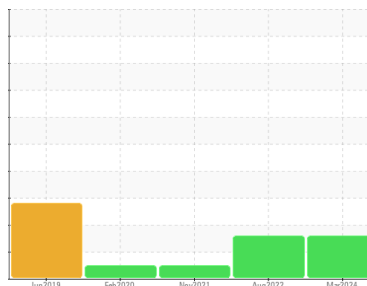


Machine Id
KAESER CSD 75 5571864 (S/N 1220)

Component
Compressor
Fluid
KAESER SIGMA (OEM) S-460 (--- GAL)



DIAGNOSIS

Recommendation

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. 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

The iron level is marginal. All other component wear rates are normal.

Contamination

There is a moderate amount of visible silt present in the sample.

Fluid Condition

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

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|--------------------|-------------|-------------|------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | | KCPA013989 | KCP50603 | KCP39798 |
| Sample Date | Client Info | | | 08 Mar 2024 | 16 Aug 2022 | 18 Nov 2021 |
| Machine Age | hrs | Client Info | | 35135 | 26698 | 23105 |
| Oil Age | hrs | Client Info | | 3991 | 3583 | 7419 |
| Oil Changed | Client Info | | | Not Chngd | Not Chngd | Changed |
| Sample Status | | | | ABNORMAL | ABNORMAL | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m | >50 | ▲ 48 | <1 | 0 |
| Chromium | ppm | ASTM D5185m | >10 | 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 | <1 | <1 | <1 |
| Lead | ppm | ASTM D5185m | >10 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >50 | 3 | 3 | 5 |
| Tin | ppm | ASTM D5185m | >10 | 0 | 0 | 0 |
| Antimony | ppm | ASTM D5185m | | --- | --- | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |

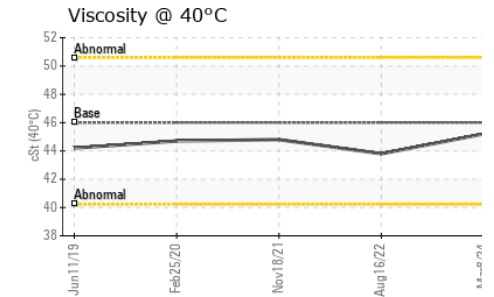
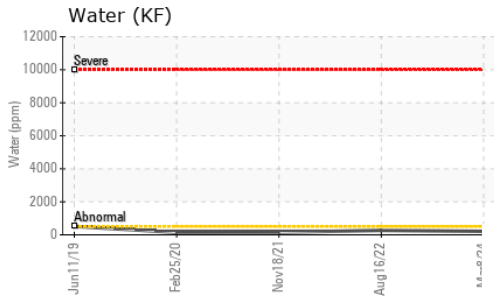
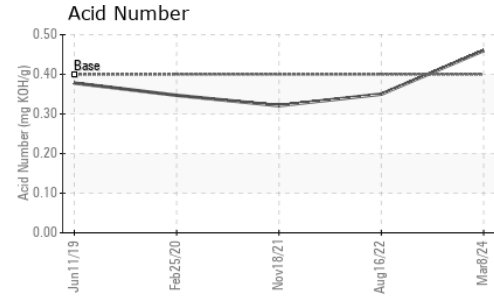
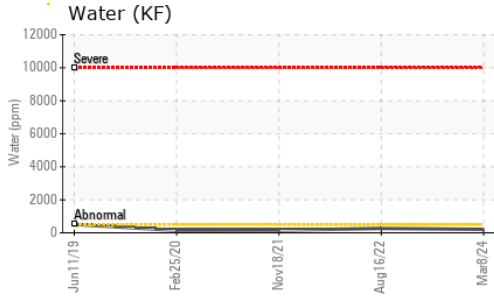
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Barium | ppm | ASTM D5185m | 90 | 2 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | 90 | 59 | 64 | 39 |
| Calcium | ppm | ASTM D5185m | 2 | 11 | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | | 11 | 6 | 2 |
| Zinc | ppm | ASTM D5185m | | 22 | 22 | 43 |
| Sulfur | ppm | ASTM D5185m | | 20440 | 18669 | 15898 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m | >25 | 5 | 0 | 0 |
| Sodium | ppm | ASTM D5185m | | 21 | 19 | 25 |
| Potassium | ppm | ASTM D5185m | >20 | 3 | 4 | 4 |
| Water | % | ASTM D6304 | >0.05 | 0.021 | 0.026 | 0.015 |
| ppm Water | ppm | ASTM D6304 | >500 | 210 | 267.0 | 153.5 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|-------------------|--|--------------|------------|------------|-------------------|----------|
| Particles >4µm | | ASTM D7647 | | --- | 22905 | 1698 |
| Particles >6µm | | ASTM D7647 | >1300 | --- | ▲ 7667 | 577 |
| Particles >14µm | | ASTM D7647 | >80 | --- | ▲ 629 | 53 |
| Particles >21µm | | ASTM D7647 | >20 | --- | ▲ 114 | 15 |
| Particles >38µm | | ASTM D7647 | >4 | --- | 3 | 0 |
| Particles >71µm | | ASTM D7647 | >3 | --- | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | --- | ▲ 22/20/16 | 16/13 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.4 | 0.46 | 0.35 | 0.321 |

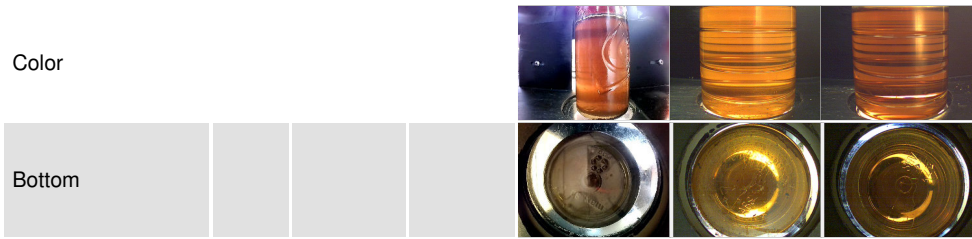
OIL ANALYSIS REPORT



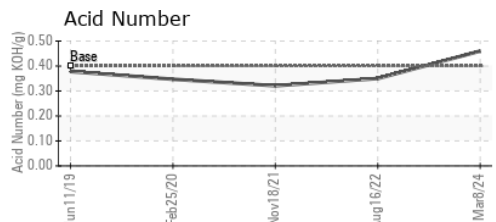
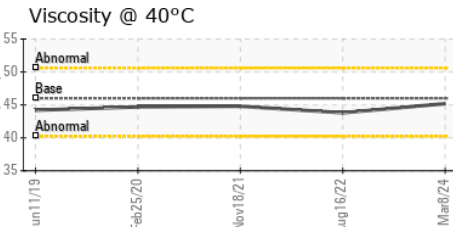
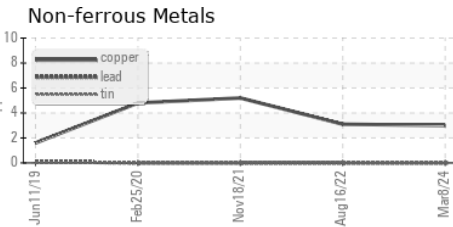
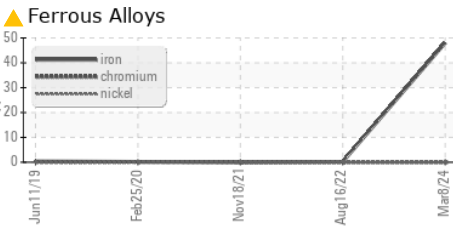
| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | ▲ MODER | NONE |
| Debris | scalar | *Visual | NONE | NONE | LIGHT |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.05 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|--------------|-------------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 46 | 45.2 | 43.8 | 44.8 |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---------------|--------|------------|---------|----------|----------|
|---------------|--------|------------|---------|----------|----------|



GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KCPA013989 **Received** : 20 Mar 2024
Lab Number : 06124293 **Tested** : 23 Mar 2024
Unique Number : 10938444 **Diagnosed** : 23 Mar 2024 - Don Baldrige
Test Package : IND 2 (Additional Tests: KF, PrtCount)

HOBBY LOBBY
 7707 SW 44TH ST
 OKLAHOMA CITY, OK
 US 73179
 Contact: JEFF LEWIS
 JEFF.LEWIS@HOBBYLOBBY.COM

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: