# **KOMATSU**

# WA380-6



Wheel loader

**Engine power** 143 kW / 192 HP @ 2100 rpm

**Operating weight** 17510 - 18570 kg

**Bucket capacity** 2.7 - 4.0 m<sup>3</sup>

# Walk-around



143 kW / 192 HP @ 2100 rpm

Operating weight

17510 - 18570 kg

Bucket capacity

2.7 - 4.0 m<sup>3</sup>

# High productivity & low fuel consumption

- Variable displacement piston pump & Closed-Centre Load Sensing System (CLSS)
- High performance Komatsu SAA6D107E-1 engine
- Low fuel consumption
- Dual-mode engine power select system
- Automatic transmission with mode select system
- Lock-up torque converter (option)



## **Increased reliability**

- · Komatsu components
- High-rigidity frames and loader linkage
- Wet multi-disc brakes and fully hydraulic braking system
- Hydraulic hoses use flat face-to-face O-ring seals
- · Sealed connectors

# **Easy maintenance**

- Gull-wing engine side cover
- Equipment Management and Monitoring System
- Easy radiator cleaning with reversible fan
- Automatic reversible fan (option)

# **Excellent operator environment**

- Pillar-less large cab
- · Low-noise design
- · Electrically controlled transmission lever
- Automatic transmission with electronically controlled modulation valve
- Variable transmission cut-off system

# Safety

- ROPS/FOPS cab (ISO 3471/ISO 3449)
- Rear-hinged full open cab door

### **Komtrax**

• Komatsu Wireless Monitoring System

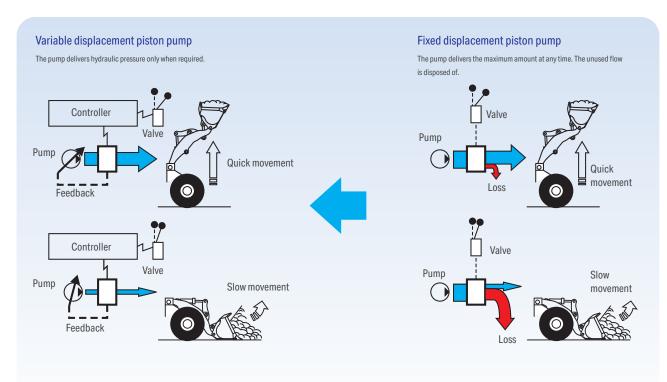
# **High productivity & low fuel consumption**



# Precision control with Closed-center Load Sensing System (CLSS) hydraulics

The WA380-6 features variable-displacement pumps on both the hydraulic and steering systems. These pumps deliver the exact amount of oil required, dramatically improving fuel efficiency. Komatsu's Closed-center Load Sensing system (CLSS) hydraulics enables extremely precise control of the working gear, and ensures that the bucket, boom and hydraulically driven attachments can all move smoothly at the same time.





# **High performance SAA6D107E-1 engine**

Electronic heavy duty common rail fuel injection system provides optimum combustion of fuel. This system also provides fast throttle response to match the machine's powerful tractive effort and fast hydraulic response. Fuel consumption is reduced greatly because of the low-noise, high-torque engine and the large-capacity torque converter with maximum efficiency in the low-speed range. This engine is EPA Tier 3 and EU Stage 3A emissions certified, without sacrificing power or machine productivity.

### **Lock-up torque converter (option)**

The Komatsu designed lock-up torque converter provides increased production efficiency, reduced cycle times and optimum fuel savings in Load & Carry or hill-climb operations. This feature allows the operator to activate the system on/off with a switch located on the right-side control panel.

### Superior dumping height and reach

The long lifting frame allows an enormous dumping height of 2950 mm and a reach of 1150 mm that is just as impressive (with a 3.3 m³ bucket, measured to the cutting edge). With this working range, loading high feeders or trucks becomes easy and fast.



# Automatic transmission with mode select system

This operator controlled system allows the operator to select manual shifting or two levels of automatic shifting (low and high). Auto L mode is for fuel saving operation with the gear shift timing set at lower speeds than Auto H mode.

Therefore Auto L mode keeps the engine in a relatively low rpm range for fuel efficiency



while also giving tractive force at the touch of the accelerator pedal.

# **Dual-mode engine power select system**

This wheel loader offers two selectable operating modes – E and P. The operator can adjust the machine's performance with the selection switch.

• E mode: This mode provides maximum fuel

efficiency for general loading.

• P mode: This mode provides maximum power output for hard



digging operations or hill climbs.



The ECO indicator will help an operator to promote energy saving.

# **Increased reliability**

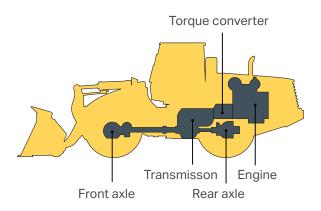


### Komatsu components

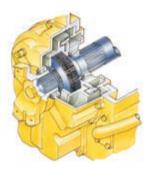
Komatsu manufactures the engine, torque converter, transmission, hydraulic units, and electric parts on this wheel loader. Komatsu wheel loaders are manufactured with an integrated production system using a strict quality control.

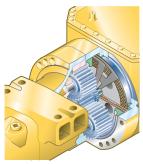
# **High-rigidity frames and loader linkage**

The front and rear frames and loader linkage have more torsional rigidity providing longer frame life. Extensive testing has proved that frame and loader linkage have the ability to accomodate actual work loads.









### **Sealed DT connectors**

Main harnesses and controller connectors are equipped with sealed DT connectors providing high reliability, water and dust resistance.



# Wet multi-disc brakes and fully hydraulic braking system

This system provides lower maintenance costs and higher reliability. Wet disc brakes are fully sealed. Contaminants are kept out, reducing wear and maintenance. Brakes require no adjustments for wear, meaning even lower maintenance. The new parking brake is also an adjustment-free, wet multi-disc for high reliability and long life. Added reliability is designed into the braking system by the use of two independent hydraulic circuits. This system provides hydraulic backup should one of the circuits fail. Fully hydraulic brakes mean no air system to bleed, or the condensation of water in the system that can lead to contamination, corrosion, and freezing.

### Komatsu developed engine

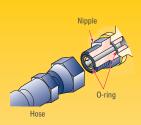
The Komatsu SAA6D107E-1 engine with high pressure common rail injection delivers ample power in a fuel efficient way. The engine meets EU Stage 3A and EPA Tier 3 emissions regulations. WA380-6's Komatsu SAA6D107E-1 engine features higher torque, better performance at low speed, excellent throttle response and advanced electronics.

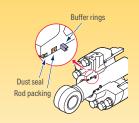
# Heavy duty HPCR system (High Pressure Common Rail fuel injection)

A high pressure pump pumps fuel into an accumulator chamber or 'Common Rail'. An ECU (electronic control unit) then optimizes fuel injection from the common rail into the engine cylinders. This improves engine power and fuel efficiency, reducing emission and noise levels.

## Reliable hydraulic line

Flat face-to-face O-ring seals are used to securely seal hydraulic hose connections and to prevent oil leakage. In addition, buffer rings are installed on the head side of the all-hydraulic cylinders to lower the load on the rod seals and maximise reliability.







# **Easy maintenance**





#### • Designed to save time

With long service intervals and best-in-class accessibility, the WA380-6 reduces the time and money you need to suspend on maintenance. A gas spring helps the operator open and close each gull-wing side door for easy daily servicing. The doors open in two steps and be able to use upper or lower stop position as the situation demands.

- Simple and convenient access to service
   The service doors are designed as gull-wing doors. They allow you convenient and safe access to the daily service points from the ground.
- Centralised filter arrangement
   With all filters collected into a centralised arrangement, the down time for servicing is reduced to a minimum.

#### External fluid drains

All fluids can be drained through externally mounted valves for easy maintenance and reduced spillage.



Gull-wing doors upper stop position



Gull-wing doors lower stop position



# **Equipment Management and Monitoring System**

The monitor is mounted in front of the operator for easy viewing, allowing the operator to easily check gauges and warning lights.

# Maintenance control and troubleshooting functions

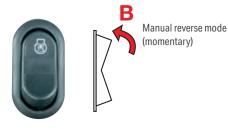
- Action code display: If any abnormality should occur, the monitor displays action details and faults to the operator.
- Monitor: Amongst other functions, the controller monitors engine oil level, pressure and coolant temperature. All errors are displayed on the LCD.
- Replacement time notice: The monitor informs replacement time of oil and filters on the LCD when replacement intervals are reached.
- Trouble data memory: The monitor stores abnormalities for effective troubleshooting.





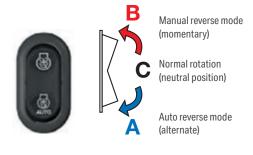
## Ease of radiator cleaning

If the machine is operating in adverse conditions, the operator can reverse the hydraulic cooling fan from inside the cab by using a switch on the control panel.



### **Automatic reversible fan (option)**

The engine fan is driven hydraulically and can be operated in reverse automatically. When the switch is in the automatic position, the fan revolves in reverse for 2 minutes every 2 hours intermittently (default setting).



# **First-class comfort**



## Pillar-less large cab

A wide pillarless windscreen provides excellent front visibility. The wiper arm covers a large area to provide great visibility even on rainy days. The cab area is the



largest in its class providing maximum space for the operator. Increased seat slide adjustment to to the rear by introducing front mounted air conditioner unit.

#### Low-noise design

Thee large cab is mounted with Komatsu's unique ROPS/FOPS viscous mounts. The low-noise engine, hydraulically driven fan, and hydraulic pumps are mounted with rubber cushions. The cab sealing is improved to



provide a quiet, low-vibration, dustproof pressurised, and comfortable operating environment. Also, the exterior noise level is the lowest in its class

# Steering wheel with telescopic/tilt column

The operator can tilt and telescope the steering column to provide a comfortable working position.



# Electronic controlled transmission

lever

Change direction or shift gears with a touch of a finger without removing the shifting hand from the steering wheel. Solid state



electronics and conveniently located direction and gear shift controls make this possible. Automatic shifts in ranges 2 to 4 keep production high and manual shifting at a minimum.

### **Automatic transmission with ECMV**

The automatic transmission with ECMV automatically selects the proper gear speed based on travel speed, engine speed, and other travel conditions. The ECMV (Electronically Controlled Modulation Valve) system engages the clutch smoothly to prevent lags and shocks when shifting. This system provides efficient machine operation and a comfortable ride.

#### Kick-down switch:

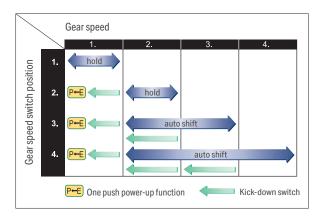
With the touch of a finger, the kick-down switch automatically downshifts from second to first when beginning the digging cycle. It automatically shifts up from first to second when the direction control lever is placed in reverse. This results in increased rim pull for better bucket penetration and reduced cycle times for higher productivity.

#### • One push power-up function:

The kick-down switch also functions as a power-up switch in first gear. The first time the kick-down switch is depressed it functions as a kick-down switch and gear speed is reduced. When the machine is in E operation mode and first gear, pressing the kick-down switch a second time changes the operation mode to P allowing increased power for heavy digging operation. The operation mode returns to E when machine gear speed changes or direction changes to reverse.

#### · Hold switch:

Auto shift is selected and if the operator turns on this switch when the lever is in 3rd or 4th gear, the transmission is held in that gear speed.





# Fingertip work equipment control levers with large size arm rest

New Pressure Proportional Control (PPC) control levers are used for the work equipment. The operator can easily operate the work equipment with fingertip control, reducing operator fatigue and increasing controllability. The PPC control lever column can be slid forward or rearward and the large size arm rest can be adjusted up or down to provide the operator with a variety of comfortable operating positions.

# Variable transmission cut-off system

The operator can continuously adjust the transmission cut-off pressure desired for the left brake pedal using switch located on the right-side control panel. The operator can improve the working performance by setting the cut-off pressure properly depending on working condition.

- · High cut-off pressure for digging operations
- Low cut-off pressure for truck-loading operations

#### Joystick steering system (option)

A joystick steering system is available as optional equipment, and ensures that steering can be wrist operated easily and conveniently in loading operations. This system allows you to change the direction of travel and gear shifting with push buttons on the joystick. And you may pre-select the steering speed in 2 stages, depending upon whether fast V-loading or precise load & carry is required.

#### Electronically controlled suspension system (option)

Electronically controlled suspension system uses an accumulator which absorbs some of the shock in the boom arm, giving the operator a much smoother ride. This reduces operator fatigue and reduces material spillage during load and carry operations. Electronically Controlled Suspension System operation is speed sensitive and turned off automatically below 5 km/h speed, meaning that the boom won't move during stationary digging.

# Safety first



### **ROPS/FOPS** cab

The ROPS/FOPS cab is standard for operator's safety. A wide pillar-less flat glass provides excellent front visibility, and a heated rear window provides excellent rear visibility in cold and freezing weather conditions.

ROPS (ISO 3471): Roll-over Protective Structure FOPS (ISO 3449): Falling Objects Protective Structure

### Rear-hinged full open cab door

The cab door hinges are installed to the rear side of the cab providing a large opening angle for the operator to enter and exit. The steps are designed like a staircase, so that the operator can get on and off the cab easily.



### Left or right side cab entry

The operator can get on and off the machine from either side of the vehicle. This design is convenient when getting on and off in a narrow jobsite or on uneven ground.



### **Safety features**

- Secondary steering
   If the steering pump is disabled, a secondary steering pump provides hydraulic flow.
- Two independent lines brake system
   Added reliability is designed into the braking system by the use of two independent hydraulic circuits, providing hydraulic backup should one of the circuits fail.
- Battery disconnect switch

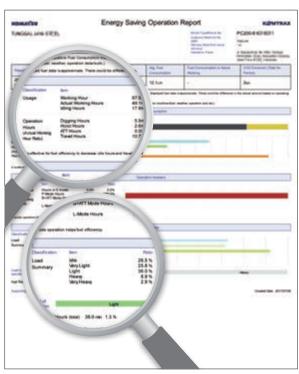
The battery disconnect switch is located in the right side battery box. This can be used to disconnect power when performing service work on the machine.

# **Komtrax**

The Komatsu remote monitoring and management technology provides insightful data about your equipment and fleet in user-friendly format.

# **Energy saving operation report**

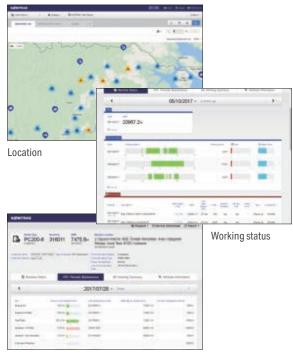
Komtrax delivers the energy-saving operation report based on the operating information such as fuel consumption, load summary and idling time, which helps you efficiently run a business.



This report image is an example of hydraulic excavator

### **Equipment management support**

Through the web application, a variety of search parameters are available to quickly find information about specific machines based on key factors. Moreover, Komtrax finds out machines with problems from your fleet and shows you through an optimal interface.



Periodic maintenance

The report contents and data depend on the machine model.

# Optimal strategy for efficient work

The detailed information that Komtrax puts at your fingertips helps you manage your fleet conveniently on the web anytime, anywhere. It gives you the power to make better daily and long-term strategic decisions.



# **Specifications**

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Eligilie	
Model	Komatsu SAA6D107E-1
Туре	Water-cooled, 4-cycle
Aspiration	Turbocharged, after-cooled
No. of cylinders	6
Bore × stroke	107 mm x 124 mm
Displacement	6.691
Governor	All-speed, electronic
Engine power	
at rated engine speed	2100 rpm
SAE J1995	Gross 143 kW / 192 HP
ISO 9249/SAE J1349*	Net 142 kW / 191 HP
Fan drive type	Hydraulic
Fuel system	Direct injection
Lubrication system	
Method	Gear pump, force-lubrication
Filter	Full-flow type
Air filter type	Dry-air filter with automatic dust emission and preliminary purification including a dust display
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<sup>\*</sup> Net horsepower at the maximum speed of radiator cooling fan is 133 kW / 179 HP. US EPA Tier 3 and EU Stage 3A emissions equivalent.

#### **Transmission**

Туре	Full-powershift, countershaft type
Torque converter	3-element, 1-stage, 1-phase

### Speeds in km/h (with 23.5-25 tyres)

Gear	1.	2.	3.	4.
Forward	6.6	11.5	20.2	34.0
Reverse	7.1	12.3	21.5	35.5

### Speeds in km/h (with 20.5-25 tyres)

Gear	1.	2.	3.	4.
Forward	6.0	10.6	18.6	31.1
Reverse	6.5	11.3	19.9	33.0

### **Chassis and tyres**

System	4-wheel drive
Front axle	Fixed, semi-floating
Rear axle	Center-pin support, semi-floating, 26° total oscillation
Reduction gear	Spiral bevel gear
Differential gear	Conventional type
Final drive	Planetary gear, single reduction

### **Brakes**

Operating brakes	Hydraulically actuated,
	wet multi-disc brakes on all wheels
Parking brake	Wet multi-disc
Emergency brake	Uses the parking brake

### Steering system

System	Articulated frame steering
Туре	Completely hydraulic power steering
Steering angle to either side	35° each direction (40° end stop)
Steering pump	Piston pump
Working pressure	24.5 MPa / 250 kgf/cm <sup>2</sup>
Pumping capacity	138 l/min
No. of steering cylinders	2
Туре	Double-action
Bore diameter × stroke	75 × 442 mm
Smallest turn	6320 mm
(center of the tyre 26.5-25)	

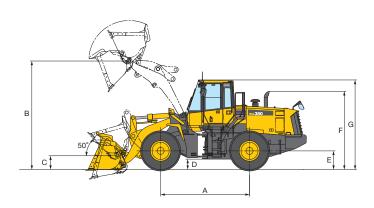
### **Hydraulic system**

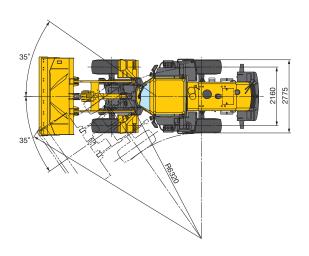
Piston pump
205.5 l/min
31.4 MPa / 320 kgf/cm <sup>2</sup>
2/1
Double-action
130 × 713 mm
150 × 535 mm
2-spool type
Raise, hold, lower, and float
Tilt-back, hold, and dump
5.9 s
1.8 s
3.3 s

### Service refill capacities

Cooling system	30.51
Fuel tank	3001
Engine oil	231
Hydraulic system	1391
Front axle	401
Rear axle	401
Torque converter and transmission	381

# **Dimensions**





### Measurements and working specifications

		Standard boom	High-lift boom		
Н	Tread	2160 n	nm		
Ι	Width over tyres	2775 n	nm		
Α	Wheel base	3300 n	mm		
В	Hinge pin height, max.	4095 mm	4625 mm		
С	Hinge pin height, carry position	520 mm	680 mm		
D	Ground clearance	455 m	nm		
Е	Hitch height	1150 n	nm		
F	Overall height, top of the stack	2975 n	2975 mm		
G	Overall height, ROPS cab	3390 n	3390 mm		

Dimensions with 20.5-25-16PR (L-3) tyres

### Change in data caused by:

Tyres / attachment	Operating weight	Tipping load straight	Tipping load full turn	Width over tyres	Ground clearance	Overall height
	kg	kg	kg	mm	mm	mm
23.5-25-16PR (L-3)	0	0	0	+5	0	0
20.5-25-16PR (L-3)	-970	-770	-680	-80	-65	-65
Add. counterweight	+340	+900	+755	0	0	0

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# **Dimensions**

Measured with 23.5-25-16PR (L-3) tyres

Standard boom		General purpose buckets		Excavating bucket			Loose material bucket	Light material bucket
		Bolt-on cutting edges	Teeth	Bolt-on cutting edges	Teeth and segments	Teeth	Bolt-on cutting edges	Bolt-on cutting edges
Bucket capacity:	heaped	3.3 m³	3.1 m <sup>3</sup>	2.9 m <sup>3</sup>	2.9 m <sup>3</sup>	2.7 m <sup>3</sup>	3.6 m <sup>3</sup>	4.0 m <sup>3</sup>
	struck	2.9 m <sup>3</sup>	2.7 m <sup>3</sup>	2.4 m <sup>3</sup>	2.4 m <sup>3</sup>	2.3 m <sup>3</sup>	3.0 m <sup>3</sup>	3.4 m <sup>3</sup>
Bucket width		2950 mm	2925 mm	2905 mm	2925 mm	2925 mm	2905 mm	2905 mm
Bucket weight		1620 kg	1540 kg	1720 kg	1765 kg	1645 kg	1735 kg	1835 kg
Dumping clearance, max. height and 45° dump angle*		2950 mm	2820 mm	3045 mm	2925 mm	2925 mm	2920 mm	2855 mm
Reach at max. height and 45° dump angle*		1150 mm	1245 mm	1055 mm	1155 mm	1155 mm	1170 mm	1240 mm
Reach at 2130 mm clearance and 45° dump angle		1735 mm	1775 mm	1680 mm	1730 mm	1730 mm	1750 mm	1780 mm
Reach with arm horizontal and bucket level		2590 mm	2750 mm	2450 mm	2620 mm	2620 mm	2625 mm	2715 mm
Operating height (fully raised)		5600 mm	5600 mm	5470 mm	5470 mm	5470 mm	5650 mm	5720 mm
Overall length		8140 mm	8310 mm	8000 mm	8170 mm	8170 mm	8175 mm	8265 mm
Loader clearance circle (bucket at carry, outside corner of bucket)		14440 mm	14550 mm	14370 mm	14480 mm	14480 mm	14460 mm	14500 mm
Digging depth:	0°	60 mm	75 mm	60 mm	75 mm	75 mm	60 mm	60 mm
	10°	290 mm	330 mm	265 mm	310 mm	310 mm	300 mm	315 mm
Static tipping load:	straight	14560 kg	14660 kg	14460 kg	14400 kg	14555 kg	14450 kg	14330 kg
	40° full turn	12610 kg	12700 kg	12505 kg	12440 kg	12595 kg	12490 kg	12375 kg
Breakout force		158 kN	170 kN	176 kN	183 kN	191 kN	150 kN	144 kN
Operating weight		17580 kg	17510 kg	17690 kg	17730 kg	17610 kg	17700 kg	17810 kg

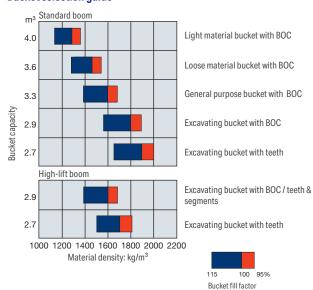
High-lift boom	Excavating bucket			
		Bolt-on cutting edges	Teeth and segments	Teeth
Bucket capacity:	heaped	2.9 m <sup>3</sup>	2.9 m <sup>3</sup>	2.7 m <sup>3</sup>
	struck	2.4 m <sup>3</sup>	2.4 m <sup>3</sup>	2.3 m <sup>3</sup>
Bucket width		2905 mm	2925 mm	2925 mm
Bucket weight		1720 kg	1765 kg	1645 kg
Dumping clearance, max. height and 45° dump angle*		3575 mm	3455 mm	3455 mm
Reach at max. height and 45° dump angle*		1185 mm	1285 mm	1285 mm
Reach at 2130 mm clearance and 45° dump angle		2205 mm	2260 mm	2260 mm
Reach with arm horizontal and bucket level		2940 mm	3110 mm	3110 mm
Operating height (fully raised)		5985 mm	5985 mm	5985 mm
Overall length		8760 mm	8930 mm	8930 mm
Loader clearance circle (bucket at carry, outside corner of bucket)		14850 mm	14930 mm	14930 mm
Digging depth:	0°	110 mm	125 mm	125 mm
	10°	320 mm	365 mm	365 mm
Static tipping load:	straight	12060 kg	12015 kg	12130 kg
	40° full turn	10330 kg	10290 kg	10405 kg
Breakout force		166 kN	173 kN	180 kN
Operating weight		18530 kg	18570 kg	18450 kg

\*At the end of tooth or Bolt-on cutting edge (BOC).

All dimensions, weights, and performance values based on SAE J732c and J742b standards. Static tipping load and operating weight shown include lubricant, coolant, full fuel tank, ROPS cab, and operator. Machine stability and operating weight affected by counterweight, tire size, and other attachments.

Apply the following weight changes to operating weight and static tipping load.

#### **Bucket selection guide**



# **Buckets & attachments**

### ■ Buckets

Туре	Feature	Image
Stockpile bucket	This bucket is used for loading stockpile products, such as crushed rock and construction materials.	
Excavating bucket	This bucket is used for excavating and loading blasted rock on rock crushing job sites, or for excavating natural ground. It has a flat-blade, straight cutting edge, and provides superior rigidity and wear resistance.	Wood of the state
Loose/light material bucket	This bucket is used for loading materials with comparatively light specific gravity. It is based on the general purpose bucket, with a lengthened cutting edge and width to give increased capacity.	

# ■ Cutting edges and teeth

Туре	Feature	Image		
Cutting edge Segment edge	This edge is made for use in loading loose sand and soil, or for loading stockpiled materials. It is bolted to the leading edge of general purpose buckets and may be detached and reversed. The cutting edges are manufactured from especially heat treated, high tension steel, and since they are reversible, both edges can be used. This effectively doubles their working life.	Bolt-on cutting edges (BOC)  Segment edges (SE)		
Teeth (bolt-on type)	These teeth are suitable for loading or excavation of piles of earth or sand, blasted rock, and jobs in the field that involve digging into the side of slopes. The special heat treated, tensile strength steel alloy used in their production assures that they will wear and have a long service life.	His Pay		
Teeth (tip type)	These teeth tips which are attached to an adapter that is welded or bolted to the bucket edge. This means that an interchangeable part, the tooth tip, absorbs most of the wear and protects the actual bucket edge. They give excellent performance when used to handle blasted rock, piles of earth and similarly heavy duty tasks.	Welded adapter  Bolt-on adapter		

### **■** Grapples

Туре	Type Feature	
Log grapple	This is a special log attachment for use with logs ranging from small-diameter short logs to large-diameter long logs. Its shape enables it to grip the log well with little rolling shock, and it is designed so that the center of gravity of the log is close to the machine body. This enables the machine to maintain its stability when loading and hauling.	

# Komatsu total support





#### Komatsu total support

To keep your machine available and minimize operation cost when you need it, the Komatsu distributor is ready to provide a variety of supports before and after procuring the machine.

#### Fleet recommendation

The Komatsu distributor can study the customer's job site and provide the most optimum fleet recommendation with detailed information to meet all of your application needs when you are considering to buy new machines or replace the existing ones from Komatsu.

#### Parts availability

The Komatsu distributor is available for emergency inquiry by the customers for genuine, quality guaranteed Komatsu parts.

#### **Technical support**

Komatsu product support service (technical support) is designed to help customer. The Komatsu distributor offers a variety of effective services to show how much Komatsu is dedicated to the maintenance and support of Komatsu machine.

- Preventive Maintenance (PM) clinic
- Oil & wear analysis program

#### **Product support**

The Komatsu distributor gives the proactive support and secures the quality of the machinery that will be delivered.

#### Repair & maintenance service

The Komatsu distributor offers quality repair and maintenance service to the customer, utilizing and promoting Komatsu developed programs.

# Komatsu Reman (remanufactured) components

Komatsu Reman products are the result of the implementation of the Komatsu global policy which establishes and agrees to reduce the owning, operating and total Life Cycle Costs (LCC) to Komatsu's customer through high quality, prompt delivery and competitively priced in own remanufactured products (QDC).



# Standard equipment

#### Engine/power train

- · Air cleaner with dust indicator
- Engine, Komatsu SAA6D107E-1 diesel
- · Parking brake, electric
- · Service brakes, wet disc type
- Transmission, 4 forward and 4 reverse

#### **Electrical system**

- Alternator, 24 V/60 A
- Back-up alarm
- · Back-up lights
- Batteries, 2 x 12 V/136 Ah
- · Directional signal
- Engine shut-off system, electric
- Front work lamps, LH and RH side
- Starting motor, 24 V/5.5 kW

#### **Hydraulic system**

- 2-spool valve for boom and bucket controls
- Hydraulic-driven fan with reverse rotation
- · Lift cylinders and bucket cylinder

#### Cab

- Automatic shift transmission with mode select system
- Main monitor panel with Equipment Management and Monitoring System
- PPC fingertip control, 2 levers
- · Rear defroster (electric)
- Rear view mirror for cab
- Rear window washer and wiper
- ROPS/FOPS (ISO 3471/ISO 3449) cab
- Seat belt
- Seat, air suspension type with reclining
- Steering wheel, tiltable, telescopic
- Sun visor

#### Work equipment

- · Boom kick-out
- · Bucket positioner
- Counterweight
- · Loader linkage with standard boom

#### Other equipment

- Front fenders
- Fuel pre-filter with water separator
- · Radiator mask, lattice type
- Tyres (23.5-25-16PR, L-3) tubeless

# **Optional equipment**

#### Engine/power train

- · Additional fuel filter with water separator
- Brake cooling system
- Engine pre-cleaner
- Limited slip differential (F&R)
- Lock-up clutch torque converter

### **Electrical system**

- 12 V converter
- ullet Batteries, large capacity, 2 imes 12 V/140 Ah
- Battery disconnect switch

#### Hydraulic system

- 3-spool valve
- Secondary steering (ISO 5010)
- Hydraulic-driven fan with automatic reverse rotation

#### Cab

- · Air conditioner
- AM/FM radio
- AM/FM stereo radio cassette
- Auto air conditioner
- Cab heater and defroster
- FNR directional change switch
- Joystick steering
- Multifunction mono-lever
- Seat, deluxe suspension seat

#### Work equipment

- Additional counterweight
- Bucket teeth (bolt-on type)
- Bucket teeth (tip type)
- Counterweight for logCutting edge (bolt-on type)
- High-lift boom
- Log grapple
- Segment edges

#### Other equipment

- Electronically Controlled Suspension System
- Fire extinguisher
- Load meter
- Ordinary spare parts
- Power train guard
- Rear fender
- Rear under view mirror
- Tool kit
- Vandalism protection kit

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