

WEAR NORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL

Machine Id

HAMM H12i HZ840112 Component Rear Differential Fluid GEAR OIL SAE 80W90 (--- QTS)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

WEAR

All component wear rates are normal.

CONTAMINATION

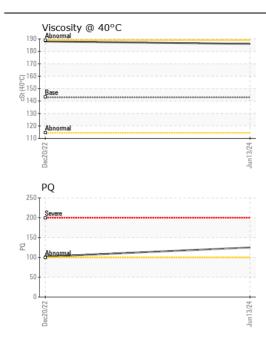
There is no indication of any contamination in the oil.

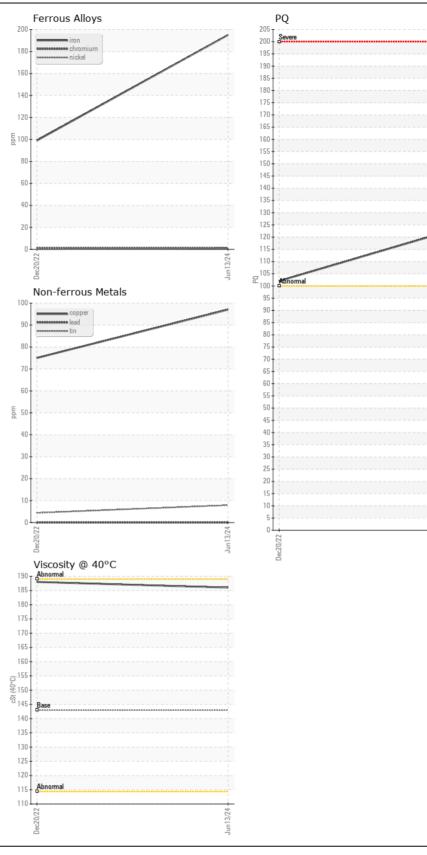
FLUID CONDITION

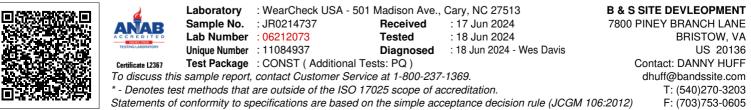
The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0214737	JR0153508	
Sample Date		Client Info		13 Jun 2024	20 Dec 2022	
Machine Age	hrs	Client Info		1311	452	
Oil Age	hrs	Client Info		0	452	
Filter Age	hrs	Client Info		0	0	
Oil Changed		Client Info		Changed	Not Changd	
Filter Changed		Client Info		N/A	N/A	
Sample Status				NORMAL	NORMAL	
PQ		ASTM D8184		125	102	
Iron	ppm	ASTM D5185m	>500	195	99	
Chromium	ppm	ASTM D5185m	>10	1	1	
Nickel	ppm	ASTM D5185m	>10	<1	0	
Titanium	ppm	ASTM D5185m		0	<1	
Silver	ppm	ASTM D5185m		0	0	
Aluminum	ppm	ASTM D5185m	>25	3	2	
Lead	ppm	ASTM D5185m	>25	0	0	
Copper	ppm	ASTM D5185m	>100	97	75	
Tin	ppm	ASTM D5185m	>10	8	4	
Vanadium	ppm	ASTM D5185m		0	0	
White Metal	scalar	*Visual	NONE	NONE	MODER	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Silicon	ppm	ASTM D5185m	>75	21	19	
Silicon Potassium		ASTM D5185m ASTM D5185m	>75 >20	21 3	19 2	
Silicon Potassium Water	ppm ppm	ASTM D5185m ASTM D5185m WC Method	>75 >20 >.2	21 3 NEG	19 2 NEG	
Silicon Potassium Water Silt	ppm ppm scalar	ASTM D5185m ASTM D5185m WC Method *Visual	>75 >20 >.2 NONE	21 3 NEG NONE	19 2 NEG VLITE	
Silicon Potassium Water Silt Debris	ppm ppm scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual	>75 >20 >.2 NONE NONE	21 3 NEG NONE NONE	19 2 NEG VLITE NONE	
Silicon Potassium Water Silt Debris Sand/Dirt	ppm ppm scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual	>75 >20 >.2 NONE NONE NONE	21 3 NEG NONE NONE NONE	19 2 NEG VLITE NONE NONE	
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 >.2 NONE NONE NONE NORML	21 3 NEG NONE NONE NONE NORML	19 2 NEG VLITE NONE NONE NORML	
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 >.2 NONE NONE NONE NORML NORML	21 3 NEG NONE NONE NONE NORML NORML	19 2 NEG VLITE NONE NONE NORML NORML	
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 >.2 NONE NONE NONE NORML	21 3 NEG NONE NONE NONE NORML	19 2 NEG VLITE NONE NONE NORML	
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 >.2 NONE NONE NONE NORML NORML	21 3 NEG NONE NONE NONE NORML NORML	19 2 NEG VLITE NONE NONE NORML NORML	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm ppm scalar scalar scalar scalar scalar scalar gpm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual	>75 >20 >.2 NONE NONE NORML NORML >.2	21 3 NEG NONE NONE NORE NORML NEG	19 2 NEG VLITE NONE NONE NORML NORML NEG	
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 ASTM D5185m	>75 >20 >.2 NONE NONE NORML NORML >.2	21 3 NEG NONE NONE NORML NORML NEG 11	19 2 NEG VLITE NONE NORML NORML NEG 9	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm ppm scalar scalar scalar scalar scalar scalar gpm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>75 >20 >.2 NONE NONE NORML >.2 >170 400	21 3 NEG NONE NONE NORML NORML NEG 11 28	19 2 NEG VLITE NONE NORML NORML NEG 9 33	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm ppm 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 >.2 NONE NONE NORML NORML >.2 >170 400 200	21 3 NEG NONE NONE NORML NORML NEG 11 28 2	19 2 NEG VLITE NONE NORML NORML NEG 9 33 0	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	>75 >20 >.2 NONE NONE NORML NORML >.2 >170 400 200	21 3 NEG NONE NONE NORML NORML NEG 11 28 2 2 0	19 2 NEG VLITE NONE NORML NORML NEG 9 33 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 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	>75 >20 >.2 NONE NORME NORML >.2 >170 400 200 12	21 3 NEG NONE NONE NORML NORML NEG 11 28 2 2 0 7	19 2 NEG VLITE NONE NORML NORML NEG 9 33 0 <1 6	
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm ppm scalar scalar scalar scalar scalar ppm 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 >.2 NONE NONE NORML >.2 >170 400 200 12	21 3 NEG NONE NONE NORML NORML NEG 11 28 2 0 7 61	19 2 NEG VLITE NONE NORML NORML NEG 9 33 0 <1 6 59	
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 ppm ppm ppm 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 ASTM D5185m	>75 >20 >.2 NONE NONE NORML NORML >.2 >170 400 200 12	21 3 NEG NONE NONE NORML NORML NEG 11 28 2 0 7 61 71	19 2 NEG VLITE NONE NORML NORML NEG 9 33 0 2 33 0 <1 6 59 25	
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	 >75 >20 >2 NONE NORME NORML >2 >170 400 200 12 12 150 1650 125 	21 3 NEG NONE NONE NORML NORML NEG 11 28 2 0 7 61 71 61 71 2189 69	19 2 NEG VLITE NONE NORML NORML NEG 9 33 0 4 33 0 <1 6 59 25 25 2053 41	
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 ppm ppm ppm 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 ASTM D5185m ASTM D5185m	>75 >20 >.2 NONE NONE NORML NORML >.2 >170 400 200 12 12 12 150 1650	21 3 NEG NONE NONE NORML NORML NEG 11 28 2 0 7 61 7 61 71 2189	19 2 NEG VLITE NONE NORML NORML NEG 9 33 0 <1 6 59 25 2053	

Contact/Location: DANNY HUFF - BSSWAR







Contact/Location: DANNY HUFF - BSSWAR Page 2 of 2

Jun13/24