



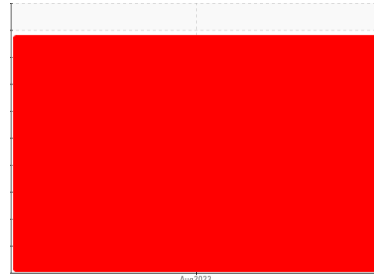
# OIL ANALYSIS REPORT

Sample Rating Trend

ISO



Area  
**CAT BIO HYDO ADVANCED [02576608]**  
 Machine Id  
**HITACHI HITACHI ZX135US-5 (S/N HCMDHF60V00100312)**  
 Component  
**Hydraulic System**  
 Fluid  
**CAT BIO HYDO ADVANCED (--- GAL)**



## DIAGNOSIS

### Recommendation

Nous vous recommandons de vérifier tous les endroits par lesquels des contaminants peuvent pénétrer dans le système. Nous vous recommandons de remplacer le filtre et d'utiliser un système de filtrage hors-ligne afin d'améliorer la propreté du fluide. Le reniflard d'air doit être réparé. S'il n'est pas classé, nous vous recommandons de le remplacer par un reniflard à air adapté au micron et / ou au dessicant. Si évalué, nous vous recommandons de réparer / remplacer le reniflard. Confirm the source of the lubricant being utilized for top-up/fill. Échantillonner de nouveau dans 30 à 45 jours afin de contrôler la situation. ( Customer Sample Comment: Brand new oil sample, for reference )

### Wear

Les taux d'usure de tous les composants sont normaux.

### Contamination

Il y a une quantité élevée de matières particulaires (2 à 100 µm de taille) présente dans l'huile. Il y a une concentration modérée (8.5%) d'huile minérale présente dans le fluide.

### Fluid Condition

L'huile peut encore servir si la contamination peut être réduite à un niveau acceptable.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>PP</b>	---	---
Sample Date	Client Info		<b>16 Aug 2023</b>	---	---
Machine Age	hrs	Client Info	<b>0</b>	---	---
Oil Age	hrs	Client Info	<b>0</b>	---	---
Oil Changed	Client Info		<b>N/A</b>	---	---
Sample Status			<b>SEVERE</b>	---	---

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	---	---
Chromium	ppm	ASTM D5185(m) >20	<b>0</b>	---	---
Nickel	ppm	ASTM D5185(m) >20	<b>0</b>	---	---
Titanium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Silver	ppm	ASTM D5185(m)	<b>0</b>	---	---
Aluminum	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	---	---
Lead	ppm	ASTM D5185(m) >20	<b>0</b>	---	---
Copper	ppm	ASTM D5185(m) >20	<b>0</b>	---	---
Tin	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	---	---
Antimony	ppm	ASTM D5185(m)	<b>0</b>	---	---
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	---	---

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	---	---
Barium	ppm	ASTM D5185(m) 0	<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185(m) 0	<b>0</b>	---	---
Manganese	ppm	ASTM D5185(m) 0	<b>0</b>	---	---
Magnesium	ppm	ASTM D5185(m) 0	<b>0</b>	---	---
Calcium	ppm	ASTM D5185(m) 0	<b>3</b>	---	---
Phosphorus	ppm	ASTM D5185(m) 475	<b>376</b>	---	---
Zinc	ppm	ASTM D5185(m) 0	<b>3</b>	---	---
Sulfur	ppm	ASTM D5185(m) 800	<b>764</b>	---	---
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	---	---

## CONTAMINANTS

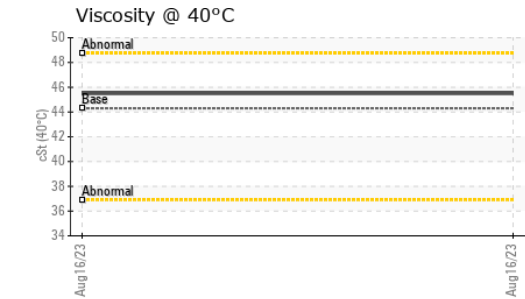
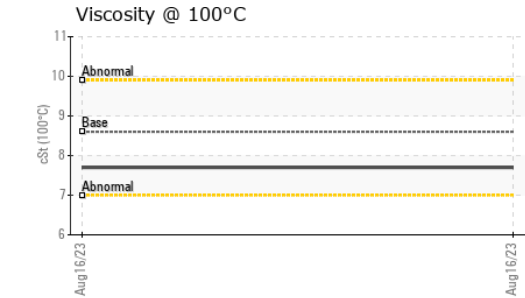
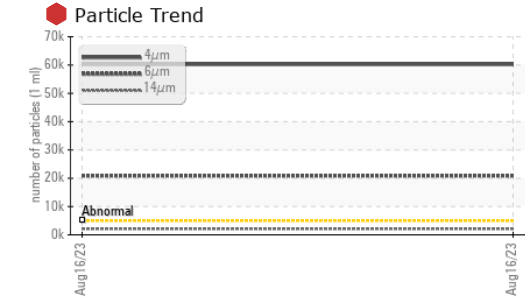
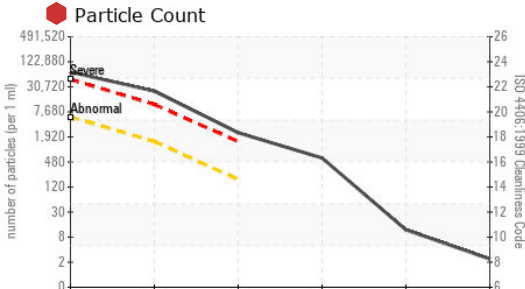
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >15	<b>4</b>	---	---
Sodium	ppm	ASTM D5185(m)	<b>&lt;1</b>	---	---
Potassium	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	---	---

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	<b>0</b>	---	---
Nitration	Abs/cm	ASTM D7624*	<b>4.5</b>	---	---
Sulfation	Abs/.1mm	ASTM D7415*	<b>147.9</b>	---	---
Mineral Oil Content	%	ASTM D7418*	<b>▲ 8.5</b>	---	---



# OIL ANALYSIS REPORT



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PP  
**Lab Number** : 02576477  
**Unique Number** : 5629537  
**Test Package** : MOB 2 ( Additional Tests: FT-IR, KV100, Mineral Oil Content, VI )

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.

**SINTO INC**  
 3750, 14 AVE WEST  
 SAINT-GEORGES DE BEAUCES, QC  
 CA G5Y 8E3  
 Contact: Hughes Giroux  
 h.giroux@sinto.ca  
 T: 1(800)463-0025  
 F: (418)228-5592

FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	<b>60230</b>	---	---
Particles >6µm	ASTM D7647	>1300	<b>20871</b>	---	---
Particles >14µm	ASTM D7647	>160	<b>2115</b>	---	---
Particles >21µm	ASTM D7647	>40	<b>526</b>	---	---
Particles >38µm	ASTM D7647	>10	<b>10</b>	---	---
Particles >71µm	ASTM D7647	>3	<b>2</b>	---	---
Oil Cleanliness	ISO 4406 (c)	>19/17/14	<b>23/22/18</b>	---	---

FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	<b>162.8</b>	---	---

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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	44.3	<b>45.5</b>	---
Visc @ 100°C	cSt	ASTM D7279(m)	8.6	<b>7.7</b>	---
Viscosity Index (VI)	Scale	ASTM D2270*	176	<b>137</b>	---

SAMPLE IMAGES	method	limit/base	current	history1	history2	
Color					no image	no image
Bottom					no image	no image



# MINERAL OIL CONTENT REPORT

FAIL

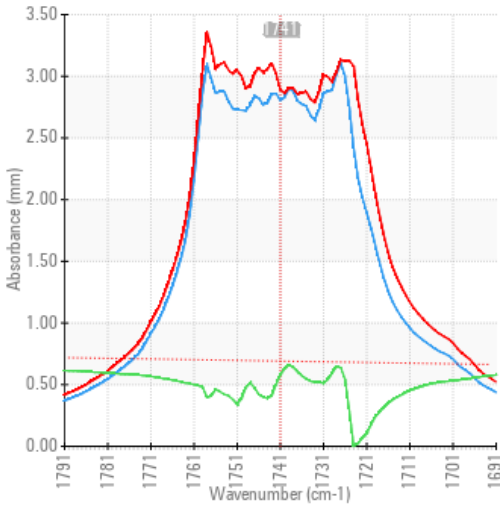


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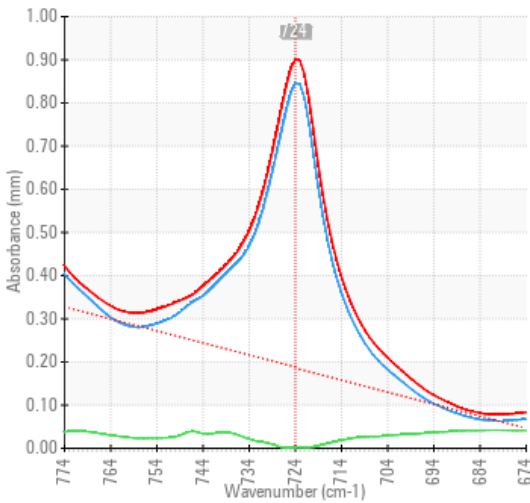
## SPECTRAL ANALYSIS

	method	limit/base	current	history1	history2
Zinc	ppm	ASTM D5185(m)	0	3	---
Mineral Oil Content	%	ASTM D7418*	<5.0%	▲ 8.5	---

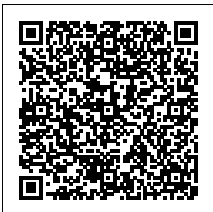
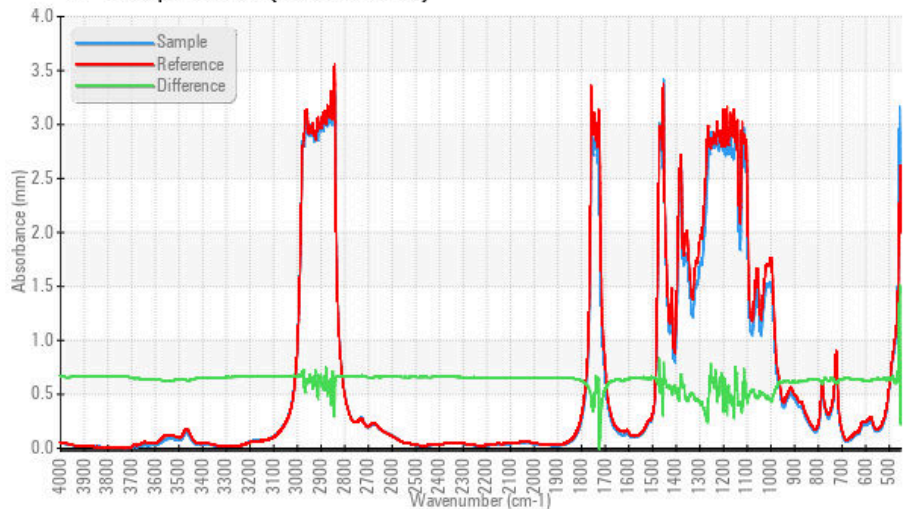
### FT-IR - Esters I



### FT-IR - Esters II



### FT-IR Spectrum (Absorbance)



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**Test Package** : MOB 2 ( Additional Tests: FT-IR, KV100, Mineral Oil Content, VI )

**Received** : 17 Aug 2023  
**Diagnosed** : 21 Aug 2023  
**Diagnostician** : Bill Quesnel

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