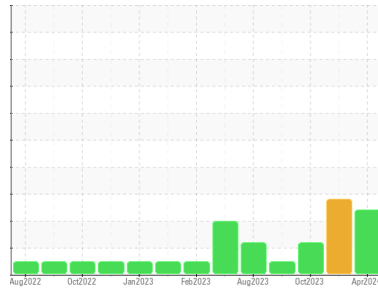


OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area
Thermoforming
 Machine Id
Line 4 A Extruder (S/N X8137)
 Component
Bevel Helical Gearbox
 Fluid
{not provided} (3 GAL)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates present in the oil.

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 | TO50002193 | TO50002205 | TO50001680 |
| Sample Date | Client Info | 17 Apr 2024 | 29 Feb 2024 | 18 Oct 2023 |
| Machine Age | hrs | Client Info | 0 | 0 |
| Oil Age | hrs | Client Info | 0 | 0 |
| Oil Changed | Client Info | Not Chngd | Not Chngd | N/A |
| Sample Status | | ABNORMAL | ABNORMAL | ABNORMAL |

WEAR METALS

| method | limit/base | current | history1 | history2 | |
|----------|------------|------------------|----------|----------|----|
| PQ | ASTM D8184 | 14 | 15 | 14 | |
| Iron | ppm | ASTM D5185m >150 | 9 | 4 | 5 |
| Chromium | ppm | ASTM D5185m >10 | <1 | <1 | 0 |
| Nickel | ppm | ASTM D5185m >10 | <1 | 0 | <1 |
| Titanium | ppm | ASTM D5185m | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m >25 | 3 | 2 | <1 |
| Lead | ppm | ASTM D5185m >100 | <1 | 0 | 0 |
| Copper | ppm | ASTM D5185m >50 | 4 | 3 | 2 |
| Tin | ppm | ASTM D5185m >10 | <1 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | <1 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | <1 | 0 | 0 |

ADDITIVES

| method | limit/base | current | history1 | history2 | |
|------------|------------|-------------|-------------|----------|------|
| Boron | ppm | ASTM D5185m | 1 | 1 | 1 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | <1 | 0 | 0 |
| Manganese | ppm | ASTM D5185m | <1 | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 1 | <1 | 3 |
| Calcium | ppm | ASTM D5185m | 0 | 0 | 5 |
| Phosphorus | ppm | ASTM D5185m | 583 | 615 | 667 |
| Zinc | ppm | ASTM D5185m | 6 | 7 | 4 |
| Sulfur | ppm | ASTM D5185m | 2003 | 2017 | 2149 |

CONTAMINANTS

| method | limit/base | current | history1 | history2 | |
|-----------|------------|------------------|--------------|----------|-------|
| Silicon | ppm | ASTM D5185m >50 | 6 | 10 | 8 |
| Sodium | ppm | ASTM D5185m | 0 | 1 | 2 |
| Potassium | ppm | ASTM D5185m >20 | 2 | <1 | 2 |
| Water | % | ASTM D6304 >0.1 | 0.001 | 0.021 | 0.008 |
| ppm Water | ppm | ASTM D6304 >1000 | 13 | 217 | 83.6 |

FLUID CLEANLINESS

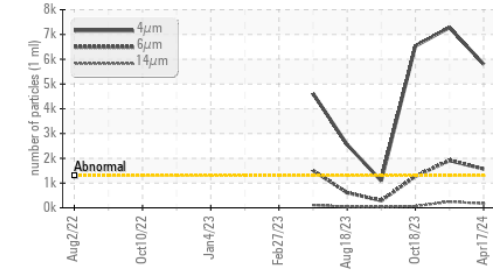
| method | limit/base | current | history1 | history2 |
|-----------------|------------------------|-------------------|------------|------------|
| Particles >4µm | ASTM D7647 >1300 | ▲ 5797 | ▲ 7279 | ▲ 6536 |
| Particles >6µm | ASTM D7647 >320 | ▲ 1568 | ▲ 1909 | ▲ 1271 |
| Particles >14µm | ASTM D7647 >80 | ▲ 169 | ▲ 247 | 61 |
| Particles >21µm | ASTM D7647 >20 | ▲ 67 | ▲ 101 | 10 |
| Particles >38µm | ASTM D7647 >4 | ▲ 6 | ▲ 13 | 0 |
| Particles >71µm | ASTM D7647 >3 | ▲ 1 | ▲ 2 | 0 |
| Oil Cleanliness | ISO 4406 (c) >17/15/13 | ▲ 20/18/15 | ▲ 20/18/15 | ▲ 20/17/13 |

FLUID DEGRADATION

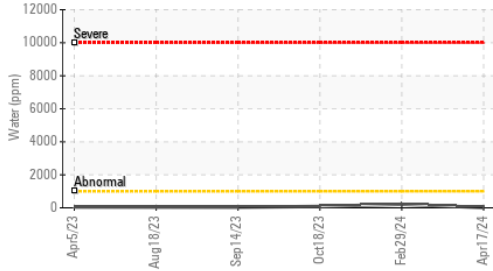
| method | limit/base | current | history1 | history2 | |
|------------------|------------|------------|-------------|----------|------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.81 | 0.79 | 0.73 |

OIL ANALYSIS REPORT

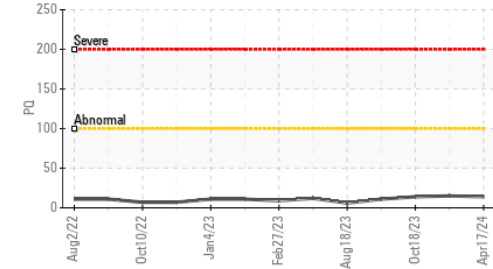
▲ Particle Trend



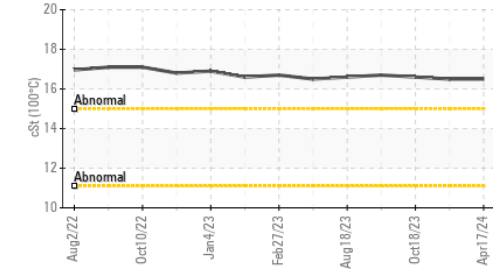
Water (KF)



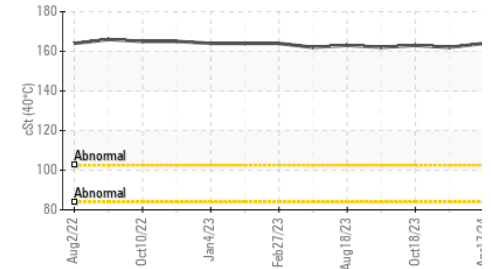
PQ



Viscosity @ 100°C



Viscosity @ 40°C



| 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 | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.1 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

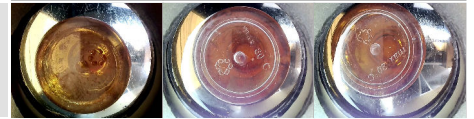
| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|----------------------|--------|------------|---------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 | 164 | 162 | 163 |
| Visc @ 100°C | cSt | ASTM D445 | 16.5 | 16.5 | 16.6 |
| Viscosity Index (VI) | Scale | ASTM D2270 | 105 | 107 | 107 |

SAMPLE IMAGES

Color

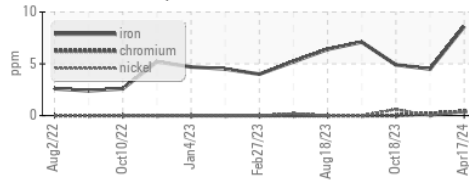


Bottom

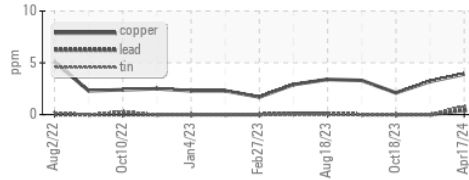


GRAPHS

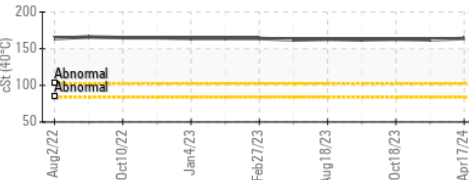
Ferrous Alloys



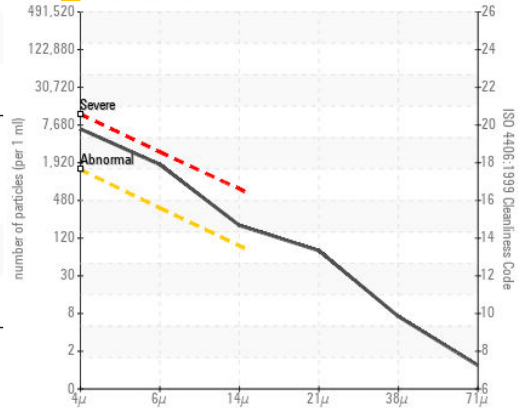
Non-ferrous Metals



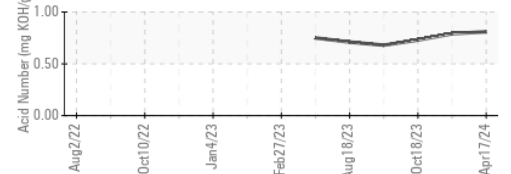
Viscosity @ 40°C



▲ Particle Count



Acid Number



Certificate L2367

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

Sample No. : TO50002193

Lab Number : 06156959

Unique Number : 10992382

Test Package : IND 2 (Additional Tests: KF, KV100, PQ, PrtCount, VI)

Received : 22 Apr 2024

Tested : 23 Apr 2024

Diagnosed : 25 Apr 2024 - Jonathan Hester

DART CONTAINER CORPORATION

4444 W LEADBETTER DR

DALLAS, TX

US 75236

Contact: YON PALOMINO

yon.palomino@dart.biz

T: (214)775-5673

F:

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)