



| | |
|-----------------|------------------|
| WEAR | NORMAL |
| CONTAMINATION | ATTENTION |
| FLUID CONDITION | NORMAL |

Area

[W62992]

Machine Id

KLEEMANN MR110Zi EVO2 K0190166

Component

Rear Hydraulic System

Fluid

HITACHI HYDRAULIC SUPER EX 46HN (50 GAL)

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. (Customer Sample Comment: W62992)

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|-------------|----------|----------|
| Sample Number | | Client Info | | JR0198978 | --- | --- |
| Sample Date | | Client Info | | 08 Jan 2024 | --- | --- |
| Machine Age | hrs | Client Info | | 990 | --- | --- |
| Oil Age | hrs | Client Info | | 990 | --- | --- |
| Filter Age | hrs | Client Info | | 0 | --- | --- |
| Oil Changed | | Client Info | | Not Changed | --- | --- |
| Filter Changed | | Client Info | | Changed | --- | --- |
| Sample Status | | | | ATTENTION | --- | --- |

WEAR

All component wear rates are normal.

| PQ | UOM | Method | Limit/Abn | Current | History1 | History2 |
|--------------|--------|-------------|-----------|---------|----------|----------|
| | | ASTM D8184 | | 11 | --- | --- |
| Iron | ppm | ASTM D5185m | >20 | 0 | --- | --- |
| Chromium | ppm | ASTM D5185m | >10 | 0 | --- | --- |
| Nickel | ppm | ASTM D5185m | >10 | 0 | --- | --- |
| Titanium | ppm | ASTM D5185m | | 0 | --- | --- |
| Silver | ppm | ASTM D5185m | | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m | >10 | 0 | --- | --- |
| Lead | ppm | ASTM D5185m | >10 | 0 | --- | --- |
| Copper | ppm | ASTM D5185m | >75 | 2 | --- | --- |
| Tin | ppm | ASTM D5185m | >10 | 0 | --- | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | --- | --- |
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |

CONTAMINATION

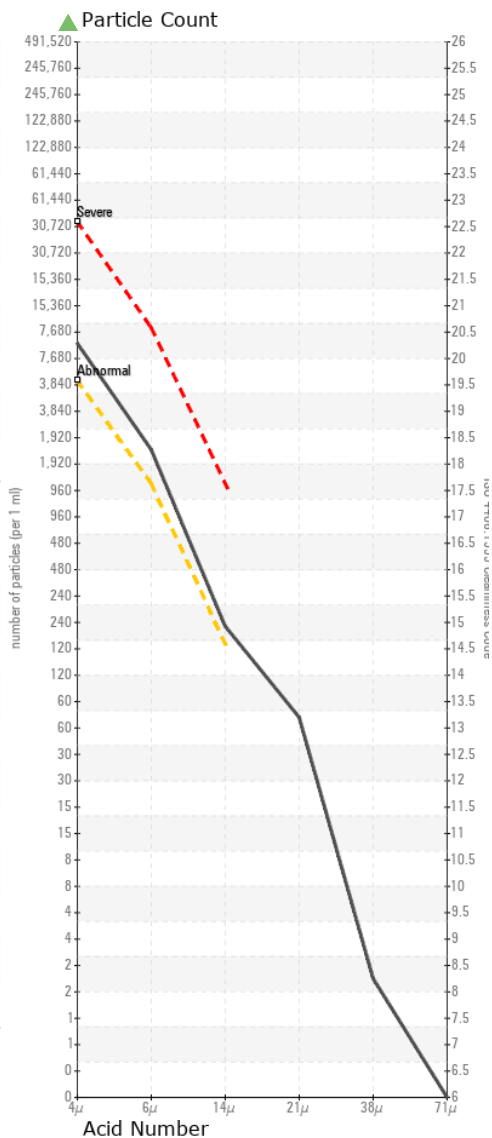
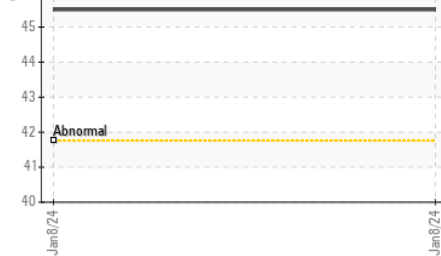
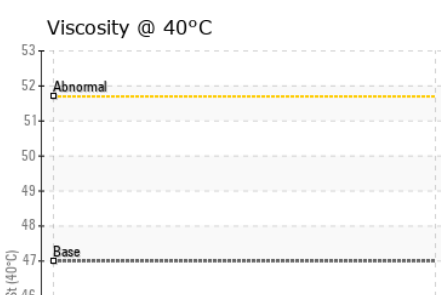
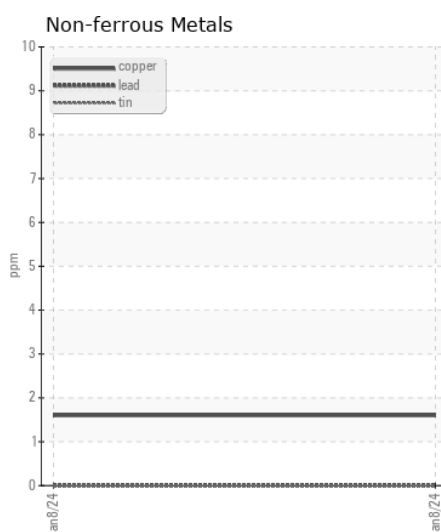
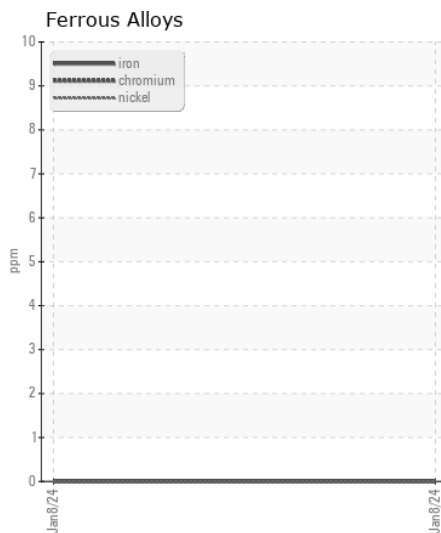
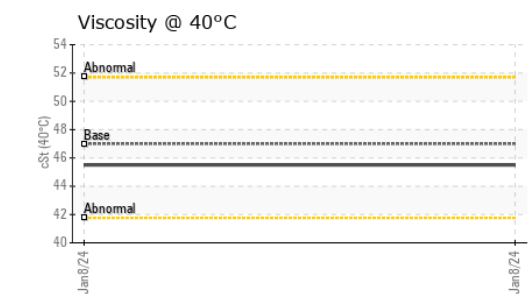
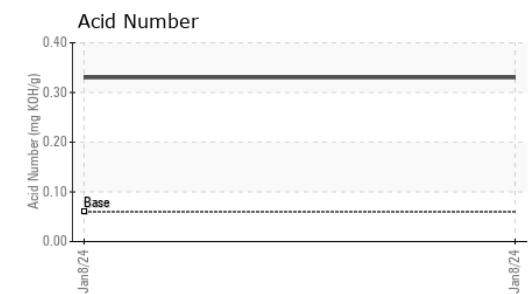
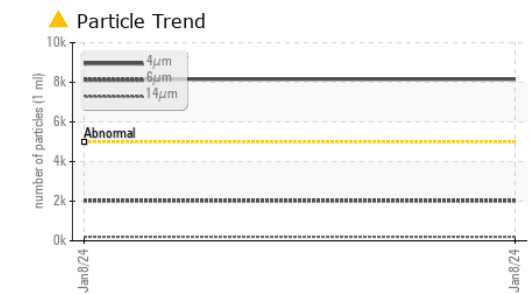
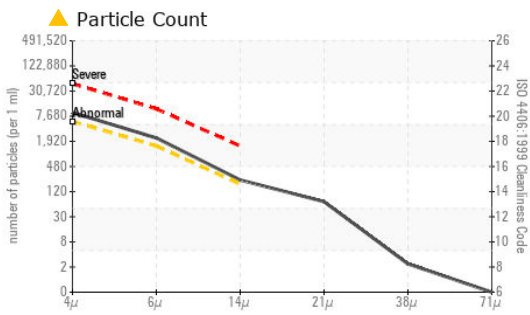
There is a moderate amount of particulates present in the oil.

| | | | | | | |
|------------------|--------|--------------|-----------|------------|-----|-----|
| Silicon | ppm | ASTM D5185m | >20 | 3 | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | <1 | --- | --- |
| Water | | WC Method | >0.1 | NEG | --- | --- |
| Particles >4µm | | ASTM D7647 | >5000 | ▲ 8156 | --- | --- |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ 2026 | --- | --- |
| Particles >14µm | | ASTM D7647 | >160 | ▲ 201 | --- | --- |
| Particles >21µm | | ASTM D7647 | >40 | ▲ 61 | --- | --- |
| Particles >38µm | | ASTM D7647 | >10 | 2 | --- | --- |
| Particles >71µm | | ASTM D7647 | >3 | 0 | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ 20/18/15 | --- | --- |
| Silt | scalar | *Visual | NONE | NONE | --- | --- |
| Debris | scalar | *Visual | NONE | NONE | --- | --- |
| Sand/Dirt | scalar | *Visual | NONE | NONE | --- | --- |
| Appearance | scalar | *Visual | NORML | NORML | --- | --- |
| Odor | scalar | *Visual | NORML | NORML | --- | --- |
| Emulsified Water | scalar | *Visual | >0.1 | NEG | --- | --- |

FLUID CONDITION

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

| | | | | | | |
|------------------|----------|-------------|------|------|-----|-----|
| Sodium | ppm | ASTM D5185m | | 0 | --- | --- |
| Boron | ppm | ASTM D5185m | | 0 | --- | --- |
| Barium | ppm | ASTM D5185m | | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | | 0 | --- | --- |
| Manganese | ppm | ASTM D5185m | | <1 | --- | --- |
| Magnesium | ppm | ASTM D5185m | | 0 | --- | --- |
| Calcium | ppm | ASTM D5185m | | 36 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | 827 | 265 | --- | --- |
| Zinc | ppm | ASTM D5185m | 0 | 336 | --- | --- |
| Sulfur | ppm | ASTM D5185m | 13 | 806 | --- | --- |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.06 | 0.33 | --- | --- |
| Visc @ 40°C | cSt | ASTM D445 | 47 | 45.5 | --- | --- |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0198978 **Received** : 10 Jan 2024
Lab Number : 06056591 **Diagnosed** : 11 Jan 2024
Unique Number : 10822540 **Diagnostician** : Don Baldrige
Test Package : CONST (Additional Tests: PQ)

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)

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