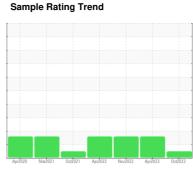


OIL ANALYSIS REPORT

KAESER S-460 [6890] Machine Id KAESER 1007/101833.1 - UNILOCK

Component

Compressor





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil

Fluid Condition

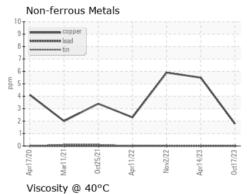
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

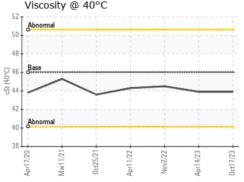
Client Info			Apr2020	Mar2021 Oct2021	Apr2022 Nov2022 Apr2023	0et2023	
Client Info	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 17570 17522 17521 1	Sample Number		Client Info		UCH05995727	UCH05825020	UCH05724178
Machine Age hrs			Client Info		17 Oct 2023	14 Apr 2023	02 Nov 2022
Dil Changed Client Info Not Changed NORMAL ABNORMAL A	Machine Age	hrs	Client Info		17570		17521
Oil Changed Sample Status Client Info Not Changed NORMAL Changed ABNORMAL Not Changed ABNORMAL ASTADESTATE TO THE TOWN TOWN TOWN TOWN TOWN TOWN TOWN TOWN		hrs	Client Info		48	1	4495
NORMAL ABNORMAL			Client Info		Not Changd	Changed	Not Changd
Chromium	Sample Status				NORMAL	ABNORMAL	ABNORMAL
Chromium ppm ASTM D5185m >10 0 0 0 0 Nickel ppm ASTM D5185m >3 0 0 0 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >10 4 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>50	0	<1	<1
Titanium	Chromium	ppm	ASTM D5185m	>10	0	0	0
Silver	Nickel	ppm	ASTM D5185m	>3	0	0	0
Aluminum	Titanium	ppm	ASTM D5185m	>3	0	0	0
Lead ppm ASTM D5185m >10 0 0 0 Copper ppm ASTM D5185m >50 2 6 6 Tin ppm ASTM D5185m >50 2 6 6 Vanadium ppm ASTM D5185m >10 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 90 0 0 0 Molybdenum ppm ASTM D5185m 90 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 59 15 19 Calcium ppm ASTM D5185m 2 0 0 4 Zinc ppm ASTM D5185m 2 0 0 4 <td>Silver</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>2</td> <th>0</th> <td>0</td> <td>0</td>	Silver	ppm	ASTM D5185m	>2	0	0	0
Lead ppm ASTM D5185m >10 0 0 0 Copper ppm ASTM D5185m >50 2 6 6 Tin ppm ASTM D5185m >10 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 90 59 15 19 Calcium ppm ASTM D5185m 2 0 0 4 Zinc ppm ASTM D5185m 31 34 50	Aluminum	ppm	ASTM D5185m	>10	4	0	<1
Copper ppm ASTM D5185m >50 2 6 6 Tin ppm ASTM D5185m >10 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 90 59 15 19 19 2 0	Lead		ASTM D5185m	>10	0	0	0
Trin			ASTM D5185m				
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 90 59 15 19 Calcium ppm ASTM D5185m 2 0 0 0 Phosphorus ppm ASTM D5185m 31 34 50 Sulfur ppm ASTM D5185m 31 34 50 Sulfur ppm ASTM D5185m >25 13 &6 &84 CONTAMINANTS method limit/base current history1 history2 Soliton	Tin				0		
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m -1 0 0 0 Magnesium ppm ASTM D5185m 90 59 15 19 Calcium ppm ASTM D5185m 2 0 0 0 Phosphorus ppm ASTM D5185m 0 0 4 2 Zinc ppm ASTM D5185m 0 0 0 4 Zinc ppm ASTM D5185m 16598 17879 20871 CONTAMINANTS method limit/base current history1 history2	Vanadium		ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 0 0 0 0 0 0 0 0 0	Cadmium				-		
Barium ppm ASTM D5185m 90 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m <1 0 0 Magnesium ppm ASTM D5185m 90 59 15 19 Calcium ppm ASTM D5185m 0 0 0 Phosphorus ppm ASTM D5185m 0 0 4 Zinc ppm ASTM D5185m 31 34 50 Sulfur ppm ASTM D5185m 16598 17879 20871 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 13 86 48 Sodium ppm ASTM D5185m >20 12 7 7 FLUID DEGRADATION method limit/base current history1 history2	ADDITIVES		method	limit/base	current	history1	history2
Barium ppm ASTM D5185m 90 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m		0	0	0
Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m <1	Barium		ASTM D5185m	90	0		0
Manganese ppm ASTM D5185m <1 0 0 Magnesium ppm ASTM D5185m 90 59 15 19 Calcium ppm ASTM D5185m 2 0 0 0 Phosphorus ppm ASTM D5185m 0 0 4 Zinc ppm ASTM D5185m 31 34 50 Sulfur ppm ASTM D5185m 16598 17879 20871 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 13 86 84 Sodium ppm ASTM D5185m >20 12 7 7 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOHg ASTM D8045 0.4 0.34 0.40 0.42 VISUAL method limit/base current history1 history1	Molvbdenum		ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m 90 59 15 19 Calcium ppm ASTM D5185m 2 0 0 0 Phosphorus ppm ASTM D5185m 0 0 4 Zinc ppm ASTM D5185m 31 34 50 Sulfur ppm ASTM D5185m 16598 17879 20871 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 13 86 A84 Sodium ppm ASTM D5185m >25 13 86 A84 Sodium ppm ASTM D5185m >20 12 7 7 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOHg ASTM D8045 0.4 0.34 0.40 0.42 VISUAL method limit/base current history1	•		ASTM D5185m		<1	0	0
Calcium ppm ASTM D5185m 2 0 0 0 Phosphorus ppm ASTM D5185m 0 0 4 Zinc ppm ASTM D5185m 31 34 50 Sulfur ppm ASTM D5185m 16598 17879 20871 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 13 ▲ 86 ▲ 84 Sodium ppm ASTM D5185m >20 12 7 7 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.4 0.34 0.40 0.42 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE <td< td=""><td>•</td><td></td><td>ASTM D5185m</td><td>90</td><th>59</th><td>15</td><td>19</td></td<>	•		ASTM D5185m	90	59	15	19
Phosphorus ppm ASTM D5185m 0 0 4 Zinc ppm ASTM D5185m 31 34 50 Sulfur ppm ASTM D5185m 16598 17879 20871 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 13 ▲ 86 ▲ 84 Sodium ppm ASTM D5185m >20 12 7 7 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.4 0.34 0.40 0.42 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE<	<u> </u>		ASTM D5185m	2		0	0
Zinc ppm ASTM D5185m 31 34 50 Sulfur ppm ASTM D5185m 16598 17879 20871 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 13 ▲ 86 ▲ 84 Sodium ppm ASTM D5185m >20 12 7 7 Potassium ppm ASTM D5185m >20 12 7 7 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.4 0.34 0.40 0.42 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Vellow Metal scalar *Visual NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE <td></td> <td></td> <td></td> <td></td> <th>0</th> <td>0</td> <td>4</td>					0	0	4
Sulfur ppm ASTM D5185m 16598 17879 20871 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 13					31	34	50
Silicon ppm ASTM D5185m >25 13	Sulfur				-		
Sodium ppm ASTM D5185m 18 12 17 Potassium ppm ASTM D5185m >20 12 7 7 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.4 0.34 0.40 0.42 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE	CONTAMINANTS	3	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 12 7 7 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.4 0.34 0.40 0.42 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Appearance scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG NEG	Silicon	ppm	ASTM D5185m	>25	13	<u>^</u> 86	<u></u> 84
FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.4 0.34 0.40 0.42 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE 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	Sodium	ppm	ASTM D5185m		18	12	17
Acid Number (AN) mg KOHig ASTM D8045 0.4 0.34 0.40 0.42 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE 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	Potassium	ppm	ASTM D5185m	>20	12	7	7
VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE 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	FLUID DEGRADA	NOITA	method	limit/base	current	history1	history2
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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 NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG NEG	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar *Visual NONE 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	White Metal	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	Yellow Metal	scalar	*Visual	NONE	NONE		NONE
Debrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.05NEGNEGNEG	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.05NEGNEGNEG	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.05NEGNEGNEG	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Odor scalar *Visual NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG NEG	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Emulsified Water scalar *Visual >0.05 NEG NEG NEG	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water scalar *Visual >0.05 NEG NEG NEG	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Free Water scalar *Visual NEG NEG NEG	Emulsified Water	scalar	*Visual			NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG

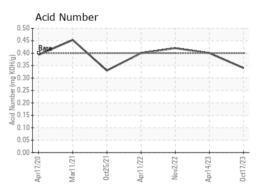


OIL ANALYSIS REPORT













Certificate L2367

Laboratory Sample No. Test Package : IND 2

Lab Number Unique Number : 10724087

: UCH05995727 : 05995727

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 01 Nov 2023 Diagnosed : 02 Nov 2023 Diagnostician : Don Baldridge

DELTA INDUSTRIES - DOWNERS GROVE

2201 CURTISS STREET DOWNERS GROVE, IL US 60515

44.5

Contact: MICHAEL FERRIS

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)

F: (630)960-3931