L&T Construction & Mining Machinery

L&T Earthmover News

Customer Newsletter

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Reaching Out Farther

Introducing
Komatsu PC210LC-8M0
Super Long Front

PC210LC-8M0 Super Long Front - Power & Productivity

Komatsu's Hydraulic Excavators have an unquestionable reputation across the world for their superb reliability and outstanding productivity. Expanding its product offering, L&T has introduced a new variant of Komatsu's highly-successful 20-ton model -- PC210LC-8M0 Super Long Front in the Indian market to meet the increasing demand from contractors engaged in varied applications like irrigation, dredging and deep canal excavation.

With a reach of 15m, the PC210LC-8M0 SLF is designed specially for Indian customers and is highly suitable for digging work and slope finishing jobs. Komatsu's exclusive, on-board, HydrauMind system assists in all the operations, providing enhanced machine performance that's perfectly matched to the task. The machine is fitted with long crawler undercarriage and special counterweight for better stability and can handle material with maximum density of 1.8 ton per cum.

Komatsu-designed and manufactured components ensure that the excavator gives the user excellent reliability and durability. The heavy-duty work equipment is fitted with reliable electronic devices and an auxiliary hydraulic circuit. It has adjustable presets for rapid attachment changeover, additional filters for attachment, hydraulic relief pressure control and automatic changeover valves.

Specifically developed for Komatsu excavators, the new operator cab is designed with a tubular steel frame. The framework provides high durability with impact resistance and maximum protection for the operator if the machine should ever roll over. Additionally, the cab has standard features such as spacious working environment, fully adjustable air-suspension seat, anti-vibratory viscous mounts and air conditioning. The new cab design contributes to extremely low interior noise levels that of a passenger car making it a quiet machine in its class and greatly reducing the operator fatigue.

The machine is fitted with Large TFT monitor with improved operator interface through Komatsu-developed information technology. This large screen makes it easy for the operator to monitor all the machine functions. It is video compatible and can be used with the optional camera system to give an easy view of the rear side of the vehicle.

To help minimize maintenance and increase productivity, PC210LC-8M0 is fitted with the advanced KOMTRAX tracking system. This enables remote monitoring of the machine anytime anywhere and for allowing mechanics to arrive at the job site fully prepared. The machine is fitted with Komatsu SAA6D107E-1 engine which develops 138 HP @ 2000 rpm. The Ecot3 engine reduces exhaust emissions and increases fuel efficiency and meets EU Stage IIIA emission regulations.

L&T's offering of Komatsu PC210-8M0 machine with Rock Breaker attachment is fast becoming popular in the domestic market and is all set to cross new milestones in performance and productivity.

Komatsu PC210LC-8M0 Super Long Front - shot at KIPL manufacturing facility in Oragadam

India Design Mark for L&T 1190 Soil Compactor

L&T 1190D Soil Compactor, designed by L&T's Product Development Centre-Coimbatore and manufactured by L&T Construction Equipment Limited, Bangalore has been awarded India Design Mark. At an event held to mark the IDC activity day in Bangalore on March 3, 2016, the certificate was received by L&T team of Mr. D. Keshava Kumar, CE, LTCEL and Mr. G.S.Narayana, GM,PDC from the executive committee of India Design Council . Mr. Suresh Sundararajan led the L&T team in designing the product.

India Design Mark is awarded for good design, which symbolizes excellence in form, function, quality, safety, sustainability and innovation, and communicates that the product is usable, durable, aesthetically appealing and socially responsible.

L&T 1190D is a compaction equipment, used for increasing the load bearing capacity of soil by vibratory ramming. Higher operating mass and optimized exciter provides for best compaction and productivity at lower fuel consumption. Best serviceability and operator comfort are the key features, providing easy and safe operation.

Mr. D. Keshava Kumar and Mr. G.S.Narayana receiving the India Design Mark certificate from the IDC members.

Distinctive Design Features of the Product:

- Novel Design of Exciter shaft (under patent) demands low torque and consumes lesser fuel. Over and above, optimally selected pump and dual displacement motors combination provide 3rd speed for steeper climbing.
- Naturally-occurring Hematite-filled front chassis and Water Ballastable tyre and Drum, result in less steel usage and lower carbon footprint. Higher Drum shell thickness provides higher Static Linear Load and longer wear life.
- Judicious use of anti-vibration pads E.g.: on steering, platform and drum, ensures good operator comfort and longer duration of operation. Emergency stop with auto braking feature ensures safe operation. Fresh air draft created over the operator by Engine Suction fan enhances operator comfort
- All replaceable and service points are located at accessible place from ground to improve serviceability. Easy ingress and egress with 3P contact.

Overall Machine with bulky-front and sleek-rear, which is inspired from bull is providing productive and agile feel to user.

Mr. Arvind K. Garg has been elevated as Executive Vice-President - Construction & Mining Machinery Business, L&T. Mr. Garg shall continue to provide leadership to the CMB team and guide the Business Unit for profitable growth and development and launch of new products. Our Congratulations.

Impressive display by L&T at IME 2016

Mr. S. Bhattacharya, Chairman-cum-MD and Mr. N. Kumar, Director (Technical), Coal India Limited at L&T Stall

Mr. Anil Swarup, Secretary, Ministry of Coal being greeted at L&T Stall

L&T participated in 6th IME-2016 (International Mining, Exploration, Mineral Processing Technology, Metals & Machinery Exhibition) held from February 24th-27th at Eco Park, Kolkata. Mr. Anil Swarup, Secretary, Ministry of Coal, Government of India inaugurated the event and Mr. Sutirtha Bhattacharya, Chairman-cum-MD, Coal India Limited was the chief guest. Senior officials from Coal India and its subsidiaries, Tata Steel, SAIL, Essel Mining, NMDC, Theiss and Adani visited the stall and held discussions with the L&T team. The event was organized by Tafcon in association with Mining, Geological and Metallurgical Institute of India. There were 300 exhibitors from 30 countries across the world. L&T stall bagged the 2nd position award for 'Innovative stall design' in the medium-size stall category.

Mr. Rajan Arora, Chief Procurement officer, Essel Mining with his team

Mr. A. Shrivastava, ED I/C and Mr. B. B. Singh, GM (MM) of SAIL-RMD in L&T stall

Mr.A.K. Tiwari, Director (Technical /Operations) and Mr..J. P. Singh, Director (Technical/PP), MCL with L&T Team

A view of L&T Stall which won award for Innovative Stall Design

L&T installs Scania Simulator at PSD-Durgapur

L&T crossed a milestone in driver training with the inauguration of the Scania's sophisticated simulator at Service Centre-Durgapur. The simulator was unveiled by Mr. A.K.Sarkar, Director (Technical), Bharat Coking Coal Limited, in the presence of dignitaries from L&T, Scania and BCCL. The simulator has been championed by Mr. Ahlin Mattias, Director-Mining, Scania Commercial Vehicles India Pvt. Ltd., who also conducted extensive trials.

In his keynote address, Mr. Sarkar expressed his deep appreciation with L&T's new initiatives in training and said that the simulator would give a big fillip to the growing mining tipper business in India. Earlier, Mr. Arun Pai, General Manager & Head-Product Support, welcomed the gathering and said the Scania Simulator installation was part of L&T's avowed commitment to provide cutting-edge training to customer personnel. Mr. Rahul Mehta, Head-CMTB; Mr. Oscar D'Silva, Head-Training Centre; Mr. N.K.Pal, Head-Service Centre and Mr. Mukesh Tiwari, Zonal Manager, CEB-East, L&T participated in the event.

With Coal India Limited targeting for 1 bn tonnes of coal by FY 2019-20, there is an impetus in the sale of 35T mining tippers, primarily deployed in overburden removal, which includes Scania P380 & P410 tippers.

Mr. A.K.Sarkar, Director-Technical, BCCL unveiling the new simulator in the presence of guests and dignitaries

This, in turn, has led to a huge demand for trained tipper drivers. While Scania and L&T have a large team of expert driver-trainers, who carry out driver training at the various customers' locations, it was felt that this effort had to be supplemented with use of Simulators, which will facilitate both the initial training of drivers, and their final assessment for further improvement, in an accident-free environment.

Accordingly, Scania India introduced the state-of-the-art Simulator training facility and has installed it in L&T's Service Centre in Durgapur. This facility will go a long way in meeting the driving training needs of customers, based in the heart of the mining belt in the Eastern part of the country.

"This simulator is, perhaps, the best place for a tipper driver to spend time before he hops on to a real truck and extracts the best out of these modern trucks from Scania. He can get accustomed to the control environment, have a feel of the opticruise control, experience its effect on the truck operation and perfect the timing to switch between the auto and manual operating mode. The sequence of training through task followed by an elaborate assessment of the performance is so well designed in the software, that by the time a driver completes the entire package, he is competent enough to handle all the operational complexities of a real mine site", says Mr. Oscar D'Silva.

This experience provide operators the comfort of being at ease when he uses the actual vehicle. All this learnt and experienced at zero fuel cost and zero loss of productive time of a real truck without taking into account the damage that might have happened due to any mishap while learning. This superlative Scania simulator becomes a very effective skill enhancement tool that will provide operators the 'confidence of trucking'.

Mr. Ahlin Mattias, Director-Mining, Scania conducting the simulator tests.

Customer Training Programmes at Kanchipuram and Regions – 2016-2017

	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
June				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
				4/PC71/130/K'puram Maintenance Staff					7/IESC-RPL- Hydraulic -Mechanic/ Kanchipuram								8/PC300/450/K'puram Maintenance Staff						10/IESC-RPL- Engine - Mechanic/ Kanchipuram												
				5/D155/ Nagpur Operators/Mechanics		6/PC210/ Bijapur Operators/Mechanics													9/PC1250/PC2000/ Durgapur Operators/ Mechanics			11/D85/ Ranchi Operators/Mechanics			12/PC1250/Chittorgarh Operators/Mechanics								
July	31					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
						13/PC210/ Panvel Operators/Mechanics			14/D85/Durgapur Operators/Mechanics				16/PC210/ Hospet Operators/Mechanics				18/Kom. Dump Trucks/K'puram Maintenance Staff							21/Excavator Hyd Systems/K'puram Executives/Managers							25/IESC-RPL_-Electrical -Mechanic/ Kanchipuram				
										15/PC210/Karauli Operators/Mechanics			17/HD465/Nagpur Operators/Mechanics				19/PC210/ Katni Operators/Mechanics							22/PC210/K'puram Maintenance Staff							26/PC210/ Gandhidham Operators/Mechanics	28/PC210/ Madurai Operators/Mechanics		
																	20/Scania P380/410 Tipper truck/K'puram Maintenance Staff							23/PC210/Bijoliya Operators/Mechanics	24/D275/ Durgapur Operators/Mechanics							27/L&T 9020/K'puram Maintenance Staff			
August		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
			30/Dozer D155/275/375/K'puram Maintenance Staff							33/L&T Compactor 990/1190/K'puram Maintenance Staff								36/PC210/ Pune Operators/Mechanics		38/PC2000/Singrauli Operators/Mechanics											40/PC210/Barabanki Operators/Mechanics			
		29/IESC-RPL - Excavator - Operator Kanchipuram								34/PC210/PC130/ Betul Operators/Mechanics								37/PC200/K'puram Maintenance Staff																	
			31/Kom. Graders/K'puram Maintenance Staff						32/PC210/PC130/ Udhampur Operators/ Mechanics				35/PC450/ Jamshedpur Operators/Mechanics									39/PC1250/ Vijayawada Operators/Mechanics													
September					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
						42/HD785/ Ramagundam Operators/Mechanics			43/IESC-RPL- Hydraulic -Mechanic/ Kanchipuram								46/L&T300 Trouble-shooting/K'puram Maintenance Staff							48/PC210/K'puram Maintenance Staff							51/PC2000/K'puram Maintenance Staff			
					41/PC210/PC130 Champa Operators/ Mechanics						44/Kom. Wheel Loaders/K'puram Maintenance Staff					45/PC210/PC130 Chandigarh Operators/ Mechanics				47/PC210/ Vijayawada Operators/Mechanics							49/Kom. Engine Systems/K'puram Maintenance Staff						50/HD465/785/ Durgapur Operators/Mechanics				
October	30	31					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
										52/L&T300CK(E) /K'puram Maintenance Staff										54/D475 Singrauli Operators/Mechanics				55/Komatsu Excavator Electricals/K'puram Maintenance Staff						57/PC210 Delhi Operators/Mechanics				
										53/HD785/Kothagudem Operators/Mechanics														56/Kom. Dump Trucks/K'puram Maintenance Staff						58/PC210/Chennai Operators/Mechanics				
November			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
			59/DozerD39/41/65/85/K'puram Maintenance Staff						61/IESC-RPL - Excavator - Operators/ Kanchipuram								65/L&T 9020/K'puram Maintenance Staff							67/Excavator Hyd Systems/K'puram Executives/Managers							69/PC210/Neem-Ka -Thana Operators/ Mechanics			
			60/Kom. Graders/K'puram Maintenance Staff						62/PC210/ Indore Operators/Mechanics			63/PC210/Singrauli Operators/Mechanics				64/PC210/ Hyderabad Operators/Mechanics			66/PC210/PC130/ Ernakulam Operators/ Mechanics						68/PC210/K'puram Maintenance Staff										
December					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
					70/D155/275/Trichy Operators/Mechanics					74/PC200/K'puram Maintenance Staff							77/L&T Compactor 990/1190/K'puram Maintenance Staff						80/PC1250/K'puram Maintenance Staff						82/PC130/ Mangalore Operators/Mechanics		83/HD785/Singrauli Operators/Mechanics			
					71/PC300/ Rajsamand Operators/Mechanics				73/IESC-RPL- Electrical - Mechanic/ Kanchipuram									78/PC210/Dehradun Operators/Mechanics															
					72/PC1250/ Nagpur Operators/Mechanics					75/Dozer D155/275/375/K'puram Maintenance Staff						76/L&T 9020/Rourkela Operators/Mechanics				79/PC210/PC130/ Salem Operators/ Mechanics			81/Kom. Dump Trucks/K'puram Maintenance Staff												
January 2017	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
				84/Scania P380/410 Tipper Truck/K'puram Maintenance Staff					86/PC300/450/K'puram Maintenance Staff							88/PC210/ Guwahati Operators/Mechanics			90/PC210/K'puram Maintenance Staff																
				85/Dump Truck Electricals/K'puram Maintenance Staff					87/PC71/130/K'puram Maintenance Staff							89/IESC-RPL- Engine - Mechanic/ Kanchipuram							91/HD465/Vijayawada Operators/Mechanics												
February				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28				
				92/Kom. Dump Trucks/K'puram Maintenance Staff					94/IESC-RPL_ Hydraulic -Mechanic/ Kanchipuram							96/IESC-RPL - Excavator - Operators/ Kanchipuram								99/Excavator Hyd Systems/K'puram Executives/Managers											
				93/PC210/PC130/ Thiruvananthapuram/ Operators/Mechanics						95/L&T 300 Trouble-shooting/K'puram Maintenance Staff							97/L&T Compactor/ Pune Operators/ Mechanics		98/PC1250/PC2000/ Durgapur Operators/ Mechanics						100/PC210/K'puram Maintenance Staff										

Key for Course Fee:

Special programme for Managers / Executives : Rs. 2,500/-

Programme for Maintenance Staff : Rs. 2,000/-

Programme for Operators & Mechanics : Rs. 1,000/-

Kom : KOMATSU

K'puram : Kanchipuram

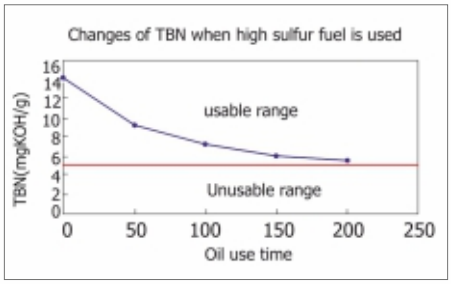
L&T Construction & Mining Machinery

Condition Monitoring - Act in Time for Peace of Mind

Mining Machines are capital-intensive equipment and are built to strip and move mountains. Be it coal mines, limestone mines, an iron ore or any other metal mines, these machines handle rocks and boulders of density ranging from 1.2 Tons per CuM to 2.7 tons per CuM. The reliability and durability built into the machines are quite high, which not only give them long life but allow them to be used for extended hours on daily basis. But the benefits of design and engineering can only be achieved if these machines are properly maintained.

All the Operation and Maintenance Manuals prescribe that filters and lubricants are to be replaced after certain working hours to keep the machine in good working condition. This replacement is also referred to as the fixed time maintenance. Many times it is felt that if prescribed maintenance is carried out on time, there would be no failures and all unscheduled machine stoppage could be eliminated. The reality is contrary to this feeling and the maintenance team is taken by surprise when the machine breaks down - at the time when they need it the most, or least expecting it to fail.

However, it should be kept in mind that the lubricants are replaced because they lose their properties as the additives get depleted and it can no longer protect the component and system where they are used. For example, engine oil is supposed to lubricate, cool, clean, seal, and neutralize the acids formed during combustion. The TBN number (Total base number) which is a measure of the acid neutralizing ability decreases at a rate proportional to the amount of sulphur available in diesel. The standard recommends that when the TBN decreases to 50% of the new oil, or maximum 5, engine oil should be replaced. Or else there will corrosion in the liners and pistons that will induce premature failure of the engine. Manufacturers also provide the inputs about reduction in engine oil replacement timings, which most of us conveniently ignore.



Similar degradation of additives also applies to lubricants used in other systems say hydraulic, transmission, brake, differential and final drives. Hence, to keep the machine running well, it is imperative to scrupulously follow the time-bound maintenance schedules using genuine filters and reduce the chances of surprise failures.

Machine life

But the more expensive question still remains. Will proper fixed interval maintenance not eliminate major component failure? The answer is No. Components and aggregates will fail as their individual life is less than machine life. Wear is a normal phenomenon that can only be reduced and not eliminated. Once the limit exceeds, we say the component has reached its service life and it fails. The success of an efficient maintenance department is to properly time the replacement and overhaul of aggregates, so that they do not waste the residual life of the component by playing too safe and removing it too early or end up with a failure by being too brave.

Working hours, load factor, machine age, intuition and experience with machines, recommendations by OEMs were the deciding factors in the years gone by. Now things are different - the science of service has undergone a sea change. Feel-based evaluation no longer holds water. Judgement has to be measurement based, backed by data to convince the decision maker on the appropriate time to dismount a component and install a new or rebuilt unit. Repair-after-failure or the reactive method is now replaced by repair-before-failure or the proactive method of maintenance.

The reactive method of repair throws surprises to the maintenance team, and they are more often than not caught on the wrong foot. Panic, trial & error and hurried quick-fix mechanism hampers the quality of repairs which can lead to catastrophic failures. Worst affected are the consequential damages on which one has very little control. As an example, if the hydraulic pump of an excavator fails, the broken parts travel all through the circuit and can get caught in the control valve, cylinders, and oil coolers before returning to tank. These free particles can damage any or all components and repair will be both very expensive and time consuming.

Studies have shown that repair-after-failure can be 10 to 15 times more expensive than a repair-before-failure. L&T has been in the business of Earthmoving and Mining machines for the last 70 years and is handling over 100 mining sites under full maintenance contracts. In a sentence, the crux of the learning over the years is "Do not allow a component to fail on the machine. Repair or replace before it breaks down". Therefore, Machine Maintenance is equal to Necessary Care (Fixed interval replacements + Condition monitoring).

Science of Service

Komatsu propagates this science of service as Preventive Maintenance Clinic that has a very elaborate and well-defined checking procedure. PM1 and PM2, KOWA (Komatsu Oil and Wear Analysis), KUC (Komatsu Undercarriage Inspection) if followed diligently, one can with a fair amount of accuracy ascertain the time when a component has lived its life and should be dismounted from the machine.

PM1 consists of checklist designed for each type of equipment. This is intended to check the basic health of the machine or the signs of beginning of a failure. One inspector carries out basic checks on all the listed parameters using simple tools and qualifies as satisfactory or unsatisfactory. This check is done once in 1000 hours and takes around one hour per machine. Minor adjustments, if required, are carried out immediately and machine put back in operation. In case there are signs of abnormality that cannot be corrected by simple adjustments, PM2 has to be carried out for that system or components. There are separate drill-down checks for engines, transmission, torque converters, hydraulics, mechatronics, etc.

The PM2 is a detailed step-by-step check for a system or component and involves in-depth diagnosis using sophisticated tools. This checking takes around 2-3 hours per system and involves 1 or 2 inspectors. This check measures the performance parameters and when evaluated along with KOWA report helps in ascertaining the health, repair method, time required and cost involved to put back the machine in order.

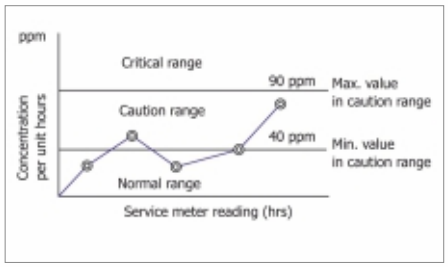
Komatsu Oil and Wear Analysis (KOWA) deals with the study of oils in various compartments of the machine and is the best way to peep into the component and understand how it wears. The lubricating oil, transmission oil or hydraulic oil narrate stories of the wear pattern-taking place within the component. Thus if oil is tested, analyzed and studied, the condition of components can be monitored. Whenever sliding parts in a machine move, there will be wear which means the loss of solid material due to the effects of friction of contacting surfaces. The wear particles will get mixed with oil used for lubricating the system.

Metal Particles

KOWA is a system of measuring the densities of these wear particles and how they change over a period of operation. The size of the wear particle is so small that they are not only invisible to the naked eye; they even pass through the filters and remain suspended in the system oil. If there is any abnormality in the machine that accelerates wear, the suspended wear particle count will increase drastically. Inductively Coupled Plasma Spectrometer (ICP) is used to measure the density of metal particles in oil in terms of PPM (Parts per million) and the changes in their trend with time is plotted and used for estimating the extent of wear inside the component.

Oil sampling from engine

A proper oil analysis program involves sampling, analysis, plotting and interpretation of results. Each step has to be performed with care and caution or else external intrusions influence or alter the inference. The sampling kits use sterilized plastic containers, which are free from dust and other particles that can give wrong results. Oil sampling should be done when the oil is still warm that is right after the machine has stopped and under similar conditions at all times to maintain uniformity. For engine oil, sampling should be done every 250 hours or 500 hours prior to oil change. For other hydraulic systems, an interval of 250 hours for the first 1000 hours of operation and thereafter 500 hrs will give fairly good results.



The following is a typical result plotted.

The standard value given by OEMs is indicated by the minimum and maximum value of the caution range. Corrective action is required if the PPM goes in the critical range. A more frequent oil change and its analysis then helps in confirming the accelerated wear and corrective measures can be initiated. Needless to mention, that the success of KOWA will depend on the accurate creation of trend line and hence an isolated oil analysis will not lead anywhere.
Service Personnel are trained to accurately plot and evaluate the readings and conclude about the condition of the component. The following table provides clues for the probable components whose excessive wear can result in an abnormal rise in the concentration.

O= Rapid increase in concentration
X= Concentration may become higher

Similar judgment table is available for all systems that can guide in analysing KOWA results.

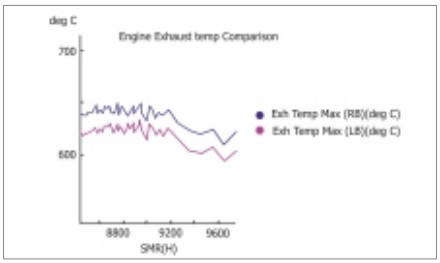
Apart from wear metal analysis, KOWA programme can be used to check water, fuel and anti-freeze mixed with lubricating oil. KOWA is thus an important scientific method of condition monitoring, which ascertains the health of major machine systems. In the present context when the cost of machine downtime is the sum of the component cost and loss of production, KOWA is imperative for fleet management.

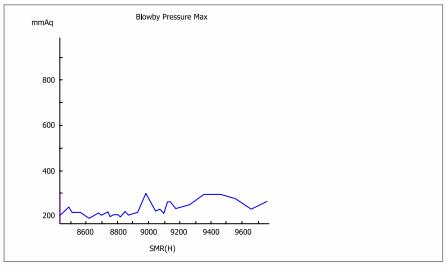
Repair Cost

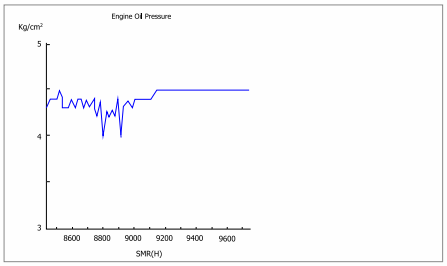
Likewise for a mining dozer, almost 50 per cent of all repair costs put together is only on undercarriage. KUC inspection service dwells on the measurement of undercarriage components to understand the rate and extent of wear. Komatsu has an evolved system which provides the dimensions of undercarriage components when new, along with its service limits. Service engineers take measurement of individual components every 1000 hrs and feed the measured values. Based on the values keyed, a wear percentage trend line can be created and the balance useful life can be captured.

The wear rate of undercarriage components is a function of underfoot conditions and soil structure, operating skills and job requirement. Trained and experienced service engineers can guide customers on measures to be taken to enhance component life. More importantly, it helps customers plan their parts inventory such that the required items reach jobsite just in time, when the machine needs it.

Komatsu provides Vehicle Health Monitoring System (VHMS) that automatically records vital machine parameters on large-size mining machines. The machines are fitted with various sensors to capture vital data of various systems. This data is collated on a periodic basis in the form of a trend line which can help the maintenance team to ascertain the health of a particular system on a continuous basis. For example, one can see how the engine blow by and exhaust temperature and engine oil pressure has fluctuated over a period of time, giving a tell-tale indication of the engine condition.







L&T's Rebuilt Exchange Programme for engines and hydraulic components reduce machine downtime drastically. Product Support team provides a rebuilt unit to their customer after inspection of the removed component at a fraction of the new cost. This eliminates repair time, and the removal and installation time is all that the machine is down for. The recon components carry the same warranty as a new part and hence, the user has everything to gain and nothing to lose.

The science of service is becoming more scientific, and proactive with condition-based monitoring. If measures indicated in this article are adopted, with no mistakes, unscheduled machine downtime can be drastically reduced and as an equipment owner, you can surely buy peace of mind.

Courtesy - Training Centre

Component	Highly concentrated elements							Assumed location of defect
	Fe	Cu	Cr	Al	Si	Pb	Na	
Engine	O							Liner, crankshaft, timing gear, camshaft, rocker arm, FCD pistons
		O				X		Timing gear thrust bearing, bushing for timing gear, pin ,oil pump, camshaft and bearing metal from crankshaft
		O					O	Water leaks from oil cooler
				O				Crankshaft thrust bearing, turbo thrust bearing, Aluminum piston
			O					Piston rings
Final drive	O		X					Gear Bearing
		O						Thrust bearing material
	O	O	X	O				Floating seal
Work Equipment	O							Cylinder wall, gear pump
		O						Cylinder rod
				O				Pump body
		O						Pump side plate, plain bearing, retarder brake disc.

PC71 Road Show in Assam

CEB-Guwahati alongwith CMB Dealer Saurav Auto conducted a PC71 Road Show-cum-Product Demonstration at Balapara-Bongaigaon. Balapara is known for brickfield industry with 20 nos. brickfield operating units. Mr. Pramod Jena, Sales Engineer, L&T, alongwith Mr. Sanjay Rajak and Mr. Simanta Deka of Saurav Auto made a presentation to the customers on the salient features of the machine and its benefits. PC71, owned by Mr. Nayan Jyoti Talukdar and deployed in brickfield operations, was demonstrated in the show.

L&T supplies Dump Trucks to Thriveni Earthmovers

Komatsu Equipment deployed at Mangampet site

L&T has bagged and executed an order for supply and commissioning of 6 nos HD785 Dump Trucks to Thriveni Earthmovers Pvt. Ltd. at its project site in Mangampet, Kadapa District, Andhra Pradesh. Thriveni had secured the contract for Barytes ore excavation from AP Mineral Development Corpn Ltd. spread over a three-year period. Mangampet Mines contributes to 95% of Barytes production in India. The contract involves overburden removal and ore extraction from the depth of the mines of 320m.

L&T and Thriveni have shared an excellent relationship over the last two decades. Thriveni owns and operates Komatsu fleet comprising PC2000-8 and PC1250-8R Hydraulic Excavators, WA900-3EO Wheel Loader, 12 nos HD785-7 Dump Trucks, 7 nos D155A-6R/ D275A-5 Dozers and 2 nos GD825A-2 Motor Graders.

L&T extends efficient product support to Afcons

Afcons Infrastructure Limited, one of the L&T's key customers in Central India, has a huge fleet of Komatsu machines. Afcons has been getting its Hydraulic Excavators and Wheel Loaders serviced and overhauled periodically by L&T's Product Support team at Service Centre in Butibori-Nagpur.

L&T had successfully refurbished and delivered 8 machines for Afcons viz., 3 nos. PC300LC-7, 3 nos. PC200-6 and 2 nos. WA380-3 machines. These machines are working satisfactorily at Afcons project sites pan India. Some more machines are being refurbished at Nagpur Service Centre.

Major activities undertaken include structural and bucket repairs, cabin repairs, overhauling of engine, hydraulic components, undercarriage etc. Adequate load trials were conducted by L&T jointly with Afcons' representatives prior to final clearance and dispatch. The back-to-back repeat order is a testimony of Afcons' confidence in L&T's capabilities and timely solution for economical conservation. Afcons' team is highly satisfied with L&T's excellent repair quality and after delivery support.

L&T-Nagpur Service Centre has taken up refurbishment jobs on regular basis against orders from customers in Maharashtra as well as the neighbouring states of Madhya Pradesh, Chhattisgarh and the southern states of Telangana and Andhra Pradesh.

The damaged machine wheeled in for repairs and (at right) the machine sporting a new look.

Mr. H.S.Hande, Head-Machinery Works, LTCEL handing over the symbolic key of PC130 machine to Mr. Ravi Kumar of Mantena Construction in the presence of Mr. Narendra Bhat and Mr. M.Naganand.

Mr. Mukesh Tiwari, Zonal Manager, CEB-East and Mr. Chinmoy Roy, Territory Manager, CEB-Kolkata handing over the symbolic key of Komatsu PC210 to representatives of Mr. Baidyanath Saha at Bandel-West Bengal.

Mr. Bony Sarna of Bihar Construction-Korba receiving the symbolic key of Scania P410 from Mr. Amitabh Marwah, Territory Manager, CEB-Nagpur. Bihar Construction have since deployed the tippers at SECL-Makikpur for OB removal

Symbolic Key of Komatsu PC130-7 being handed over to Mr. Shivkumar, Proprietor, Samara Blue Metals by Mr. R. Socrates –Territory Manager and Mr. Govindarajan – Service Manager, CEB-Coimbatore.

Group photo taken on the occasion of the handing over of Komatsu PC210 to Mr. Jaywant Padwal and his family at Talegaon-Pune by Mr.Salim Awate and Mr.M.S.Qamar, CEB -Pune.

Handing over of symbolic key of PC71 by Mr. Pradipta Panda of NKB Industrial Products, CMB Dealer to Mr. Ashok Kumar Pal at Jajpur, Odisha

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Editorial Team: Hemant Mathur, V.R. Subramanian, Suresh Bhat & Giridhar Gururajan

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