

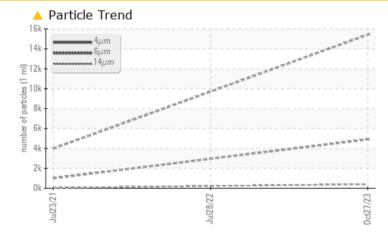
PROBLEM SUMMARY

Sample Rating Trend

Machine Id 7319628 (S/N 1151) Component

Compressor Fluid KAESER SIGMA (OEM) M-460 (--- LTR)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS Sample Status ABNORMAL ABNORMAL NORMAL Particles >6µm ASTM D7647 >1300 4910 1004 Particles >14µm ASTM D7647 >80 **403** 38 Particles >21µm ASTM D7647 >20 7 89 **Oil Cleanliness** ISO 4406 (c) >--/17/13 A 21/19/16 17/12

Customer Id: TUCLEE Sample No.: KC111113 Lab Number: 06001077 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Don Baldridge +1 <u>don.b505@comcast.net</u>

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED	RECOMMENDED ACTIONS							
Action	Status	Date	Done By	Description				
Change Fluid			?	Oil and filter change at the time of sampling has been noted.				
Change Filter			?	Oil and filter change at the time of sampling has been noted.				

HISTORICAL DIAGNOSIS



28 Jul 2022 Diag: Doug Bogart

The filter change at the time of sampling has been noted. We were unable to perform a particle count due to a high concentration of particles present in this sample. We advise that you stop the unit and follow the water drainoff procedure for this component. We recommend an early resample in 500 hours to monitor this condition.All component wear rates are normal. Moderate concentration of visible dirt/debris present in the oil. There is a light concentration of water present in the oil. Free water present. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



23 Jul 2021 Diag: Angela Borella

NORMAL



Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.





OIL ANALYSIS REPORT

Sample Rating Trend ISO

Machine Id 7319628 (S/N 1151) Component

Compressor Fluid KAESER SIGMA (OEM) M-460 (--- LTR)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates present in the oil.

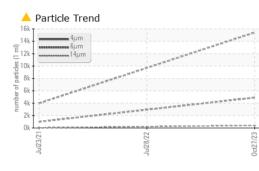
Fluid Condition

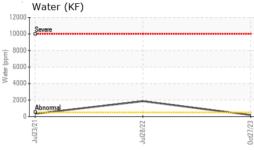
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

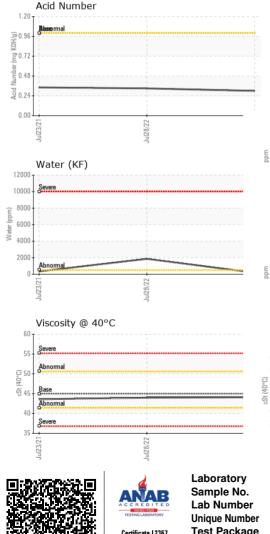
Particles >4μm ASTM D7647 15420 3990 Particles >6μm ASTM D7647 >1300 4910 1004 Particles >14μm ASTM D7647 >80 403 38 Particles >21μm ASTM D7647 >20 ▲ 89 7 Particles >21μm ASTM D7647 >4 4 0 Particles >38μm ASTM D7647 >4 4 0 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/16 17/12 FLUID DEGRADATION method limit/base current history1 history2	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 3864 1756 660 Oil Age hrs Client Info 1960 0 660 Oil Age hrs Client Info ABNORMAL NORMAL NORMAL Sample Status Imitbase current history1 history2 Iron ppm ASTM D5185m >50 0 <1	Sample Number		Client Info		KC111113	KC97511	KC88096
Oil Age hrs Client Info 1960 0 660 Oil Changed Client Info Changed Changed Changed Sample Status method limit/base current history2 Iron ppm ASTM D5185n >50 0 <1	Sample Date		Client Info		27 Oct 2023	28 Jul 2022	23 Jul 2021
Oil Changed Sample Status Client Into Changed ABNORMAL Changed ABNORMAL Changed ABNORMAL Changed NORMAL WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM D5185m >50 0 <1	Machine Age	hrs	Client Info		3864	1756	660
Sample Status method Imit/base current history1 history2 Iron ppm ASTM D5185m >50 0 <1	Oil Age	hrs	Client Info		1960	0	660
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185m >50 0 <1	Oil Changed		Client Info		Changed	Changed	Changed
Iron ppm ASTM D5185m >50 0 <1 <1 Chromium ppm ASTM D5185m >10 0 0 0 Nickel ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >2 0 <1	Sample Status				ABNORMAL	ABNORMAL	NORMAL
Chromium ppm ASTM D5185m >10 0 0 0 Nickel ppm ASTM D5185m >3 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >3 0 <1 0 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >10 <1	Iron	ppm	ASTM D5185m	>50	0	<1	<1
Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >2 0 <1	Chromium	ppm	ASTM D5185m	>10	0	0	0
Silver ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >10 <1	Nickel	ppm	ASTM D5185m	>3	0	<1	0
Silver ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >10 -11 1 1 Lead ppm ASTM D5185m >10 0 <1	Titanium		ASTM D5185m	>3	0	0	0
Aluminum ppm ASTM D5185m >10 <1 1 Lead ppm ASTM D5185m >10 0 <1	Silver		ASTM D5185m	>2	0	<1	0
Lead ppm ASTM D5185m >10 0 <1 0 Copper ppm ASTM D5185m >50 8 5 2 Tin ppm ASTM D5185m >10 0 1 0 Antimony ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Maganese ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 0 Phosphorus ppm ASTM D5185m 0 0 0 0 0 Slicon ppm ASTM D5185m 0 0	Aluminum		ASTM D5185m	>10		1	1
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Boron ppm ASTM D5185m 0 0 <1 0 Barium ppm ASTM D5185m 90 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 Magnesee ppm ASTM D5185m 100 22 39 56 Calcium ppm ASTM D5185m 0 0 0 0 Phosphorus ppm ASTM D5185m 0 0 0 7 Zinc ppm ASTM D5185m 0 69 25 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 1 0 Sodium ppm ASTM D5185m >20 6 9 31 Water % ASTM D5185m >20 186.5 1860 343.3 FLUID CLEANLINESS method limit/base		ррш			-		
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Manganesse ppm ASTM D5185m 0 <1	Barium	ppm	ASTM D5185m	90	0	0	0
Magnesium ppm ASTM D5185m 100 22 39 56 Calcium ppm ASTM D5185m 0 0 0 0 Phosphorus ppm ASTM D5185m 0 0 0 7 Zinc ppm ASTM D5185m 0 69 25 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 1 0 Sodium ppm ASTM D5185m >20 6 9 31 Water % ASTM D5185m >20 6 9 34.3 ppm Water ppm ASTM D5044 >0.05 0.018 0.186 0.034 ppm Water ppm ASTM D7647 15420 3990 Particles >4µm ASTM D7647 >1300 4910 388 Particles >14µm ASTM D7647 88 7 7<	Molybdenum	ppm	ASTM D5185m	0	0	0	0
Calcium ppm ASTM D5185m 0 0 0 0 0 0 0 0 0 0 0 0 7	Manganese	ppm	ASTM D5185m		0	<1	<1
Phosphorus ppm ASTM D5185m 0 0 0 7 Zinc ppm ASTM D5185m 0 69 25 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 1 0 Sodium ppm ASTM D5185m >25 0 1 0 Sodium ppm ASTM D5185m >20 6 9 31 Water % ASTM D6304 >0.05 0.018 0.186 0.034 ppm Water ppm ASTM D6304 >500 186.5 1860 343.3 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >1300 4910 3990 Particles >51µm ASTM D7647 >89 38 Particles >21µm ASTM D7647 >4 4 0 <td>Magnesium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>100</td> <th>22</th> <td>39</td> <td>56</td>	Magnesium	ppm	ASTM D5185m	100	22	39	56
Zinc ppm ASTM D5185m 0 69 25 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 1 0 Sodium ppm ASTM D5185m >25 0 1 0 Sodium ppm ASTM D5185m >20 6 9 31 Vater % ASTM D6304 >0.05 0.018 0.186 0.034 ppm Water ppm ASTM D6304 >500 186.5 1860 343.3 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 1300 4910 3990 Particles >6µm ASTM D7647 >1300 4910 38 Particles >1µm ASTM D7647 >80 403 38 Particles >21µm ASTM D7647 >20 89	Calcium	ppm	ASTM D5185m	0	0	0	0
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 1 0 Sodium ppm ASTM D5185m >25 0 1 0 Sodium ppm ASTM D5185m >20 6 9 31 Potassium ppm ASTM D5304 >0.05 0.018 0.186 0.034 ppm Water % ASTM D6304 >500 186.5 1860 343.3 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 15420 3990 Particles >6µm ASTM D7647 >1300 4910 38 Particles >1µm ASTM D7647 >20 89 38 Particles >21µm ASTM D7647 >20 89 7 Particles >38µm ASTM D7647 >3 0 0	Phosphorus	ppm	ASTM D5185m	0	0	0	7
Silicon ppm ASTM D5185m >25 0 1 0 Sodium ppm ASTM D5185m 12 8 8 Potassium ppm ASTM D5185m >20 6 9 31 Water % ASTM D6304 >0.05 0.018 0.186 0.034 ppm Water ppm ASTM D6304 >500 186.5 1860 343.3 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 15420 3990 Particles >6µm ASTM D7647 >1300 4910 38 Particles >14µm ASTM D7647 >80 403 38 Particles >21µm ASTM D7647 >20 89 7 Particles >38µm ASTM D7647 >3 0 0 Particles >71µm ASTM D7647 >3 0 0 Oil Cleanliness </td <td>Zinc</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th>69</th> <td>25</td> <td>0</td>	Zinc	ppm	ASTM D5185m	0	69	25	0
Sodium ppm ASTM D5185m 12 8 8 Potassium ppm ASTM D5185m< >20 6 9 31 Water % ASTM D6304 >0.05 0.018 0.186 0.034 ppm Water ppm ASTM D6304 >500 186.5 1860 343.3 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 15420 3990 Particles >6µm ASTM D7647 >1300 4910 1004 Particles >14µm ASTM D7647 >80 403 38 Particles >21µm ASTM D7647 >20 89 7 Particles >38µm ASTM D7647 >3 0 0 Particles >71µm ASTM D7647 >3 0 0 OIl Cleanliness ISO 4406 (c) >/17/13 21/19/16 17/12 FLUID DEGRADATION	CONTAMINANTS	6	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 6 9 31 Water % ASTM D6304 >0.05 0.018 0.186 0.034 ppm Water ppm ASTM D6304 >500 186.5 1860 343.3 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 15420 3990 Particles >6µm ASTM D7647 >1300 4910 388 Particles >14µm ASTM D7647 >80 403 38 Particles >21µm ASTM D7647 >20 89 7 Particles >38µm ASTM D7647 >4 4 0 Particles >71µm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/16 17/12 FLUID DEGRADATION method limit/base current history1 history2 </td <td>Silicon</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>25</td> <th>0</th> <td>1</td> <td>0</td>	Silicon	ppm	ASTM D5185m	>25	0	1	0
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ppm Water ppm ASTM D6304 >500 186.5 ▲ 1860 343.3 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 15420 3990 Particles >6µm ASTM D7647 >1300 ▲ 4910 1004 Particles >6µm ASTM D7647 >80 ▲ 403 38 Particles >14µm ASTM D7647 >20 ▲ 89 7 Particles >21µm ASTM D7647 >4 4 0 Particles >38µm ASTM D7647 >4 4 0 Particles >71µm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) /17/13 21/19/16 17/12 FLUID DEGRADATION method limit/base current history1 history2	Potassium	ppm	ASTM D5185m	>20	6	9	31
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 15420 3990 Particles >6µm ASTM D7647 >1300 4910 1004 Particles >14µm ASTM D7647 >80 403 38 Particles >14µm ASTM D7647 >20 89 7 Particles >21µm ASTM D7647 >20 89 7 Particles >38µm ASTM D7647 >4 4 0 Particles >38µm ASTM D7647 >3 0 0 Particles >71µm ASTM D7647 >3 0 17/12 FLUID DEGRADATION method limit/base current history1 history2	Water	%	ASTM D6304	>0.05	0.018	0 .186	0.034
Particles >4µm ASTM D7647 15420 3990 Particles >6µm ASTM D7647 >1300 4910 1004 Particles >14µm ASTM D7647 >80 403 38 Particles >14µm ASTM D7647 >20 ▲ 89 37 Particles >21µm ASTM D7647 >20 ▲ 89 7 Particles >38µm ASTM D7647 >4 4 0 Particles >71µm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/16 17/12 FLUID DEGRADATION method limit/base current history1 history2	ppm Water	ppm	ASTM D6304	>500	186.5	1860	343.3
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Particles >21μm ASTM D7647 >20 ▲ 89 7 Particles >38μm ASTM D7647 >4 4 0 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/16 17/12 FLUID DEGRADATION method limit/base current history1 history2	Particles >6µm		ASTM D7647	>1300	<u> </u>		1004
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Particles >38μm ASTM D7647 >4 4 0 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/16 17/12 FLUID DEGRADATION method limit/base current history1 history2			ASTM D7647	>20			7
Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/16 17/12 FLUID DEGRADATION method limit/base current history1 history2			ASTM D7647	>4	4		0
Oil Cleanliness ISO 4406 (c) >/17/13 21/19/16 17/12 FLUID DEGRADATION method limit/base current history1 history2	•			>3	0		
	FLUID DEGRADA	ATION	method	limit/base	current	historv1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	0.30	0.33	0.342

ЧĽ-COMPRESSORS Built for a lifetime.

OIL ANALYSIS REPORT

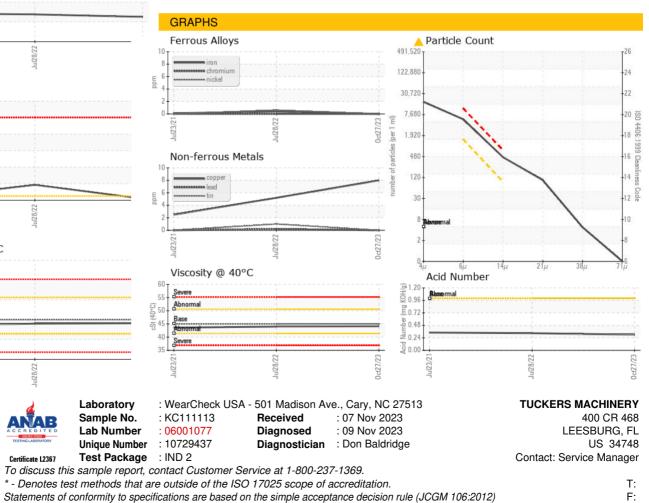






VISUAL		method	limit/base	current	history1	history2
		memou	IIIIII/Dase	Current	Thistory I	THIS LOT YZ
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	🔺 MODER	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	0.2%	NEG
Free Water	scalar	*Visual		NEG	1 .0	NEG
FLUID PROPERT		method	limit/base	current	historyd	history?
	IES	method	iimii/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	45	44.1	44.0	43.6
SAMPLE IMAGES	6	method	limit/base	current	history1	history2
Color						

Bottom



Contact/Location: Service Manager - TUCLEE Page 4 of 4