGNOSIS

Recommendation
We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition
The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0888623**	WC0837812	WC0667060
Sample Date		Client Info		**10 Dec 2023**	10 Jul 2023	13 Feb 2022
Machine Age	days	Client Info		**0**	0	0
Oil Age	days	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	SEVERE	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.05	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**<1**	<1	3
Chromium	ppm	ASTM D5185(m)	>20	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**<1**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**0**	<1	<1
Lead	ppm	ASTM D5185(m)	>20	**<1**	0	1
Copper	ppm	ASTM D5185(m)	>20	**1**	2	▲ 25
Tin	ppm	ASTM D5185(m)	>20	**0**	0	<1
Antimony	ppm	ASTM D5185(m)		**0**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

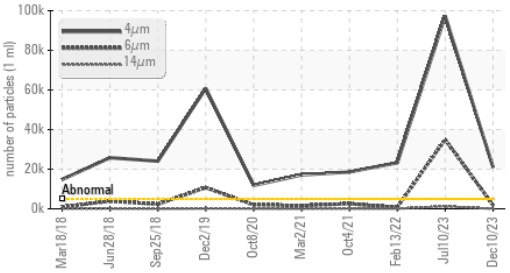
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**1**	1	3
Barium	ppm	ASTM D5185(m)		**<1**	0	0
Molybdenum	ppm	ASTM D5185(m)		**0**	0	0
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)		**0**	<1	2
Calcium	ppm	ASTM D5185(m)		**42**	44	31
Phosphorus	ppm	ASTM D5185(m)		**330**	370	357
Zinc	ppm	ASTM D5185(m)		**413**	431	350
Sulfur	ppm	ASTM D5185(m)		**2098**	2276	1079
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**0**	0	1
Sodium	ppm	ASTM D5185(m)		**<1**	0	<1
Potassium	ppm	ASTM D5185(m)	>20	**0**	<1	1

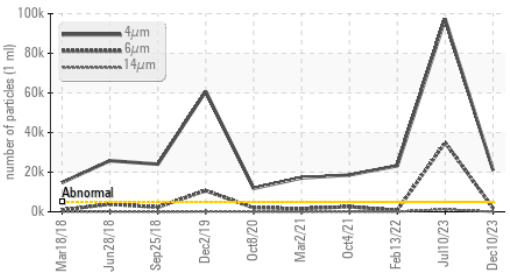
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ **20962**	⬢ 97310	▲ 23243
Particles >6µm		ASTM D7647	>1300	▲ **1836**	⬢ 34971	705
Particles >14µm		ASTM D7647	>160	**16**	▲ 1202	36
Particles >21µm		ASTM D7647	>40	**2**	▲ 196	14
Particles >38µm		ASTM D7647	>10	**1**	9	1
Particles >71µm		ASTM D7647	>3	**1**	1	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **22/18/11**	⬢ 24/22/17	▲ 22/17/12

OIL ANALYSIS REPORT

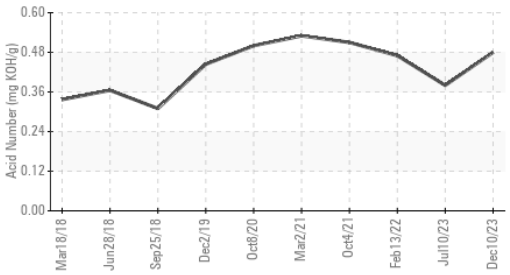
Particle Trend



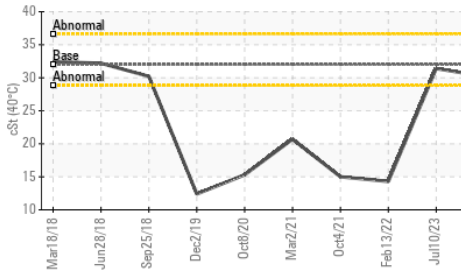
Particle Trend



Acid Number



Viscosity @ 40°C

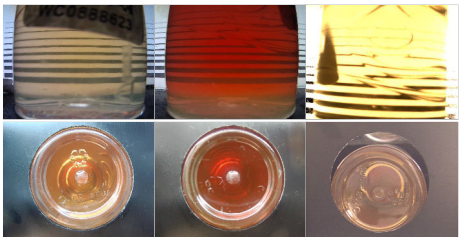


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		**0.48**	0.38	0.47

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Debris	scalar	Visual*	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Appearance	scalar	Visual*	NORML	**NORML**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

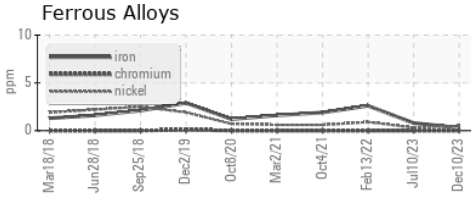
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	32	**30.2**	▲ 31.4	▲ 14.3

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

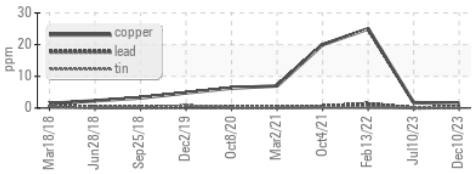


GRAPHS

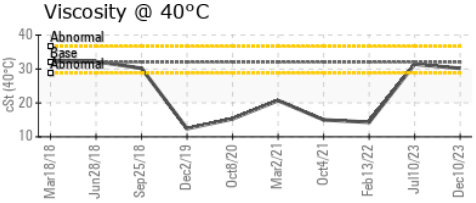
Ferrous Alloys



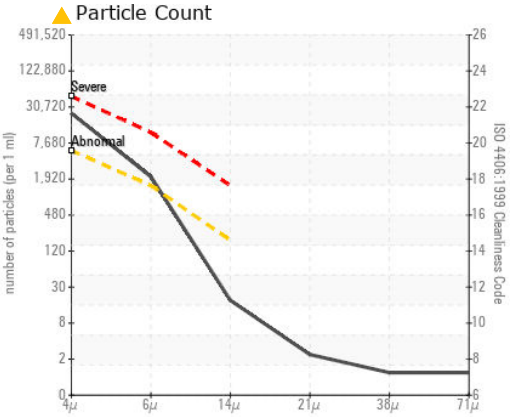
Non-ferrous Metals



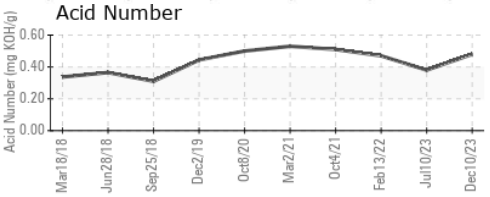
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **HUSKY INJECTION MOLDING SYSTEMS LTD**
Sample No. : WC0888623 **Received** : 11 Dec 2023
Lab Number : 02602279 **Diagnosed** : 12 Dec 2023
Unique Number : 5695364 **Diagnostician** : Kevin Marson
Test Package : IND 2 (Additional Tests: TAN Man)

530 QUEEN STREET SOUTH
BOLTON, ON
CA L7E 5S5
Contact: Robert Cameron
rcameron@husky.ca
T: (905)951-5000
F: (905)951-5167

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.