

01

# JUST FOREST

**CUTTING AGE**



## FOUR NEW HARVESTERS USHER IN A NEW ERA

15 Komatsu C144 a success

16 Popular Komatsu Days

22 Improving profitability

**Training on modern forest machine simulators** is one way to quickly and effectively become a skilled operator. Komatsu Forest's simulators are used in many places throughout the world and interest is growing as they become increasingly realistic.

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**OLA BOSTRÖM**  
HEAD OF MARKETING,  
KOMATSU FOREST

# Ushering in a new era

Everyone in the forest industry is waiting and hoping for the global economy to pick up and the reasons behind its slow pace have varied. Right now, I believe development is being hampered by several factors. One important factor is the general concern about armed conflicts, such as those in the Middle East and Russia, and another is stagnated development in the Eurozone. On the plus side, we have seen positive developments in the USA.

Even if the world is entering what we could call a time of waiting, this has no real bearing on Komatsu. We believe that the only thing we can be sure of is that sooner or later the economy will turn and we want to be ready.

This is why we have renewed our entire machine lineup over the past few years. First we revamped our forwarders and now we are launching our new harvesters.

The four new harvesters being launched are not only our largest and most important product launch for some time, they also usher in a brand new era for modern harvesters.

In developing the new lineup we have taken a broad approach to both design and technology to create the most cost-effective, productive, and eco-friendly harvesters on the market – with the operator in focus every step of the way. And now that the launch

has begun, I can conclude that we have succeeded. This was seen at the initial launch, during the Komatsu Days event at the end of October, when almost 700 eager customers visited Umeå, Sweden, for a closer look at the new harvesters. Judging by the positive reactions, I can summarize the visitors' overall rating as top marks to Komatsu Forest, which is reflected in the fact that we have already taken orders.

We do not want to simply deliver the best machines. We feel it is just as important to develop good relations with our customers and to help them maximize their profitability. One way is to invest more in preventative service and maintenance, just like they already do in the aviation industry. Working proactively rather than reactively. The ProAct 2.0 service concept and the MaxiFleet system offer every opportunity to take command and control of both service and maintenance, as well as of the income and expenses associated with machine ownership.

Even if the general economy is showing restraint in some parts of the world, I see a brighter near future. I am confident that our new harvester lineup, with its very broad offering of new harvesting heads, will be just as well appreciated as our new forwarders have been.

Happy reading!

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Presenting the new

**KOMATSU 901 | 911 | 931 | 951**

# OPERATO

Everyone wants the best possible opportunities to maximize their work performance. Komatsu's new harvesters give operators the chance to deliver maximum production at the lowest possible cost in a sustainable manner.



# HARVESTERS IN FOCUS



**THE NEW HARVESTERS** set the focus on the operator. Simply put, this means that all new features and improvements are based on enabling the operator to maximize production in a manner that is sustainable for both the operator and the forest.

This is why everything has been carefully considered and the new technical features have resulted in machines that simplify the operator's day-to-day work.

Focusing on the operator means providing the best conditions for effective production. Every hour of every day. The machine, quite simply, should never limit production; rather the operator should always be able to conduct as many work tasks as possible at once. One important new feature that gives the operator the necessary conditions is the new 3-pump hydraulics, split into two circuits with separate pressure levels. This offers unique pressure and flow optimization, which enables the operator to work consid-

erably faster without losing hydraulic power. You can, quite simply, use multiple crane and head functions at the same time with maximum hydraulic power, such as slew the crane, feed a log, and maneuver the machine, with optimally low fuel consumption.

Naturally, focusing on the operator means that the harvester should be an attractive workplace, so we prioritized both the interior and exterior work environments together with good cab ergonomics. This encompasses, for example, noise, light, buttons, work posture, and communication. What's more, stepping into a machine with an attractive and functional design is uplifting.

Service and maintenance should also be easy. The work should be quick, simple, and – most of all – entail reduced daily service and maintenance needs. Well-considered service means automation where possible, centralized service points, easier access, and smarter solutions. Always with the operator in focus.



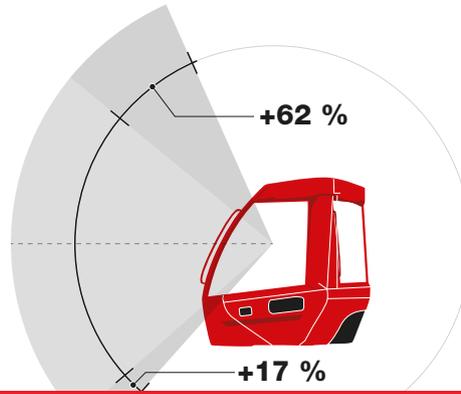
**#1 ERGONOMIC SEAT**



**#2 REMOTE CONTROL**



**#4 NEW POSITION**



**#3 IMPROVED VISIBILITY**



**#5 CURVED FRONT WINDSHIELD**

All new features are focused on the operator, such as the new ergonomic seat, the keyless system, and the improved visibility. You can read about the new features illustrated here by referring to the image numbers in the text below.

## THE PERFECT CAB

**THE CAB ENVIRONMENT IS IMPORTANT** to the operator. The entire interior of the new cab speaks quality and is easily cleaned. The panels are made from quality material that provides a homey touch and the many storage compartments and spaces are strategically placed for increased comfort and convenience.

The climate inside the cab benefits from high air flow, ensuring a comfortable cab environment. The new machines can be equipped with electric floor heating to further enhance comfort. The air conditioning unit is also easily serviced. The cab houses a new **ergonomically-designed seat #1**, for increased comfort and convenience, that swivels a full 180 degrees.

The harvesters are equipped with central locking that encompasses doors, storage spaces, and emergency exits. It is activated by the key in the door lock or a **remote #2**, the latter an optional extra. The remote makes the machines completely keyless. The unique keyless system enables the operator to control the machine's heaters, main power switch, and locks. Once inside the cab, the machine is started

with the press of a button. The pushbutton gives the machine a start order, after which the startup procedure is managed by the machine. The remote is used to unlock the machine and the door. Each remote can be linked to a particular operator, so that when they unlock the machine they are automatically logged in to MaxiXplorer with the appropriate profile. The keyless system also means that you can lock doors and service hatches, as well as control the heaters, at some distance from the machine. When driving, the machine locks all hatches – except the emergency exit, of course.

The main power switch is controlled by the remote, too. If the main power switch is not switched off when the shift ends, the system automatically switches it off after a preset time.

The new harvester cab is spacious in all directions and both upward and downward visibility has been improved with a brand new front windshield design. The front panel under the windshield has been lowered, increasing visibility of the forward bogie wheels by 17 percent, while the new windshield design increases upward

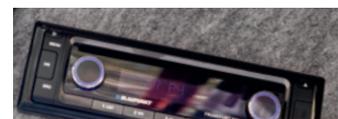
**visibility #3** by 62 percent. Rear visibility is also better, with only one upright support and two large rear windshields. The computer screen has a new position **#4** to the right, which further improves visibility toward the ground and the bogie wheels. A mount is also available for installation in the traditional position. The top of **the front windshield is curved #5**, providing better visibility toward the tree tops while preventing snow and debris from collecting on the upper part of the windshield.

Downward visibility, toward the machine's bogie wheels, is significantly improved. The downward view through the front windshield offers a good overview even when working on a slope with the cab tilted backward.

But visibility is not the only improvement. Much focus has also been placed on creating comfortable noise levels in the cab. The floor plate has been more than doubled in thickness to prevent noise from propagating into the cab, the new engine produces low noise levels, and the cooling fan is a high capacity model that doesn't need to work as hard and its speed is regulated in



**#6** MEDIA HUB



**#7** NEW RADIO



**#8** REARVIEW CAMERA



**#9** SNAKE LIGHT



**#10** 360 DEGREES



**#11** NEW HAND CONTROLS



**#12** TOUCH-PAD

All new features are focused on the operator, such as the new media hub, radio, rearview camera, hand controls, and full-circle slewing cab. You can read about the new features illustrated here by referring to the image numbers in the text below.

steps. The hydraulic pumps are fitted with noise reduction to reduce the machine's hydraulic noise. The cab walls have been improved to reduce noise and the new material used for the panels also helps dampen any noise that enters the cab.

**ANOTHER NEW FEATURE** is the centrally-placed **media hub #6** with four USB ports, facilitating cell phone charging and more. The USB ports are connected to the machine's computer for easy file management. The hub also has two 3.5 mm stereo jacks connected to the radio, so you can use the machine's sound system to listen to audio files via a cell phone. The new **radio #7** has optional Bluetooth and handsfree functionality, making it easy to wirelessly stream music or audio books from a smartphone to the radio. If the phone rings, the radio automatically fades so the operator can answer.

The work lights can comprise up to 15 lamps. Two by the door, six around the cab roof, five pointing forward, and two on the roof illuminating the treetops.

The rear headlights are now more safely

and strategically placed high up on the hood and can also be used as work lights. The **rearview camera #8** shares the same smart placement and the image it produces is now integrated with the machine's display, which increases safety and helps when reversing. What's more, the machine can be equipped with an extra camera on the rear edge of the cab. The cab has four ceiling-mounted spotlights, a **snake light #9**, and floor lighting.

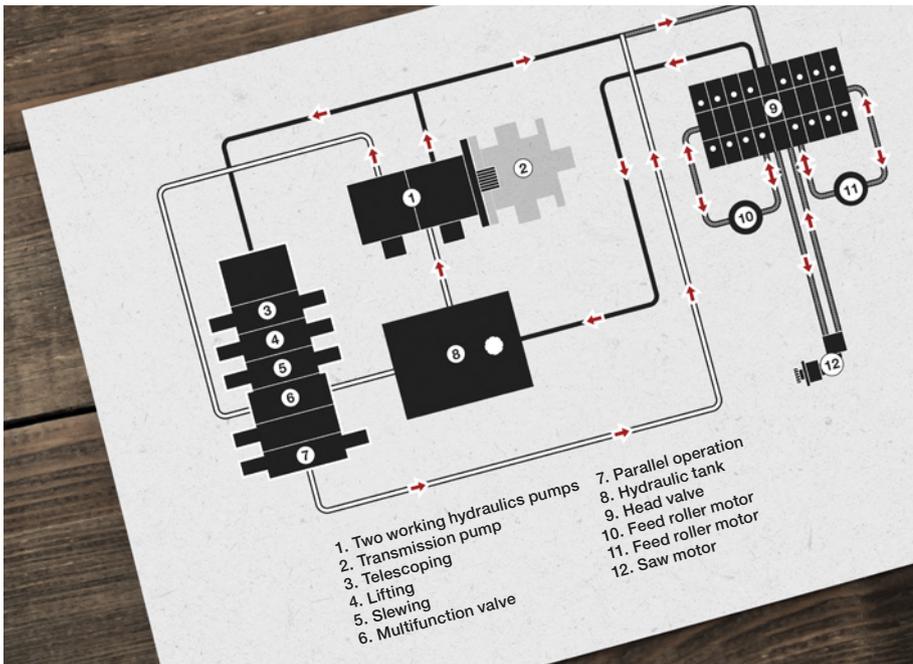
**The cab and crane can also slew a full 360 degrees #10.** This offers a larger work area and the result is increased timber concentration and thereby increased forwarding productivity.

The cab has the new **hand controls, Komatsu Comfort Controls EME #11**, which are adjustable and ergonomically designed. They have well-placed buttons and the operator can change their functions in MaxiXplorer. The buttons provide tangible feedback and are not dependent on the angle from which they are pressed. They have molded relief patterns and markers, making it easier for the operator to find the right button. All buttons have back-

lights, which can be adjusted according to needs. Light sensors automatically dim the backlighting at night so as not to distract the operator.

Komatsu Comfort Controls EME include an integrated **touchpad #12** for navigating the control system. Komatsu Comfort Controls EME support sequential control and an optional rocker switch is available for the left hand control. This offers considerably smoother and more effective control. The controls are angled forward, providing an ergonomically-correct position for the operator, especially when using the machine's sequential control. The armrests have an ergonomic design, clearly seen in the new profiled armrests with their many adjustment options and adaptations to joystick use.

Cab comfort is important. All new harvesters are available with the optional unique cab suspension system, Komatsu Autolev Advanced. This technology is as simple as it is ingenious. The cab suspension is hydraulic and its functionality is controlled by MaxiXplorer. The result is effective damping of hard knocks.



**2+1=3** The three-pump system, 3PS, uses three hydraulic pumps to ensure the availability of hydraulic power for the machine's functions. One pump is used solely for the transmission while the other two are part of the dual-circuit system in which they can work separately or together. The hydraulic flow is controlled by MaxiXplorer based on the pressure needs of the different hydraulic functions. The result is power regulation that enables the operator to conduct several work tasks at once. The circuits can work at different pressures, which requires less power from the diesel engine and thereby reduces fuel consumption. The third pump ensures there is always power in the form of pressure and flow for the transmission to move the machine, regardless of which other hydraulic functions are in use.

## ALWAYS THE RIGHT POWER

**AN IMPORTANT FACTOR** if the operator is to be able to work effectively is that there is always enough power to conduct several tasks at once. In simple terms, the harvester should never limit the operator. The new harvesters have a brand new hydraulic system that gives the operator the opportunity to use high flows at low engine speeds because the machine is equipped

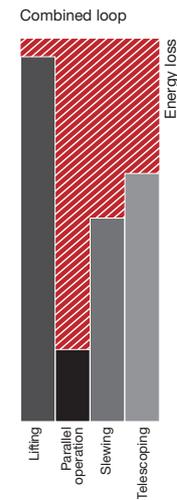
with three pumps.

With this three-pump system, 3PS, one pump is always used solely for the transmission, ensuring that there is always power in the form of pressure and flow for the transmission to move the machine. The other two pumps are part of the dual-circuit system in which they can work separately or together.

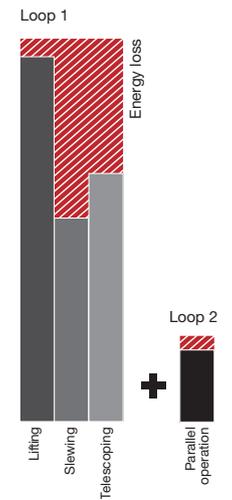


**The three-pump system, 3PS, enables the operator to conduct several work tasks at once since the available flow to the machine's functions is maximized and adjusted according to needs.**

### 1-circuit system



### 2-circuit system



The hydraulic components are divided up according to pressure level, which means that the two working hydraulics circuits can operate at different pressures and thereby reduce energy requirements from the diesel engine. At times when hydraulic oil requirements are greatest, such as when feeding, the two circuits are combined to provide maximum hydraulic power. System power is regulated against the diesel engine, ensuring the ability to utilize the diesel engine's full capacity at any point in the work cycle.

The different circuits are engaged and disengaged by MaxiXplorer. The result is a high hydraulic flow that provides the operator with the ability to conduct several work tasks at once and thereby produce more timber as the available flow to the machine's functions is maximized and adjusted according to needs.

The new hydraulic system features automatic pressure calibration, which maximizes efficiency while guaranteeing the expected service life of all component parts. The new pumps are equipped with noise reduction, helping to considerably reduce hydraulic noise. The new hydraulic system also allows the operator to shut off the oil flow to the head via an electrically-operated valve, which can be an advantage in the event of hose failure as the machine can be restarted for transport without unnecessary oil leakage.

## FASTER CRANE OPERATION

**THE CRANE IS AN IMPORTANT COMPONENT** of the new harvesters. All the new harvesters have parallel cranes that are both fast and easy to maneuver while the new slewing transmission offers high lifting capacity as standard. Together with the hydraulic system's new triple pumps, this ensures that there is always enough power to conduct several tasks at once. The Komatsu 951 has a new dual-circuit valve for the crane and head with larger diameter hoses for the parallel function. This gives the crane greater capacity and lower energy losses. The valve also features an electric shutoff for the head's oil supply. This results in reduced oil spillage in the event of hose failure, improved multifunction performance, and smooth operation.

The cranes have five lights as standard: three on the right by the crane foot and two on the crane arm. As an option, the crane can be equipped with two additional lights, by the crane base and on the crane arm. Maintenance is easy since the crane base

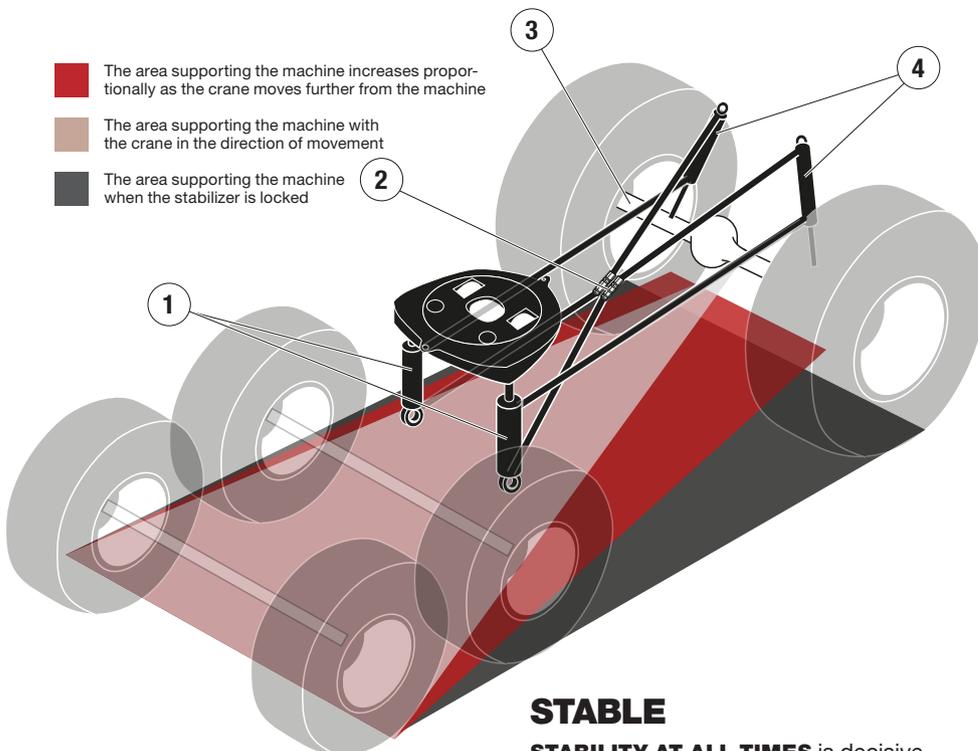


is integrated with the turntable, which improves durability and reduces maintenance. One smart function is the transport lock integrated with the slewing function, which facilitates trailer transport and service. When driving on roads, the crane slewing function can be locked with a mechanical valve for increased safety.

The crane nose is equipped with Komatsu MDB (Multi Disk Brake), a new brake

link developed to increase the performance of the existing link and brake system. The MDB is available with different numbers of brake disks, depending on the size of the head. The link can be supplied without brake disks or with the customer's preferred number of brake disks, a maximum of two up and two down.

All machines have at least two crane reach options.



- The area supporting the machine increases proportionally as the crane moves further from the machine
- The area supporting the machine with the crane in the direction of movement
- The area supporting the machine when the stabilizer is locked

1. Stabilizing cylinders
2. Valve
3. Stabilizer
4. Stabilizing cylinders

## STABLE

**STABILITY AT ALL TIMES** is decisive if the operator is to be able to maintain productivity regardless of the terrain. As a cornerstone of Komatsu's harvester con-

cept, the unique and well-proven concept of a stabilizer combined with the cab's stabilizing cylinders provides superior stability, whether maneuvering the machine or operating the crane at maximum reach. This concept has proven to be the most effective for several decades.

When the centrally-placed crane is working far from the machine, naturally the area supporting the machine moves further from the center. In order to counter the instability this would otherwise entail, two stabilizing cylinders act as an opposing force on the stabilizer, locking the harvester in a horizontal position. The force in the stabilizing cylinders comes from the pressure in the machine's tilt cylinders, which are located under the cab. The pressure from the tilt cylinders transfers the force to the corresponding stabilizing cylinder. Together with the automatically leveling cab, this makes the harvesters extremely stable. The system is simple, well proven, and has no complicated components, such as sensors and computers.

## EASY NAVIGATION

**THE ENGINES IN THE NEW HARVESTERS** fulfill the latest emission control requirements of Stage IV/TIER 4 Final. This means the market's lowest emission levels and a cleaner environment.

The new engines interact effectively with the transmission system, which automatically adapts when the load changes depending on the terrain, obstacles, and inclines.

The new harvesters have a cooling system with high cooling capacity and low noise levels, thanks to effective cooling fan speed control. The result is reduced fuel consumption and lower overall noise levels.

The diesel exhaust fluid (DEF) tank is fitted with a sensor that monitors the fluid level and triggers a warning indicator in Maxi if it drops too low. The DEF tank also has electric overflow protection.

To better utilize the diesel engine's performance and to improve the machine's

handling in steep terrain, the system automatically increases torque and thereby traction just before the machine reaches maximum capacity. This enables the harvesters to more easily climb obstacles compared to machines with traditional hydrostatic transmission systems while reducing fuel consumption.

The new transmission even functions as an intelligent differential lock that not only prevents individual wheels from spinning but also adapts the transmission to each wheel in order to achieve optimal traction, thereby increasing navigability.

All the new harvesters are equipped with Komatsu Comfort Bogie. One new feature is that the bogie has concealed portals (bogie casings) that are integrated with the rims, contributing to very good ground clearance and navigability. Another advantage is that the bogies have a balance function that improves navigability in steep terrain.



**The new transmission and Komatsu Comfort Bogie provide good navigability and stability.**

The filter locations make for easy servicing and reduced downtime. All filters have upright fittings, reducing spillage during filter changes.



## EVERYDAY CONVENIENCE

**SERVICE SHOULD BE** as quick and easy as possible. Everything to simplify the operator's working day. All service points on the new harvesters are located with easy access to minimize the time and cost to service the machine. Daily inspections are performed easily and effectively without the need to open any hoods. Daily checks have been grouped together, such as checking the engine oil and water separator in succession because they are found next to each other.

The engine oil filter is fitted upright, which reduces oil spillage when changing the filter, while the hydrostat filter is easily

accessed on the left side of the machine. The engine's after-treatment equipment is fitted in a cassette system, simplifying access to the engine's valve casings. The result is easier and faster engine valve lifter adjustments.

The diesel and hydraulic oil tanks are also easily filled from ground level. The machine's storage spaces are many and generously sized, with even more places to store spare parts and consumables. The service ladder is equipped with a warning sensor in the parking position and the machine has several ladder attachment points. The toolbox, bar, and chains are in

the same strategic locations as before, by the cab's footboard at a comfortable working height.

Another new service feature is that the fuses are more easily accessed, in both the engine compartment and the cab. The cab fuses are now easily accessed under a hatch in the side panel. Other electrical components, such as the computers, also have new placements to considerably improve accessibility. The most important electrical components are found in a rack system that is easily removed to access the connectors.



Daily service is simple as all service points are easily accessed.



Movable ladder with position sensor.



Fuel and hydraulic oil are easily refilled while standing next to the machine.

Presenting the new

**KOMATSU 901 | 911 | 931 | 951**



# 901

## A true thinning professional

The Komatsu 901 is strong, nimble, and easy on the forest floor, enabling it to manage even the most demanding thinning assignments in an effective and eco-friendly manner.

# 911

## Always effective

The Komatsu 911 is an all-round harvester that provides the right conditions for effectively conducting most assignments with high productivity and minimal environmental impact.

Facts

### **KOMATSU 901**



**CRANE:** 200H 32.8'/36.1' (10/11 m)  
**LIFTING TORQUE, GROSS:** 73 tonf-ft (198 kNm)  
**HYDRAULIC FLOW, MAX.:** 106 gal/min (400 l/min) at 1,600 rpm  
**ENGINE POWER, MAX.:** 201 hp (150 kW) at 1,900 rpm  
**WHEELS:** 24.5"

.....  
**HEAD:**

**340 S92 C93**

Facts

### **KOMATSU 911**



**CRANE:** 200H 32.8'/36.1' (10/11 m), 230H 28.5'/32.8'/36.1' (8.7/10/11 m)  
**LIFTING TORQUE, GROSS:** 200H 73 tonf-ft (198 kNm), 230H 84.5 tonf-ft (229 kNm)  
**HYDRAULIC FLOW, MAX.:** 106 gal/min (400 l/min) at 1,600 rpm  
**ENGINE POWER, MAX.:** 228 hp (170 kW) at 1,900 rpm  
**WHEELS:** 26.5"

.....  
**HEAD:**

**340 S92 C93 360.2**  
**365.1 S132 370.2 C144**

901 911  
931 951  
**ON TOUR**  
MORE INFORMATION AT  
KOMATSUFORREST.COM



# 931

## A smart powerhouse

The Komatsu 931 is a reliable and smart powerhouse that is the obvious choice for demanding final logging.

# 951

## The biggest of them all

The Komatsu 951 is a powerful harvester that provides the right conditions to work effectively and productively while sparing the environment. It's quite simply the biggest.

### Facts

#### KOMATSU 931



**CRANE:** 230H 28.5'/32.8'/36.1' (8.7/10/11 m)  
**LIFTING TORQUE, GROSS:** 84.5 tonf-ft (229 kNm)  
**HYDRAULIC FLOW, MAX.:** 140 gal/min (528 l/min) at 1,600 rpm  
**ENGINE POWER, MAX.:** 248 hp (185 kW) at 1,900 rpm  
**WHEELS:** 26.5"

#### HEAD:

**S92 C93 360.2**  
**365.1 S132 370.2**  
**C144**

### Facts

#### KOMATSU 951



**CRANE:** 270H 28.2'/33.8' (8.6/10.3 m)  
**LIFTING TORQUE, GROSS:** 101 tonf-ft (274 kNm)  
**HYDRAULIC FLOW, MAX.:** 140 gal/min (528 l/min) at 1,600 rpm  
**ENGINE POWER, MAX.:** 282 hp (210 kW) at 1,900 rpm  
**WHEELS:** 28.5"

#### HEAD:

**365.1 S132 370.2**  
**C144 370E**  
**C202 C202E**



Product development is not linear, but rather a continuous cyclical process with no clear beginning or end. Specific projects are started and concluded, but product development itself is a continuous process based on the aim of continually developing the concerned products.

# Hatching new product ideas

When new products are presented, the launches have been preceded by a great deal of work, influenced by everyone from customers and various forestry stakeholders to sales reps and designers. Everything to ensure that the products exceed everyone's expectations.

**AT A FUNDAMENTAL LEVEL, ALL PRODUCT DEVELOPMENT WORK** is determined by factors such as general market trends, changes in the forest industry, market positions, legislation, changes in customer behavior, the competition, and the availability of new technology. The collected information then provides a basis for a long-term product plan that includes strategic decisions and lays the foundation for all product development.

The development work for the four new harvesters, the Komatsu 901, the Komatsu 911, the Komatsu 931, and the Komatsu 951, was preceded by years of product planning and development work influenced by many different factors and the knowledge and expertise of various stakeholders.

With the determining factors as a strategic starting point, we could say that the actual development work with the new harvesters began with information from those who work closest to the reality in which the products are used, namely operators, machine owners, sales reps, technicians, and mechanics.

Five areas were identified for special attention in the development work: productivity, navigability, the environment, the forest environment, and information and communication systems.

The next step was to conduct a preliminary study. This involved, among other things, closer inspections of market analyses, the competition, development costs, requirement specifications, design guidelines, concept studies, performance calculations, production costs, resource requirements, and schedules. It soon

became clear that there was considerable potential to further improve the harvester lineup.

Once the preliminary study was completed and the decision to initiate the project was made, the next step was to move the project up to the prototype phase.

At this point, the approach was broadened and more colleagues from the design, service, production technology, and purchasing departments, together with suppliers, were brought on board the project.

**THE PROTOTYPE PHASE ENTAILS** modeling a new product in a digital environment and performing calculations, producing manufacturing data, purchasing the necessary components, and constructing the prototype.

The prototype is then thoroughly tested in terms of quality, performance, and service. The experience gained in the prototype phase is used to manufacture a preproduction series in which logistics, factory assembly, and quality assurance are tested and verified. Finally, the product is taken to market and serial production begins.

However, product development does not end there. Once the product has been launched, again we gather feedback from people close to the reality in which the products are used, such as operators, machine owners, dealers, our sales reps, and service personnel. Does this sound familiar? This is how products are refined in a continuous improvement process.

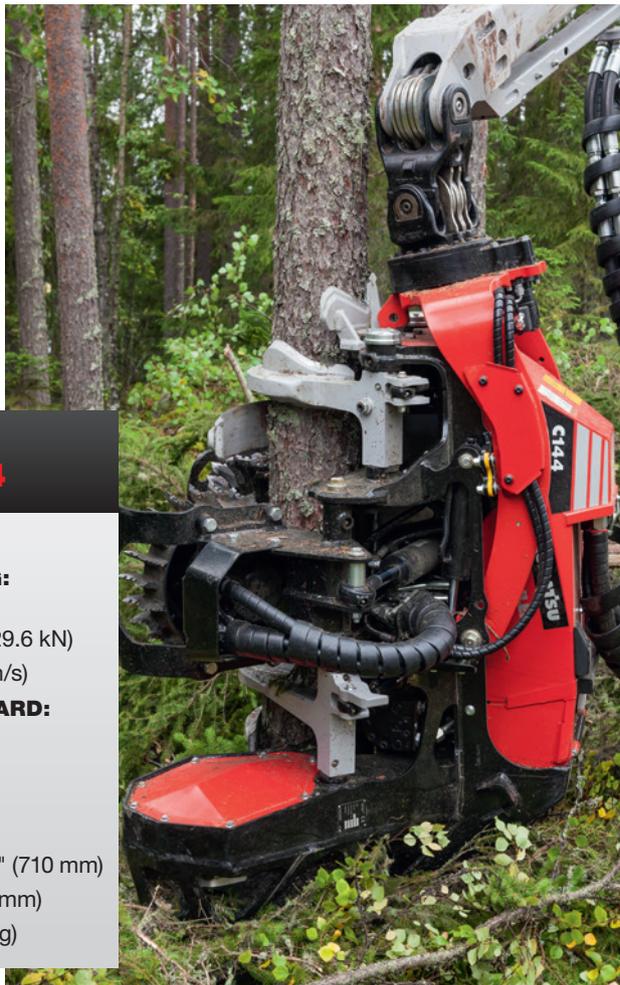
# SUCCESS for the C144

The Komatsu C144 was launched almost a year ago and we can already conclude that it's been an international success.

**OUR ORDER BOOK IS FULL** and we have many deliveries to fulfill. The reception enjoyed by the Komatsu C144 throughout Europe and Australia exceeded all expectations. One important reason is that it's a head that works well in many different types of forest.

This is due to the refined feed, which has a fourth feed roller set in the head's feed path, above the frame roller, linked by a sprocket. The advantage is that this provides more points of contact between the trunk and the head, and thereby a strong feed. This is most noticeable with trees of broader diameters or that are difficult to delimb. The reduced clamping pressure also results in lower fuel consumption.

The feed system provides not only a fast feed but also good lifting capacity, which helps with measurement accuracy. Another new and much appreciated feature of the C144 is that the felling link has an increased tilt angle of 40 degrees. This provides a fast feed start.



## Facts

### KOMATSU C144

**FEED ROLLERS:** 4

**FEED ROLLER OPENING:**  
29.5" (750 mm)

**FEED FORCE:** 6,654 lbf (29.6 kN)

**FEED RATE:** 16.4 ft/s (5 m/s)

**KNIFE OPENING, FORWARD:**  
26" (660 mm)

**KNIFE OPENING, REAR:**  
31" (800 mm)

**TILT ANGLE:** 40 degrees

**CUTTING DIAMETER:** 28" (710 mm)

**BAR LENGTH:** 32.5" (825 mm)

**WEIGHT:** 3,086 lb (1,400 kg)

## Two opinions!

### The Komatsu C144

has quickly gained in popularity. We asked two customers why they like this head.



#### RISTO KANGASSALO FINLAND

"If I had to describe the C144 with one word, it would be smooth. The C144 runs smoothly. Reliably with no hitches. It also easily delimbs difficult trees, even birch. It cuts fast, holding the tree well and felling it smoothly."



#### JÜRGEN PREISS GERMANY

"The C144 is impressive when it comes to stem holding and delimiting, whether the trees are big or small. What's more, the C144 works perfectly together with the Komatsu 931.1. To put it briefly, this is the best head I've ever owned, and I've owned quite a few."



# Komatsu Days™ | 2014



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# SIMULATORS

## an important educational tool

Training on modern forest machine simulators while studying is one way to quickly and effectively become a skilled operator. Komatsu Forest's simulators are used in many places throughout the world and interest is growing as they become increasingly realistic.

**MOST PEOPLE STUDYING** to be forest machine operators in the Nordic countries do so at high schools that offer vocational study programs. This gives young people the chance to thoroughly learn how to operate forest machines while also gaining basic theoretical knowledge about the forest.

Most Nordic programs for forest machine operators consider simulator use important preparation for practicing in real machines in the forest.

One school that uses simulators is Jämsänkoski Vocational

High School, one of nine similar schools in Finland, which is specialized in training youths – and adults wishing to change career paths – to be forest



**Mikko Sippola has almost completed his first year at the school in Jämsänkoski, Finland. Here he is using a forwarder simulator, although he'd like to focus on becoming a harvester operator and prefers Komatsu machines.**

machine operators. It's a three-year course and a large part of the freshman year is spent using simulators.

"Once the course begins, it's important to quickly start operating a forest machine as a complement to all the theory, so we use simulators," explains Helena Sneck, an instructor at the school in Jämsänkoski.

**INITIALLY, ONLY** forwarder simulators are used, with the opportunity to specialize in harvesters later on. The students studying the program follow a well-proven training manual, doing everything to learn to operate the machines as effectively as possible.

"Simulator training also lowers the threshold for a quick start when they begin operating real machines," says Helena.

Oryx Simulations is responsible for support and sales of Komatsu Forest's forest machine simulators. At present, there are simulators for harvesters, forwarders, and forestry excavators. The simulated machines behave exactly as they do in the forest. The physics are very realistic, affecting, for example, how the harvesting head behaves when coming into contact with trees and how logs move when being forwarded.

Komatsu Forest's simulators are centered around training with a clear focus on operating technique and work planning to aid methodology training.

"As simulators are often used for gaining extensive

experience before starting to operate real machines, operating a simulator must be as close as possible to operating the real thing. The training program in the simulator takes the operator through basic training to full operation in the forest," Francesco Pietroni from Oryx explains.

**IN ORDER** to make things easier for the instructor, a student system is included to keep track of users and their use of the simulators. The instructor can easily

follow a student's development from a separate workstation.

"The first things our students are to learn in a simulator are learned more quickly every year," says Helena.

Simulators are not only used in the Nordic countries. Throughout Europe simulators are a given part of operator training programs at both novice and advanced levels. Some major machine sale agreements, such as in Brazil and Indonesia, have also included simulators.

Another example of simulator use in education is in Russia, where Komatsu Forest has delivered simulators to, among others, a

training institute in the Khabarovsk region and, most recently, a new training center for forest machine operators in Divnogorsk in the Krasnoyarsk Territory of central Russia. In collaboration with Divnogorsk Forestry College, modern operator training is offered in the region with both theory and practical operation, using both simulators and modern Komatsu machines.

Jarmo Nikkanen is head of training at the school in Jämsänkoski. Jarmo says that you can already train most elements using simulators, but that perhaps it's possible to further develop simulator training, such as to include daily machine maintenance.

"We consider it important to work together with schools and other training providers to continue developing Komatsu Forest's simulators," says Francesco.



The training program in the simulator takes the operator through basic training to full operation in the forest."



**Instructor Helena Sneck says that simulators are an important tool for quickly learning to operate a forest machine.**

# CAB SUSPENSION C

KWF  
GALIFOREST  
EKO-LAS

The smart **Komatsu Comfort Ride** cab suspension is a success and is now winning innovation awards throughout Europe. Most buyers of new forwarders now choose the cab suspension option, confirming that cab suspension really does work as intended.



**Suspension that acts in all directions. Thanks to its unique design, the cab is dampened in all directions when driving.**

**GOOD ERGONOMICS** are gaining in importance among forest machine operators. Ever since Komatsu Comfort Ride was launched in Sweden about eighteen months ago, and then in the rest of Europe about a year ago, operators and contractors have voiced their appreciation of this innovative cab suspension.

Many of the forwarders we deliver are fitted with cab suspension – in Sweden in

particular, although the rest of Europe also exhibits strong demand for cab suspension.

One of the innovation accolades that Komatsu Comfort Ride has received was awarded at 2014's Interforst, one of the largest forest trade fairs in the world, held in Munich, Germany. Germany's KWF awarded its highly sought-after innovation prize in the ergonomics category to Komatsu Forest for the Komatsu Comfort Ride

cab suspension system. KWF is a German organization for forestry and technology development that aims to highlight groundbreaking innovations in the forest industry. In its award statement, KWF states that the innovation has contributed to considerable improvements for forest machine operators.

Komatsu Comfort Ride has also been honored with a gold medal at the major forest trade fair EKO-LAS in Poland, as well

# ONQUERS EUROPE

**Komatsu Comfort Ride** is a well executed hydraulic cab suspension system. With optimized geometry, 4-point suspension, and well-protected cylinders with extremely long travel, it effectively counters bumps, jolts, and vibrations.



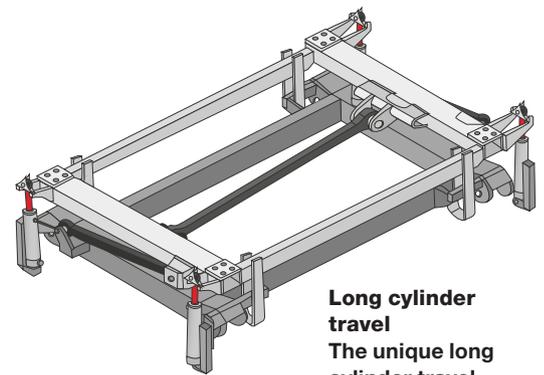
Jürgen Munz, Komatsu Forest GmbH, with the official KWF innovation award certificate.

as a special mention at the Spanish forest trade fair Galiforest 2014.

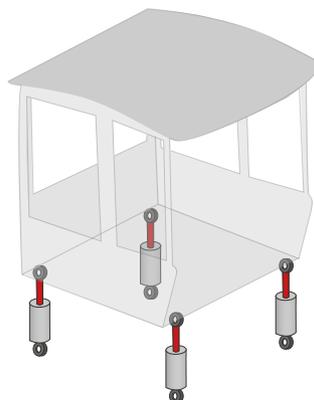
Ergonomics are becoming increasingly important in the development of new forest machines. Operators must be given the opportunity to work productively in a sustainable manner. Komatsu Comfort Ride cab suspension improves operator comfort by reducing vibrations and jolts.

- Good dampening geometry: 4-point suspension, longer free suspension travel than other designs.
- Compact design so the machine remains nimble in the forest, with or without Comfort Ride engaged.
- Sturdy cylinders with integrated position sensors and long cylinder travel for good dampening characteristics.
- Large support area between cylinders for harmonic dampening.
- Cylinders with well-protected remote position sensors ensure good reliability.
- Hydraulic stabilizer minimizes side-to-side cab roll.
- Automatic leveling – compensates for shifts in center of gravity on alternating flat/hilly terrain.
- Alarm management – cylinder sensors with status feedback to Maxi indicate sensor failure.
- Mechanical trailer and service lock when the machine is transported by trailer or the cab is tilted up. Simple procedure to lock the cab in place.

**Automatic leveling means that the cab suspension is leveled when driving on alternating flat/hilly terrain.**



**Long cylinder travel**  
The unique long cylinder travel better absorbs jolts and more effectively dampens cab movements.



**4-point suspension**  
Gaining the most from dampening requires that all four corners are dampened.

# Think total cost of ow

When it's time to invest in a new machine, attention is often turned to the price tag. But the road to profitable machine ownership isn't as simple as that. It's more important to look at the **total cost of ownership** throughout the machine's entire life cycle.



## ONE MORE TREE PER HOUR

If, for example, we assume that the machine is operational 2,300 hours per year, one more tree per hour means 2,300 more trees per year. If the average stem measures, say, 21 cu ft, the total production increase is 48,300 cu ft. If income per cubic foot is, for instance, 22 cents, the total increase in income is \$10,626 per year. Over an ownership period of five years, this would mean \$53,130 in increased income.

**MACHINE OWNERS** want more predictable costs in order to more easily keep track of the bottom line. Calculating the total cost of owning a machine is one way to gain an overview and develop your business.

When investing in a new machine, naturally the price is important, but the question is how important is it in relation to income and expenses throughout the entire period of ownership? For example, can one more tree per hour or an additional full load per week be of greater importance to overall profitability?

Total Cost of Ownership, or TCO, is an approach that is becoming increasingly well established among machine owners across all industries. TCO entails considering not only the purchase price but also all future costs associated with machine ownership, such as spare parts, service, tires, uptime,

personnel, interest, depreciation, insurance, fuel consumption, and so on. The result is the ability to calculate a cost per unit, such as per hour of work or per cubic foot of timber.

The idea is to enable the machine owner to easily gain an overview of the total cost of owning the machine while gaining insight into how different factors affect profitability.

**THINKING IN TERMS OF TCO** makes it easier to find the factors that can be influenced to increase hourly production rates. Factors such as preventative service to avoid unplanned downtime and maintain high uptime. Or making sure the machine has the right settings. Small adjustments, such as fine-tuning the saw speed or crane operation, can have a major impact on productivity and the total cost of ownership (see example calculation).

# LOOK AFTER YOUR MA

**A well-maintained forest machine** is an asset when it's time to buy a new one.

The best way to guarantee as high a used machine price as possible is to look after your investment with proactive service and regular maintenance.



**THE SALES POTENTIAL** of used forest machines clearly affects your options when investing in new machines. If you want to be sure that your machine is attractive in the used machine market, then you need to look after your investment well. A surefire way is to invest in proactive service and regular maintenance.

Today's machines are of such high quality that they can easily run for 15,000 to 20,000 hours during their service life if properly serviced by authorized mechanics using original spare parts. Regular maintenance not only maintains the value of your machine but also contrib-

# nership

Methodology training is another factor that can increase the chances of harvesting that extra tree every hour. For the machine owner, it's really about getting an overview of all costs associated with ownership, as well as an understanding of what small, simple cost savings entail for the total cost of ownership when considering the machine's entire life cycle.

**MAXIFLEET** is a fleet management system that makes it possible to quickly and easily search for, compile, and present all the operation and production data that a machine generates. This data can already be used to calculate the total cost of ownership.

If you take the time to compare how changes to different variables affect the total cost of ownership of a machine, it quickly becomes apparent how you, as the machine owner, can influence this cost.



**The total cost of ownership provides a picture of all costs throughout a machine's entire service life. It helps you weigh up, for example, the purchase price against various running costs. Just as important is to consider how you can increase income by optimizing production.**

# ACHINE

utes to maintaining high uptime. Neglected service and maintenance increases unplanned downtime and reduces productivity considerably.

"Good machines can always find new owners, especially when we know that the previous owner has taken good care of the machine," says Sten Kanebo, who is responsible for matching well-maintained machines to interested customers.

A well-maintained forest machine that has had the correct service, regular maintenance, and original spare parts throughout its entire service life not only demands a high price for its owner, but also provides the buyer with peace of mind as they can be sure they've made a good decision.

Today, good used forest machines can find new owners throughout all of Europe. With an effective net-

work, used machines can find new owners in, primarily, Southern Europe, Eastern Europe, and Russia. Even if mechanized forestry is developing quickly and interest in new machines is increasing, there's still strong demand for good used machines.

In Russia, used machines are sold via dealers. Sweden, Finland, and Germany also have markets for used machines. Germany even has a used machine center strategically located near Eastern Europe and most used machines in Norway are exported directly to buyers throughout all of Europe.

"If a machine is to be really interesting, it must be in good condition, preferably with documented service and maintenance. We like to see a good amount of authorized service in which the machine owner has used original spare parts," Sten explains.

“  
Good machines can always find new owners.”

**News, developments, and improvements.** Komatsu Forest constantly works with product development and continual improvements. Here are a few snippets of technical news, both large and small.

## NEW SOFTWARE SUITE FOR OLDER HARVESTERS

A new software suite for the older MaxiHarvester control system is now available for Valmet harvesters manufactured in 2008 or earlier. The same applies to MaxiHead.

The MaxiHarvester/MaxiHead 3.15 software suite offers support for the latest Komatsu head models, as well as for the new MHC2 head computer.

Installing MaxiHarvester 3.15 enables, for example, the Komatsu C93, C144, C202E, S92, and S132 heads to be retrofitted with retained compatibility between the control system and the head. MaxiHarvester 3.15 even includes some of the new functionality found in MaxiXplorer.

## FRONT BLADE FOR 835 AND 845

An optional front blade is now available for the Komatsu 835 and 845 forwarders. The front blade covers a large work area and offers a high lifting height, providing good obstacle clearance.



## NEW TIRE

Nokian Forest King F2 is a new tire that can be used on the 835, 845, 855, and 865 forwarders and all the new harvesters. The tire is available in 24.5" and 26.5" sizes and is compatible with tracks and anti-skid protection. Track grip has been improved with crosswise grooves for the cross members so that the tracks do not have to be tensioned as much, which means less wear on tires and bogies. What's more, this reduces fuel consumption. Straighter sidewalls and higher material strength on the tire shoulder reduce the risk of punctures.

## CAB SUSPENSION EVEN ON HARVESTERS

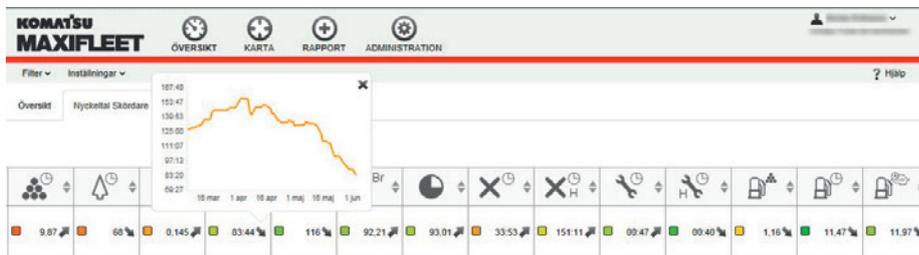
All the new harvesters are available with the unique cab suspension system, Komatsu Autolev Advanced, as an option. This technology is as simple as it is ingenious and provides better work ergonomics. Together with the tilt equipment, you can choose the unique harvester cab suspension system for all new harvesters.

## NEW PARALLEL CRANE FOR KOMATSU 951

The Komatsu 951 has a new parallel crane. The crane is fast and energy efficient with good multifunction performance. It's available with two different reaches, 33.8 feet (10.3 m) and 28.2 feet (8.6 m).

## DETAILED COMPARISON

You can now display a color-coded and detailed key figures comparison between machines in MaxiFleet. This is a useful function for machine owners with just a few machines or who want to compare different machine types as the function provides a clear picture of how one machine has performed compared to others.



## TRENDS IN MAXIFLEET

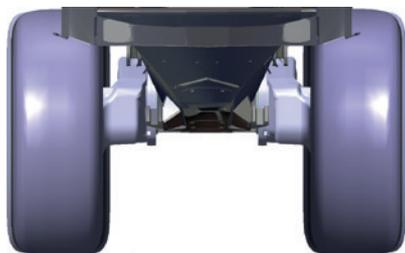
The presentation view in MaxiFleet for a machine's key figures has been improved so that users can more easily grasp how the machine is performing. Key figures for the past three months are calculated and presented. An arrow indicates the trend of each key figure for the current three-month period. Clicking an arrow presents detailed information in a chart.

## AUTOMATIC REPORTS ON PLOT COMPLETION

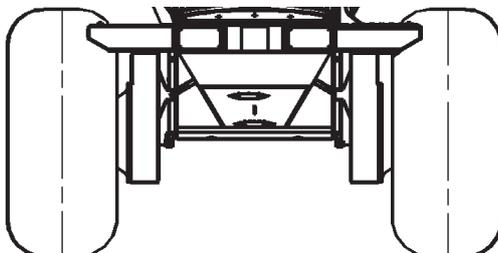
A new option has been added to MaxiFleet. In order to simplify the e-mailing of reports when a plot has been completed, the report is now automatically sent to the preselected e-mail address the day after the plot is completed by a specific machine.

## NEW CYLINDER

A new electric cylinder for the platform on harvesters ensures platform functionality. The new cylinder prevents the system from triggering the "platform out" warning when the machine reacts to the platform leaving its innermost position. The electric cylinder can be retrofitted to harvesters.



**KOMATSU COMFORT BOGIE**



## CONCEALED PORTALS

All the new harvesters are now equipped with Komatsu Comfort Bogie. One new feature is that the bogie has bogie casings with concealed portals integrated with the rims. This contributes to very good ground clearance and navigability.

## ACTIVE ALARMS

Active alarms or warnings from the machine are now displayed in the overview in MaxiFleet. An icon indicates what the alarm or warning concerns. In order to see which alarms and warnings are active, simply click the icon to display a detailed list. The alarms/warnings that are displayed are based on the information sent by the machine every other minute and found in the latest report.

Maskin	Status	Senaste rapport	Nyttjandegrad	Produktion	Område / distrik
S407X: 0000400002 (SIM-FORW) Motorstyr: 19413 h	Arbetar	3 jun 2014 11:55:09	<div style="width: 100%; height: 10px; background-color: green;"></div>		AgriManSE4 / AgriManSE4_Sub4
S31-1: 0000400001 (SIM-HARV) Motorstyr: 33374 h	Aktiv senaste dygnet	3 jun 2014 09:54:15	<div style="width: 100%; height: 10px; background-color: green;"></div>	446,964 m3	Area11 / SubArea1
PC226-7: 0005400008 (SIM-EXC) Motorstyr: 0 h	Aktiv senaste dygnet	3 jun 2014 12:27:48	<div style="width: 100%; height: 10px; background-color: green;"></div>		Area51 / SubArea1

Alarm / varning	Status
11:33 Chassis:1102 Låg hydrauloljaivå	✓
11:33 IO:3088.2 Vakuumpump på Avbrott	✗
11:36 IO:4017.2 Vals öppna/Avbrott	✗
11:36 IO:4019.2 Kniv strävs öppna/Avbrott	✗
11:36 IO:4015.2 Aggregat upp/Avbrott	✗
11:37 IO:4024.2 Svärmatningsriktning/Avbrott	✗
11:37 IO:5014.2 Pump 2, flöde till aggregat/Avbrott	✗



## PROTECTIVE CAGE FOR 835 AND 845

A new protective guard is now available as an optional extra for the Komatsu 835 and 845 forwarders.

NEW!

# KOMATSU DASH-10 Forestry Excavators

MacMillan & Company Logging appreciate purpose-built model PC240LL-10

**MACMILLAN & COMPANY LOGGING** of Montesano, Washington USA, is an established Pacific Coast logging contractor with an average of 30 employees. The company keeps three towers and one yarder/shovel logging side busy moving whole tree logs to market.

Robert MacMillan Sr. owns the company and runs the business with the help of his son Rob. The two recently purchased a Komatsu PC240LL-10 Forestry Excavator from their dealer Modern Machinery and report their successes and the evolution of these hardworking machines.

Robert says, "We own four Komatsu excavators, with our two most recent machines from the LL Series, including the PC350LL-8, used primarily for shovel logging and our new PC240LL-10. We

really like each, but the size of the newer PC240LL-10 makes it easier to move from job to job. It also has the stability, reach, lift capacity and swing torque we wanted in a machine that size."

**FORESTRY EXCAVATORS** handle a variety of tough jobs in a logging operation. Sometimes called swing machines, Komatsu's Dash-10 series Forestry Excavators are equipped with long reach, powerful swing torque, rugged high and wide undercarriages, impressive lift capacity and horsepower, and optimized hydraulic systems. Loggers can choose from a variety of Komatsu forestry and excavator booms, and excavator arms to match their equipment to a range of jobs. Each model is adaptable to a variety of fronts and at-

tachments for forestry work including shovel logging, stacking, loading trucks, road building, roadside sorting, or fitted with a processing head.

Robert says, "There are a lot of Komatsu excavators working in the forest. This purpose-built Forestry Excavator series is built for longevity. Machine operators look for comfort, stability, powerful lift and swing torque. Our PC240LL-10 handles a variety of jobs and has features that put it ahead of a lot of other machines."

Komatsu makes three purpose-built Forestry Excavator models to suit a range of customer needs, including the newest PC210LL-10, the PC240LL-10 and the PC390LL-10. All are based on Komatsu's durable and proven forestry excavator platforms.

**MacMillan & Company's new PC240LL-10 loads large tree-length logs at a coastal mountain job site**



Robert MacMillan Jr. (left) and dealer representative Jim Stevens of Modern Machinery





**THE NEW DASH-10** Forestry Excavators are purpose-built to stand up to the rigors of forestry work. Models share a new Oregon OSHA ROPS/OPS/FOPS/TOPS/WBC certified forestry cab design. The spacious cab design features stronger doors, windows and guarding. The structure provides a quieter and more comfortable work environment so operators can maximize their productivity. Cab riser options include a 7" (18 cm) for road building, or a 48" (122 cm) riser, which optimizes visibility for log loading applications.

Steve Yolitz, Manager, Marketing Forestry, Komatsu America Corp says, "Each of the machines features heavy-duty components for better performance, reliability and durability. Komatsu uses components from the next-sized larger excavator in its Dash-10 models, such as the swing system and final drives.

"The control system in the cab has a high-resolution 7" LCD color monitor with enhanced capabilities and displays information in 25 languages for global support. An operator can easily select from six working modes to match machine performance to their job."

**THE ENGINES** are more environmentally friendly across the board with a 5% increase in horsepower while decreasing fuel consumption by up to 10% (compared to prior models). The improved performance is made possible by utilizing an advanced



MacMillan & Company's PC240LL-10 shovel logging.

electronic control system that manages air-flow rate, fuel injection, combustion parameters, and after-treatment functions to optimize performance, reduce emissions, and provide advanced diagnostic capability.

**AN INTEGRATED HIGH EFFICIENCY**

Hydraulic System design features closed-center load sensing which uses variable speed matching. Variable matching allows the engine speed to adjust based on the hydraulic pump output for both light and heavy duty applications. Each model has adjustable flow controls for boom, arm, heel and grapple, and other work equipment functions for fine tuning hydraulic

response to individual operator preference.

Robert says, "Our machine operator likes the way the PC240LL-10 controls function allowing him to feather the controls better than any other shovel machine that we own. Now, he doesn't want to run anything other than the Komatsu."

MacMillan & Company employees handle the daily upkeep for their machines, but also have mechanics that handle most of their service work. Robert says, "For anything out of the ordinary our mechanic can usually trouble shoot with Modern Machinery's service team using KOMTRAX, which is Komatsu's remote equipment monitoring and management system."

**KOMATSU DASH-10 FORESTRY EXCAVATORS.**



**PC210LL-10**

**WEIGHT:** 63,852 pounds (28,063 kg)  
**SWING TORQUE:** 58,334 lb-ft / 8,065 kg-m  
**ENGINE SAA6D107E-2:** 158 hp (118 kW) at flywheel



**PC240LL-10**

**WEIGHT:** 83,985 pounds (38,095 kg)  
**SWING TORQUE:** 75,903 ft lbs (10,494 kg-m)  
**ENGINE SAA6D107E-2:** 177 hp (132 kW) at flywheel  
**MAX LIFT AT:** 38 ft (11.6 m) 11,900 lbs (5,398 kg)



**PC390LL-10**

**WEIGHT:** 106,920 pounds (48,500 kg)  
**SWING TORQUE:** 97,024 ft lbs (13,414 kg-m)  
**ENGINE SAA6D114E-5:** 257 hp (192 kW) at flywheel  
**MAX LIFT AT:** 42 ft (12.8 m) 14,100 lbs (6,396 kg)

For more information visit [KomatsuForest.us](http://KomatsuForest.us) or [.ca](http://.ca)

# Komatsu XT-3

## Track Feller Bunchers & Track Harvesters



**NEW**



**XT460L-3**



**XT445L-3**



**XT430L-3**



**XT430-3**

Komatsu's next generation XT-3 Series Track Feller-Bunchers & Harvesters offer significant improvements in operator comfort, ease of operation, productivity, reliability and durability. These represent the most dramatic changes to-date in the evolution of the XT-3 Series machines.

**AMONG THE MANY** XT-3 improvements, the Komatsu XT-3 Forestry Cab stands out as being the most impressive. Having been designed and engineered with a total focus on "Attention to the Details", the new cab delivers ergonomics, technology, and fit and finish to place the XT-3 cab design at the top of its class.

The XT-3 cab is equipped with the latest technologically advanced IQAN-MD4 programmable digital control system— a "1st in the Forest" for track forest machines.

The new XT-3 cab layout is more ergonomically efficient and spacious, and quieter. Its sloped roofline increases headroom above and forward of the seat. Larger front, side and skylight windows provide superior visibility and a commanding work view. Eleven (11) brilliant white LED lights provide 2-3 times more illumination across a larger area.

The new XT-430-3, XT430L-3, XT445L-3 and XT460L-3 models all have the latest Komatsu undercarriage and hydraulic improvements for greater reliability and durability. The XT460L-3, with larger boom & arm cylinders, has 37% greater lift capacity at full reach compared to the prior XT450L-2.

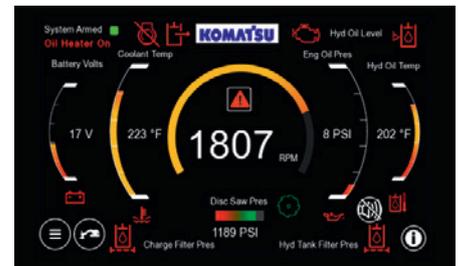
### VISIBILITY

- Full floor-to-ceiling 1.25" (32 mm) thick polycarbonate front window is 10% larger for a commanding view and has no window bars
- Boomside window is larger and has no window bars
- Right-side window is larger; lower door handle position further improves operator's view
- Skylight window is 60% larger providing a clear upward view from the seated position; retractable sunshade is standard
- Eleven (11) exterior LED lights provide 2-3 times more brilliant work area illumination

### IQAN-MD4 DIGITAL CONTROL

- Komatsu is "1st in the Forest" to offer the state-of-the-art technology IQAN-MD4 digital control system
- IQAN-MD4 display provides the operator a true "Command Central" control system
- Rugged 7" (18 cm) LED color touchscreen

- monitor provides the operator with sensitive touch response even when wearing gloves
- Screen provides excellent viewing in all lighting conditions with a 170° wide viewing angle
- All former gauges are now integrated into the new IQAN-MD4 display screen
- All switches are now located forward of the seatback
- "Highly intuitive" Komatsu programming makes operation & system navigation easy



**"1st in the Forest" IQAN-MD4 provides a true "Command Central" Control System.**



Superior working visibility through all windows and skylight; no window bars on front or boomside windows.

### OPERATOR COMFORT

- Six (6) multi-level adjustable vents provide full AC/Heat cabin airflow
- Cab is pressurized with fresh air flow from all six (6) vents in AC/Heat mode
- AC/Heat controls are dash-mounted
- AM/FM/Weather Band Stereo Radio w/iPod/MP3 input above left armrest
- Two (2) 12-volt outlets
- Adjustable-width cellphone holder
- Five (5) pre-threaded welded bosses for mounting auxiliary electronics
- Bright LED overhead dome light
- Stanley® Insulated Vacuum Bottle & Cooler
- Magnetic & moveable coat hook
- Literature box & fire extinguisher relocated to lower right-side of operator seat

### HYDRAULICS & UNDERCARRIAGE

- XT460L-3 model: Larger hydraulic boom arm cylinders increase lift capacity by 37%
- Upgraded Implement Pump bearings for longer service life
- 1-2 additional bottom rollers (depending on

model) for improved track chain support and roller load distribution

- Upgraded chain guide (rock guard) material for improved service life
- XT445L/XT460L track roller guards are now removable to allow easy access to rollers
- Improved track chain alignment for improved service life with:
  - Continuous chain guide (rock guard) profile
  - Lengthened chain guide profile at idler & sprocket
  - Redesigned track shoe supports

### EXTERIOR UPDATES

- Modern, sleek styling is common with Komatsu Log Loaders
- Forestry cab is Oregon OSHA ROPS/FOPS/TOPS/FOG/OPS/WBC certified
- Sloped roof design provides more headroom, reduces debris build-up, and lowers transport height below 14'6" (4.42 m)
- Robust new service doors are a triple-hinged design with new lever latches



10% larger floor-to-ceiling front window with no footwell or light box obstructions.



From the left: Perry Hughes, Roland Machinery Company, Henry Schienebeck, Great Lakes Timber Producers Association, Jim Anderson, Felch, Michigan, John Talbacka, Ispeming, Michigan, David Anderson, Felch, Michigan, Gerald Dugree, Jr., Hermansville, Michigan, Norio Kido, Komatsu America Corp., and Jim Williams, Komatsu America Corp.

## COMPETITION WINNER IN THE USA

The Great Lakes Operator Challenge 2014 for forwarders ended with the crowning of a new champion, Gerald Dugree, Jr., who won the \$1,000 first prize.

Gerald Dugree, Jr. had a total time of 3 minutes, 15 seconds. Second place went

to David Anderson, with a final time of 3 minutes, 23 seconds, but with a 30-second penalty his total time was 3 minutes, 53 seconds. John Talbacka came in third, followed by fourth place winner Jim Anderson.



## POPULAR THE WORLD OVER

The Komatsu 895 is a popular machine in many parts of the world. Since its launch some two years ago, many units have been delivered. This eight-wheeled Komatsu 895 was delivered to Oberon, about 60 miles (100 km) west of Sydney in New South Wales, Australia.

## ONE REAL LEGO MACHINE...



This is an authentically proportioned Komatsu 840.4. It has a mechanical crane and is fully remote controlled. It's even strong enough to load and carry small logs in the forest. It has a number of functions, including an articulated joint, bogie axles, a rotating crane that can be lowered and raised, and a grapple that can be opened, closed, and rotated.

Would you like to see it in action? Simple scan the QR code and watch the video.



## ...AND ANOTHER ONE

This Komatsu 931.1 was built for a Technic Mini competition with a 200-piece limit. The rear section and the back of the cab were the most important aspects for the right look.



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