



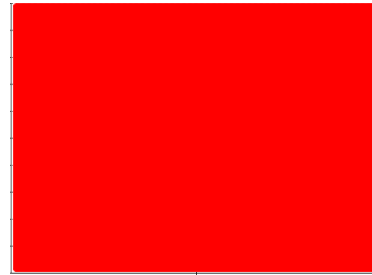
PROBLEM SUMMARY

Sample Rating Trend

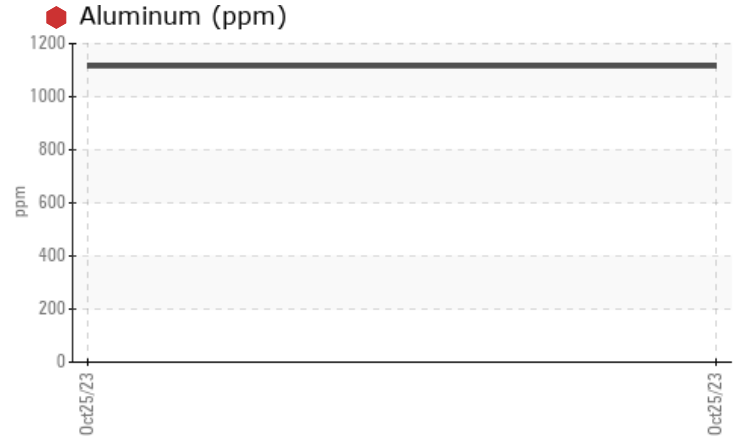
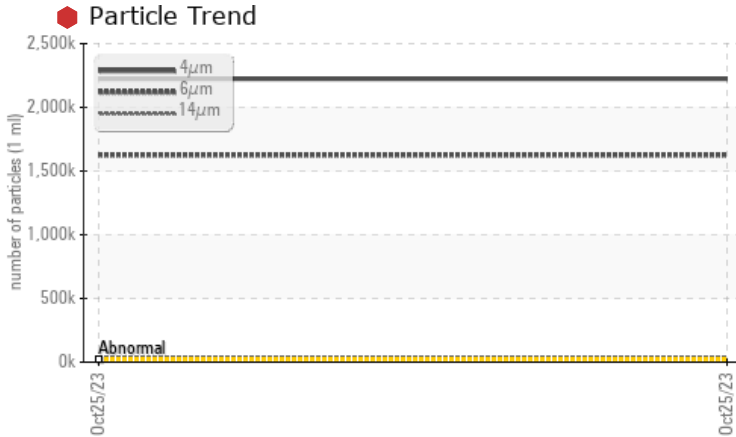
WEAR



Machine Id
20090-360-1048-20267
Component
Damper
Fluid
FUCHS TITAN SAF 1579 EU 175 (--- GAL)



COMPONENT CONDITION SUMMARY



RECOMMENDATION

Check seals and/or filters for points of contaminant entry. 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 recommend either performing an oil change or oil filtration. We cannot recommend specific action as we have limited information with regards to reservoir capacity and/or lubricant type. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample.

PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	---	---
Aluminum	ppm	ASTM D5185(m)	1115	---	---
Ferrous Rubbing	Scale 0-10	ASTM D7684*	6	---	---
Particles >4µm		ASTM D7647 >20000	2223433	---	---
Particles >6µm		ASTM D7647 >5000	1625875	---	---
Particles >14µm		ASTM D7647 >640	32944	---	---
Particles >21µm		ASTM D7647 >160	238	---	---
Oil Cleanliness		ISO 4406 (c) >21/19/16	28/28/22	---	---

Customer Id: MULMAR
 Sample No.: PP
 Lab Number: 02592085
 Test Package: IND 3



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	---	---	?	Resample in 30-45 days to monitor this situation.
Information Required	---	---	?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample.
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 Seals	---	---	?	Check seals and/or filters for points of contaminant entry.
Filter Fluid	---	---	?	We recommend either performing an oil change or oil filtration. We cannot recommend specific action as we have limited information with regards to reservoir capacity and/or lubricant type.

HISTORICAL DIAGNOSIS



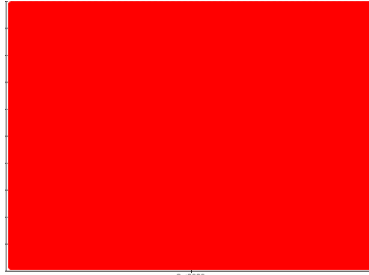
OIL ANALYSIS REPORT

Sample Rating Trend

WEAR



Machine Id
20090-360-1048-20267
 Component
Damper
 Fluid
FUCHS TITAN SAF 1579 EU 175 (--- GAL)



DIAGNOSIS

Recommendation

Check seals and/or filters for points of contaminant entry. 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 recommend either performing an oil change or oil filtration. We cannot recommend specific action as we have limited information with regards to reservoir capacity and/or lubricant type. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample.

Wear

Aluminum ppm levels are severe. Wear particle analysis indicates that the ferrous rubbing particles are abnormal.

Contaminants

The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code.

Oil Condition

The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PP	---	---
Sample Date	Client Info		25 Oct 2023	---	---
Machine Age	hrs	Client Info	0	---	---
Oil Age	hrs	Client Info	0	---	---
Oil Changed	Client Info		N/A	---	---
Sample Status			SEVERE	---	---

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		6	---	---
Iron	ppm	ASTM D5185(m) >200	18	---	---
Chromium	ppm	ASTM D5185(m) >10	2	---	---
Nickel	ppm	ASTM D5185(m) >10	1	---	---
Titanium	ppm	ASTM D5185(m)	0	---	---
Silver	ppm	ASTM D5185(m)	<1	---	---
Aluminum	ppm	ASTM D5185(m)	1115	---	---
Lead	ppm	ASTM D5185(m)	1	---	---
Copper	ppm	ASTM D5185(m)	4	---	---
Tin	ppm	ASTM D5185(m)	0	---	---
Antimony	ppm	ASTM D5185(m) >5	0	---	---
Vanadium	ppm	ASTM D5185(m)	0	---	---
Beryllium	ppm	ASTM D5185(m)	0	---	---
Cadmium	ppm	ASTM D5185(m)	0	---	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	<1	---	---
Barium	ppm	ASTM D5185(m)	<1	---	---
Molybdenum	ppm	ASTM D5185(m)	0	---	---
Manganese	ppm	ASTM D5185(m)	<1	---	---
Magnesium	ppm	ASTM D5185(m)	11	---	---
Calcium	ppm	ASTM D5185(m)	12	---	---
Phosphorus	ppm	ASTM D5185(m)	554	---	---
Zinc	ppm	ASTM D5185(m)	664	---	---
Sulfur	ppm	ASTM D5185(m)	1238	---	---
Lithium	ppm	ASTM D5185(m)	<1	---	---

CONTAMINANTS

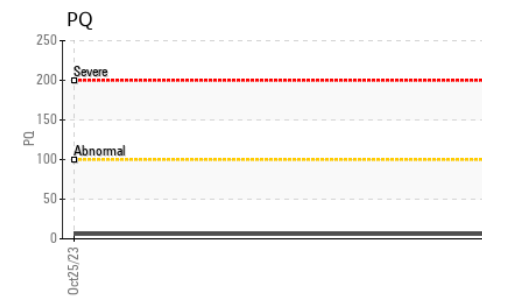
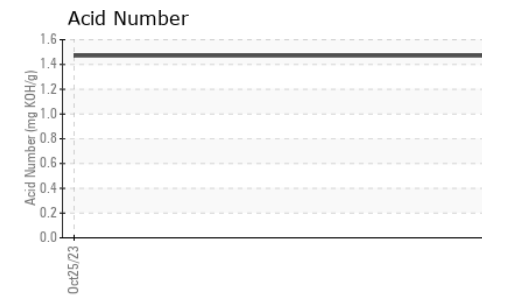
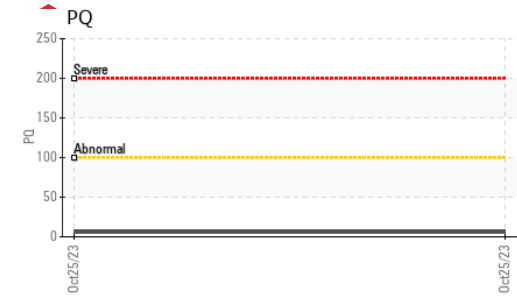
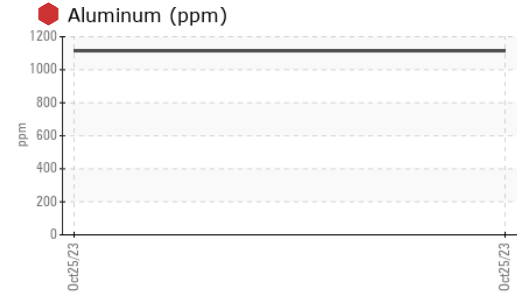
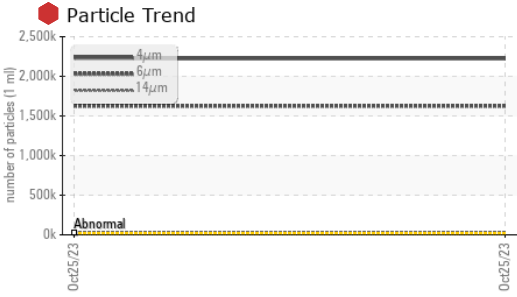
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	8	---	---
Sodium	ppm	ASTM D5185(m)	4	---	---
Potassium	ppm	ASTM D5185(m) >20	1	---	---

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	2223433	---	---
Particles >6µm	ASTM D7647	>5000	1625875	---	---
Particles >14µm	ASTM D7647	>640	32944	---	---
Particles >21µm	ASTM D7647	>160	238	---	---
Particles >38µm	ASTM D7647	>40	4	---	---
Particles >71µm	ASTM D7647	>10	0	---	---
Oil Cleanliness	ISO 4406 (c)	>21/19/16	28/28/22	---	---



OIL ANALYSIS REPORT



FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	1.47	---	---

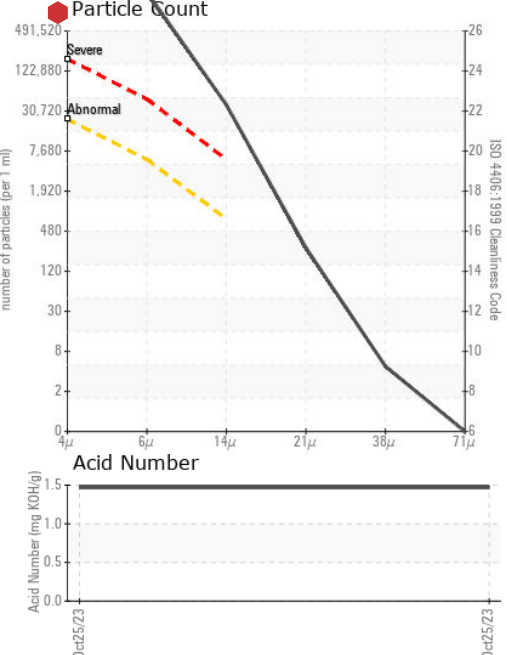
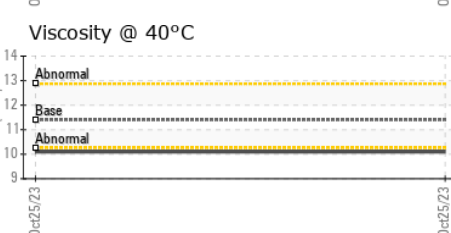
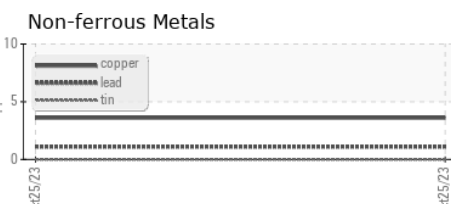
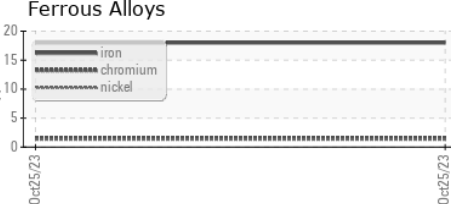
VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---
Precipitate	scalar	Visual*	NONE	NONE	---	---
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	---	---
Emulsified Water	scalar	Visual*	>0.2	NEG	---	---
Free Water	scalar	Visual*		NEG	---	---

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D7279(m)	11.4	10.1	---	---

SAMPLE IMAGES

method	limit/base	current	history1	history2
Color			<i>no image</i>	<i>no image</i>
Bottom			<i>no image</i>	<i>no image</i>

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PP **Received** : 26 Oct 2023
Lab Number : 02592085 **Diagnosed** : 30 Oct 2023
Unique Number : 5669164 **Diagnostician** : Kevin Marson
Test Package : IND 3 (Additional Tests: PrtCount, TAN Man)

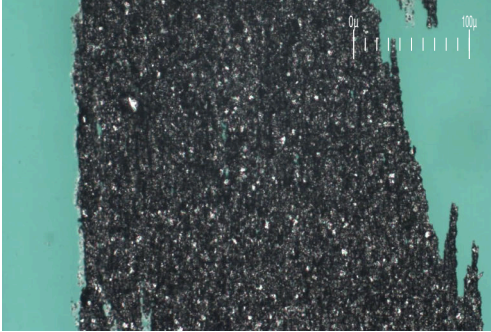
Multimatic Engineering Services
 85 Valleywood Drive
 Markham, ON
 CA L3R 5E5
 Contact: Drew Gilchrist
 dgilchrist@multimatic.com
 T: (416)909-6020
 F:

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.

FERROGRAPHY REPORT

Machine Id
20090-360-1048-20267
 Component
Damper
 Fluid
FUCHS TITAN SAF 1579 EU 175 (--- GAL)

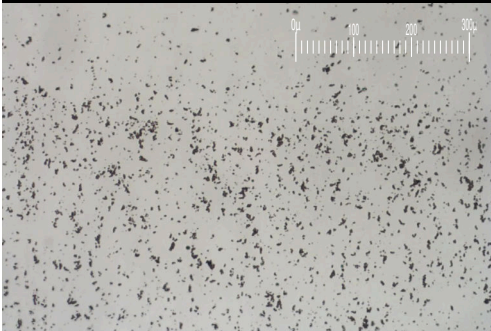
Magn: 200x Illum: BC



Magn: 50x Illum: RW



Magn: 100x Illum: RW

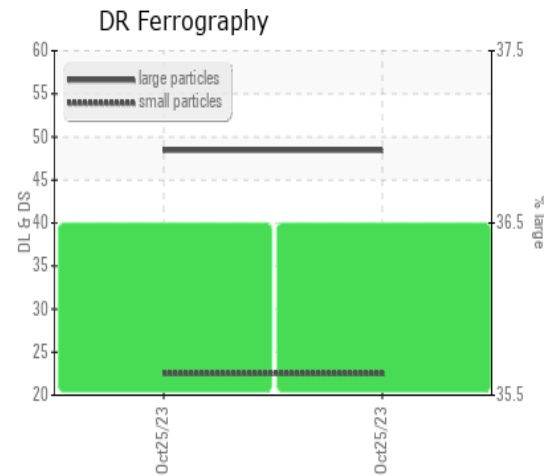


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		48.4	---	---
Small Particles		DR-Ferr*		22.5	---	---
Total Particles		DR-Ferr*	>---	70.9	---	---
Large Particles Percentage	%	DR-Ferr*		36.5	---	---
Severity Index		DR-Ferr*		1254	---	---

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		▲ 6		
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		■ 3		
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*		■ 1		
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*		■ 2		
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		■ 1		
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		■ 2		

WEAR

Aluminum ppm levels are severe.
 Wear particle analysis indicates that the ferrous rubbing particles are abnormal.



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