

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id B400 Component Inboard Blower Fluid KAESER OMEGA SB-220 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Analytical Ferrography: Results are normal, with typical amounts of ferrous rubbing wear and contamination present.

Wear

All component wear rates are normal.

Contaminants

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Oil Condition

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

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0954919	WC0779536	WC0599638
Sample Date		Client Info		21 Jun 2024	01 Feb 2023	01 Feb 2022
Machine Age	hrs	Client Info	Info 51726 44645		44645	39818
Oil Age	hrs	Client Info	nfo 7076 4848		4848	6962
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ATTENTION
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184		20	11	21
Iron	ppm	ASTM D5185m	>20	0	<1	<1
Chromium	ppm	ASTM D5185m	>20	0	0	0
Nickel	ppm	ASTM D5185m	>20	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	<1
Aluminum	ppm	ASTM D5185m	>20	<1	3	1
Lead	ppm	ASTM D5185m		0	<1	<1
Copper	ppm	ASTM D5185m	>20	۰ <1	<1	<1
Tin	ppm	ASTM D5185m		0	0	0
Antimony	ppm	ASTM D5185m				0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	ррпі			-	-	-
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		0	0	<1
Barium	ppm ppm	ASTM D5185m	90	0	0	0
Barium Molybdenum		ASTM D5185m ASTM D5185m	90	0 0	0 0	0 0
Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m		0 0 0	0 0 0	0 0 0
Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90	0 0 0 83	0 0 0 88	0 0 0 101
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	90	0 0 0 83 2	0 0 0 88 1	0 0 0 101 0
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90	0 0 0 83	0 0 88 1 1	0 0 0 101
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90	0 0 0 83 2	0 0 0 88 1	0 0 0 101 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90	0 0 83 2 <1	0 0 88 1 1	0 0 101 0 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90	0 0 83 2 <1 0	0 0 88 1 1 0	0 0 101 0 5 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90 2	0 0 83 2 <1 0 21861	0 0 88 1 1 0 21900	0 0 101 0 5 0 18303
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90 2 limit/base	0 0 83 2 <1 0 21861 current	0 0 88 1 1 0 21900 history1	0 0 101 0 5 0 18303 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90 2 limit/base	0 0 83 2 <1 0 21861 current <1	0 0 88 1 1 0 21900 history1 <1	0 0 101 0 5 0 18303 history2 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	90 2 limit/base >15	0 0 83 2 <1 0 21861 current <1 2	0 0 88 1 1 0 21900 history1 <1 <1	0 0 101 0 5 0 18303 history2 0 <1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90 2 limit/base >15	0 0 83 2 <1 0 21861 current <1 2 1	0 0 88 1 1 0 21900 history1 <1 <1 0	0 0 101 0 5 0 18303 history2 0 <1 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	90 2 limit/base >15	0 0 0 83 2 <1 0 21861 current <1 2 1 1 0.021	0 0 88 1 1 0 21900 history1 <1 <1 0 0 0.015	0 0 0 101 0 5 0 18303 history2 0 <1 0 0 <1 0 0 0.006
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304	90 2 limit/base >15 >20	0 0 83 2 <1 0 21861 current <1 2 1 0.021 213	0 0 88 1 1 0 21900 history1 <1 <1 0 0.015 155.3	0 0 101 0 5 0 18303 history2 0 <1 0 0 <1 0 0.006 62.3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D6304	90 2 2 <i>limit/base</i> >15 >20 <i>limit/base</i>	0 0 0 83 2 <1 0 21861 current 2 1 0.021 213 213 current 402	0 0 88 1 1 0 21900 history1 <1 <1 <1 0 0.015 155.3 history1	0 0 0 101 0 5 0 18303 history2 0 <1 0 0 0.006 62.3 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D6304	90 2 2 	0 0 0 83 2 <1 0 21861 current 2 1 0.021 213 current	0 0 88 1 1 0 21900 history1 <1 <1 <1 0 0.015 155.3 history1 929 184	0 0 0 101 5 0 18303 history2 0 <1 0 0 <1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647	90 2 2 	0 0 0 83 2 <1 0 21861 current <1 2 1 0.021 213 current 402 88 8 8	0 0 88 1 1 0 21900 history1 <1 <1 <1 0 0.015 155.3 history1 929	0 0 0 101 0 5 0 18303 history2 0 <10 0 (1 3 0 0 0.006 62.3 history2 0 2656 422 23
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	90 2 2	0 0 83 2 <1 0 21861 current <1 2 1 0.021 213 current 402 88 8 8 3	0 0 88 1 1 1 0 21900 history1 <1 <1 <1 0 0.015 155.3 history1 929 184 8 1	0 0 0 101 5 5 0 18303 history2 0 <1 0 0 <1 0 0.006 62.3 history2 2656 422 23 4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	90 2 2 	0 0 0 83 2 <1 0 21861 current <1 2 1 0.021 213 current 402 88 8 8 3 1	0 0 88 1 1 0 21900 history1 <1 <1 <1 0 0.015 155.3 history1 929 184 8 1 0 0	0 0 0 101 5 5 0 18303 history2 0 <1 0 0 <1 0 0.006 62.3 history2 2 2656 422 23 4 0 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	90 2 2 	0 0 83 2 <1 0 21861 current <1 2 1 0.021 213 current 402 88 8 8 3	0 0 88 1 1 1 0 21900 history1 <1 <1 <1 0 0.015 155.3 history1 929 184 8 1	0 0 0 101 5 5 0 18303 history2 0 <1 0 0 <1 0 0.006 62.3 history2 2656 422 23 4



OIL ANALYSIS REPORT

Severe			Acid Number (AN)	mg KOH/g	ASTM D8045	0.4	0.39	0.44	0.27
			VISUAL		method	limit/base	current	history1	history
			White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
			Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Abnemal			Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
0ct22/19	Feb1/23 -	1/24	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
0 ct2 Feb	-9- -	Jun21/24	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
DO			Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
PQ			Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Severe			Odor	scalar	*Visual	NORML	NORML	NORML	NORML
			Emulsified Water	scalar	*Visual		NEG	NEG	NEG
Abnormal			Free Water	scalar	*Visual		NEG	NEG	NEG
- O			FLUID PROPER	TIES	method	limit/base	current	history1	history
			Visc @ 40°C	cSt	ASTM D445	220	232	230	232
0ct22/19 Feb1/22	Feb1/23	Jun21/24	SAMPLE IMAGE	S	method	limit/base	current	history1	history
Particle Trend	LL.	Ju							
			Color						no image
6μm 14μm									
Abnomal			Bottom						no image
All Products on the Local Stationary of the									
22	23	24	GRAPHS				Particle Count		
0ct22/19 Feb1/22	Feb1/23	Jun21/24	Ferrous Alloys			491,52	Particle Count		
			iron			122,88			
Viscosity @ 40°C		bbu	5 nickel						
						30,72	bevele		
			0 161/3		Feb1/23	1 m 1 m 1 1 m 1	Abnormal		
Base			0ct22/19 Feb 1/22		Feb1	Jun21/24 s {per 1 m]			
			Non-ferrous Meta	ls		Jun21/24 Jun21/24 1.56 1 89		· · · · · · · · · · · · · · · · · · ·	
Abnormal			10 copper			d Jo 12			
		E	Lead accounter lead			dmin 3			
0ct22/19 Feb1/22	Feb1/23	Actes.	5-			3			
00	LE.	_	0			_	3+		
PQ			0ct22/19 Feb1/22		Feb 1/23	Jun21/24	2 -		-
					£	Jun	4µ 6µ	14µ 21µ	38µ 7
Severe		2	Viscosity @ 40°C				Acid Number		
i i 						(^р /Но.6 Ноу в ш)-0.4]		
Abnormal		cSt (40°C)	20 Base			E_0.4	Base		
		5 ² 2	00 - Abnormal			- ag g 0.2	D-		
		1	80			9.0 Vimper	, 		
22 -	23	10	0ct22/19 - Feb1/22 -		Feb1/23	Jun21/24	0ct22/19	Feb1/23	
0ct22/19 Feb1/22	Feb1/23	10	E Oct		Ъ.	Jun	Doct 0	<u> </u>	
	Unique N	No. : \ mber : (umber : ckage :	WearCheck USA - 50 WC0954919 06220404 11098601 ND 3 (Additional Tea	Recei Teste Diagn sts: KF, P	ived : 25 id : 28 nosed : 28	5 Jun 2024 3 Jun 2024 Jun 2024 - Aa		ENTAL & INFRASTRUC 511 CONGR PC Contact: KA	ESS STRI RTLAND, US 04

Contact/Location: KAITLYN CHICK - ENVPOR Page 2 of 4



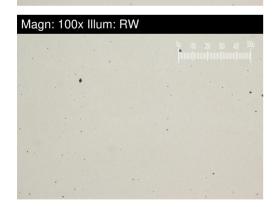
FERROGRAPHY REPORT

Machine Id B400 Component Inboard Blower Fluid KAESER OMEGA SB-220 (--- GAL)

Magn: 100x Illum: RW	Magn: 100x II	llum: RW	
Magn: 100x Illum: RW			
Magn: 100x Illum: RW	•		
Magn: 100x Illum: RW		•.	*
Magn: 100x Illum: RW			
	Magn: 100x II	llum: RW	



FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	*ASTM D7684		1	1	2
Ferrous Sliding	Scale 0-10	*ASTM D7684			1	
Ferrous Cutting	Scale 0-10	*ASTM D7684				2
Ferrous Rolling	Scale 0-10	*ASTM D7684				
Ferrous Break-in	Scale 0-10	*ASTM D7684				
Ferrous Spheres	Scale 0-10	*ASTM D7684				
Ferrous Black Oxides	Scale 0-10	*ASTM D7684				2
Ferrous Red Oxides	Scale 0-10	*ASTM D7684				
Ferrous Corrosive	Scale 0-10	*ASTM D7684				
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				
Fibres	Scale 0-10	*ASTM D7684				
Spheres	Scale 0-10	*ASTM D7684				
Other	Scale 0-10	*ASTM D7684		1	1	2



WEAR

All component wear rates are normal.

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