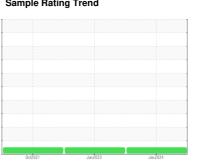


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



ARBURG E-03 (S/N 263560)

Hydraulic System

AW HYDRAULIC OIL ISO 46 (--- GAL)

Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Fluid Condition

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

Sample Number Client Info WC0883593 WC0736302 WC0631248 Sample Date Client Info 17 Jan 2024 23 Jan 2023 24 Oct 2021 Machine Age yrs Client Info 0			00	2021	Jan2023 Jan20	124	
Sample Date Cilent Info 17 Jan 2024 23 Jan 2023 24 Oct 2021	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age yrs Client Info 0 0 0 0 Oil Age yrs Client Info 0 0 0 0 Oil Changed Client Info N/A N/A N/A N/A Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method Imitibase current history1 history2 Water WC Method >0.05 NEG NEG NEG WEAR METALS method Imitibase current history1 history2 Iron ppm ASTM D5185m >20 0 0 0 WEAR METALS method Imitibase current history1 history2 Iron ppm ASTM D5185m >20 0 0 0 WEAR METALS method Imitibase current history1 history2 Iron ppm ASTM D5185m >20 0 0 0	Sample Number		Client Info		WC0883593	WC0736302	WC0631248
Oil Age yrs Client Info N/A N/A N/A N/A Sample Status Client Info N/A N/A N/A N/A CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 0 2 2 2 Chromium ppm ASTM D5185m >20 0 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <t< td=""><th>Sample Date</th><td></td><td>Client Info</td><td></td><th>17 Jan 2024</th><td>23 Jan 2023</td><td>24 Oct 2021</td></t<>	Sample Date		Client Info		17 Jan 2024	23 Jan 2023	24 Oct 2021
Oil Changed Client Info N/A N/A N/A N/A NORMAL NO	Machine Age	yrs	Client Info		0	0	0
Oil Changed Client Info N/A N/A N/A N/A NORMAL NO	Oil Age	yrs	Client Info		0	0	0
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 0 2 2 2 Chromium ppm ASTM D5185m >20 0 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-		Client Info		N/A	N/A	N/A
Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 0 0 0 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 2 7 6 Tin ppm ASTM D5185m >20 2 7 6 Tin ppm ASTM D5185m >20 <1	Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 0 2 2 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 0 Copper ppm ASTM D5185m >20 2 7 6 Tin ppm ASTM D5185m >20 <1 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDTTVES method limit/base current history1 history2	CONTAMINATIO	N	method	limit/base	current	history1	history2
Iron	Water		WC Method	>0.05	NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Titanium ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 2 7 6 Copper ppm ASTM D5185m >20 2 7 6 Tin ppm ASTM D5185m >20 <1 0 0 Antimony ppm ASTM D5185m >20 <1 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadium ppm ASTM D5185m 5 6 0 0 0 Barium ppm ASTM D5185m 5 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >20 0 0 0 Titanium ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m ≥20 0 0 0 Aluminum ppm ASTM D5185m ≥20 0 0 0 Lead ppm ASTM D5185m >20 2 7 6 Tin ppm ASTM D5185m ≥20 <1	Iron	ppm	ASTM D5185m	>20	0	2	2
Titanium	Chromium	ppm	ASTM D5185m	>20	0	0	0
Titanium	Nickel		ASTM D5185m	>20	0	0	0
Silver ppm ASTM D5185m 0 0 0 Aluminum ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 0 Copper ppm ASTM D5185m >20 2 7 6 Tin ppm ASTM D5185m 0 Antimony ppm ASTM D5185m 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 5 6 0 0 Boron ppm ASTM D5185m 5 0 2 0 Molybdenum ppm ASTM D5185m 5 0 2 0 Mangaesium ppm ASTM D5185m 25 8 2 0 Calcium ppm ASTM D5185m	Titanium		ASTM D5185m		0	0	0
Aluminum ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 0 Copper ppm ASTM D5185m >20 2 7 6 Tin ppm ASTM D5185m >20 <1	Silver		ASTM D5185m		0	0	0
Lead	Aluminum		ASTM D5185m	>20	0	0	0
Tin ppm ASTM D5185m >20 <1 0 0 0 Antimony ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 5 0 2 0 Molybdenum ppm ASTM D5185m 5 0 2 0 Molybdenum ppm ASTM D5185m 5 0 0 2 0 Molybdenum ppm ASTM D5185m 5 0 0 0 0 Manganese ppm ASTM D5185m 25 8 2 0 Calcium ppm ASTM D5185m 25 8 2 0 Calcium ppm ASTM D5185m 300 395 505 526 Zinc ppm ASTM D5185m 370 506 695 693 Sulfur ppm ASTM D5185m 2500 1884 1427 1196 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 0 2 Potassium ppm ASTM D5185m > 15 <1 0 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 603 2943 249 Particles >5μm ASTM D7647 >160 13 43 16 Particles >21μm ASTM D7647 >40 3 16 4 Particles >38μm ASTM D7647 >40 3 16 4 Particles >38μm ASTM D7647 >40 3 16 4	Lead	ppm	ASTM D5185m	>20	0	0	0
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Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 5 6 0 0 Barium ppm ASTM D5185m 5 0 2 0 Molybdenum ppm ASTM D5185m 5 0 <1	Tin	ppm	ASTM D5185m	>20	<1	0	0
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 5 6 0 0 Barium ppm ASTM D5185m 5 0 2 0 Molybdenum ppm ASTM D5185m 5 0 <1	Antimony	ppm	ASTM D5185m				0
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Boron ppm ASTM D5185m 5 6 0 0 Barium ppm ASTM D5185m 5 0 2 0 Molybdenum ppm ASTM D5185m 5 0 <1 <1 Manganese ppm ASTM D5185m 25 8 2 0 Magnesium ppm ASTM D5185m 200 41 58 60 Phosphorus ppm ASTM D5185m 200 41 58 60 Phosphorus ppm ASTM D5185m 370 506 695 693 Sulfur ppm ASTM D5185m 2500 1884 1427 1196 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 0 2 Sodium ppm ASTM D5185m >20 0 <1 0 2 Potassium ppm ASTM D5185	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 5 0 2 0 Molybdenum ppm ASTM D5185m 5 0 <1 <1 Manganese ppm ASTM D5185m 25 8 2 0 Magnesium ppm ASTM D5185m 200 41 58 60 Calcium ppm ASTM D5185m 200 41 58 60 Phosphorus ppm ASTM D5185m 300 395 505 526 Zinc ppm ASTM D5185m 370 506 695 693 Sulfur ppm ASTM D5185m 2500 1884 1427 1196 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 0 Sodium ppm ASTM D5185m >20 0 <1 0 FLUID CLEANLINESS method limit/bas	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 5 0 <1	Boron	ppm	ASTM D5185m	5	6	0	0
Manganese ppm ASTM D5185m <1 0 0 Magnesium ppm ASTM D5185m 25 8 2 0 Calcium ppm ASTM D5185m 200 41 58 60 Phosphorus ppm ASTM D5185m 300 395 505 526 Zinc ppm ASTM D5185m 370 506 695 693 Sulfur ppm ASTM D5185m 2500 1884 1427 1196 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 0 2 Sodium ppm ASTM D5185m >20 0 <1 0 2 Potassium ppm ASTM D7647 >5000 603 2943 249 Particles >4µm ASTM D7647 >1300 147 564 99 Particles >21µm ASTM D7647 >40	Barium	ppm	ASTM D5185m	5	0	2	0
Magnesium ppm ASTM D5185m 25 8 2 0 Calcium ppm ASTM D5185m 200 41 58 60 Phosphorus ppm ASTM D5185m 300 395 505 526 Zinc ppm ASTM D5185m 370 506 695 693 Sulfur ppm ASTM D5185m 2500 1884 1427 1196 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 0 Sodium ppm ASTM D5185m >20 0 <1 0 Potassium ppm ASTM D5185m >20 0 <1 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 603 2943 249 Particles >21μm ASTM D7647 >160	Molybdenum	ppm	ASTM D5185m	5	0	<1	<1
Calcium ppm ASTM D5185m 200 41 58 60 Phosphorus ppm ASTM D5185m 300 395 505 526 Zinc ppm ASTM D5185m 370 506 695 693 Sulfur ppm ASTM D5185m 2500 1884 1427 1196 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1	Manganese	ppm	ASTM D5185m		<1	0	0
Phosphorus ppm ASTM D5185m 300 395 505 526 Zinc ppm ASTM D5185m 370 506 695 693 Sulfur ppm ASTM D5185m 2500 1884 1427 1196 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 0 Sodium ppm ASTM D5185m >20 0 <1 0 Potassium ppm ASTM D5185m >20 0 <1 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 603 2943 249 Particles >6μm ASTM D7647 >1300 147 564 99 Particles >21μm ASTM D7647 >40 3 16 4 Particles >38μm ASTM D7647 >10 0 4	Magnesium	ppm	ASTM D5185m	25	8	2	0
Zinc ppm ASTM D5185m 370 506 695 693 Sulfur ppm ASTM D5185m 2500 1884 1427 1196 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 0 Sodium ppm ASTM D5185m >20 0 <1 0 Potassium ppm ASTM D5185m >20 0 <1 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 603 2943 249 Particles >6μm ASTM D7647 >1300 147 564 99 Particles >14μm ASTM D7647 >160 13 43 16 Particles >21μm ASTM D7647 >40 3 16 4 Particles >38μm ASTM D7647 >10 0 4 1	Calcium	ppm	ASTM D5185m	200	41	58	60
Sulfur ppm ASTM D5185m 2500 1884 1427 1196 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 0 Sodium ppm ASTM D5185m <1 0 2 Potassium ppm ASTM D5185m >20 0 <1 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 603 2943 249 Particles >6μm ASTM D7647 >1300 147 564 99 Particles >14μm ASTM D7647 >160 13 43 16 Particles >21μm ASTM D7647 >40 3 16 4 Particles >38μm ASTM D7647 >10 0 4 1	Phosphorus	ppm	ASTM D5185m	300	395	505	526
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1	Zinc	ppm	ASTM D5185m	370	506	695	693
Silicon ppm ASTM D5185m >15 <1	Sulfur	ppm	ASTM D5185m	2500	1884	1427	1196
Sodium ppm ASTM D5185m <1	CONTAMINANTS	;	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 <1	Silicon	ppm	ASTM D5185m	>15	<1	<1	0
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 603 2943 249 Particles >6μm ASTM D7647 >1300 147 564 99 Particles >14μm ASTM D7647 >160 13 43 16 Particles >21μm ASTM D7647 >40 3 16 4 Particles >38μm ASTM D7647 >10 0 4 1	Sodium	ppm	ASTM D5185m		<1	0	2
Particles >4μm ASTM D7647 >5000 603 2943 249 Particles >6μm ASTM D7647 >1300 147 564 99 Particles >14μm ASTM D7647 >160 13 43 16 Particles >21μm ASTM D7647 >40 3 16 4 Particles >38μm ASTM D7647 >10 0 4 1	Potassium	ppm	ASTM D5185m	>20	0	<1	0
Particles >6μm ASTM D7647 >1300 147 564 99 Particles >14μm ASTM D7647 >160 13 43 16 Particles >21μm ASTM D7647 >40 3 16 4 Particles >38μm ASTM D7647 >10 0 4 1	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
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Particles >21μm ASTM D7647 >40 3 16 4 Particles >38μm ASTM D7647 >10 0 4 1			ASTM D7647	>1300	147	564	99
Particles >38μm ASTM D7647 >10 0 4 1	Particles >14µm		ASTM D7647	>160	13	43	16
·	Particles >21µm		ASTM D7647	>40	3	16	4
Particles >71μm	Particles >38µm		ASTM D7647	>10	0	4	1
	Particles >71µm		ASTM D7647	>3	0	2	0

ISO 4406 (c) >19/17/14

Oil Cleanliness

19/16/13

16/14/11

15/14/11



OIL ANALYSIS REPORT







Certificate L2367

Laboratory Sample No. Lab Number Test Package

Unique Number

: WC0883593 : 06064301 : 10835683 : IND 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 18 Jan 2024 Recieved Diagnosed Diagnostician

: 19 Jan 2024 : Wes Davis

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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