

**KOMTRAX
PLUS**

KOMTRAX PLUS MONITORING

Free remote monitoring service for your mining and production equipment

KOMTRAX Plus

KOMATSU
Driven by your success

WHY USE KOMTRAX PLUS?

KOMTRAX Plus is Komatsu's technologically advanced remote monitoring data system that provides access to view specific machine data via the internet on your computer.

KOMTRAX Plus is Komatsu's answer to remote monitoring of large (mining and production) sized equipment. Komatsu's KOMTRAX Plus (formerly VHMS) provides the means to remotely monitor the health of major components using Telemetry Technology (Satellite) on equipped Mining and Production class machines, enabling the evaluation of the machine's condition and operations. This system has been designed to reduce repair costs and maintain optimal machine availability by helping to prevent unscheduled downtime.

APPLICABLE MACHINES

Komatsu's new generation of mining and production class machines are equipped with KOMTRAX Plus. These include:

- **HAUL TRUCKS:** HD465, HD605, HD785, HD1500, 730E, 830E, 860E, 930E and 960E
- **EXCAVATORS:** PC1250-8, PC1800-6, PC2000, PC3000, PC4000, PC5500 and PC8000
- **WHEEL LOADERS:** WA600, WA800, WA900 and WA1200
- **DOZERS:** D375A and D475A



To enable all our customers to take full advantage of the KOMTRAX Plus remote monitoring data services, we offer FREE KOMTRAX Plus data service to all Komatsu machine owners with KOMTRAX Plus compatible machines!

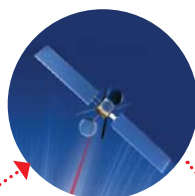
HOW DOES KOMTRAX PLUS WORK?



1. GPS satellite provides position information to your equipment in the field.



2. The KOMTRAX Plus unit in your machine gathers engine data and position, and sends this information to the satellite.



3. The communication satellite transmits information to the KOMTRAX Plus data centre.



4. The KOMTRAX Plus data centre stores and distributes the information throughout the machine life.



5. You can access the information gathered from your machine directly via the Internet from the KOMTRAX Plus system - Equipment Care

WHY USE KOMTRAX PLUS?

...anytime, anywhere

KOMTRAX Plus provides you with the means to monitor machine conditions, helping you achieve maximum productivity and utilisation. Some of the key features and benefits include:

- **Complimentary system**
- **Reduced maintenance costs:** Continuous monitoring of machine condition and performance ensures any abnormal readings can be addressed before they result in unscheduled downtime.
- **Safer operations:** Poor or incorrect operator practices (e.g. excessive speed) are highlighted, allowing additional training.

- **Lower operating costs:** Continuous monitoring of operating practices and machine settings allows fine-tuning of operator procedures.
- **Manage fuel usage**
- **Accurately log machine hours:** Know if your machines are actually working or accumulating hours.
- **Production Data** - Is my machine producing ! Be aware of machine payloads

Komatsu uses this data for Continuous Improvement (CI) to ensure that this tool gives you added benefit and our product meets your application demand.

ACCESSING YOUR MACHINE DATA

Machine information easily available at your fingertips

To access your KOMTRAX Plus data, Komatsu has designed a user friendly website portal called "Equipment Care".

Equipment Care allows customers to view their KOMTRAX Plus equipment fleet on a single platform. With simple navigation, Equipment Care provides users access to critical information about each machines, including; machine performance, machine health, fault analysis, fuel data, payload data and idle time summaries... just to name a few!

Equipment Care is an online website portal, which means it is accessible to users from any computer with an internet connection. Data at your fingertips.



KOMATSU TECHNOLOGY

Leadership | Technology | Innovation

Komatsu is actively engaged in Research and Development (R&D) activities for new technologies, new products and new services, consistent with our commitment to provide 'Quality and Reliability'.

These technology advances will deliver true value to your operation. It is proven technology, that is working for your peers and your competitors, and is available for your operation today.

With an annual investment in R&D of over \$AUD620 million our focus is on safety, productivity and the environment.



IS YOUR MACHINE MAKING MONEY?

Easily identify the type of work your machine is doing

KOMTRAX Plus provides information about your machine so that you can be more proactive.

If you know the working status of your machine, how much fuel the machine consumes per working hour and payload information, you will know how productive your machine really is.



FLEET MANAGEMENT

Machine comparisons and summary

Using our fleet management tool allows you to compare multiple Komatsu machines, so you can quickly identify any inefficient operating practices and compare machine performance/production data across your fleet.

OPERATIONAL INFORMATION

KOMTRAX Plus provides you with a working record of operational information, as well as daily and monthly information that enable you to monitor machine health and schedule preventative maintenance. KOMTRAX Plus also helps you to improve the performance and productivity of your investment. Some of these reports include:

- Machine Health Assessment
- Service Meter Readings (SMR)
- Fault Summary
- Fuel Consumption
- Payload levels and information
- Duty Cycle (How hard the machine is working)
- Operating vs. Idle time

Machine Health Assessment

This feature allows you to view your machines health based on any data that has exceeded recommended Original Equipment Manufacturers (OEM) specifications. It also provides KOMTRAX Plus users the ability for work to be prioritised based on actual machine health.

Service Meter Readings

Service Meter Readings (SMR) allow you to see how many hours your machine is working per day. In return, KOMTRAX Plus can report on the following:

- Whether one machine is working more than another
- Accurately know machine's SMR assisting with machine maintenance
- Report on hours worked per month, per machine, with the option to compare data as required

Fuel Consumption

Fuel usage is a great feature of KOMTRAX Plus, that provides users with monthly usage figures for each machine, giving you the ability to see data such as; fuel consumed compared with previous months and other machines.

Note: The availability of information is dependent on the machine model and type.

Colour coded health status to help quickly identify any concerns

Customer Unit No.	Model	Serial	Last SMR	Last SMR Date (MM/DD/YYYY)	Country	Distributor	Site	KOMTRAX Plus
KOM 01	HD785-7	66666	4,303	10/13/2013	AUSTRALIA (AU)	KAL FAIRFIELD	KOMATSU PIT	Red
KOM 02	D475A-5E0	77777	17,010	10/16/2013	AUSTRALIA (AU)	KAL FAIRFIELD	KOMATSU PIT	Yellow
KOM 03	D375A-5E0	88888	14,364	10/16/2013	AUSTRALIA (AU)	KAL FAIRFIELD	KOMATSU PIT	Green
KOM 04	D475A-5E0	99999	12,463	10/12/2013	AUSTRALIA (AU)	KAL FAIRFIELD	KOMATSU PIT	--

Pictured: Fleet Management Report Summary

INDIVIDUAL MACHINE MANAGEMENT

Detailed machine information

Detailed machine information is available giving the user the ability to proactively and remotely view this data as required. Combining machine data allows you to get an accurate picture of your machines health and overall performance.



- Detailed Health Status
- Detailed Service Meter Readings (SMR)
- Trend Analysis
- Fault Analysis
- Fuel Analysis
- Detailed Production (Payload)
- Detailed Operation

MACHINE HEALTH

Is your machine in good condition?

Machine Health judgment gives you the ability to see why this status was given, giving the user the ability to prioritize and schedule required work into your maintenance plan.

Trend data with Original Equipment Manufacturer's set parameters

The screenshot displays the KOMTRAX Plus interface for a Komatsu HD605 bulldozer. It includes fields for Country (AUSTRALIA), Site (BRISBANE), Customer Unit No (KOM01), Model (HD605), Type (7), and Serial No (E0). The 'Machine Details' section shows 'Owned By: KOMATSU', 'Site: BRISBANE', and 'Distributor: KAL BRISBANE'. A 'Trend signal judgement' table shows a 'BLOW-BY PRESS MAX' fault with a 'Critical' rank and 'Red' signal. A calendar for September 9, 2013, highlights a fault on the 23rd. A callout box points to the calendar with the text 'Fault time stamp showing time and duration'. Another callout box points to the trend data with the text 'Trend data with Original Equipment Manufacturer's set parameters'.

Trend Item	Unit	Date	SMR	Value	Rank	Signal
BLOW-BY PRESS MAX	mmHg	09/17/2013 22:56:59	1,327	2,477.91	Critical	Red

Fault	Error Message	From SMR	From	To SMR	To	Count	Rank	Signal
F088ZL	HIGH BLOWBY PRESSURE	1,304	09/18/2013 00:00:00	1,341	09/18/2013 13:50:28	627	Critical	Red

FUEL DATA

Efficient fuel usage

Fuel consumption data can be viewed allowing you to see how much fuel the machine is using:

- Measure and manage fuel usage
- Reduce running costs

Graphed data allows you to quickly visualize changes in fuel consumption

The screenshot displays the Fuel Analysis interface. It shows a 'Result Total: 31' and a table of fuel consumption data. A line graph titled 'FUEL CONSUMPTION RATE[#1]' shows fuel consumption in Liter/H over time. A callout box points to the graph with the text 'Graphed data allows you to quickly visualize changes in fuel consumption'.

Date	SMR	Avg. Fuel (Liter/H)
08/31/2013 17:04:53	842	40.2
08/30/2013 18:48:54	822	34.6
08/29/2013 20:15:09	802	31.8
08/28/2013 21:28:30	782	37.3
08/27/2013 13:19:22	762	32.8
08/26/2013 15:24:58	742	34.4
08/25/2013 16:46:21	722	36.7
08/24/2013 18:03:30	702	33.1
08/23/2013 19:19:07	682	31.5
08/22/2013 19:26:12	662	31.1
08/21/2013 21:07:34	642	34.1
08/20/2013 22:58:45	622	37.6
08/20/2013 01:51:04	602	38.1

UNDERSTANDING YOUR FLEET

Using; trend analysis, fault analysis, payload summaries and Idle time summaries, allows you to better understand each individual machine you are operating, as well as whole fleet.

Assessing workplace behaviours and patterns allows for better machine productivity and full life cycle maintenance.



Graphed trend data gives you insight to changes in component conditions

TREND ANALYSIS

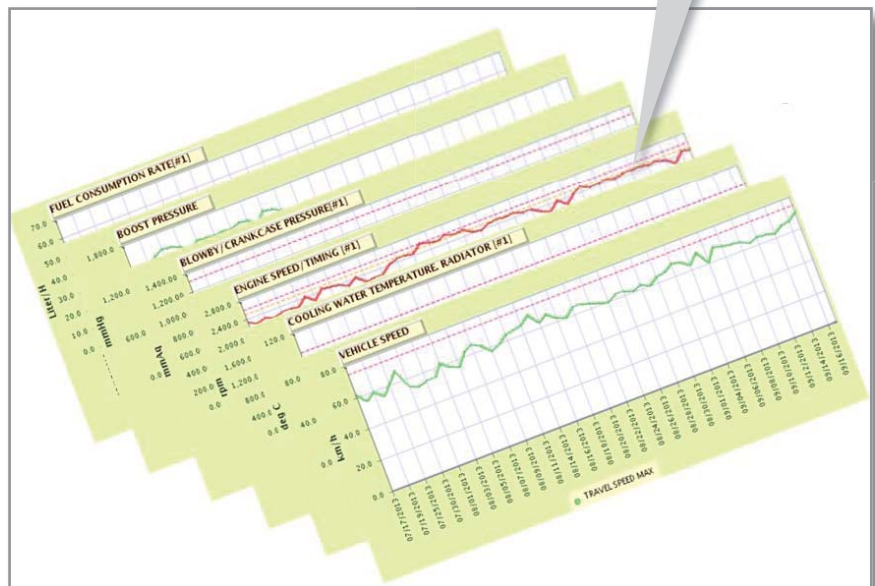
Power in your hands

KOMTRAX Plus gives you the ability to measure and manage your fleet in a controlled environment.

Trend Analysis allows you to see any changes in component history, assess component life and monitor condition.

This data is also useful when used for remote diagnosis and troubleshooting. Such information may include:

- Engine Speed
- Travel Speed Max
- Engine Oil Pressures
- Economy Mode
- Blow-by Pressure
- Fuel Rate
- Boost Pressures
- Exhaust Temperatures



Note: Trend data may vary from machine model and type.

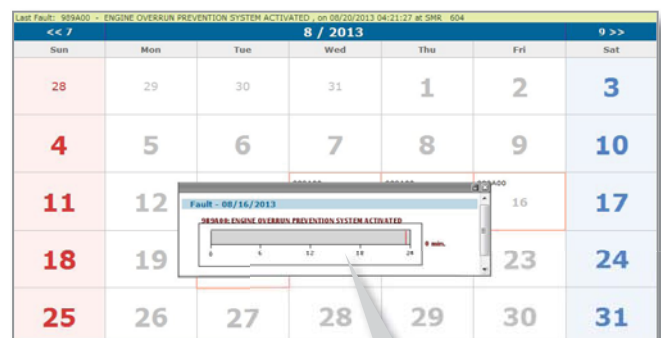
FAULT ANALYSIS

Machine diagnosis

KOMTRAX Plus can be used as a tool giving Komatsu the ability to examine any faults prior to travelling to the job site assisting with troubleshooting. This information can also be used to identify required parts for the maintenance, reducing travel costs, maintenance and machine downtime.

Fault timestamps enable the viewer to establish time, duration and SMR of faults. It also has the ability to identify critical faults and have the option to investigate and rectify any concerns before machine downtime.

If desired email notifications can be provided informing you of any alarms.



Faults can be displayed in calendar view.

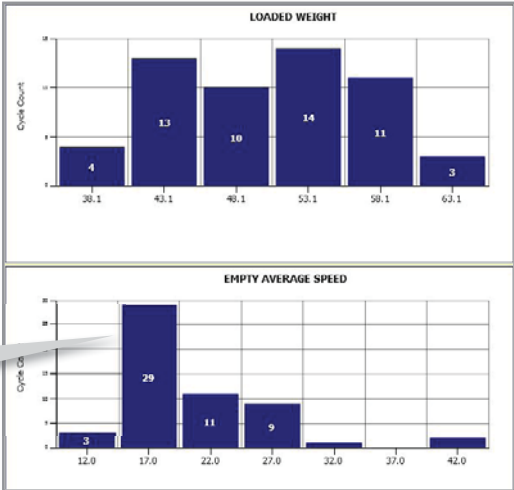
PAYLOAD DATA

Is my machine producing?

We understand that production information is crucial. KOMTRAX Plus reports daily Haul Cycle summaries giving you the ability to optimize your production. This includes:

- Daily total number of Haul Cycles
- Travel speeds
- Average load carried
- Travel distances

Payload Data comparisons can be easily made



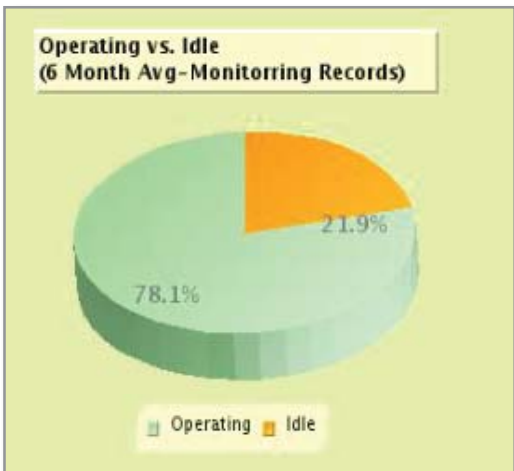
Note: Data available may vary from machine model and type

IDLE TIME

Manage your machines working hours

With KOMTRAX Plus Idle Time, users can differentiate between the time the machine is on verse the time the machine is actually working - producing an Idle Time analysis.

Idle Time provides machine owners with accurate data so that unnecessary and extensive idle time can be reduced. This results in a decrease in fuel consumption and also positively impacts the health of your machine.



SYSTEM COLLABORATION

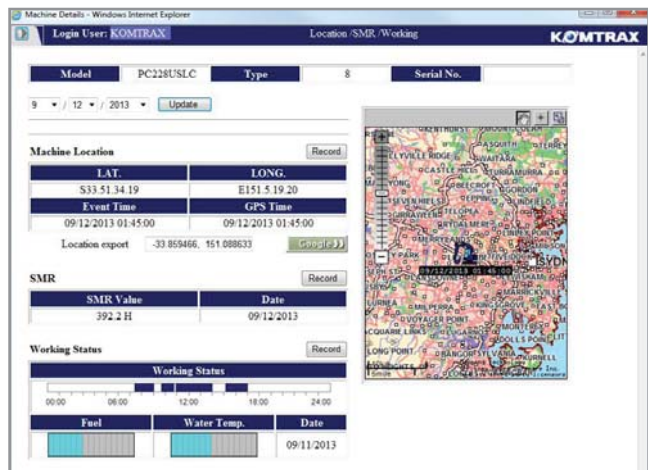
Managing a mixed Komatsu fleet

Equipped KOMTRAX Plus machines can also have basic data available in Komatsu's KOMTRAX - which is Komatsu's remote monitoring system for construction and utility class machines.

Available information includes:

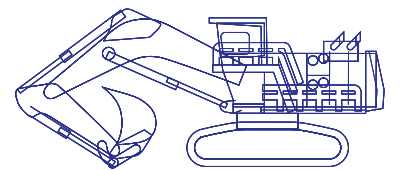
- Geographical location
- Service Meter Reading
- Working status (hours worked per day)

Note: Screen shown on right is from the Komatsu KOMTRAX system





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FOR MORE INFORMATION:

Australia - Ph: 1300 566 287 | Web: www.komatsu.com.au

New Zealand - Ph: 0800 566 2878 | Web: www.komatsu.co.nz

New Caledonia - Ph: 43 53 06

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