

KOMATSU®

WA470-5

BUCKET CAPACITY
3.6–5.2 m³
4.7–6.8 yd³



WA
470



Photo may include optional equipment.

WHEEL LOADER



WA470-5 Wheel Loader

WALK-AROUND

NET HORSEPOWER
195 kW 261 HP @ 2000 rpm**OPERATING WEIGHT**
21520–21750 kg
47,443–47,950 lb**BUCKET CAPACITY**
3.6–5.2 m³
4.7–6.8 yd³

High Productivity & Low Fuel Consumption

- Powerful engine
- Ultra-low fuel consumption
- Dual-mode engine power select system
- Transmission mode select system
- Dual speed hydraulic system
- Superior dumping clearance and reach
- Long wheelbase and 40 degree articulation

See page 4.

Excellent Operator Environment

- Automatic transmission with selectable modes
- Low-noise designed cab (option)
- Electrically controlled transmission lever
- Fingertip control levers
- Pillar-less large ROPS/FOPS cab (option)
- Easy entry/exit, rear-hinged doors
- Telescopic/tilt steering column

See page 8.

Increased Reliability

- Reliable Komatsu designed and manufactured components
- Sturdy main frame
- Maintenance-free fully hydraulic, wet disc service and parking brakes
- All hydraulic hoses use flat face O-ring seals

See page 6.

- Cathion electrodeposition process is used to apply primer paint
- Powder coating process is used to apply on main structure
- Sealed DT connectors for electrical connections

**GALEO**

Based upon the expertise, technology and success which Komatsu has accumulated over 80 years, the new brand was born to provide customers all over the world a fresh image of the innovative technology and great value of Komatsu equipment. *The new brand name is GALEO.* High productivity, environment-friendly, safety and benefiting from cutting-edge technology, *GALEO* will contribute to our environment in the 21st century.

Genuine Answer for Land and Environment Optimization

Harmony with Environment

- Meets EPA Tier II or EC second emission
- Low spectator noise
- Low fuel consumption

Easy Maintenance

- “EMMS” (Equipment Management Monitoring System)
- Reversible radiator fan
- Swing-out aftercooler and oil coolers
- Prolonged engine oil change interval
- Ground check for windshield washer tank and coolant tank
- Easy access gull-wing type engine side doors

See page 7.

Photo may include optional equipment.

PRODUCTIVITY FEATURES

High Productivity and Low Fuel Consumption

Powerful Engine

The electronically controlled fuel injection timing in the SAA6D125E-3 engine provides optimum combustion of fuel at both low and high speed/power applications. This system also provides fast throttle response to match the machine's powerful rim pull and fast hydraulic response.

195 kW, 261 HP

The common rail type fuel injection system provides maximum power with minimum emissions. This engine meets EPA Tier II emission regulations and EC second emission regulations.

Low Fuel Consumption

The 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.

Reduction of Fuel Consumption: 15% (compared with Dash 3 technology).

Dual-Mode Select System

This wheel loader offers two selectable operating modes—Normal and Power. The operator can adjust the machine's performance by flipping a switch.

- **Normal Mode:** This mode provides maximum fuel efficiency for most of general loading.
- **Power Mode:** This mode provides maximum power output for hard digging operation or hill climb.



Transmission Mode Select System

This operator controlled system allows the operator to select manual shifting or three levels of automatic shifting (low, medium, and high).

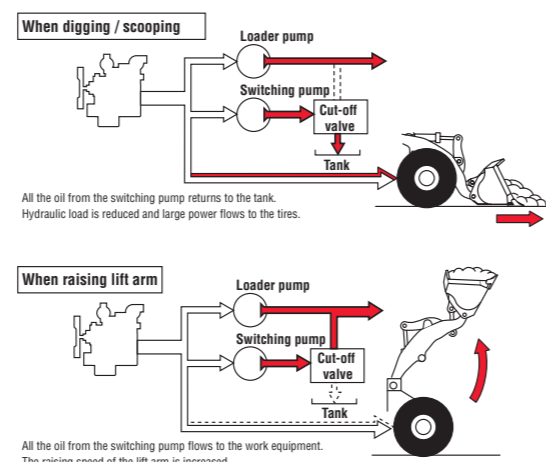


- **Manual:** Transmission is fixed to gear speed selected with gear shift lever.
- **Auto. L:** This mode provides smooth gear change and low fuel consumption since gear shifting is performed at relatively low engine speeds, suitable for general excavating and loading.
- **Auto. M:** Gear is shifted at medium engine speeds between those of L and H modes.
- **Auto. H:** This mode provides large rim pull and short cycle time since gear shifting is performed at relatively high engine speeds, suitable for load and carry operation on uphill.

New Dual-Speed Hydraulic System

Komatsu's dual-speed hydraulic system increases operational efficiency by matching the hydraulic demands to work conditions.

Oil from the switch pump is completely returned to the tank when digging and breaking out, therefore, hydraulic flow to the loader is reduced and pressure is increased. This reduces horsepower demand from the engine and makes the operation more efficient. Kick-down switch signal also controls the oil flow. This new technology is greater productivity at the lowest operating cost.



Maximum Dumping Clearance and Reach



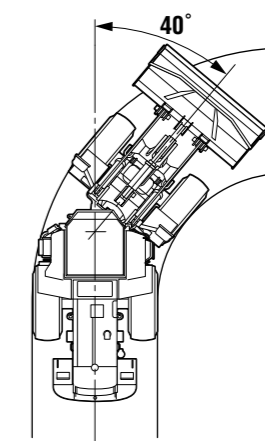
Dumping Clearance: 3120 mm 10'3"
Dumping Reach: 1305 mm 4'3"
(4.2 m³ 5.5 yd³ bucket with B.O.C.)

The long lift arms provide high dumping clearances and maximum dumping reach. The operator can even level loads on the body of a dump truck easily and efficiently.

Long Wheelbase/Articulation Angle of 40°

The longest wheelbase in class and the widest tread provide improved machine stability in both longitudinal and lateral directions. Since the articulation angle is 40°, the operator can work efficiently even in the tightest job sites.

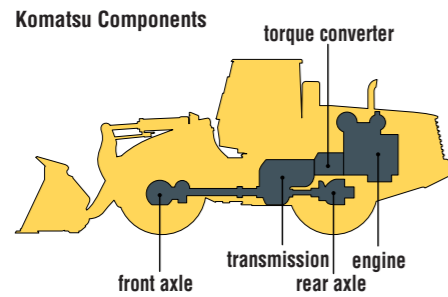
Tread	2300 mm 7'7"
Wheelbase	3450 mm 11'4"
Minimum turning radius (center of outside tire)	5900 mm 19'4"



INCREASED RELIABILITY

Komatsu Components

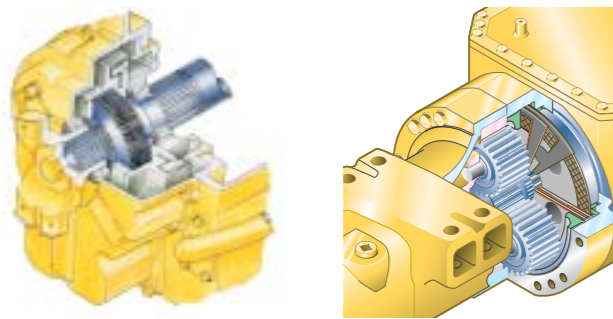
Komatsu manufactures the engine, torque converter, transmission, hydraulic units, electric parts, and even each bolt on this wheel loader. Komatsu loaders are manufactured with an integrated production system under a strict quality control system.



Wet multi-disc brakes and fully hydraulic braking system mean lower maintenance costs and higher reliability. Wet disc brakes are fully sealed. Contaminants are kept out, reducing wear and resulting 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. 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.

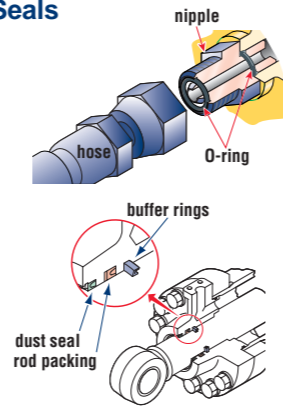


High-rigidity Frames

The front and rear frames have high rigidity to bear twisting and bending loads applied repeatedly to the loader body. Both upper and lower center pivot bearings are tapered roller bearings having high durability. The structure is similar to those of large-sized loaders and the reinforced loader linkage also ensures high rigidity.

Flat Face-to-Face O-Ring Seals

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



Cathion Electrodeposition Primer Paint/ Powder Coating Final Paint

Cathion electrodeposition paint is applied as a primer paint and powder coating is applied as topcoat to the exterior metal sheet parts. This process results in a beautiful rust-free machine, even in the most severe environments. Some external parts are made of plastic providing long life and high impact resistance.

Sealed DT Connectors

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

EASY MAINTENANCE

EMMS (Equipment Management Monitoring System)

Monitor is mounted in front of the operator allowing the operator to easily check gauges and warning lights. A specially designed two-spoke steering wheel allows the operator to easily see the instrument panel.



Maintenance Control and Troubleshooting Functions

- **Action code display function.** If the loader has any troubles, the monitor displays action details on the character display at the center bottom of the monitor.
- **Monitor function.** Controller monitors engine oil level, pressure, coolant temperature, air cleaner clogging etc. If controller finds abnormalities, all of these are displayed on LCD.
- **Replacement time notice function.** Monitor informs replacement time of oil and filters on LCD when it reaches replacement intervals.
- **Trouble data memory function.** Monitor stores abnormalities for effective troubleshooting.

Reversible Cooling Fan and Swing-out Cooler Elements



If the machine is operating in adverse conditions, the operator can reverse the hydraulic cooling fan from inside the cab by turning on a switch on the control panel. The coolers can also swing out for easy cleaning.



Gull-wing Type Engine Side Doors Open Wide

The operator can open and close each gull-wing type engine side door easily with the assistance of a gas spring to perform daily service checks from the ground.



Lengthened Maintenance Interval

Lengthened engine oil replacement interval:
250 H → 500 H

Lengthened drive shaft greasing interval:
1000 H → 4000 H

OPERATOR ENVIRONMENT

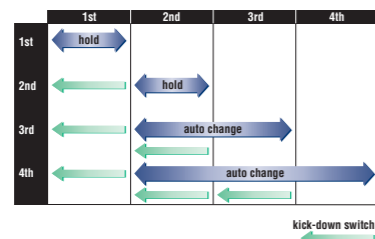
Easy Operation

Automatic Transmission with ECMV

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: Consider this valuable feature for added productivity. With the touch of a finger, the kick-down switch



automatically downshifts from second to first when beginning the digging cycle. It automatically upshifts 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.

- **Hold switch:** Auto shift is selected and if the operator turns on this switch when the lever is at the 3rd or 4th gear speed position, the transmission is fixed to that gear speed.

Electrically Controlled Transmission Lever



Easy shifting and directional changes with Komatsu two-lever electronic shifting. Change direction or shift gears with a touch of the fingers 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 two through four keep production high and manual shifting at a minimum.

Variable Transmission Cut-off

The operator can adjust the transmission cut-off connected to the left brake pedal with the switch near the operator's seat to set the brake/cut-off point for easier operation and higher operating performance in variable operating conditions.

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

Telescopic/Tilt Steering Column

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



Fingertip Work Equipment Control Lever

New 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 tilted forward or rearward and the wrist rest can be adjusted up or down to provide the operator with a variety of comfortable operating positions.



Comfortable Operation

Low-noise Design

Operator noise: 72 dB(A)
Dynamic noise (outside): 109 dB(A)



The 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, and the cab sealing is improved to provide a quiet, low-vibration, dustproof with pressurizing, and comfortable operating environment. Also, spectator noise is lowest in this class.



Pillar-less Large Cab (Optional)

A wide pillar-less flat glass 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.

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.



Emergency Brake

If the brake oil pressure drops, the warning lamp flashes and the warning buzzer sounds intermittently. If the brake pressure drops lower, the parking brake is applied providing a double safety system.



SPECIFICATIONS

ENGINE

ModelKomatsu SAA6D125E-3
 TypeWater-cooled, 4-cycle
 AspirationTurbocharged
 Number of cylinders6
 Bore x stroke**125 mm x 150 mm** 4.9" x 5.9"
 Piston displacement**11.04 ltr** 674 in³
 Performance:
 Flywheel horsepower**195 kW** 261 HP (SAE J1349)
 195 kW 265 PS (DIN 6270)
 Rated rpm2000 rpm
 Fuel systemDirect injection
 GovernorElectronic, all-speed control
 Lubrication system:
 Lubrication methodGear pump, force-lubrication
 FilterFull-flow type
 Air cleanerDry type with double elements and dust evacuator, plus dust indicator

TRANSMISSION

Torque converter:
 Type3-element, single-stage, single-phase
 Transmission:
 TypeFull-powershift, countershaft type
 Travel speed: **km/h** mph
 Measured with 23.5-25 tires

	1st	2nd	3rd	4th
Forward	5.8 3.6	11.2 7.0	20.2 12.6	33.1 20.6
Reverse	6.1 3.8	11.9 7.4	21.4 13.3	34.7 21.6

Measured with 26.5-25 tires

	1st	2nd	3rd	4th
Forward	6.3 3.9	12.1 7.5	21.7 13.5	34.9 21.7
Reverse	6.7 4.2	12.8 8.0	23.0 14.3	36.0 22.4

AXLES AND FINAL DRIVES

Drive systemFour-wheel drive
 FrontFixed, semi-floating
 RearCenter-pin support, semi-floating, 30° total oscillation
 Reduction gearSpiral bevel gear
 Differential gearConventional type
 Final reduction gearPlanetary gear, single reduction

BRAKES

Service brakesHydraulically actuated, wet disc brakes actuate on four wheels
 Parking brakeWet disc brake
 Emergency brakeParking brake is commonly used

STEERING SYSTEM

TypeArticulated type, full-hydraulic power steering with orbit-roll system
 Steering angle40° each direction
 Minimum turning radius at the center of outside tire**5900 mm** 19'4"

HYDRAULIC SYSTEM

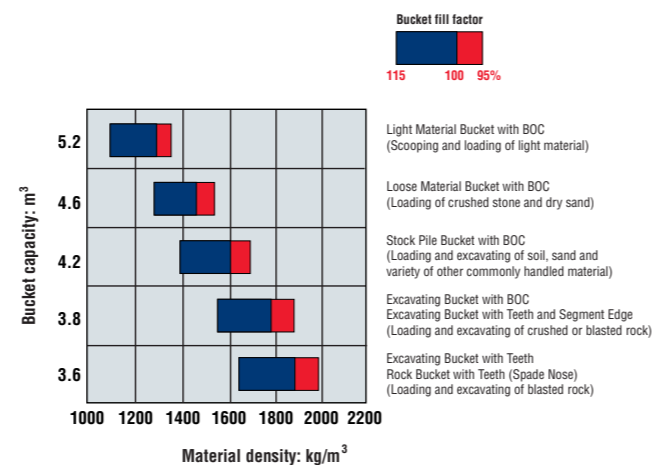
Steering system:
 Hydraulic pumpGear pump
 Capacity**146 ltr/min** 38.6 U.S. gal/min at rated rpm
 Relief valve setting**210 kgf/cm²** 3,000 psi
 Hydraulic cylinders:
 TypeDouble-acting, piston type
 Number of cylinders2
 Bore x stroke**100 mm x 441 mm** 3.9" x 17.3"

Loader control:
 Hydraulic pumpGear pump
 Capacity**303 + 120 ltr/min** 80.0 + 31.7 U.S. gal/min at rated rpm
 Relief valve setting**210 kgf/cm²** 3,000 psi
 Hydraulic cylinders:
 TypeDouble-acting, piston type
 Number of cylinders—bore x stroke:
 Boom cylinder**2—180 mm x 764 mm** 7.1" x 30.0"
 Bucket cylinder**1—200 mm x 575 mm** 7.9" x 22.6"
 Control valve2-spool type
 Control positions:
 BoomRaise, hold, lower, and float
 BucketTilt-back, hold, and dump
 Hydraulic cycle time (rated load in bucket)
 Raise6.0 sec
 Dump1.4 sec
 Lower (Empty)3.7 sec

SERVICE REFILL CAPACITIES

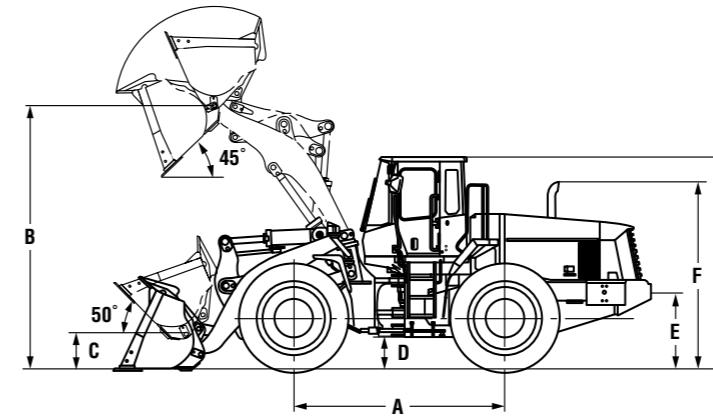
Cooling system**50 ltr** 13.2 U.S. gal
 Fuel tank**390 ltr** 103.0 U.S. gal
 Engine**38 ltr** 10.0 U.S. gal
 Hydraulic system**186 ltr** 49.1 U.S. gal
 Axle (each front and rear)**52 ltr** 13.7 U.S. gal
 Torque converter and transmission**60 ltr** 15.9 U.S. gal

BUCKET SELECTION GUIDE



DIMENSIONS

Measured with 23.5-25-20PR (L3) tires



Tread	2300 mm	7'7"
Width over tires	2920 mm	9'7"
A Wheelbase	3450 mm	11'4"
B Hinge pin height, max. height	4295 mm	14'1"
C Hinge pin height, carry position	585 mm	1'11"
D Ground clearance	460 mm	1'6"
E Hitch height	1175 mm	3'10"
F Overall height, top of the stack	3015 mm	9'11"
G Overall height, ROPS cab	3395 mm	11'2"

	General Purpose Buckets					Rock Bucket	Loose Material Bucket	Light Material Bucket
	Stockpile		Excavating					
	Bolt-on Cutting Edges	Teeth	Bolt-on Cutting Edges	Teeth and Segments	Teeth			
Bucket capacity: heaped	4.2 m ³	3.9 m ³	3.8 m ³	3.8 m ³	3.6 m ³	3.6 m ³	4.6 m ³	5.2 m ³
struck	5.5 yd ³	5.1 yd ³	5.0 yd ³	5.0 yd ³	4.7 yd ³	4.7 yd ³	6.0 yd ³	6.8 yd ³
	3.5 m ³	3.3 m ³	3.2 m ³	3.2 m ³	3.1 m ³	3.1 m ³	3.9 m ³	4.5 m ³
	4.6 yd ³	4.3 yd ³	4.2 yd ³	4.2 yd ³	4.1 yd ³	4.1 yd ³	5.1 yd ³	5.9 yd ³
Bucket width	3170 mm	3190 mm	3170 mm	3190 mm	3190 mm	3170 mm	3170 mm	3170 mm
	10'5"	10'6"	10'5"	10'6"	10'6"	10'5"	10'5"	10'5"
Bucket weight	2050 kg	1970 kg	2150 kg	2200 kg	2070 kg	2165 kg	2110 kg	2185 kg
	4,519 lb	4,343 lb	4,740 lb	4,850 lb	4,564 lb	4,773 lb	4,652 lb	4,817 lb
Dumping clearance, max. height and 45° dump angle*	3120 mm	2995 mm	3170 mm	3045 mm	3045 mm	2910 mm	2990 mm	2970 mm
	10'3"	9'10"	10'5"	10'0"	10'0"	9'7"	9'10"	9'9"
Reach at max. height and 45° dump angle*	1305 mm	1405 mm	1255 mm	1355 mm	1355 mm	1505 mm	1435 mm	1455 mm
	4'3"	4'7"	4'1"	4'5"	4'5"	4'11"	4'8"	4'9"
Reach at 2130 mm (7') clearance and 45° dump angle	1980 mm	2020 mm	1950 mm	1995 mm	1955 mm	2080 mm	2050 mm	2060 mm
	6'6"	6'8"	6'5"	6'7"	6'5"	6'10"	6'9"	6'9"
Reach with arm horizontal and bucket level	2820 mm	2975 mm	2750 mm	2905 mm	2905 mm	3105 mm	3005 mm	3030 mm
	9'3"	9'9"	9'0"	9'6"	9'6"	10'2"	9'10"	9'11"
Operating height (fully raised)	5895 mm	5895 mm	5810 mm	5810 mm	5810 mm	5810 mm	5895 mm	6120 mm
	19'4"	19'4"	19'1"	19'1"	19'1"	19'1"	19'4"	20'1"
Overall length	8815 mm	8970 mm	8745 mm	8900 mm	8900 mm	9100 mm	9000 mm	9025 mm
	28'11"	29'5"	28'8"	29'2"	29'2"	29'10"	29'6"	29'7"
Loader clearance circle (bucket at carry, outside corner of bucket)	13960 mm	14080 mm	13930 mm	14040 mm	14040 mm	13970 mm	14060 mm	14080 mm
	45'10"	46'2"	45'8"	46'1"	46'1"	45'10"	46'2"	46'2"
Digging depth: 0°	145 mm	165 mm	145 mm	165 mm	165 mm	150 mm	145 mm	145 mm
	5.7"	6.5"	5.7"	6.5"	6.5"	5.9"	5.7"	5.7"
10°	380 mm	425 mm	370 mm	415 mm	415 mm	435 mm	410 mm	415 mm
	1'3"	1'5"	1'3"	1'4"	1'4"	1'5"	1'4"	1'4"
Static tipping load: straight	16700 kg	16780 kg	16490 kg	16440 kg	16570 kg	16475 kg	16530 kg	16455 kg
	36,817 lb	36,993 lb	36,354 lb	36,244 lb	36,530 lb	36,321 lb	36,442 lb	36,277 lb
40° full turn	14530 kg	14610 kg	14325 kg	14275 kg	14405 kg	14310 kg	14365 kg	14290 kg
	32,033 lb	32,209 lb	31,581 lb	31,471 lb	31,757 lb	31,548 lb	31,669 lb	31,504 lb
Breakout force	192 kN	207 kN	203 kN	209 kN	220 kN	190 kN	168 kN	165 kN
	43,162 lb	46,534 lb	45,634 lb	46,983 lb	49,456 lb	42,712 lb	37,766 lb	37,092 lb
Operating weight	21600 kg	21520 kg	21700 kg	21750 kg	21620 kg	21715 kg	21660 kg	21735 kg
	47,619 lb	47,443 lb	47,840 lb	47,950 lb	47,663 lb	47,873 lb	47,752 lb	47,917 lb

* At the end of tooth or B.O.C.

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.



WEIGHT CHANGES

Tires	Operating weight		Tipping load straight		Tipping load full turn		Width over tires		Ground clearance		Change in vertical dimensions	
	kg	lb	kg	lb	kg	lb	mm	ft in	mm	ft in	mm	ft in
23.5-25-20PR(L-3)	0	0	0	0	0	0	2920	9'7"	460	1'6"	0	0
23.5-25-20PR(L-2)	-310	-683	-240	-529	-210	-463	2920	9'7"	460	1'6"	0	0
26.5-25-16PR(L-3)	+305	+672	+240	+529	+210	+463	3010	9'11"	525	1'9"	+65	3"
26.5-25-20PR(L-4)	+730	+1,609	+570	+1,257	+500	+1,102	3010	9'11"	525	1'9"	+65	3"
Remove ROPS cab	-660	-1,455	-610	-1,345	-590	-1,300						
Install additional counterweight	+400	+880	+1030	+2,270	+860	+1,895						
Install front/rear compartment	+120	+265	+110	+243	+105	+230						



STANDARD EQUIPMENT

- 2-spool valve for boom and bucket controls
- Alternator, 35 A
- Auto shift transmission with mode select system
- Back-up alarm
- Back-up lamp
- Batteries, **150 Ah**/2 x 12 V
- Boom kick-out
- Bucket positioner
- Counterweight
- Directional signal
- EMMS (Equipment Management Monitoring System)
- Engine, Komatsu SAA6D125E-3 diesel
- Engine shut-off system, electric
- Hard water area arrangement (corrosion resister)
- Hydraulic-driven fan with reverse rotation
- Lift cylinders and bucket cylinder
- Loader linkage with standard lift arm
- Main monitor panel with speedometer
- PPC fingertip control, two levers
- Radiator mask, lattice type
- Seat, suspension type with reclining
- Service brakes, wet disc type
- Starting motor, **7.5 kW**/24 V
- Steering wheel, tiltable
- Swing-out aftercooler and oil cooler
- Tires (23.5-25-20PR, L3 tubeless) and rims
- Transmission, 4 forward and 4 reverse



OPTIONAL EQUIPMENT

- 3-spool valve
- Additional counterweight
- Additional fuel filter
- Air conditioner
- Air conditioner side louver
- Alternator, 50 A
- Alternator, 90 A
- AM/FM radio
- AM/FM stereo radio cassette
- Auto air conditioner
- Automatic greasing
- Battery disconnect switch
- Brake cooling system
- Bucket teeth (bolt-on type)
- Bucket teeth (tip type)
- Counterweight for log
- Cutting edge (bolt-on type)
- Deluxe suspension seat
- ECSS (Electronically Controlled Suspension System)
- Emergency steering (SAE)
- Engine pre-cleaner with extension
- EPC fingertip control levers with automatic leveler and positioner
- Floor mat
- Front fender
- Heater and defroster
- High lift arm
- Joystick steering
- Limited slip differential (F&R)
- Load meter, new type
- Lock-up clutch torque converter
- Log grapple
- Ordinary spare parts
- Power train guard
- Rear defroster (electric)
- Rear fender
- Rearview mirror
- Rear window washer and wiper
- Remote grease (lift arm pivot pin)
- ROPS/FOPS cab
- ROPS/FOPS canopy
- Seat belt
- Single lever, loader control
- Starting motor, **11 kW**
- Sun visor
- Tool kit
- Vandalism protection kit
- Water separator

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