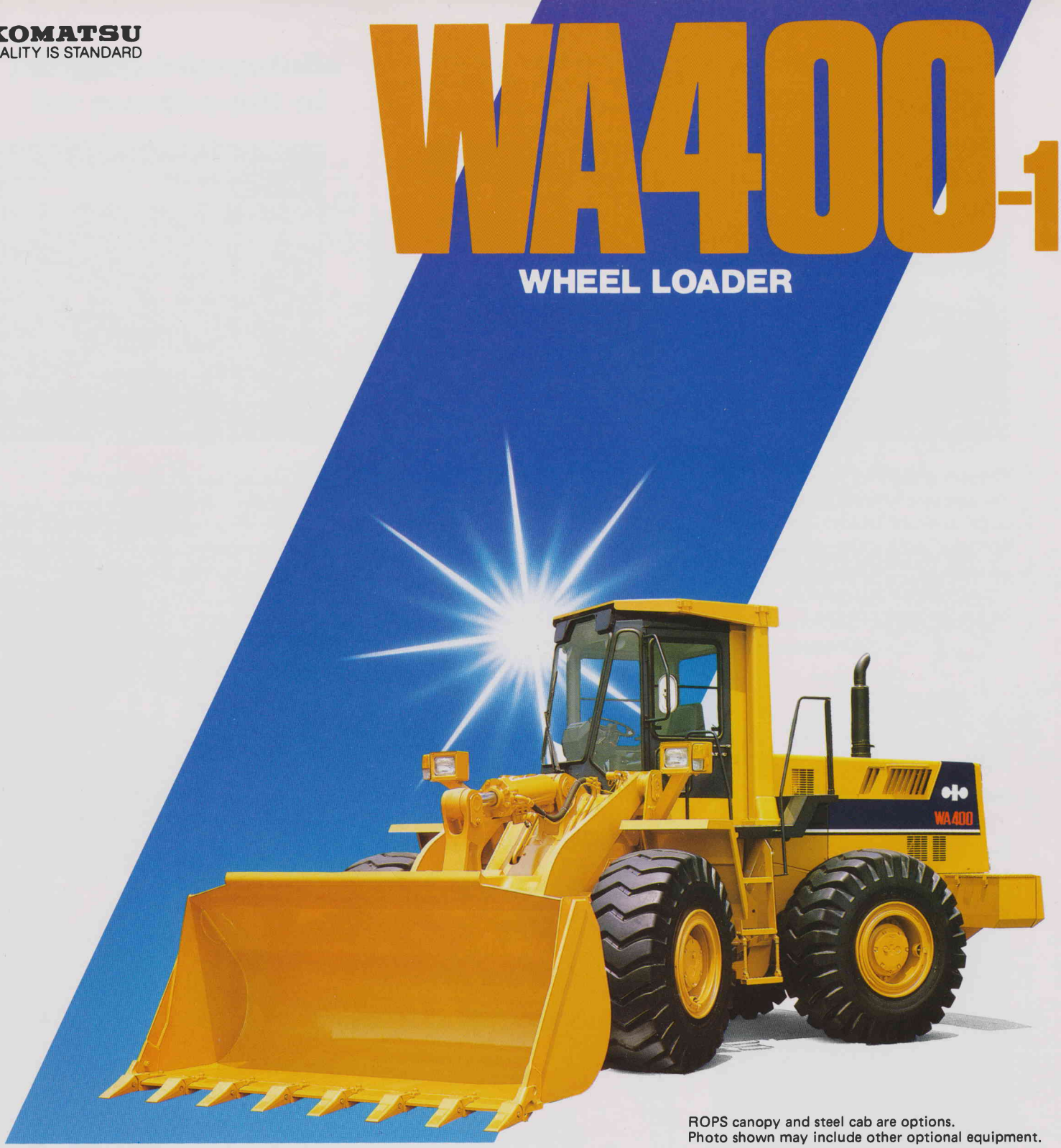
KOMATSU
THE QUALITY IS STANDARD

WA400-1

WHEEL LOADER



ROPS canopy and steel cab are options.
Photo shown may include other optional equipment.

KOMATSU VANGUARD SERIES

- *Komatsu-built components throughout the machine assure years of reliability and high-performance service.*
- *Fingertip control with a smooth, electrically controlled transmission (ELECTRAN) provide high maneuverability.*
- *A tiltable steering wheel and an optional, fully adjustable suspension seat offer ideal conditions for every operator.*
- *An electronic display and monitoring system (EDIMOS) allows monitoring from the operator's compartment.*
- *The electric system for safety (ESS) promotes foolproof operation.*
- *Wet disc brakes ensure highly reliable operation.*
- *Torque proportioning differentials minimize tire slippage for extended tire life.*
- *Outstanding performance boosts productivity.*

Flywheel horsepower: 197 HP (147 kW) at 2300 RPM Bucket capacity: 3.1 m^3 (4.1 cu.yd)
Operating weight: 16840 kg (37,130 lb)

Highly responsive and maneuverable

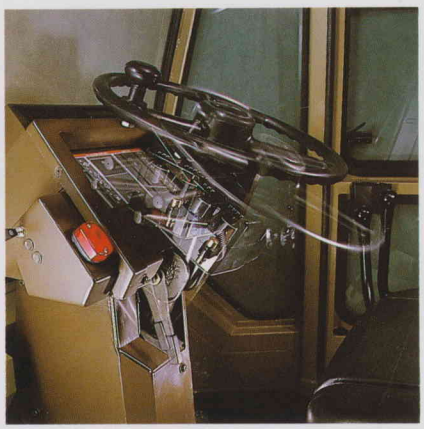
Fingertip control is realized with the electrically controlled transmission (ELECTRAN), assuring responsive, light-touch manipulation of the speed control and direction change levers provided on the side of the steering column.

Smooth, light-touch steering: The demand valve system guarantees light-touch steering at all times. An advanced hydraulic design in the steering circuit gives the WA400-1 a smooth steering action and maximizes operator comfort while minimizing soil spillage.

Enhanced comfort in the cab

Spacious, comfortable cab (optional): The use a cab with expansive tinted glass relaxes the operator and improves his visibility. Ergonomically arranged instruments, control levers and pedals boost operating efficiency. The cab is mounted on the rear frame with rubber pads to minimize noise and vibration.

An efficient operating environment



The steering wheel smoothly tilts within a 100 mm (4'') range, offering ideal steering conditons for every operator.

Oil-suspension seat (optional): The seat is up/down and fore/aft adjustable with cushion hardness also varying according to the operator.

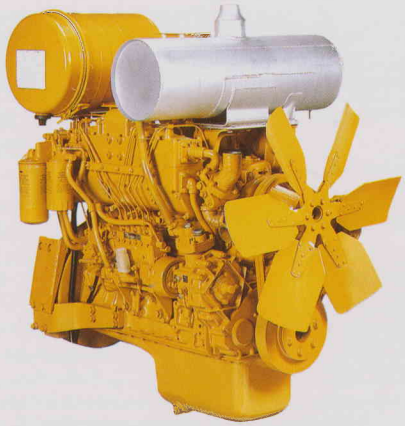
High component reliability: All components are designed and manufactured by Komatsu for maximum reliability and performance.

High performance for more production

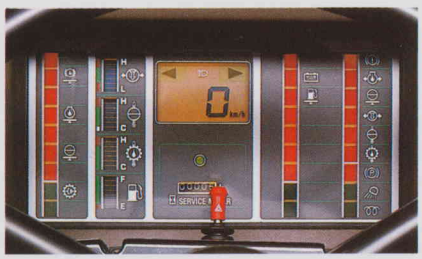
Outstanding bucket and loader performance: Powerful breakout foce, high dumping clearance, large dumping reach and smooth, fast movement enable the WA400-1 to achieve outstanding bucket and loader performance for high productivity.

High machine stability: A center-pin-supported rear axle and large oscillation angle maintain level operation on even the roughest surfaces. This, plus a long wheel-base, wide tread and large static tipping load, give the WA400-1 high stability for efficient digging/carrying operations.

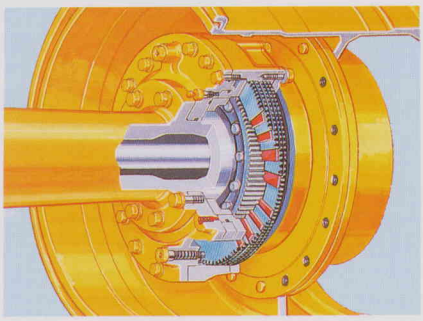
The Komatsu SA6D110 diesel engine delivers a lugging 197 HP (147 kW). This dynamically balanced 6-cylinder engine assures quiet, economical operation.



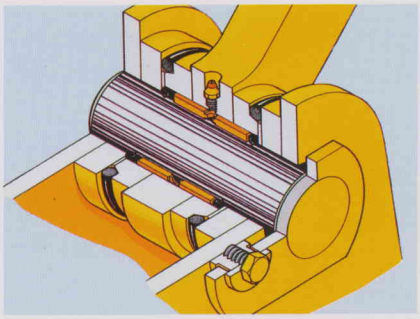
Minimum maintenance for less downtime



The electronic display and monitoring system (EDIMOS): All important checkpoints are monitored and the operator is alerted through the sophisticated display panel in the event of a malfunction or emergency. The Electric System for Safety (ESS) promotes foolproof operation.



Wet, multiple-disc brakes are adjustment-free. Sure braking performance is maintained even when the machine is operated on muddy terrain. The torque proportioning differential minimizes tire slippage for extended tire life.



Sealed loader linkage pins need less maintenance. Bucket hinge and linkage pins are lubricated and protected by dust seals and cord rings as are all loader linkage pins. As a result, lubrication intervals are greatly extended.

SPECIFICATIONS

ENGINE

The Komatsu SA6D110, is a 4-stroke, water-cooled, overhead valve, direct-injection turbocharged diesel engine with an after-cooler. It includes six cylinders with a 110 mm (4.3") bore x 125 mm (4.9") stroke and a 7.13 ltr. (435 cu.in) piston dispalcement.

Flywheel horsepower:

197 HP (147 kW) at 2200 RPM (SAE J1349)
200 PS at 2200 RPM (DIN 6270 NET)

Direct-injection fuel system. All-speed mechanical governor. Gear-pump-driven force-lubrication with full-flow filters. All filters are spin-on type for easy maintenance. Dry, cyclo-pack air cleaner for longer element service. 24 V/7.5 kW electric starting motor. 24 V/25 A alternator. 2 x 12 V/150 Ah batteries.

TRANSMISSION

3-element, single-stage, single-phase torque converter. Full powershift, planetary-gear type transmission. A modulating function assures shockless speed and directional changes without braking. An electrically controlled transmission allows fingertip control with speed and directional change levers. A neutral safety circuit allows starting only when the speed control lever is in neutral.

Travel speed km/h (MPH)

	Forward	Reverse
1st	0–6.8 (4.2)	0–7.4 (4.6)
2nd	0–11.9 (7.4)	0–13.3 (8.3)
3rd	0–20.2 (12.6)	0–22.2 (13.8)
4th	0–33.5 (20.8)	0–35.8 (22.2)

AXLES & FINAL DRIVES

Four-wheel drive system. A full-floating front axle is fixed to the front frame. Center-pin-supported, full-floating rear axle with a large oscillation of ±15°. A spiral bevel gear for reduction and a planetary gear for final reduction. Front and rear torque proportioning differentials of the straight bevel gear minimizes tire slippage, especially on soft terrain.

BRAKES

Service brakes: Air-over-hydraulic, wet, multiple-disc, brakes actuate all four-wheels. Two brake pedals provided. The right for normal braking; the left offers not only normal braking but also braking + transmission neutralizing in case the transmission cut-off switch is turned on.

Parking brake: Dry disc type, air released, spring applied on front axle pinion shaft.

Emergency brake: The parking brake is automatically actuated as an emergency brake when air pressure goes below the rated value.

TIRES

Front and rear: 23.5 -25-12PR (L-3) tubeless.
Rims: 19.5 x 25 WTB.

STEERING SYSTEM

Center-pivot frame articulation. Mechanical follow-up type, full-hydraulic power assisted steering independent of engine RPMs. A wide articulation angle of 40° on each side for a minimum turning radius of 6505 mm (21'4") at the outside corner of the bucket.

BOOM & BUCKET

Z-bar loader linkages are made of high-tensile-strength steel for maximum rigidity and offer powerful excavation. Rap-out loader linkage design enables shock dumping to fall off sticky materials. Sealed loader linkage pins with dust seals and cord rings extend greasing intervals. The bucket is also made of high-tensile-strength steel. Bucket corner teeth (optional) not only minimize bucket wear but also increase penetrating force.

BUCKET CONTROLS

Little effort is required to operate the bucket and boom control levers, assuring smooth, responsive bucket/boom action. In addition, the bucket positioner and the boom kickout device (optional) facilitate repeated digging/loading operations.

Control positions:

Boom . . . . . Raise, hold, lower and float
Bucket . . . . . Tilt-back, hold and dump

HYDRAULIC SYSTEM

Two gear pumps for loader control.

Capacity (discharge flow) at engine 2200 RPM

Loader pump . . . . . 170 ltr. (44.9 U.S. gal)/min.
Switch pump . . . . . 134 ltr. (35.4 U.S. gal)/min.

Relief valve setting . . . . . 210 kg/cm^2 (2990 PSI/20.6 MPa)

Control valves:

A 2-spool type control valve and a steering valve with a demand valve.

Hydraulic cylinders	Number of cylinders	Bore	Stroke
Boom	2	160 mm (6.30")	769 mm (30.28")
Bucket	1	200 mm (7.87")	485 mm (19.09")

SERVICE REFILL CAPACITIES

Cooling system	52 ltr. (13.7 U.S. gal)
Fuel tank	293 ltr. (77.4 U.S. gal)
Engine	22 ltr. (5.8 U.S. gal)
Brake oil	7 ltr. (1.8 U.S. gal)
Hydraulic system	103 ltr. (27.2 U.S. gal)
Axle (each front and rear)	62 ltr. (16.4 U.S. gal)
Torque converter and transmission	54 ltr. (14.3 U.S. gal)

OPERATING WEIGHT

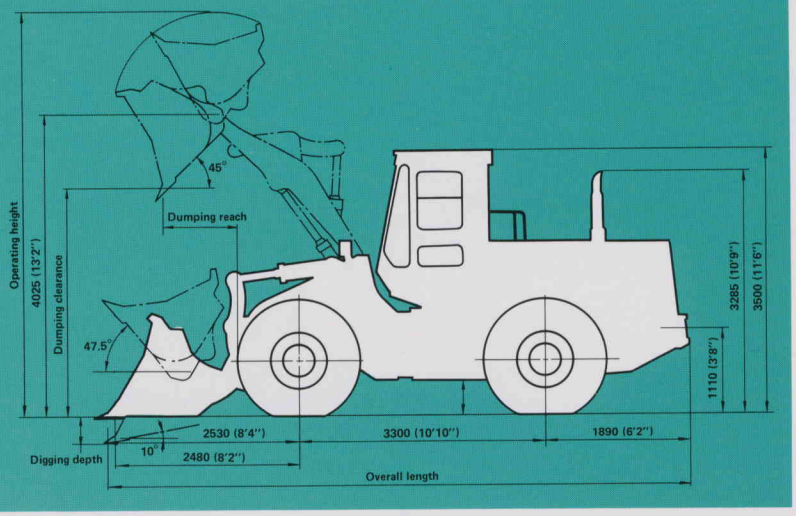
Operating weight, including rated capacity of lubricant, coolant, full fuel tank, 23.5-25-12PR (L-3) tubeless tires, 3.1 m^3 (4.1 cu.yd) capacity bucket and other standard equipment: 16840 kg (37,130 lb)

DIMENSIONS

ROPS canopy and steel cab are options. Unit: mm (ft.in)

Dimensions vary with tires

Tire size and code	23.5-25-12PR (L-3) tubeless	23.5-25-12PR (L-2) tubeless	23.5-25-16PR (L-3) tubeless	23.5-25-20PR (L-3) tubeless
Tread	2200 mm (7'3")	2200 mm (7'3")	2200 mm (7'3")	2200 mm (7'3")
Width over tires	2820 mm (9'3")	2815 mm (9'3")	2835 mm (9'4")	2835 mm (9'4")
Change in vertical dimension	0	0	0	0
Change in reach	0	0	0	0
Change in digging depth				
0°	0	0	0	0
10°	0	0	0	0
Change in overall length				
Bucket on ground	0	0	0	0
Bucket at carry	0	0	0	0



Usage		Stockpile	Excavation	Excavation
Bucket type		Straight edge	Straight edge	Spade nose
Bucket capacity	SAE rated	3.1 m³ (4.1 cu.yd)	2.8 m³ (3.7 cu.yd)	2.8 m³ (3.7 cu.yd)
	Struck	2.6 m³ (3.4 cu.yd)	2.4 m³ (3.1 cu.yd)	2.5 m³ (3.3 cu.yd)
Bucket width		2925 mm (9'7")	2925 mm (9'7")	2925 mm (9'7")
Static tipping load	Straight	12510 kg (27,580 lb)	12610 kg (27,800 lb)	12460 kg (27,470 lb)
	Full turn	10540 kg (23,240 lb)	10630 kg (23,430 lb)	10500 kg (23,150 lb)
Dumping clearance, max. height and 45° dump angle		2995 mm (9'10")	3050 mm (10')	2930 mm (9'7")
Reach at 2130 mm (7') cut edge clearance and 45° dump angle		1665 mm (5'6")	1635 mm (5'4")	1700 mm (5'7")
Reach at max. height and 45° dump angle		1075 mm (3'6")	1015 mm (3'4")	1135 mm (3'9")
Reach with arm horizontal and bucket level		2415 mm (7'11")	2335 mm (7'8")	2500 mm (8'2")
Operating height (fully raised)		5435 mm (17'10")	5380 mm (17'8")	5495 mm (18')
Overall length	Bucket on ground	7720 mm (25'4")	7640 mm (25'1")	7805 mm (25'7")
	Bucket at carry	7670 mm (25'2")	7615 mm (25')	7725 mm (25'4")
Turning radius (bucket at carry, outside corner of bucket)		6505 mm (21'4")	6485 mm (21'3")	6470 mm (21'3")
Digging depth	0°	60 mm (2.4")	60 mm (2.4")	60 mm (2.4")
	10°	275 mm (10.8")	260 mm (10.2")	290 mm (11.4")
Lifting capacity (SAE carry)		17020 kg (37,520 lb)	17080 kg (37,650 lb)	16860 kg (37,170 lb)
Breakout force (bucket cylinder)		18450 kg (40,670 lb)	19535 kg (43,070 lb)	16900 kg (37,260 lb)
Rated load		4960 kg (10,930 lb)	4960 kg (10,930 lb)	4960 kg (10,930 lb)
Operating weight		16840 kg (37,130 lb)	16855 kg (37,160 lb)	16935 kg (37,330 lb)

- All dimensions, weights and performance values based on SAE J-732C and J742b standards.
- Concerning increases or decreases according to tire size, refer to the table in DIMENSIONS.
- Static tipping load and operating weight shown include 23.5-25-12PR (L-3) tubeless tires without ballast in rear, lubricants, coolant, full fuel tank and operator. Machine stability and operating weight are affected by counterweight, tire size and other attachments. Use either tire ballast or counterweight, not both. Add the following weight changes to operating weight and static tipping load.

Weight changes

Tires and options	Change in operating weight	Change in tipping load	
		Straight	Full turn
23.5-25-12PR (L-3) tubeless tires	0/*+1050 kg (2,315 lb)	0/*+1615 kg (3,560 lb)	0/*+1355 kg (2,990 lb)
23.5-25-12PR (L-2) tubeless tires	−305 kg (672 lb)	−240 kg (529 lb)	−200 kg (441 lb)
23.5-25-16PR (L-3) tubeless tires	+70 kg (154 lb)/ *+1050 kg (2,315 lb)	+55 kg (121 lb)/ *+1670 kg (3,682 lb)	+45 kg (99 lb)/ *+1400 kg (3,086 lb)
23.5-25-20PR (L-3) tubeless tires	+135 kg (298 lb)/ *+1050 kg (2,315 lb)	+105 kg (231 lb)/ *+1720 kg (3,792 lb)	+85 kg (187 lb)/ *+1400 kg (3,086 lb)
Canopy	+63 kg (139 lb)	+65 kg (143 lb)	+55 kg (121 lb)
ROPS canopy	+470 kg (1,036 lb)	+480 kg (1,058 lb)	+405 kg (893 lb)
Steel cab	+288 kg (635 lb)	+265 kg (584 lb)	+220 kg (485 lb)
Headguard	+141 kg (311 lb)	+150 kg (331 lb)	+125 kg (276 lb)
Front half fenders	+65 kg (143 lb)	+30 kg (66 lb)	+25 kg (55 lb)
Rear half fenders	+40 kg (88 lb)	+20 kg (44 lb)	+15 kg (33 lb)
Bucket teeth (unitized)	+143 kg (315 lb)	−160 kg (353 lb)	−160 kg (353 lb)
Bucket teeth (tip type)	+162 kg (357 lb)	−185 kg (408 lb)	−185 kg (408 lb)
Bolt-on edges	+227 kg (500 lb)	−245 kg (540 lb)	−245 kg (540 lb)
Counterweight (for loggers)	+860 kg (1,896 lb)	+2020 kg (4,453 lb)	+1695 kg (3,737 lb)
Additional counterweight	+300 kg (661 lb)	+705 kg (1,554 lb)	+509 kg (1,122 lb)

* Filled with $CaCl_2$ liquid in rear tires.

STANDARD EQUIPMENT

Engine and cooling system: Starter. Alternator. Preheater.
Electrical components: Head lights (2). Rear working lights (2). Brake lamp of tail lamp. Turn indicators (front and rear). Electronic display/monitoring system.
Gauges: Fuel level. Coolant temperature. Torque converter oil temperature. Air pressure. Speedometer. Service meter.

Pilot lamps: Engine preheating. High-beam. Working light. Turn indicators. Parking brake applied . Transmission cutoff.
Monitor lights: Engine oil level. Brake oil level. Coolant level.
Caution lamps: Battery charging. Fuel level.
Caution lamps with alarm: Engine oil pressure. Coolant level. Coolant temperature. Torque converter oil temperature. Brake oil level. Brake oil pressure. Air pressure. Parking and neutral.

Others: Sight gauges (hydraulic reservoir level and brake oil level). Dust indicator. Emergency brake. Bucket positioner. General-purpose bucket, 3.1 m^3 (4.1 cu.yd). 23.5-25-12PR (L-3) tubeless tires.

OPTIONAL EQUIPMENT

ROPS canopy
Canopy
Steel cab
Seatbelt
Air conditioner
Heater and defroster
Windshield wiper and washer
Floor mat
Sun visor
Car radio
Fire extinguisher
Suspension seat
Front fender
Rear half fender
Tire inflation kit
Vandalism protection kit
Emergency steering
Backup alarm
Front working lights
Rear-view mirrors

Work equipment:
Bucket teeth (unitized)
Bucket teeth (tip type)
Bucket corner teeth
Bolt-on cutting edges
Boom kickout
3-spool control valve
Hydraulic adaptor kit
Log clamp
Lumber clamp
Log lumber clamp
Log lumber fork
Multipurpose bucket

Tires:
23.5-25-12PR (L-2) tubeless
23.5-25-16PR (L-3) tubeless
23.5-25-16PR (L-2) tubeless
23.5-25-20PR (L-3) tubeless
23.5-25-20PR (L-2) tubeless
23.5-25-20PR (L-3) tubeless with steel breaker
23.5-25-20PR (L-3) tubeless with side steel breaker
23.5-25 radial tubeless

This specification sheet may contain attachments and optional equipment that are not available in your area. Please consult your local Komatsu distributor for those items you may require. Materials and specifications are subject to change without notice.

KOMATSU

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