

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

TYSVIC 15 SWING (S/N 107639)

Refrigeration Compressor

USPI ALT-68 SC (--- GAL)

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. The amount and size of particulates present in the system are acceptable.

Fluid Condition

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

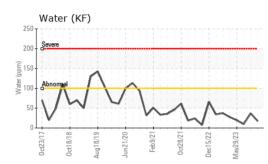
| 0ct2018 | Aug2019 | Jun2020 | Feb2021 | 0ct2021 | Dec2022 | Mav2023 | |
|-------------|---------|---------|---------|---------|---------|---------|--|

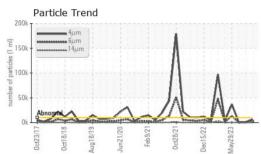


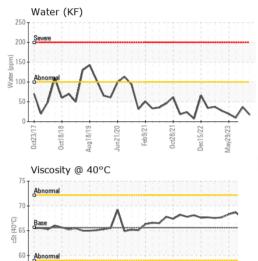
| SAMPLE INFORM | ATION | method | limit/base | current | history1 | history2 |
|------------------|----------|--------------|------------|-------------|-------------|-------------|
| Sample Number | | Client Info | | USP0003481 | USP0000333 | USP250241 |
| Sample Date | | Client Info | | 13 Nov 2023 | 31 Aug 2023 | 04 Jul 2023 |
| Machine Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| WEAR METALS | | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >8 | 0 | 0 | 0 |
| Chromium | ppm | ASTM D5185m | >2 | <1 | 0 | 0 |
| Nickel | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >3 | 0 | 0 | <1 |
| Lead | ppm | ASTM D5185m | >2 | 0 | <1 | 0 |
| Copper | ppm | ASTM D5185m | >8 | 0 | 0 | 0 |
| Tin | ppm | ASTM D5185m | >4 | 0 | 0 | 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 | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Calcium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Zinc | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Sulfur | ppm | ASTM D5185m | 50 | 0 | 0 | 4 |
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
| Silicon | ppm | ASTM D5185m | >15 | <1 | 0 | 1 |
| Sodium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | <1 | <1 | 2 |
| Water | % | ASTM D6304 | >0.01 | 0.002 | 0.003 | 0.001 |
| ppm Water | ppm | ASTM D6304 | >100 | 17.4 | 36.7 | 9.7 |
| FLUID CLEANLIN | IESS | method | limit/base | current | history1 | history2 |
| Particles >4µm | | ASTM D7647 | >10000 | 6062 | 998 | 536 |
| Particles >6µm | | ASTM D7647 | >2500 | 2307 | 358 | 126 |
| Particles >14µm | | ASTM D7647 | >320 | 90 | 27 | 11 |
| Particles >21µm | | ASTM D7647 | >80 | 7 | 6 | 4 |
| Particles >38µm | | ASTM D7647 | >20 | 1 | 1 | 0 |
| Particles >71µm | | ASTM D7647 | >4 | 0 | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >20/18/15 | 20/18/14 | 17/16/12 | 16/14/11 |
| FLUID DEGRADA | TION | method | limit/base | current | history1 | history2 |
| Acid Number (AN) | mg KOH/g | ASTM D974 | 0.005 | 0.012 | 0.014 | 0.014 |



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200

Ê 150

of partic

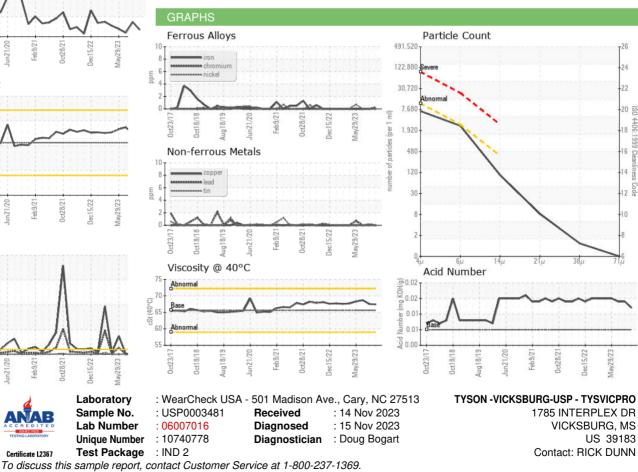
0

dmi 50

018/19

Particle Trend

| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|-----------|------------|---|----------|----------|
| 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 | 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 | >0.01 | NEG | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG | NEG |
| FLUID PROPERT | IES | method | limit/base | current | history1 | history2 |
| Visc @ 40°C | cSt | ASTM D445 | 65.6 | 67.4 | 67.5 | 68.7 |
| SAMPLE IMAGES | 6 | method | limit/base | current | history1 | history2 |
| Color | | | | NIL Base Base Base Base Base Base Base Base | | C ID 312 |
| Bottom | | | | (\bigcirc) | (6) | |



* - 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)

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