

BRANDEIS MACHINERY AND SUPPLY COMPANY  
 ANTHONY HILLYARD  
 1801 WATTERSON TRAIL  
 LOUISVILLE, KY 40299

# KOWA

ISO 9001 REGISTERED  
 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**Normal** ON 03-Jun-11

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: ENGINE  
 COMP. REF. NO.: 9905346  
 P.O./REF NO.: BRANDEIS S

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED 15W40
COMPONENT TYPE DIESEL ENGINE (TURBO CHARGED)	COMPONENT MANUFACTURER AND MODEL KOMATSU SA6D114E-2	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 5050 Reported On 2011-06-10 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. RESAMPLE at the next scheduled interval.

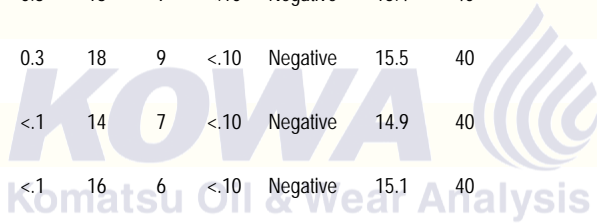
**SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT**

EVAL ID: 4666	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
	1064	56	2	1	3	5	62	<1	<.1	<.1	7	38	7	<10	<5	1220	1552	3380	<10	105	<30	<.1	13-Nov-08
	5050	61	1	<.1	3	5	69	2	<.1	<.1	8	48	12	<10	6	1297	1669	3771	<10	137	<30	<.1	22-Dec-08
	1602	11	<.1	<.1	<.1	<.1	<.1	<.1	0.5	<.1	1	109	3	<10	21	1042	1289	2735	<10	170	<30	<.1	02-Dec-09
	5261	5	<.1	<.1	2	<.1	<.1	<.1	<.1	<.1	4	37	2	<10	<5	1051	1239	2314	<10	34	<30	<.1	07-Jan-11
	1033	19	1	<.1	3	2	1	<.1	<.1	<.1	3	188	6	<10	28	1152	1436	3128	<10	187	<30	<.1	17-Mar-11
	5050	22	1	1	3	2	3	<.1	<.1	<.1	3	137	12	<10	25	1125	1389	2971	<10	161	<30	<.1	03-Jun-11

**SAMPLE INFORMATION**

**PHYSICAL TEST RESULTS**

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	FUEL %VOL	FUEL SOOT	ABS OXID	ABS NITR	WTR. %VOL	GLYCOL TEST	VIS 100°C	CS GRADE	SAE
1064	1261			n	S	<1.0	0.3	18	9	<.10	Negative	15.4		40
5050	1263			n	S	<1.0	0.3	18	9	<.10	Negative	15.5		40
1602	3109			y	y	<1.0	<.1	14	7	<.10	Negative	14.9		40
5261				y	y	<1.0	<.1	16	6	<.10	Negative	15.1		40
1033	4196			n	n	<1.0	<.1	17	9	<.10	Negative	15.7		40
5050	4391	500		y	y	<1.0	0.1	18	10	<.10	Negative	15.5		40



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

FOR LEGEND AND EXPLANATION OF KOWA TESTS PLEASE CLICK ON THE "LEGEND" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.  
 KOWA SAMPLE ANALYSIS IS PERFORMED BY AN INDEPENDENT LABORATORY.

FOR LEGEND AND EXPLANATION OF ADDITIONAL TESTS PLEASE CLICK ON THE "GLOSSARY" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.

NOTE: 'L' after SAMPLE DRAWN indicates date was NOT provided, displayed date is process date.

N/R = TEST NOT PERFORMED

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Form No. 6024B 9/00

BRANDEIS MACHINERY AND SUPPLY COMPANY  
 ANTHONY HILLYARD  
 1801 WATTERSON TRAIL  
 LOUISVILLE, KY 40299

# KOWA

ISO 9001 REGISTERED  
 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**Normal** ON Lab # 5051

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: TRANSMISSION  
 COMP. REF. NO.: 9905347  
 P.O./REF NO.: BRANDEIS S

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED
COMPONENT TYPE TRANSMISSION	COMPONENT MANUFACTURER AND MODEL KOMATSU D61PX-15	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 5051 Reported On 2011-06-10 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



TEST RESULTS ARE SATISFACTORY (Based on the information available). Lubricant viscosity grade has not been provided. RESAMPLE at the next scheduled interval.

**SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT**

EVAL ID: 4666	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
	1065	133	<1	<1	3	4	76	1	<.1	<.1	29	6	4	<10	<5	1078	1365	4312	10	18	<30	<.1	13-Nov-08
	5051	131	<1	<1	2	4	77	2	<.1	<.1	28	7	7	<10	<5	1040	1295	4286	<10	20	<30	<.1	22-Dec-08
	1603	86	<1	<1	1	2	117	<.1	0.2	<.1	21	4	5	<10	<5	776	1007	3260	<10	15	<30	<.1	02-Dec-09
	5262	50	<1	<1	3	2	78	<.1	<.1	<.1	13	16	4	<10	<5	1007	1237	3274	<10	12	<30	<.1	07-Jan-11
	1034	31	<1	<1	3	1	31	<.1	<.1	<.1	6	12	7	<10	<5	951	1110	2588	<10	22	<30	<.1	17-Mar-11
	5051	36	<1	<1	2	2	33	<.1	<.1	<.1	6	11	7	<10	<5	956	1109	2584	<10	22	<30	<.1	10-Jun-11 L

**SAMPLE INFORMATION**

**PHYSICAL TEST RESULTS**

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	WATER % VOL	VIS CS 100°C
1065	1261	1261		n	S	<.10	10.4
5051	1263			n	S	<.10	10.7
1603	3109			y	y	<.10	10.4
5262				y	y	<.10	8.4
1034	4196			n	n	<.10	10.0
5051	4391	500		y	n	<.10	10.0



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

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 KOWA SAMPLE ANALYSIS IS PERFORMED BY AN INDEPENDENT LABORATORY.

NOTE: 'L' after SAMPLE DRAWN indicates date was NOT provided, displayed date is process date.

N/R = TEST NOT PERFORMED

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 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**Monitor** ON Lab # 5052

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: HYDRAULIC  
 COMP. REF. NO.: 9905345  
 P.O./REF NO.: BRANDEIS S

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED SAE 10
COMPONENT TYPE HYDRAULIC SYSTEM	COMPONENT MANUFACTURER AND MODEL KOMATSU D61PX-15	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 5052 Reported On 2011-06-10 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS REFLECTS CONDITIONS / VALUES NOTED FOR MONITORING PURPOSES ONLY. NO SPECIFIC diagnostic or corrective MAINTENANCE is REQUIRED at this time. COPPER may be partly from oil cooler tubing. Other test results are satisfactory. RESAMPLE at the next scheduled interval.

**SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT**

EVAL ID: 4666	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
	4053	14	<1	1	4	9	362	1	0.1	<1	19	5	5	<10	96	1019	1231	3551	<10	10	<30	<1	08-Jan-08
	5047	19	<1	1	3	8	296	1	<.1	<1	16	16	2	<10	63	934	1026	2829	<10	6	<30	<1	22-Dec-08
	1574	16	<1	<1	3	7	377	<1	0.1	<1	11	4	5	<10	46	744	927	2332	<10	9	<30	<1	02-Dec-09
	5263	20	1	1	5	9	389	<1	0.1	<1	15	4	2	<10	41	692	891	2161	<10	8	<30	<1	07-Jan-11
	1035	18	1	1	4	5	185	<1	<.1	<1	9	4	6	<10	20	604	754	1468	<10	8	<30	<1	17-Mar-11
	5052	16	1	<1	4	5	176	<1	<.1	<1	8	4	6	<10	19	586	718	1429	<10	8	<30	<1	10-Jun-11 L

**SAMPLE INFORMATION**

**PHYSICAL TEST RESULTS**

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	WATER % VOL	VIS CS 100°C
4053	722	722		y	S	<.10	6.3
5047	1263			n	S	<.10	6.4
1574	3109			n	n	<.10	6.3
5263				y	y	<.10	6.2
1035	4196			n	n	<.10	6.8
5052	4391			n	n	<.10	6.8



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

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 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**Normal** ON 17-Mar-11

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: ENGINE  
 COMP. REF. NO.: 9905346  
 P.O./REF NO.: BRANDEIS S

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED 15W40
COMPONENT TYPE DIESEL ENGINE (TURBO CHARGED)	COMPONENT MANUFACTURER AND MODEL KOMATSU SA6D114E-2	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 1033 Reported On 2011-03-21 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. RESAMPLE at the next scheduled interval.

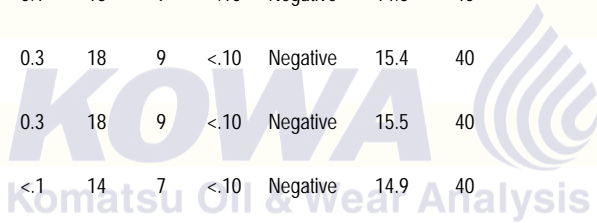
**SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT**

EVAL ID: 3810	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
	2019	44	2	1	1	3	33	1	<.1	<.1	7	53	10	<10	5	1295	1574	3456	<10	128	<30	<.1	21-Jul-08
	1064	56	2	1	3	5	62	<.1	<.1	<.1	7	38	7	<10	<5	1220	1552	3380	<10	105	<30	<.1	13-Nov-08
	5050	61	1	<.1	3	5	69	2	<.1	<.1	8	48	12	<10	6	1297	1669	3771	<10	137	<30	<.1	22-Dec-08
	1602	11	<.1	<.1	<.1	<.1	<.1	<.1	0.5	<.1	1	109	3	<10	21	1042	1289	2735	<10	170	<30	<.1	02-Dec-09
	5261	5	<.1	<.1	2	<.1	<.1	<.1	<.1	<.1	4	37	2	<10	<5	1051	1239	2314	<10	34	<30	<.1	07-Jan-11
	1033	19	1	<.1	3	2	1	<.1	<.1	<.1	3	188	6	<10	28	1152	1436	3128	<10	187	<30	<.1	17-Mar-11

**SAMPLE INFORMATION**

**PHYSICAL TEST RESULTS**

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	FUEL %VOL	FUEL SOOT	ABS OXID	ABS NITR	WTR. %VOL	GLYCOL TEST	VIS 100°C	CS GRADE	SAE
2019	943	222		n	S	<1.0	0.1	16	9	<.10	Negative	14.6		40
1064	1261			n	S	<1.0	0.3	18	9	<.10	Negative	15.4		40
5050	1263			n	S	<1.0	0.3	18	9	<.10	Negative	15.5		40
1602	3109			y	y	<1.0	<.1	14	7	<.10	Negative	14.9		40
5261				y	y	<1.0	<.1	16	6	<.10	Negative	15.1		40
1033	4196			n	n	<1.0	<.1	17	9	<.10	Negative	15.7		40



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

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 LOUISVILLE, KY 40299

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 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**Monitor** ON 17-Mar-11

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: TRANSMISSION  
 COMP. REF. NO.: 9905347  
 P.O./REF NO.: BRANDEIS S

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED
COMPONENT TYPE TRANSMISSION	COMPONENT MANUFACTURER AND MODEL KOMATSU D61PX-15	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 1034 Reported On 2011-03-21 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS REFLECTS CONDITIONS / VALUES NOTED FOR MONITORING PURPOSES ONLY. NO SPECIFIC diagnostic or corrective MAINTENANCE is REQUIRED at this time. MIXTURE or DIFFERENT type OIL in service. RESAMPLE at the next scheduled interval. PLEASE ADVISE specific oil being used (trade name & viscosity grade).

**SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT**

EVAL ID: 3810	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
	4055	134	<1	<1	4	6	102	3	<.1	<.1	39	7	5	<10	<5	1051	1290	4725	15	13	<30	<.1	08-Jan-08
	1065	133	<1	<1	3	4	76	1	<.1	<.1	29	6	4	<10	<5	1078	1365	4312	10	18	<30	<.1	13-Nov-08
	5051	131	<1	<1	2	4	77	2	<.1	<.1	28	7	7	<10	<5	1040	1295	4286	<10	20	<30	<.1	22-Dec-08
	1603	86	<1	<1	1	2	117	<.1	0.2	<.1	21	4	5	<10	<5	776	1007	3260	<10	15	<30	<.1	02-Dec-09
	5262	50	<1	<1	3	2	78	<.1	<.1	<.1	13	16	4	<10	<5	1007	1237	3274	<10	12	<30	<.1	07-Jan-11
	1034	31	<1	<1	3	1	31	<.1	<.1	<.1	6	12	7	<10	<5	951	1110	2588	<10	22	<30	<.1	17-Mar-11

**SAMPLE INFORMATION**

**PHYSICAL TEST RESULTS**

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	WATER % VOL	VIS CS 100°C
4055	722	722		y	C	<.10	10.3
1065	1261	1261		n	S	<.10	10.4
5051	1263			n	S	<.10	10.7
1603	3109			y	y	<.10	10.4
5262				y	y	<.10	8.4
1034	4196			n	n	<.10	10.0



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

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 LOUISVILLE, KY 40299

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 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**Monitor** ON 17-Mar-11

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: HYDRAULIC  
 COMP. REF. NO.: 9905345  
 P.O./REF NO.: BRANDEIS S

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED SAE 10
COMPONENT TYPE HYDRAULIC SYSTEM	COMPONENT MANUFACTURER AND MODEL KOMATSU D61PX-15	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 1035 Reported On 2011-03-21 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS REFLECTS CONDITIONS / VALUES NOTED FOR MONITORING PURPOSES ONLY. NO SPECIFIC diagnostic or corrective MAINTENANCE is REQUIRED at this time. COPPER may be partly from oil cooler tubing. RESAMPLE at the next scheduled interval.

### SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT

EVAL ID: 3810	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
	4053	14	<1	1	4	9	362	1	0.1	<1	19	5	5	<10	96	1019	1231	3551	<10	10	<30	<1	08-Jan-08
	5047	19	<1	1	3	8	296	1	<.1	<1	16	16	2	<10	63	934	1026	2829	<10	6	<30	<1	22-Dec-08
	1574	16	<1	<1	3	7	377	<1	0.1	<1	11	4	5	<10	46	744	927	2332	<10	9	<30	<1	02-Dec-09
	5263	20	1	1	5	9	389	<1	0.1	<1	15	4	2	<10	41	692	891	2161	<10	8	<30	<1	07-Jan-11
	1035	18	1	1	4	5	185	<1	<.1	<1	9	4	6	<10	20	604	754	1468	<10	8	<30	<1	17-Mar-11

### SAMPLE INFORMATION

### PHYSICAL TEST RESULTS

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	WATER % VOL	VIS CS 100°C
4053	722	722		y	S	<.10	6.3
5047	1263			n	S	<.10	6.4
1574	3109			n	n	<.10	6.3
5263				y	y	<.10	6.2
1035	4196			n	n	<.10	6.8



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

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 ANTHONY HILLYARD  
 1801 WATTERSON TRAIL  
 LOUISVILLE, KY 40299

# KOWA

ISO 9001 REGISTERED  
 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**ABNORMAL** ON 17-Mar-11

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: FINAL DRIVE RIGHT  
 COMP. REF. NO.: 9905344  
 P.O./REF NO.: BRANDEIS S

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED SAE 30
COMPONENT TYPE FINAL DRIVE	COMPONENT MANUFACTURER AND MODEL KOMATSU D61PX-15	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 1036 Reported On 2011-03-21 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS INDICATES ABNORMAL CONDITIONS! ABRASIVES (dirt) present. CHECK breathers and/or air vents. CHANGE OIL if not already performed. RESAMPLE at the next scheduled interval.

**SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT**

EVAL ID: 3810	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
	4052	124	2	1	4	1	<1	1	<.1	<.1	32	2	4	<10	<5	1046	1311	4763	<10	13	<30	<.1	08-Jan-08
	1063	37	1	<.1	3	1	<.1	<.1	<.1	<.1	16	1	12	<10	<5	1079	1325	3139	<10	19	<30	<.1	13-Nov-08
	5052	37	<.1	<.1	3	<.1	<.1	1	<.1	<.1	16	2	17	<10	<5	1152	1419	3510	<10	15	<30	<.1	22-Dec-08
	1575	275	4	<.1	95	1	<.1	<.1	<.1	5	184	<.1	16	16	<5	910	1136	2718	<10	22	<30	1	02-Dec-09
	5264	171	3	1	46	<.1	<.1	<.1	<.1	3	91	7	4	<10	<5	1010	1272	2993	<10	12	<30	<.1	07-Jan-11
	1036	118	2	1	36	<.1	5	<.1	<.1	2	105	9	9	<10	<5	957	1115	2399	<10	29	<30	<.1	17-Mar-11

**SAMPLE INFORMATION**

**PHYSICAL TEST RESULTS**

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	WATER % VOL	VIS CS 100°C
4052	722	722		n	C	<.10	10.7
1063	1261	1261		n	S	<.10	10.9
5052	1263			n	S	<.10	10.7
1575	3109			n	y	<.10	10.5
5264				n	y	<.10	10.7
1036	4196			n	n	<.10	10.9



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

FOR LEGEND AND EXPLANATION OF ADDITIONAL TESTS PLEASE CLICK ON THE "GLOSSARY" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.

FOR LEGEND AND EXPLANATION OF KOWA TESTS PLEASE CLICK ON THE "LEGEND" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.  
 KOWA SAMPLE ANALYSIS IS PERFORMED BY AN INDEPENDENT LABORATORY.

NOTE: 'L' after SAMPLE DRAWN indicates date was NOT provided, displayed date is process date.

N/R = TEST NOT PERFORMED

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Form No. 6024B 9/00

# KOWA

BRANDEIS MACHINERY AND SUPPLY COMPANY  
 ANTHONY HILLYARD  
 1801 WATTERSON TRAIL  
 LOUISVILLE, KY 40299

ISO 9001 REGISTERED  
 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**Normal** ON 17-Mar-11

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: FINAL DRIVE LEFT  
 COMP. REF. NO.: 9905343  
 P.O./REF NO.: BRANDEIS S

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED SAE 30
COMPONENT TYPE FINAL DRIVE	COMPONENT MANUFACTURER AND MODEL KOMATSU D61PX-15	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 1037 Reported On 2011-03-21 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. RESAMPLE at the next scheduled interval.

### SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT

EVAL ID: 3810	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
	4051	239	4	<1	7	1	<1	1	<1	1	30	10	3	<10	14	1071	1312	4668	<10	18	<30	<1	08-Jan-08
	1062	60	2	<1	3	1	1	<1	<1	<1	14	1	8	<10	<5	1119	1353	3103	<10	61	<30	<1	13-Nov-08
	5048	51	1	<1	3	1	2	<1	<1	<1	13	3	10	<10	5	995	1206	3031	<10	13	<30	<1	22-Dec-08
	1576	324	6	1	65	<1	<1	<1	<1	4	141	<1	12	11	<5	905	1145	2743	<10	19	<30	1	02-Dec-09
	5266	285	5	1	41	<1	1	<1	7.3	3	85	2	4	<10	<5	990	1263	2974	<10	11	<30	1	07-Jan-11
	1037	125	2	1	23	<1	1	<1	<1	1	69	9	8	<10	<5	935	1082	2324	<10	27	<30	<1	17-Mar-11

### SAMPLE INFORMATION

### PHYSICAL TEST RESULTS

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	WATER % VOL	VIS CS 100°C
4051	722	722		n	C	<.10	10.8
1062	1261	1261		n	S	<.10	10.9
5048	1263			n	S	<.10	11.0
1576	3109			n	y	<.10	10.7
5266				n	y	<.10	10.9
1037	4196			n	n	<.10	11.0



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

FOR LEGEND AND EXPLANATION OF ADDITIONAL TESTS PLEASE CLICK ON THE "GLOSSARY" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.

FOR LEGEND AND EXPLANATION OF KOWA TESTS PLEASE CLICK ON THE "LEGEND" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.  
 KOWA SAMPLE ANALYSIS IS PERFORMED BY AN INDEPENDENT LABORATORY.

NOTE: 'L' after SAMPLE DRAWN indicates date was NOT provided, displayed date is process date.

N/R = TEST NOT PERFORMED

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Form No. 6024B 9/00

BRANDEIS MACHINERY AND SUPPLY COMPANY  
 ANTHONY HILLYARD  
 1801 WATTERSON TRAIL  
 LOUISVILLE, KY 40299

# KOWA

ISO 9001 REGISTERED  
 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**Normal** ON 07-Jan-11

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: ENGINE  
 COMP. REF. NO.: 9905346  
 P.O./REF NO.: POWER EQUI

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED 15W40
COMPONENT TYPE DIESEL ENGINE (TURBO CHARGED)	COMPONENT MANUFACTURER AND MODEL KOMATSU SA6D114E-2	COMPONENT SERIAL NUMBER

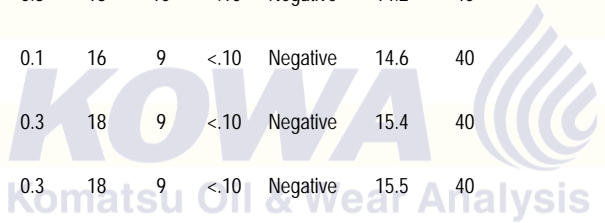
MAINTENANCE RECOMMENDATIONS FOR LAB NO. 5261 Reported On 2011-01-14 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. Info form indicates system was serviced and the oil & filter(s) were changed at the time of sampling. RESAMPLE at next scheduled interval.

EVAL ID: 3810	SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT																			SAMPLE DRAWN		
	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium		Magnesium	Antimony
4054	121	5	1	5	13	240	3	0.1	<1	46	18	16	10	18	1154	1540	4052	11	8	<30	<1	08-Jan-08
2019	44	2	1	1	3	33	1	<.1	<1	7	53	10	<10	5	1295	1574	3456	<10	128	<30	<1	21-Jul-08
1064	56	2	1	3	5	62	<1	<.1	<1	7	38	7	<10	<5	1220	1552	3380	<10	105	<30	<1	13-Nov-08
5050	61	1	<1	3	5	69	2	<.1	<1	8	48	12	<10	6	1297	1669	3771	<10	137	<30	<1	22-Dec-08
1602	11	<1	<1	<1	<1	<1	<1	0.5	<1	1	109	3	<10	21	1042	1289	2735	<10	170	<30	<1	02-Dec-09
5261	5	<1	<1	2	<1	<1	<1	<.1	<1	4	37	2	<10	<5	1051	1239	2314	<10	34	<30	<1	07-Jan-11

SAMPLE INFORMATION						PHYSICAL TEST RESULTS								
LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	FUEL %VOL	FUEL SOOT	ABS OXID	ABS NITR	WTR. %VOL	GLYCOL TEST	VIS 100°C	CS	SAE GRADE
4054	722	722		y	C	<1.0	0.3	18	10	<.10	Negative	14.2		40
2019	943	222		n	S	<1.0	0.1	16	9	<.10	Negative	14.6		40
1064	1261			n	S	<1.0	0.3	18	9	<.10	Negative	15.4		40
5050	1263			n	S	<1.0	0.3	18	9	<.10	Negative	15.5		40
1602	3109			y	y	<1.0	<.1	14	7	<.10	Negative	14.9		40
5261				y	y	<1.0	<.1	16	6	<.10	Negative	15.1		40



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

FOR LEGEND AND EXPLANATION OF KOWA TESTS PLEASE CLICK ON THE "LEGEND" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.  
 KOWA SAMPLE ANALYSIS IS PERFORMED BY AN INDEPENDENT LABORATORY.

FOR LEGEND AND EXPLANATION OF ADDITIONAL TESTS PLEASE CLICK ON THE "GLOSSARY" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.

NOTE: 'L' after SAMPLE DRAWN indicates date was NOT provided, displayed date is process date.

N/R = TEST NOT PERFORMED

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Form No. 6024B 9/00

BRANDEIS MACHINERY AND SUPPLY COMPANY  
 ANTHONY HILLYARD  
 1801 WATTERSON TRAIL  
 LOUISVILLE, KY 40299

# KOWA

ISO 9001 REGISTERED  
 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**Monitor** ON 07-Jan-11

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: TRANSMISSION  
 COMP. REF. NO.: 9905347  
 P.O./REF NO.: POWER EQUI

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED ISO 46
COMPONENT TYPE TRANSMISSION	COMPONENT MANUFACTURER AND MODEL KOMATSU D61PX-15	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 5262 Reported On 2011-01-14 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS REFLECTS CONDITIONS / VALUES NOTED FOR MONITORING PURPOSES ONLY. Suspect component was not serviced with the viscosity grade reported. Other test results are satisfactory. VERIFY product in service. RESAMPLE at the next scheduled interval. Test result(s) have been verified by retest.

**SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT**

EVAL ID: 3810	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
	4055	134	<1	<1	4	6	102	3	<.1	<.1	39	7	5	<10	<5	1051	1290	4725	15	13	<30	<1	08-Jan-08
	1065	133	<1	<1	3	4	76	1	<.1	<.1	29	6	4	<10	<5	1078	1365	4312	10	18	<30	<1	13-Nov-08
	5051	131	<1	<1	2	4	77	2	<.1	<.1	28	7	7	<10	<5	1040	1295	4286	<10	20	<30	<1	22-Dec-08
	1603	86	<1	<1	1	2	117	<.1	0.2	<.1	21	4	5	<10	<5	776	1007	3260	<10	15	<30	<1	02-Dec-09
	5262	50	<1	<1	3	2	78	<.1	<.1	<.1	13	16	4	<10	<5	1007	1237	3274	<10	12	<30	<1	07-Jan-11

**SAMPLE INFORMATION**

**PHYSICAL TEST RESULTS**

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	WATER % VOL	VIS CS 100°C
4055	722	722		y	C	<.10	10.3
1065	1261	1261		n	S	<.10	10.4
5051	1263			n	S	<.10	10.7
1603	3109			y	y	<.10	10.4
5262				y	y	<.10	8.4



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE 'MONITOR' OR 'CAUTION' LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

FOR LEGEND AND EXPLANATION OF ADDITIONAL TESTS PLEASE CLICK ON THE 'GLOSSARY' TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.

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 KOWA SAMPLE ANALYSIS IS PERFORMED BY AN INDEPENDENT LABORATORY.

NOTE: 'L' after SAMPLE DRAWN indicates date was NOT provided, displayed date is process date.

N/R = TEST NOT PERFORMED

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BRANDEIS MACHINERY AND SUPPLY COMPANY  
 ANTHONY HILLYARD  
 1801 WATTERSON TRAIL  
 LOUISVILLE, KY 40299

# KOWA

ISO 9001 REGISTERED  
 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**Monitor** ON 07-Jan-11

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: HYDRAULIC  
 COMP. REF. NO.: 9905345  
 P.O./REF NO.: POWER EQUI

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED SAE 10
COMPONENT TYPE HYDRAULIC SYSTEM	COMPONENT MANUFACTURER AND MODEL KOMATSU D61PX-15	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 5263 Reported On 2011-01-14 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS REFLECTS CONDITIONS / VALUES NOTED FOR MONITORING PURPOSES ONLY. NO SPECIFIC diagnostic or corrective MAINTENANCE is REQUIRED at this time. COPPER may be partly from oil cooler tubing. Data provided indicates oil and filter were changed at sampling. RESAMPLE at the next scheduled interval.

**SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT**

EVAL ID: 3810	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
	4053	14	<1	1	4	9	362	1	0.1	<1	19	5	5	<10	96	1019	1231	3551	<10	10	<30	<1	08-Jan-08
	5047	19	<1	1	3	8	296	1	<.1	<1	16	16	2	<10	63	934	1026	2829	<10	6	<30	<1	22-Dec-08
	1574	16	<1	<1	3	7	377	<1	0.1	<1	11	4	5	<10	46	744	927	2332	<10	9	<30	<1	02-Dec-09
	5263	20	1	1	5	9	389	<1	0.1	<1	15	4	2	<10	41	692	891	2161	<10	8	<30	<1	07-Jan-11

**SAMPLE INFORMATION**

**PHYSICAL TEST RESULTS**

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	WATER % VOL	VIS CS 100°C
4053	722	722		y	S	<.10	6.3
5047	1263			n	S	<.10	6.4
1574	3109			n	n	<.10	6.3
5263				y	y	<.10	6.2



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

FOR LEGEND AND EXPLANATION OF KOWA TESTS PLEASE CLICK ON THE "LEGEND" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE. KOWA SAMPLE ANALYSIS IS PERFORMED BY AN INDEPENDENT LABORATORY.

FOR LEGEND AND EXPLANATION OF ADDITIONAL TESTS PLEASE CLICK ON THE "GLOSSARY" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.

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N/R = TEST NOT PERFORMED

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BRANDEIS MACHINERY AND SUPPLY COMPANY  
 ANTHONY HILLYARD  
 1801 WATTERSON TRAIL  
 LOUISVILLE, KY 40299

# KOWA

ISO 9001 REGISTERED  
 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**Normal** ON 07-Jan-11

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: FINAL DRIVE RIGHT  
 COMP. REF. NO.: 9905344  
 P.O./REF NO.: POWER EQUI

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED SAE 30
COMPONENT TYPE FINAL DRIVE	COMPONENT MANUFACTURER AND MODEL KOMATSU D61PX-15	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 5264 Reported On 2011-01-14 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS WERE ACCEPTABLE. Data reflects the system was serviced and this fluid was drained at the time of sampling. RESAMPLE at the next scheduled interval.

**SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT**

EVAL ID: 3810	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
	4052	124	2	1	4	1	<1	1	<.1	<.1	32	2	4	<10	<5	1046	1311	4763	<10	13	<30	<1	08-Jan-08
	1063	37	1	<1	3	1	<1	<1	<.1	<.1	16	1	12	<10	<5	1079	1325	3139	<10	19	<30	<1	13-Nov-08
	5052	37	<1	<1	3	<1	<1	1	<.1	<.1	16	2	17	<10	<5	1152	1419	3510	<10	15	<30	<1	22-Dec-08
	1575	275	4	<1	95	1	<1	<1	<.1	5	184	<1	16	16	<5	910	1136	2718	<10	22	<30	1	02-Dec-09
	5264	171	3	1	46	<1	<1	<1	<.1	3	91	7	4	<10	<5	1010	1272	2993	<10	12	<30	<1	07-Jan-11

**SAMPLE INFORMATION**

**PHYSICAL TEST RESULTS**

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	WATER % VOL	VIS CS 100°C
4052	722	722		n	C	<.10	10.7
1063	1261	1261		n	S	<.10	10.9
5052	1263			n	S	<.10	10.7
1575	3109			n	y	<.10	10.5
5264				n	y	<.10	10.7



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

FOR LEGEND AND EXPLANATION OF KOWA TESTS PLEASE CLICK ON THE "LEGEND" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.  
 KOWA SAMPLE ANALYSIS IS PERFORMED BY AN INDEPENDENT LABORATORY.

FOR LEGEND AND EXPLANATION OF ADDITIONAL TESTS PLEASE CLICK ON THE "GLOSSARY" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.

NOTE: 'L' after SAMPLE DRAWN indicates date was NOT provided, displayed date is process date.

N/R = TEST NOT PERFORMED

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BRANDEIS MACHINERY AND SUPPLY COMPANY  
 ANTHONY HILLYARD  
 1801 WATTERSON TRAIL  
 LOUISVILLE, KY 40299

# KOWA

ISO 9001 REGISTERED  
 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**Normal** ON 07-Jan-11

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: FINAL DRIVE LEFT  
 COMP. REF. NO.: 9905343  
 P.O./REF NO.: POWER EQUI

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED SAE 30
COMPONENT TYPE FINAL DRIVE	COMPONENT MANUFACTURER AND MODEL KOMATSU D61PX-15	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 5266 Reported On 2011-01-14 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS WERE ACCEPTABLE. Data reflects the system was serviced and this fluid was drained at the time of sampling. RESAMPLE at the next scheduled interval.

**SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT**

EVAL ID: 3810	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
	4051	239	4	<1	7	1	<1	1	<1	1	30	10	3	<10	14	1071	1312	4668	<10	18	<30	<1	08-Jan-08
	1062	60	2	<1	3	1	1	<1	<1	<1	14	1	8	<10	<5	1119	1353	3103	<10	61	<30	<1	13-Nov-08
	5048	51	1	<1	3	1	2	<1	<1	<1	13	3	10	<10	5	995	1206	3031	<10	13	<30	<1	22-Dec-08
	1576	324	6	1	65	<1	<1	<1	<1	4	141	<1	12	11	<5	905	1145	2743	<10	19	<30	1	02-Dec-09
	5266	285	5	1	41	<1	1	<1	7.3	3	85	2	4	<10	<5	990	1263	2974	<10	11	<30	1	07-Jan-11

**SAMPLE INFORMATION**

**PHYSICAL TEST RESULTS**

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	WATER % VOL	VIS CS 100°C
4051	722	722		n	C	<.10	10.8
1062	1261	1261		n	S	<.10	10.9
5048	1263			n	S	<.10	11.0
1576	3109			n	y	<.10	10.7
5266				n	y	<.10	10.9



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

FOR LEGEND AND EXPLANATION OF ADDITIONAL TESTS PLEASE CLICK ON THE "GLOSSARY" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.

FOR LEGEND AND EXPLANATION OF KOWA TESTS PLEASE CLICK ON THE "LEGEND" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.  
 KOWA SAMPLE ANALYSIS IS PERFORMED BY AN INDEPENDENT LABORATORY.

NOTE: 'L' after SAMPLE DRAWN indicates date was NOT provided, displayed date is process date.

N/R = TEST NOT PERFORMED

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Form No. 6024B 9/00

BRANDEIS MACHINERY AND SUPPLY COMPANY  
 ANTHONY HILLYARD  
 1801 WATTERSON TRAIL  
 LOUISVILLE, KY 40299

# KOWA

STATUS WAS

**Monitor** ON 02-Dec-09

ISO 9001 REGISTERED  
 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: HYDRAULIC  
 COMP. REF. NO.: 9905345  
 P.O./REF NO.: POWER EQUI

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE - FACTORY FILL SAE 10
COMPONENT TYPE HYDRAULIC SYSTEM	COMPONENT MANUFACTURER AND MODEL KOMATSU D61PX-15	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 1574 Reported On 2009-12-07 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS REFLECTS CONDITIONS / VALUES NOTED FOR MONITORING PURPOSES ONLY. NO SPECIFIC diagnostic or corrective MAINTENANCE is REQUIRED at this time. COPPER may be partly from oil cooler tubing. Time on the oil was not provided. RESAMPLE at the next scheduled interval.

**SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT**

EVAL ID: 4666	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
	4053	14	<1	1	4	9	362	1	0.1	<1	19	5	5	<10	96	1019	1231	3551	<10	10	<30	<1	08-Jan-08
	5047	19	<1	1	3	8	296	1	<.1	<1	16	16	2	<10	63	934	1026	2829	<10	6	<30	<1	22-Dec-08
	1574	16	<1	<1	3	7	377	<1	0.1	<1	11	4	5	<10	46	744	927	2332	<10	9	<30	<1	02-Dec-09

**SAMPLE INFORMATION**

**PHYSICAL TEST RESULTS**

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	WATER % VOL	VIS CS 100°C
4053	722	722		y	S	<.10	6.3
5047	1263			n	S	<.10	6.4
1574	3109			n	n	<.10	6.3



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

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NOTE: 'L' after SAMPLE DRAWN indicates date was NOT provided, displayed date is process date.

N/R = TEST NOT PERFORMED

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Form No. 6024B 9/00

BRANDEIS MACHINERY AND SUPPLY COMPANY  
 ANTHONY HILLYARD  
 1801 WATTERSON TRAIL  
 LOUISVILLE, KY 40299

# KOWA

ISO 9001 REGISTERED  
 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**ABNORMAL** ON 02-Dec-09

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: FINAL DRIVE RIGHT  
 COMP. REF. NO.: 9905344  
 P.O./REF NO.: POWER EQUI

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED SAE 30
COMPONENT TYPE FINAL DRIVE	COMPONENT MANUFACTURER AND MODEL KOMATSU D61PX-15	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 1575 Reported On 2009-12-07 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS INDICATES ABNORMAL COMPONENT CONDITIONS! SILICON (dirt) is causing abrasive wear. ALUMINUM level is associated with SILICON (dirt) content. CHECK seals, vents, and case for location of contaminant entry. NOTED ELEMENTS are generally associated with: Gear wear. PERFORM diagnostics and institute repairs/inspections accordingly. CHANGE the OIL. RESAMPLE after diagnostics / corrective action to confirm improvement.

**SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT**

EVAL ID: 4666	SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT																			SAMPLE DRAWN		
LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
4052	124	2	1	4	1	<1	1	<.1	<.1	32	2	4	<10	<5	1046	1311	4763	<10	13	<30	<1	08-Jan-08
1063	37	1	<1	3	1	<1	<1	<.1	<.1	16	1	12	<10	<5	1079	1325	3139	<10	19	<30	<1	13-Nov-08
5052	37	<1	<1	3	<1	<1	1	<.1	<.1	16	2	17	<10	<5	1152	1419	3510	<10	15	<30	<1	22-Dec-08
1575	275	4	<1	95	1	<1	<1	<.1	5	184	<1	16	16	<5	910	1136	2718	<10	22	<30	1	02-Dec-09

**SAMPLE INFORMATION**

**PHYSICAL TEST RESULTS**

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	WATER % VOL	VIS CS 100°C
4052	722	722		n	C	<.10	10.7
1063	1261	1261		n	S	<.10	10.9
5052	1263			n	S	<.10	10.7
1575	3109			n	y	<.10	10.5



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

FOR LEGEND AND EXPLANATION OF KOWA TESTS PLEASE CLICK ON THE "LEGEND" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE. KOWA SAMPLE ANALYSIS IS PERFORMED BY AN INDEPENDENT LABORATORY.

FOR LEGEND AND EXPLANATION OF ADDITIONAL TESTS PLEASE CLICK ON THE "GLOSSARY" TAB AT THE TOP OF ANY KOWA ONLINE WEB PAGE.

NOTE: 'L' after SAMPLE DRAWN indicates date was NOT provided, displayed date is process date.

N/R = TEST NOT PERFORMED

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Form No. 6024B 9/00

# KOWA

BRANDEIS MACHINERY AND SUPPLY COMPANY  
 ANTHONY HILLYARD  
 1801 WATTERSON TRAIL  
 LOUISVILLE, KY 40299

ISO 9001 REGISTERED  
 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**ABNORMAL** ON 02-Dec-09

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: FINAL DRIVE LEFT  
 COMP. REF. NO.: 9905343  
 P.O./REF NO.: POWER EQUI

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED SAE 30
COMPONENT TYPE FINAL DRIVE	COMPONENT MANUFACTURER AND MODEL KOMATSU D61PX-15	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 1576 Reported On 2009-12-07 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS INDICATES ABNORMAL COMPONENT CONDITIONS! SILICON (dirt) is causing abrasive wear. ALUMINUM level is associated with SILICON (dirt) content. CHECK seals, vents, and case for location of contaminant entry. NOTED ELEMENTS are generally associated with: Gear wear. PERFORM diagnostics and institute repairs/inspections accordingly. CHANGE the OIL. RESAMPLE after diagnostics / corrective action to confirm improvement.

**SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT**

EVAL ID: 4666	SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT																			SAMPLE DRAWN		
LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
4051	239	4	<1	7	1	<1	1	<1	1	30	10	3	<10	14	1071	1312	4668	<10	18	<30	<1	08-Jan-08
1062	60	2	<1	3	1	1	<1	<1	<1	14	1	8	<10	<5	1119	1353	3103	<10	61	<30	<1	13-Nov-08
5048	51	1	<1	3	1	2	<1	<1	<1	13	3	10	<10	5	995	1206	3031	<10	13	<30	<1	22-Dec-08
1576	324	6	1	65	<1	<1	<1	<1	4	141	<1	12	11	<5	905	1145	2743	<10	19	<30	1	02-Dec-09
	-----			-----						-----												

**SAMPLE INFORMATION**

**PHYSICAL TEST RESULTS**

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	WATER % VOL	VIS CS 100°C
4051	722	722		n	C	<.10	10.8
1062	1261	1261		n	S	<.10	10.9
5048	1263			n	S	<.10	11.0
1576	3109			n	y	<.10	10.7



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

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# KOWA

BRANDEIS MACHINERY AND SUPPLY COMPANY  
 ANTHONY HILLYARD  
 1801 WATTERSON TRAIL  
 LOUISVILLE, KY 40299

ISO 9001 REGISTERED  
 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**Normal** ON 02-Dec-09

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: ENGINE  
 COMP. REF. NO.: 9905346  
 P.O./REF NO.: POWER EQUI

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED 15W40
COMPONENT TYPE DIESEL ENGINE (TURBO CHARGED)	COMPONENT MANUFACTURER AND MODEL KOMATSU SA6D114E-2	COMPONENT SERIAL NUMBER

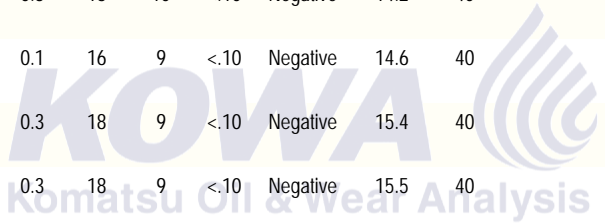
MAINTENANCE RECOMMENDATIONS FOR LAB NO. 1602 Reported On 2009-12-07 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. Info form indicates system was serviced and the oil & filter(s) were changed at the time of sampling. RESAMPLE at next scheduled interval.

EVAL ID: 3810	SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT																			SAMPLE DRAWN		
	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium		Magnesium	Antimony
4054	121	5	1	5	13	240	3	0.1	<1	46	18	16	10	18	1154	1540	4052	11	8	<30	<1	08-Jan-08
2019	44	2	1	1	3	33	1	<.1	<1	7	53	10	<10	5	1295	1574	3456	<10	128	<30	<1	21-Jul-08
1064	56	2	1	3	5	62	<1	<.1	<1	7	38	7	<10	<5	1220	1552	3380	<10	105	<30	<1	13-Nov-08
5050	61	1	<1	3	5	69	2	<.1	<1	8	48	12	<10	6	1297	1669	3771	<10	137	<30	<1	22-Dec-08
1602	11	<1	<1	<1	<1	<1	<1	0.5	<1	1	109	3	<10	21	1042	1289	2735	<10	170	<30	<1	02-Dec-09

SAMPLE INFORMATION						PHYSICAL TEST RESULTS								
LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	FUEL %VOL	FUEL SOOT	ABS OXID	ABS NITR	WTR. %VOL	GLYCOL TEST	VIS 100°C	CS GRADE	SAE
4054	722	722		y	C	<1.0	0.3	18	10	<.10	Negative	14.2		40
2019	943	222		n	S	<1.0	0.1	16	9	<.10	Negative	14.6		40
1064	1261			n	S	<1.0	0.3	18	9	<.10	Negative	15.4		40
5050	1263			n	S	<1.0	0.3	18	9	<.10	Negative	15.5		40
1602	3109			y	y	<1.0	<.1	14	7	<.10	Negative	14.9		40



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE 'MONITOR' OR 'CAUTION' LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

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N/R = TEST NOT PERFORMED

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# KOWA

BRANDEIS MACHINERY AND SUPPLY COMPANY  
 ANTHONY HILLYARD  
 1801 WATTERSON TRAIL  
 LOUISVILLE, KY 40299

ISO 9001 REGISTERED  
 11350 Bluegrass Parkway  
 Louisville KY 40299  
 PH: (502)266-9776 FAX: (502)266-9779

STATUS WAS

**Normal** ON 02-Dec-09

MODEL SERIAL #: B41283 / C5443  
 COMPONENT: TRANSMISSION  
 COMP. REF. NO.: 9905347  
 P.O./REF NO.: POWER EQUI

WORKSITE CERTIFIED RENTAL	MODEL MANUFACTURER KOMATSU D61PX-15	OIL TYPE UNSPECIFIED ISO 46
COMPONENT TYPE TRANSMISSION	COMPONENT MANUFACTURER AND MODEL KOMATSU D61PX-15	COMPONENT SERIAL NUMBER

MAINTENANCE RECOMMENDATIONS FOR LAB NO. 1603 Reported On 2009-12-07 From: BRANDEIS MACHINERY & SUPPLY, STANVILLE, KY



ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. Info form indicates system was serviced and the oil & filter(s) were changed at the time of sampling. RESAMPLE at next scheduled interval.

**SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION BY WEIGHT**

EVAL ID: 3810	LAB NO.	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Boron	Sodium	Potassium	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium	SAMPLE DRAWN
	4055	134	<1	<1	4	6	102	3	<.1	<.1	39	7	5	<10	<5	1051	1290	4725	15	13	<30	<1	08-Jan-08
	1065	133	<1	<1	3	4	76	1	<.1	<.1	29	6	4	<10	<5	1078	1365	4312	10	18	<30	<1	13-Nov-08
	5051	131	<1	<1	2	4	77	2	<.1	<.1	28	7	7	<10	<5	1040	1295	4286	<10	20	<30	<1	22-Dec-08
	1603	86	<1	<1	1	2	117	<.1	0.2	<.1	21	4	5	<10	<5	776	1007	3260	<10	15	<30	<1	02-Dec-09

**SAMPLE INFORMATION**

**PHYSICAL TEST RESULTS**

LAB NO.	Mi/HR Unit	Mi/HR Oil	Oil Add	FLTR CHG	OIL CHG	WATER % VOL	VIS CS 100°C
4055	722	722		y	C	<.10	10.3
1065	1261	1261		n	S	<.10	10.4
5051	1263			n	S	<.10	10.7
1603	3109			y	y	<.10	10.4



UNDERLINED RESULTS INDICATE SIGNIFICANT VALUES BASED ON KOWA GUIDELINES. SINGLE UNDERLINES INDICATE "MONITOR" OR "CAUTION" LEVELS. DOUBLE UNDERLINES INDICATES CRITICAL LEVELS.

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