

PROBLEM SUMMARY

Sample Rating Trend

VIS DEBRIS

Machine Id KAESER 2484373 (S/N 1066)

Component

Compressor

KAESER SIGMA (OEM) M-460 (--- GAL)

COMPONENT CONDITION SUMMARY

No relevant graphs to display

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. We were unable to perform a particle count due to a high concentration of particles present in this sample.

PROBLEMATIC T	EST RE	SULTS				
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Debris	scalar	*Visual	NONE	MODER	NONE	▲ MODER

Customer Id: INDGAS Sample No.: KCP46149 Lab Number: 05644255 Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:

Don Baldridge +1 don.b505@comcast.net

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

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.
Alert			?	We were unable to perform a particle count due to a high concentration of particles present in this sample.

HISTORICAL DIAGNOSIS

03 Aug 2021 Diag: Doug Bogart

ISO



No corrective action is recommended at this time. 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 a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.



27 Aug 2020 Diag: Don Baldridge

SEDIMENT



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. We were unable to perform a particle count due to a high concentration of particles present in this sample. All component wear rates are normal. There is a moderate amount of visible silt present in the sample. Moderate concentration of visible dirt/debris present in the oil. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.





OIL ANALYSIS REPORT

SAMPLE INFORMATION

VIS DEBRIS

KAESER 2484373 (S/N 1066)

Compressor

KAESER SIGMA (OEM) M-460 (--- GAL)

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. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Wear

All component wear rates are normal.

Contamination

Moderate concentration of visible dirt/debris present in the oil.

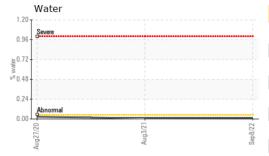
Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

Sample Date	Sample Number				KCP46149	KCP41713	KCP29438
Oil Age Oil Changed Sample Status hrs 3000 Changed ABNORMAL 3000 ABNORMAL 3000 ABNORMAL 3000 ABNORMAL 3000 ABNORMAL ABNORMAL	Sample Date				08 Sep 2022	03 Aug 2021	27 Aug 2020
Oil Changed Sample Status Changed ABNORMAL ABNORMAL ABNORMAL	Machine Age	hrs			62575	60925	58627
Sample Status method limit/base current history 1 history 2 Iron ppm ASTM D5185m >50 0 0 8 Chromium ppm ASTM D5185m >50 0 0 0 Nickel ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >10 0 <1 <1 Lead ppm ASTM D5185m >10 0 <1 <1 Copper ppm ASTM D5185m >10 0 <1 <1 Cadmium ppm ASTM D5185m >50 16 38 30 Tin ppm ASTM D5185m >10 0 0 0 Antimony ppm ASTM D5185m -10 0 0 0 Cadmium ppm ASTM D5185m 0 0 0	Oil Age	hrs			3000	3000	3000
WEAR METALS method limit/base current history 1 history 2 Iron ppm ASTM D5185m >50 0 0 8 Chromium ppm ASTM D5185m >10 0 0 0 Nickel ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >10 0 <1 <1 Lead ppm ASTM D5185m >10 0 <1 <1 Copper ppm ASTM D5185m >10 0 <1 <1 Copper ppm ASTM D5185m >50 16 38 30 Tin ppm ASTM D5185m >10 0 0 0 Vanadium ppm ASTM D5185m 10 0 0 0 ASTM D5185m 0 0 0 0 1 1 </th <th>Oil Changed</th> <th></th> <th></th> <th></th> <th>Changed</th> <th>Changed</th> <th>Changed</th>	Oil Changed				Changed	Changed	Changed
Iron	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Chromium ppm ASTM D5185m >10 0 0 0 0 Nickel ppm ASTM D5185m >3 0 0 <1	WEAR METALS		method	limit/base	current	history 1	history 2
Nickel	Iron	ppm	ASTM D5185m	>50	0	0	8
Titanium	Chromium	ppm	ASTM D5185m	>10	0	0	0
Silver	Nickel	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	Titanium	ppm	ASTM D5185m	>3	0	0	0
Lead ppm ASTM D5185m >10 0 0 <1	Silver	ppm	ASTM D5185m	>2	0	<1	0
Copper ppm ASTM D5185m >50 16 38 30 Tin ppm ASTM D5185m >10 0 0 0 Antimony ppm ASTM D5185m 0 0 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history 1 history 2 Boron ppm ASTM D5185m 0 0 <1 <1 Barium ppm ASTM D5185m 90 <1 0 <1 Molybdenum ppm ASTM D5185m 90 <1 0 <1 Magnesium ppm ASTM D5185m 0 0 0 <1 Calcium ppm ASTM D5185m 0 3 8 <1 Zinc ppm ASTM D5185m 0 71 0 103 Sulfur	Aluminum	ppm	ASTM D5185m	>10	0	<1	<1
Tin	Lead	ppm	ASTM D5185m	>10	0	0	<1
Antimony ppm ASTM D5185m 0 0 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history 1 history 2 Boron ppm ASTM D5185m 0 0 <1	Copper	ppm	ASTM D5185m	>50	16	38	30
Antimony ppm ASTM D5185m 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history 1 history 2 Boron ppm ASTM D5185m 0 0 <1	Tin	ppm	ASTM D5185m	>10	0	0	0
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history 1 history 2 Boron ppm ASTM D5185m 0 0 <1	Antimony	ppm	ASTM D5185m			0	0
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history 1 history 2 Boron ppm ASTM D5185m 0 0 <1 <1 Barium ppm ASTM D5185m 0 0 0 <1 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 <1 Magnesium ppm ASTM D5185m 0 <1 0 0 Calcium ppm ASTM D5185m 0 <1 0 0 Phosphorus ppm ASTM D5185m 0 3 8 <1 Zinc ppm ASTM D5185m 0 71 0 103 Sulfur ppm ASTM D5185m 0 71 0 103 Silicon ppm ASTM D5185m >25 1 1 2 <th>Vanadium</th> <th></th> <th>ASTM D5185m</th> <th></th> <th>0</th> <th>0</th> <th>0</th>	Vanadium		ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 0 0 <1	Cadmium		ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 90 <1	ADDITIVES		method	limit/base	current	history 1	history 2
Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 100 4 <1	Boron	ppm	ASTM D5185m	0	0	<1	<1
Manganese ppm ASTM D5185m 0 0 <1	Barium	ppm	ASTM D5185m	90	<1	0	<1
Magnesium ppm ASTM D5185m 100 4 <1	Molybdenum	ppm	ASTM D5185m	0	0	0	0
Calcium ppm ASTM D5185m 0 <1	Manganese	ppm	ASTM D5185m		0	0	<1
Phosphorus ppm ASTM D5185m 0 3 8 <1	Magnesium	ppm	ASTM D5185m	100	4	<1	8
Zinc ppm ASTM D5185m 0 71 0 103 Sulfur ppm ASTM D5185m 23500 17208 13552 23014 CONTAMINANTS method limit/base current history 1 history 2 Silicon ppm ASTM D5185m >25 1 1 2 Sodium ppm ASTM D5185m >20 0 0 3 Potassium ppm ASTM D5185m >20 0 0 2 Water % ASTM D585m >0 0.012 0.008 0.027 Particles >4µm ASTM D6304 >500 120.0 87.4 273.7 Particles >4µm ASTM D7647 >80 20964	Calcium	ppm	ASTM D5185m	0	<1	0	0
Zinc ppm ASTM D5185m 0 71 0 103 Sulfur ppm ASTM D5185m 23500 17208 13552 23014 CONTAMINANTS method limit/base current history 1 history 2 Silicon ppm ASTM D5185m >25 1 1 2 Sodium ppm ASTM D5185m >20 0 0 3 Potassium ppm ASTM D5185m >20 0 0 2 Water % ASTM D5185m >20 0 0 2 Water % ASTM D5185m >20 0 0 2 Water % ASTM D585m >20 0 0 2 Water % ASTM D6304 >0.05 0.012 0.008 0.027 ppm Water ppm ASTM D6304 >500 120.0 87.4 273.7 FLUID CLEANLINESS method limit/base current	Phosphorus	ppm	ASTM D5185m	0	3	8	<1
CONTAMINANTS method limit/base current history 1 history 2 Silicon ppm ASTM D5185m >25 1 1 2 Sodium ppm ASTM D5185m >20 0 0 3 Potassium ppm ASTM D5185m >20 0 0 2 Water % ASTM D6304 >0.05 0.012 0.008 0.027 ppm Water ppm ASTM D6304 >500 120.0 87.4 273.7 FLUID CLEANLINESS method limit/base current history 1 history 2 Particles >4µm ASTM D7647 >1300 △ 6657 Particles >6µm ASTM D7647 >80 △ 542 Particles >21µm ASTM D7647 >4 3 Particles >38µm ASTM D7647 >3 0 Particles >71µm ASTM D7647 >3 0 <		ppm	ASTM D5185m	0	71	0	103
Silicon ppm ASTM D5185m >25 1 1 2 Sodium ppm ASTM D5185m 0 0 3 Potassium ppm ASTM D5185m >20 0 0 2 Water % ASTM D6304 >0.05 0.012 0.008 0.027 ppm Water ppm ASTM D6304 >500 120.0 87.4 273.7 FLUID CLEANLINESS method limit/base current history 1 history 2 Particles >4μm ASTM D7647 >1300 △ 6657 Particles >6μm ASTM D7647 >80 △ 542 Particles >21μm ASTM D7647 >20 △ 133 Particles >38μm ASTM D7647 >4 3 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 △ 20/16 </th <th>Sulfur</th> <th>ppm</th> <th>ASTM D5185m</th> <th>23500</th> <th>17208</th> <th>13552</th> <th>23014</th>	Sulfur	ppm	ASTM D5185m	23500	17208	13552	23014
Sodium ppm ASTM D5185m 0 0 3 Potassium ppm ASTM D5185m >20 0 0 2 Water % ASTM D6304 >0.05 0.012 0.008 0.027 ppm Water ppm ASTM D6304 >500 120.0 87.4 273.7 FLUID CLEANLINESS method limit/base current history 1 history 2 Particles >4μm ASTM D7647 20964 Particles >6μm ASTM D7647 >1300 △ 6657 Particles >14μm ASTM D7647 >80 △ 542 Particles >21μm ASTM D7647 >20 △ 133 Particles >38μm ASTM D7647 >4 3 Particles >71μm ASTM D7647 >3 0 Poil Cleanliness ISO 4406 (c) >/17/13 △ 20/16	CONTAMINANTS	3	method	limit/base	current	history 1	history 2
Potassium ppm ASTM D5185m >20 0 0 2 Water % ASTM D6304 >0.05 0.012 0.008 0.027 ppm Water ppm ASTM D6304 >500 120.0 87.4 273.7 FLUID CLEANLINESS method limit/base current history 1 history 2 Particles >4μm ASTM D7647 20964 Particles >6μm ASTM D7647 >80 6657 Particles >14μm ASTM D7647 >80 542 Particles >21μm ASTM D7647 >20 133 Particles >38μm ASTM D7647 >3 3 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 20/16 FLUID DEGRADATION method limit/base current history 1 history 2 <th>Silicon</th> <th>ppm</th> <th>ASTM D5185m</th> <th>>25</th> <th>1</th> <th>1</th> <th>2</th>	Silicon	ppm	ASTM D5185m	>25	1	1	2
Water % ASTM D6304 >0.05 0.012 0.008 0.027 ppm Water ppm ASTM D6304 >500 120.0 87.4 273.7 FLUID CLEANLINESS method limit/base current history 1 history 2 Particles >4μm ASTM D7647 20964 Particles >6μm ASTM D7647 >1300 6657 Particles >14μm ASTM D7647 >80 542 Particles >21μm ASTM D7647 >20 133 Particles >38μm ASTM D7647 >4 3 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 Δ 20/16 FLUID DEGRADATION method limit/base current history 1 history 2	Sodium	ppm	ASTM D5185m		0	0	3
ppm Water ppm ASTM D6304 >500 120.0 87.4 273.7 FLUID CLEANLINESS method limit/base current history 1 history 2 Particles >4μm ASTM D7647 20964 Particles >6μm ASTM D7647 >1300 6657 Particles >14μm ASTM D7647 >80 542 Particles >21μm ASTM D7647 >20 133 Particles >38μm ASTM D7647 >4 3 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 Δ 20/16 FLUID DEGRADATION method limit/base current history 1 history 2	Potassium	ppm	ASTM D5185m	>20	0	0	2
FLUID CLEANLINESS method limit/base current history 1 history 2 Particles >4μm ASTM D7647 20964 Particles >6μm ASTM D7647 >1300 6657 Particles >14μm ASTM D7647 >80 542 Particles >21μm ASTM D7647 >20 133 Particles >38μm ASTM D7647 >4 3 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 Δ 20/16 FLUID DEGRADATION method limit/base current history 1 history 2	Water	%	ASTM D6304	>0.05	0.012	0.008	0.027
Particles >4μm ASTM D7647 20964 Particles >6μm ASTM D7647 >1300 6657 Particles >14μm ASTM D7647 >80 542 Particles >21μm ASTM D7647 >20 133 Particles >38μm ASTM D7647 >4 3 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 20/16 FLUID DEGRADATION method limit/base current history 1 history 2	ppm Water	ppm	ASTM D6304	>500	120.0	87.4	273.7
Particles >6μm ASTM D7647 >1300 4 6657 Particles >14μm ASTM D7647 >80 4 542 Particles >21μm ASTM D7647 >20 4 133 Particles >38μm ASTM D7647 >4 3 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 4 20/16 FLUID DEGRADATION method limit/base current history 1 history 2	FLUID CLEANLIN	NESS	method	limit/base	current	history 1	history 2
Particles >6μm ASTM D7647 >1300 4 6657 Particles >14μm ASTM D7647 >80 4 542 Particles >21μm ASTM D7647 >20 4 133 Particles >38μm ASTM D7647 >4 3 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 4 20/16 FLUID DEGRADATION method limit/base current history 1 history 2	Particles >4µm		ASTM D7647			20964	
Particles >21μm ASTM D7647 >20 133 Particles >38μm ASTM D7647 >4 3 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 ≥ 20/16 FLUID DEGRADATION method limit/base current history 1 history 2			ASTM D7647	>1300		△ 6657	
Particles >38μm ASTM D7647 >4 3 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 Δ 20/16 FLUID DEGRADATION method limit/base current history 1 history 2	Particles >14µm		ASTM D7647	>80		<u></u> 542	
Particles >38μm ASTM D7647 >4 3 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 Δ 20/16 FLUID DEGRADATION method limit/base current history 1 history 2	Particles >21µm		ASTM D7647	>20		<u></u> 133	
Oil Cleanliness ISO 4406 (c) >/17/13 △ 20/16 FLUID DEGRADATION method limit/base current history 1 history 2			ASTM D7647	>4		3	
Oil Cleanliness ISO 4406 (c) >/17/13 △ 20/16 FLUID DEGRADATION method limit/base current history 1 history 2	Particles >71µm		ASTM D7647	>3		0	
·							
	FLUID DEGRADA	ATION	method	limit/base	current	history 1	history 2
	Acid Number (AN)	mg KOH/a	ASTM D8045		0.36		



OIL ANALYSIS REPORT



VISUAL		method	limit/base	current	history 1	history 2
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	▲ MODER
Debris	scalar	*Visual	NONE	MODER	NONE	▲ MODER
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 PROPERT	TES	method	limit/base	current	history 1	history 2
Visc @ 40°C	cSt	ASTM D445	45	47.3	54.4	47.0
SAMPLE IMAGES	6	method	limit/base	current	history 1	history 2
Color						
Bottom						

GRAPHS Ferrous Alloys Non-ferrous Metals Viscosity @ 40°C Acid Number ® 1.20 W 0.96 ₤0.72 흔 0.48 를 0.24 0.00 G





Laboratory Sample No. Lab Number Unique Number : 10138794

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : KCP46149 : 05644255

Received

Diagnosed Diagnostician : Don Baldridge

: 16 Sep 2022 : 20 Sep 2022 112 SUPERIOR STAINLESS RD

GASTONIA, NC USA 28052

Contact: Service Manager

INDUSTRIAL GLASS TECHNOLOGIES

Test Package : IND 2 (Additional Tests: KF, PrtCount) Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - 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)

T:

F: