

# LABORATORY ANALYSIS



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Department **MAQUINADO 2**  
Equipment No. **4205.0 HYD MAZAK NC VERTICAL LATHE IVS200 (1 OF 4) (00048)**  
System **Hydraulic System**  
Oil Type **ENGINEERED LUBRICANTS ENLUBE 15-AW (--- GAL)**

## DIAGNOSIS

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. There is a moderate concentration of water present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. Zinc (Zn) ppm levels are severely low. cSt Vis. @ 40C is marginally high. Viscosity of sample indicates oil is within ISO 46 range, advise investigate. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

## SAMPLE INFORMATION

Lab Number	New	2312-00027	2310-00471	2306-00767
Date of Sample	(Typical)	<b>13 Nov 2023</b>	20 Sep 2023	16 Jun 2023
Oil Added		<b>UNK</b>	UNK	UNK
Last Drain Date		--	--	--
Last Filter Service		--	--	--
Sample Point		---	---	---
Sample Status		<b>SEVERE</b>	SEVERE	SEVERE

## VISCOSITY @ 100F OR 40C (ASTM D-445)

SSU Vis. @ 100F	SSU	236.2	173.4	165.9
cSt Vis. @ 40C	cSt	32.0	▲ 45.75	■ 33.55
			■ 32.07	

## % WATER - KARL FISCHER (ASTM E203)

% Water (KF)	%	▲ 0.437	---	---
ppm Water (KF)	ppm	▲ 4,370	---	---

## COLOR (BASED ON ASTM D1500 STANDARDS)

Color	Scale 0-8	3.0*	---	---
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## PARTICLE COUNT (PER 1ML)

ISO CODE	ISO 4406(c)	>19/18/14	22/18/11	26/24/16	24/21/14
4 Micron & Larger	particles/ml	>5000	▲ 25,065	■ 344,242	■ 103,722
6 Micron & Larger	particles/ml	>2500	■ 2,362	■ 94,647	▲ 19,731
14 Micron & Larger	particles/ml	>160	■ 17	▲ 326	■ 118
21 Micron & Larger	particles/ml	>40	■ 2	■ 4	■ 20
38 Micron & Larger	particles/ml	>10	■ 0	■ 0	■ 1
70 Micron & Larger	particles/ml	>3	■ 0	■ 0	■ 0

## ICP - OILS (REPORTED IN PARTS PER MILLION)

Element	ppm	<5	<5	<5
Aluminum (Al)	ppm	<5	<5	<5
Antimony (Sb)	ppm	<5	<5	<5
Cadmium (Cd)	ppm	<5	<5	<5
Chromium (Cr)	ppm	<5	<5	<5
Cobalt (Co)	ppm	<5	<5	<5
Copper (Cu)	ppm	■ 9	■ 12	■ 15
Iron (Fe)	ppm	■ 9	■ 15	■ 10
Lead (Pb)	ppm	7	10	11
Manganese (Mn)	ppm	<5	<5	<5
Molybdenum(Mo)	ppm	<5	<5	<5
Nickel (Ni)	ppm	<5	<5	<5
Silver (Ag)	ppm	<5	<5	<5
Tin (Sn)	ppm	<5	<5	<5
Titanium (Ti)	ppm	<5	<5	<5
Vanadium (V)	ppm	<5	<5	<5
Barium (Ba)	ppm	<5	<5	<5
Boron (B)	ppm	9	8	6
Calcium (Ca)	ppm	31	50	54
Magnesium (Mg)	ppm	<5	<5	<5
Phosphorus(P)	ppm	370	484	501
Silicon (Si)	ppm	<5	<5	<5
Zinc (Zn)	ppm	668	■ 269	▲ 485
Sulfur (S)	ppm		1,300	1,570
				1,940

Customer Id: ENC0005J03  
Sample No.: EN23120027  
Lab Number: 23120027  
Test Package: TEST



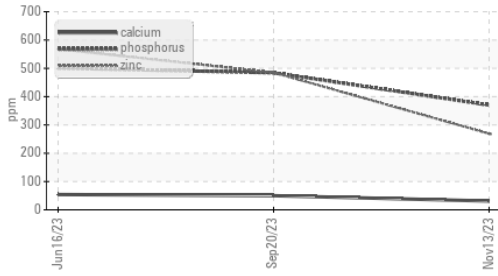
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# OIL ANALYSIS REPORT

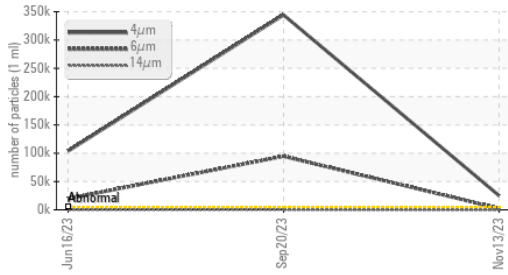
### Additives



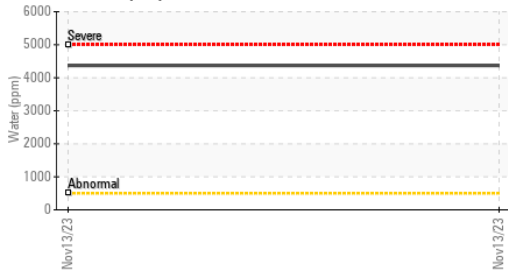
### DR FERROGRAPHY READINGS

L		■ 8.8	● 50.6	■ 19.1
S		■ 5.0	● 18.0	■ 7.4
WPC	DL + DS	■ 13.8	● 68.6	■ 26.5

### Particle Trend



### Water (KF)



### Viscosity @ 40°C

