

## Machine Id **KOMATSU PC228 PC228-1 (S/N 1028)** Component Left Final Drive Fluid SAE 50W (--- GAL)

## RECOMMENDATION

We advise that you check all areas where dirt can enter the system. Resample at the next service interval to monitor.

## **WEAR**

All component wear rates are normal.

## CONTAMINATION

Elemental levels of silicon (Si) and aluminum (AI) indicate aluminasilicate (coarse dirt) ingress.

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The oil viscosity is lower than normal. Confirm oil type. The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TLY0002464	TLY0001786	
Sample Date		Client Info		14 May 2024	19 Jun 2023	
Machine Age	hrs	Client Info		6143	5605	
Oil Age	hrs	Client Info		5605	1605	
Filter Age	hrs	Client Info		5605	1605	
Oil Changed		Client Info		Not Changd	Not Changd	
Filter Changed		Client Info		Not Changd	Not Changd	
Sample Status				ABNORMAL	ABNORMAL	
			500		000	
Iron Obre misses	ppm		>500	349	280	
Chromium	ppm		>10	5	4	
Titonium	ppm	ASTM D5185m	>10	1	<	
Cilver	ppm	ASTM DE105m		0	0	
Sliver	ррп		05	0	0	
Aluminum	ppm	ASTM D5185m	>25	13	0	
Lead	ppm	ASTM D5185m	>25	0	0	
Copper	ppm	ASTM D5185m	>50	28	26	
l in	ppm	ASTM D5185m	>10	<1	<1	
Vanadium	ppm	ASTM D5185m	NONE	0	<1	
White Metal	scalar	^Visual	NONE	NONE	NONE	
Vallow Matal	coalar	*\/icuol		NIZANIE		
	Scalai	visuai			NONE	
Silicon	ppm	ASTM D5185m	>75	▲ 82	▲ 76	
Silicon Potassium	ppm ppm	ASTM D5185m ASTM D5185m	>75 >20	▲ 82 0	▲ 76 4	
Silicon Potassium Water	ppm ppm	ASTM D5185m ASTM D5185m WC Method	>75 >20 >0.2	▲ 82 0 NEG	▲ 76 4 NEG	
Silicon Potassium Water Silt	ppm ppm scalar	ASTM D5185m ASTM D5185m WC Method *Visual	>75 >20 >0.2 NONE	NONE 82 0 NEG MODER	A 76 4 NEG NONE	  
Silicon Potassium Water Silt Debris	ppm ppm scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual	>75 >20 >0.2 NONE NONE	<ul> <li>82</li> <li>0</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> </ul>	<ul> <li>76</li> <li>4</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> </ul>	 
Silicon Potassium Water Silt Debris Sand/Dirt	ppm ppm scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual	>75 >20 >0.2 NONE NONE NONE	<ul> <li>▲ 82</li> <li>0</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NONE</li> </ul>	<ul> <li>76</li> <li>4</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> </ul>	     
Silicon Potassium Water Silt Debris Sand/Dirt Appearance	ppm ppm scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual	>75 >20 >0.2 NONE NONE NONE NORML	<ul> <li>NONE</li> <li>82</li> <li>0</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> </ul>	<ul> <li>76</li> <li>4</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> </ul>	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor	ppm ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual	>75 >20 >0.2 NONE NONE NORME NORML	<ul> <li>NONE</li> <li>82</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> </ul>	<ul> <li>76</li> <li>4</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> </ul>	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual	>75 >20 >0.2 NONE NONE NONE NORML NORML >0.2	<ul> <li>NONE</li> <li>82</li> <li>0</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> </ul>	<ul> <li>A</li> <li>76</li> <li>4</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> </ul>	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	ppm ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual *Visual	>75 >20 >0.2 NONE NONE NORML NORML >0.2	<ul> <li>NONE</li> <li>82</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>2</li> </ul>	<ul> <li>NONE</li> <li>A</li> <li>NEG</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>0</li> </ul>	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm ppm scalar scalar scalar scalar scalar scalar ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NONE NORML NORML >0.2	NONE 82 0 NEG MODER NONE NONE NORML NORML NEG 2 0	<ul> <li>NONE</li> <li>A</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>0</li> <li>0</li> </ul>	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NONE NONE NORML >0.2	<ul> <li>NONE</li> <li>82</li> <li>0</li> <li>NEG</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>2</li> <li>0</li> <li>0</li> </ul>	NONE 76 4 NONE NONE NONE NORML NORML NORML NEG 0 0 0 0	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NONE NORML NORML >0.2	<ul> <li>NONE</li> <li>82</li> <li>0</li> <li>NEG</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>2</li> <li>0</li> <li>0</li> <li>0</li> </ul>	NONE 76 4 NONE NONE NORML NORML NORML NORML NORML NORML 0 0 0 0 0 <1	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NONE NORML NORML >0.2	NONE 82 0 NEG NONE NONE NORML NORML NEG 2 0 0 0 3	<ul> <li>NONE</li> <li>4</li> <li>NEG</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>0</li> <li>0</li> <li>2</li> </ul>	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NONE NONE NORML >0.2	<ul> <li>NONE</li> <li>82</li> <li>0</li> <li>NEG</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>2</li> <li>0</li> <li>0</li> <li>0</li> <li>3</li> <li>20</li> </ul>	<ul> <li>NONE</li> <li>4</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>2</li> <li>18</li> </ul>	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NONE NORML NORML >0.2	<ul> <li>NONE</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>2</li> <li>0</li> <li>0</li> <li>3</li> <li>20</li> <li>3983</li> </ul>	<ul> <li>NONE</li> <li>A</li> <li>NEG</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>0</li> <li>0</li> <li>2</li> <li>18</li> <li>4539</li> </ul>	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NORME NORML >0.2	<ul> <li>NONE</li> <li>0</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>2</li> <li>0</li> <li>0</li> <li>3</li> <li>20</li> <li>3983</li> <li>791</li> </ul>	<ul> <li>NONE</li> <li>4</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>0</li> <li>0</li> <li>2</li> <li>18</li> <li>4539</li> <li>842</li> </ul>	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NONE NORML NORML >0.2	<ul> <li>NONE</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>2</li> <li>0</li> <li>0</li> <li>3</li> <li>20</li> <li>3983</li> <li>791</li> <li>944</li> </ul>	<ul> <li>NONE</li> <li>4</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>2</li> <li>18</li> <li>4539</li> <li>842</li> <li>1044</li> </ul>	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NONE NORML NORML >0.2	<ul> <li>NONE</li> <li>NEG</li> <li>MODER</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>2</li> <li>0</li> <li>0</li> <li>3</li> <li>20</li> <li>3983</li> <li>791</li> <li>944</li> <li>4539</li> </ul>	<ul> <li>NONE</li> <li>A</li> <li>NEG</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>0</li> <li>0</li> <li>2</li> <li>18</li> <li>4539</li> <li>842</li> <li>1044</li> <li>4649</li> </ul>	

Submitted By: BRANDY BADING



**GAINES & COMPANY** Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. Received **112 WESTMINISTER RD** : TLY0002464 : 29 May 2024 Lab Number : 06194430 Tested REISTERSTOWN, MD : 31 May 2024 Unique Number : 11056553 Diagnosed : 31 May 2024 - Sean Felton US 21136 Test Package : CONST Contact: LANCE TANCRAITOR Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. ltancraitor@gainesandco.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (410)833-9833 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

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Submitted By: BRANDY BADING Page 2 of 2