

Komatsu 830E Haul Trucks Monitored by MAG-PROBE®

The Problem

Komatsu 830E haul trucks at a Canadian diamond mine were suffering difficult to predict wheel motor and front spindle bearing failures. This led to unnecessary, expensive failures. Additionally, the design of the GE wheel motor does not include filtration: ferrous contamination was controlled by oil change.

The Solution

The operators equipped a pair of trucks with BAY6 Solutions' Mag-Shield and Mag-Probe kits as part of a trial. The intention was to provide oil filtration to capture as much ferrous contamination as possible and provide a method of visually monitoring iron contamination within the hubs and wheel motors. Mag-Shields were installed in the wheel motor sumps, and Mag-Probes were installed both in the wheel motor filler caps and the front wheel hubs.



830E front wheel hub MAG-PROBE® captures material indicating impending bearing failure. The use of this Probe saved the Hub & Spindle from damage.



MAG-PROBE® 830E wheel motor sump filler cap after 486 hours of normal operation.



MAG-SHIELD® installed in an 830E wheel motor sump after 2026 hours of normal operation.

The Results

In addition to providing an excellent visual indicator of iron contamination within the wheel motors and front hubs, a large reduction in iron levels was observed in follow up fluid sampling, as shown in the report below. The benefits of cleaner oil are extended oil life, reduced wear and increased component service life. The Mag-Probes also provide a visual baseline for normal operation.

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	Silicon (Si)	Sodium (Na)	Potassium (K)	Iron (Fe)	Chromium (Cr)	Lead (Pb)	Copper (Cu)	Tin (Sn)	Aluminum (Al)	Nickel (Ni)	Silver (Ag)	Titanium (Ti)
	14	0	1	0	0	1	0	0	0	0	0	0
	19	2	0	58	2	0	5	0	0	0	0	0
Installed Breather												
	14	1	1	51	1	0	6	0	0	1	0	0
	16	1	0	28	1	0	5	0	0	0	0	0
	19	1	1	32	1	0	6	0	0	0	0	0
	22	1	0	43	1	0	6	0	0	0	0	0
Installed Magnetic filtration device												
	34	3	0	138	3	1	4	0	0	2	0	0
	32	2	2	61	1	0	4	0	1	1	0	0
	75	2	1	485	23	1	10	0	1	4	0	0
	22	0	1	60	0	0	0	0	0	2	0	0
	20	1	1	75	2	1	6	1	1	1	0	0
	24	1	1	96	3	0	7	1	1	1	0	0
	23	1	0	75	3	0	6	0	1	1	0	0
	29	2	0	103	5	1	7	0	0	1	0	0
	36	2	0	140	7	1	7	0	1	2	0	0
	33	2	2	129	6	0	4	0	0	2	0	0
	60	2	1	377	14	1	9	0	1	5	0	0
	73	1	0	437	17	1	10	1	1	5	0	0
	68	1	0	354	15	0	8	0	1	4	0	0
	59	2	0	238	10	0	8	0	0	3	0	0
	74	2	0	240	19	1	11	1	1	2	0	0

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