

# KOMATSU WA 500-1

## WHEEL LOADER



Flywheel Horsepower @ 2100 RPM  
Cummins Powered **291 HP** 217 kW  
Operating Weight **63,711 lb** 28,899kg  
Bucket Capacity **6.05 yd<sup>3</sup>** 4.6m<sup>3</sup>

Photo shown may include optional equipment.

# KOMATSU

## Efficient and Comfortable Operators Environment

**Resiliently Mounted Platform and Sound Suppressed Cab** - isolates operator from noise and vibration.

**Superior Visibility** - 47% of the total cab area is tinted glass, giving the operator a clear and complete view of his working environment. The result is greater operator efficiency and confidence.

**Two Door Walk - Through Cab** - provides easy entrance and exit from either side of the machine.



**Electronic Display and Monitoring System** - is a highly effective and reliable display/warning system which continuously monitors all operating systems. If a malfunction should occur the operator is immediately warned which system is experiencing trouble, saving downtime and repair costs. Also, gauges constantly monitor coolant temperature, transmission oil temperature, fuel level, service hours and speed. Komatsu's transmission safety system insures the engine cannot be started unless the transmission is in neutral.



**Adjustable Suspension Seat** - ergonomically designed and fully adjustable for maximum operator comfort.

- Fabric seat covering
- Adjustable suspension firmness
- Backrest angle adjustment
- Seat height and tilt adjustment
- **3.9"** 100 mm vertical suspension stroke
- **6.9"** 160 mm fore and aft adjustment

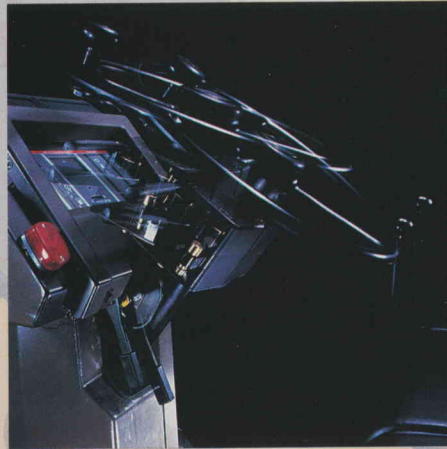
**Efficient Layout of Controls** - Komatsu engineers designed the WA 500-1 around the operator. The most critical controls, such as Electran Shift, work equipment controls and Kick Down Switch are conveniently located for low-effort finger tip operation - increasing operator efficiency and machine productivity.



**Electrically Controlled Transmission** - allows the operator to quickly and easily shift gears without removing his hand from the steering wheel. Adjustable length shift levers send an electrical signal to a solenoid on the transmission control valve, so gear changes are smooth and easy.



**Tilt Steering Column** - has a 4" 100mm tilt range, allowing operator to select his optimum position for comfort.



**Proportional Pressure Equipment Control Valve** - improves work equipment response and provides superior fine control over a wide range of lever stroke.



**Demand Valve Steering** - guarantees smooth, constant steering regardless of engine speed, providing easy machine operation, fast cycle times and increased maneuverability.

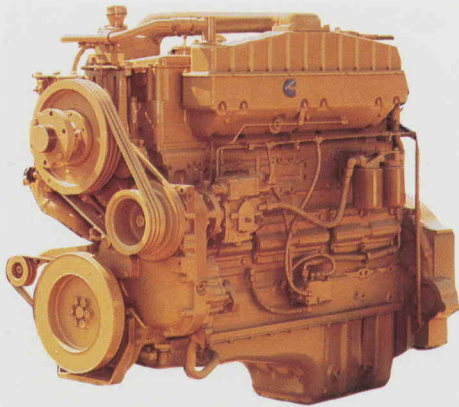
**Kickdown Switch** - located on top of the boom control lever.

- The Komatsu Kickdown Switch provides faster cycle times and reduced operator effort.
- As the loader bucket penetrates the pile, depressing the switch immediately shifts the transmission from F2 to F1.
- This enables the machine to fully utilize its maximum loading power for big bucket payloads while allowing the operator to keep his hand on the steering wheel.
- Once the bucket is loaded, a simple flick of the directional lever to reverse automatically puts the transmission in R2 for faster reverse cycle times.

The transmission modulation feature minimizes shock generated during gear changes, assuring a smooth and comfortable ride and protection for the power train components.



**Cummins NTA 855 Engine** - delivers the power and efficiency to get the job done quickly and cost effectively, while providing maximum reliability and durability.



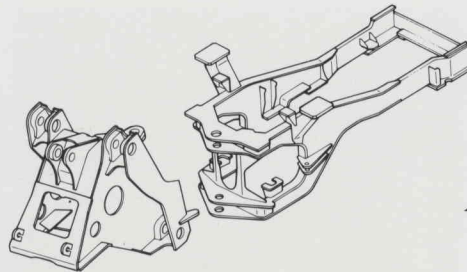
**Heavy-Duty Features** - cummins 14-liter (855 cubic inch) engine has long been the standard of the industry for reliability and durability. And recent refinement to the NT, including dual Ni-Resist pistons, lower press-fit liners and top-stop injectors make it an even tougher engine.

**Lower Press-Fit Liners** - The liner press-fit is lower in the block to increase liner stability and reduce liner movement. By minimizing liner movement, the liner is less prone to damage from liner pitting or cavitation corrosion. The end result is a liner that provides a longer life to overhaul.

**"Pulse" Type Exhaust Manifold** - The "pulse" type design of the NT manifold controls and preserves exhaust pulse energy to the turbo through optimized exhaust passages in the manifold and cylinder heads. The end result is increased durability as well as excellent turbo response and fuel economy.

**Large-Diameter Camshaft** - The single large-diameter flangeless camshaft has a crowned design for both the camshaft journal and cam follower rollers, thus reducing contact roller stress. Forged and induction-hardened camshafts with crown rollers result in outstanding reliability and durability.

**Box-Section Rear Frame** - a strong and sturdy backbone for the WA 500-1. The box-section design absorbs shock and torsional loads, provides a rigid structure for maintaining driveline alignment for long component life.



**Four Plate Loader Tower** - ensures the highest durability even under the severest loading conditions. The lift arms, lift cylinders, and bucket cylinders are attached at both sides to resist shocks and corner loading stress.

**Solid Plate Lift Arms & Single Z-Bar** - for maximum strength and visibility. Cast-steel cross tube assures proper pin bore alignment extending pin life. Single Z-bar provides a clear view to the bucket, even distribution of loads, fewer wear and grease points

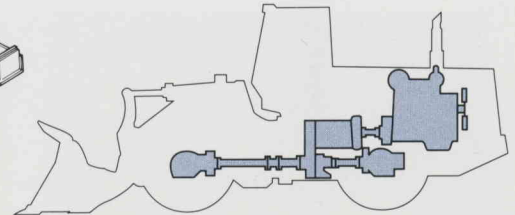
**Casting Used in High Stress Areas** - provide maximum strength in high stress areas.

**Spread Center Hinge Pin Design** - reduces stress loads on hinge pins and roller bearings for longer life and excellent service access.

**Sealed Loader Linkage Pins** - features internal lip seals and external cord rings at the bucket - to keep the grease in and contaminants out for extended grease intervals.

**Quality Welds** - majority of welds are performed by robots. Consistent welds with superior penetration and exceptional plate fusion yield strong, fatigue resistant welds.

The proven Komatsu components provide the most reliable and durable power train system in the industry. Producing high production at a low cost.



**Multiple Oil Disc Brakes** - completely sealed and adjustment free. The brake circuit is divided into the front and rear wheel systems with independent piping and brake fluid reservoirs.

**Planetary Power Shift Transmission** - electronic shifting with modulation valve provides smooth consistent shifts with light effort finger-tip control.

Large diameter clutches and highly heat resistant linings coupled with high contact planetary gear sets provide high torque carrying capacity for outstanding reliability and durability.

**Heavy-Duty Axles** - have been designed to withstand the stress encountered during tough digging conditions. Axle shafts are full-floating to carry torque but not the weight of the machine.

**Torque Converter** - the Komatsu three-element, single-stage, single-phase torque converter automatically modulates power flow from the engine to the transmission and acts as a fluid coupling to effectively absorb drive train shock loads.

## Buckets

Komatsu buckets are designed to provide aggressive loading for maximum productivity.



**High-Tensile Strength Steel Construction** - provides high wear resistance and excellent resistance to twisting and distortion when under heavy loads.

**Integral Rock Guard** - helps prevent spillage and maximize load retention.

## Special Configuration

### High Lift Arrangement

- Excellent alternative for where a larger loader might be too much machine.
- Longer lift arms get the load up higher - doesn't sacrifice digging force.



- Sufficient Dump Clearance to load 35-50 ton dump trucks.
- **11'10"** 3615 mm vertical dump clearance.

### Electronically Controlled Suspension System

- provides a softer ride during load and carry operation. Increasing productivity and lowering operating costs.

## Serviceability

Fast, and easy servicing has been designed right into the WA500. This means less downtime and more production.



**Electronic Display and Monitoring System** - in the operator's compartment allows the operator to make pre-starting checks from his seat.

Swing-up and Swing-out doors provide convenient access to:

- Engine dipstick and filler port
- Engine oil filters
- Fuel Filter
- Corrosion Resistor
- Air Cleaner
- Air filter service indicator
- Alternator
- P.P.C. circuit strainer.

Ground Level fueling.

Sight gauges for hydraulic tank and brake oil tank.

Centralized lube points provide ground level greasing.

Remote Drain Ports for engine oil and radiator.

Batteries are easily accessible through hinged doors at the rear bumper.



## Specifications

### Engine

The Cummins NTA is a 855 is a 4-stroke, water-cooled, overhead valve, direct-injection turbocharged aftercooled diesel engine with 6 cylinders and a **5.51"** 140 mm bore x **6.00"** 152 mm stroke for a **855 cu. in** 14 ltr. piston displacement.

Flywheel horsepower:

**291 HP** 217 kW at **2100 RPM** (SAE J1349)

Direct-injection fuel system. All-speed mechanical governor. Gear-pump-driven force-lubrication with full-flow filters. All filters are spin-on style for easy maintenance. Dry-type air cleaner with automatic dust evacuator. 24 V electric starting motors. 24 V/50 A alternator. 2 x 12 V/170 Ah batteries.

### Transmission

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

Travel speed	Forward		Reverse	
1st	<b>4.5 MPH</b>	0-7.3 km/h	<b>4.8 MPH</b>	0-7.8 km/h
2nd	<b>7.8 MPH</b>	0-12.6 km/h	<b>8.3 MPH</b>	0-13.4 km/h
3rd	<b>13.1 MPH</b>	0-21.1 km/h	<b>14.0 MPH</b>	0-22.5 km/h
4th	<b>21.3 MPH</b>	0-34.2 km/h	<b>22.6 MPH</b>	0-36.4 km/h

### Axle and Final Drive

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  $\pm 15^\circ$ . A spiral bevel gear for reduction, a straight bevel gear for differential and a planetary gear for final reduction.

### Brakes

**Service brakes:** Axle-by-axle, air-over-hydraulic, wet, multiple-disc brakes actuate all four wheels. Two brake pedals provided. The right for normal braking; the left offers normal braking or neutralizes the transmission when the transmission cut-off switch is activated.

**Parking brake:** Dry disc type, spring applied, air released on the front axle pinion shaft. The parking brake is automatically actuated when air pressure goes below rated PSI value.

### Tires

Select ideal tires depending on job requirements.  
See option list for available tires.  
Rims: 22.00 x 25 WTB, 25.00 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  $40^\circ$  on each side for a minimum turning radius of **23'9"** 7230 mm at the outside corner of the bucket.

### Boom & Bucket

Z-bar loader linkage is made of high-tensile-strength steel to provide maximum rigidity, fast cycle times and superior breakout force. Rap-out loader linkage design enables shock dumping to remove sticky materials. Sealed loader linkage pins fitted with dust seals and cord rings. The bucket is also constructed of high-tensile-strength steel. Bucket corner teeth increase penetrating force and minimize bucket wear.

#### Boom and Bucket Cycle Times (Standard Boom)

Raise	<b>7.3 sec.</b>
Lower	<b>3.5 sec.</b>
Dump	<b>1.7 sec.</b>
Total	<b>12.5 sec.</b>

### Bucket Controls

Proportional Pressure Control assures light-touch work-equipment control. Therefore, 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 facilitate repeated digging/loading operations.

#### Control positions:

Boom	Raise, hold, lower and float
Bucket	Roll-back, hold and dump

### Hydraulic System

Gear pumps are used for loader control and steering system.

Loader control	<b>114.7 U.S. gal/min.</b>	434 ltr./min.
Steering pump	<b>45.2 U.S. gal/min.</b>	171 ltr./min.
Relief valves	<b>3000psi</b>	210 kg/cm <sup>2</sup>

#### Control Values

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

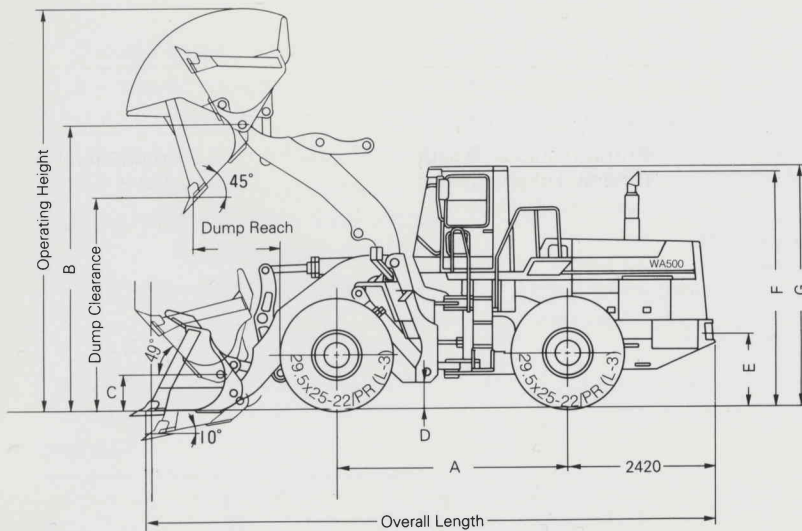
Hydraulic cylinders	Number of cylinders	Bore	Stroke
Boom	2	<b>7.9"</b> 200 mm	<b>32.5"</b> 825 mm
Bucket	1	<b>8.9"</b> 225 mm	<b>22.2"</b> 565 mm
Steering	2	<b>4.3"</b> 110 mm	<b>19.1"</b> 486 mm

### Service Refill Capacities

Cooling system	<b>21.1 U.S. gal</b>	80 ltr.
Fuel tank	<b>114 U.S. gal</b>	430 ltr.
Engine	<b>9.5 U.S. gal</b>	36 ltr.
Brake oil	<b>0.80 U.S. gal</b>	3 ltr.
Hydraulic system	<b>39.6 U.S. gal</b>	150 ltr.
Differential, final drive case (each front and rear)	<b>20.6 U.S. gal</b>	78 ltr.
Torque converter and transmission	<b>16.4 U.S. gal</b>	62 ltr.

### Operating Weight

Operating weight, including rated capacity of lubricant, coolant, full fuel tank, 29.5/25-22 PR (L-3) tires, **6.05 yd<sup>3</sup>** 4.6 m<sup>3</sup> SAE capacity bucket, ROPS canopy, cab, operator and other standard equipment: **63,711 lb** 28899 kg.



Tires	29.5-25-22/PR (L-3)	
Tread	<b>7'10"</b>	2400 mm
Width over tires	<b>10'6"</b>	3190 mm
A Wheelbase	<b>11'8"</b>	3550 mm
B Hinge pin height, max. height	<b>14'7"</b>	4445 mm
C Hinge pin height, carry position	<b>2'1"</b>	640 mm
D Ground clearance	<b>1'7"</b>	485 mm
E Hitch height	<b>3'11"</b>	1185 mm
F Overall height, top of the stack	<b>12'1"</b>	3680 mm
G Overall height, ROPS canopy	<b>12'11"</b>	3945 mm

All specs are with teeth and 29.5-25-22/PR (L-3) tires, steel cab, ROPS canopy, lubricant, full fuel and operator.

Standard Boom				High-Lift Boom	
Bucket Type		General Purpose Straight Edge w/B.O.C.	Excavation Straight Edge w/Teeth	Excavation Spade-Nose w/Teeth	Excavation Straight Edge w/Teeth
Bucket Capacity	SAE Rated	<b>6.05 cyd</b> 4.6 m <sup>3</sup>	<b>5.20 cyd</b> 4.0 m <sup>3</sup>	<b>5.20 cyd</b> 4.0 m <sup>3</sup>	<b>5.00 cyd</b> 3.8 m <sup>3</sup>
	Struck	<b>5.20 cyd</b> 4.0 m <sup>3</sup>	<b>4.30 cyd</b> 3.3 m <sup>3</sup>	<b>4.30 cyd</b> 3.3 m <sup>3</sup>	<b>4.20 cyd</b> 3.2 m <sup>3</sup>
Bucket Width		<b>11'2"</b> 3400 mm	<b>11'2"</b> 3400 mm	<b>11'2"</b> 3400 mm	<b>11'2"</b> 3400 mm
Static Tipping Loads	Straight	<b>46,892 lbs</b> 21720 kg	<b>51,136 lbs</b> 29195 kg	<b>49,924 lbs</b> 22645 kg	<b>41,083 lbs</b> 18635 kg
	Full Turn (40°)	<b>40,245 lbs</b> 18255 kg	<b>44,170 lbs</b> 20035 kg	<b>42,968 lbs</b> 19490 kg	<b>36,288 lbs</b> 16460 kg
Dump Clearance, max height and 45° dump angle		<b>10'5"</b> 3182 mm	<b>10'1"</b> 3070 mm	<b>9'6"</b> 2905 mm	<b>11'10"</b> 3615 mm
Reach at 7' (2130 mm) cutting edge clearance and 45° dump angle		<b>6'9"</b> 2063 mm	<b>7'0"</b> 2140 mm	<b>7'4"</b> 2230 mm	<b>8'3"</b> 2507 mm
Reach at maximum height and 45° dump angle		<b>4'7"</b> 1408 mm	<b>4'10"</b> 1470 mm	<b>5'4"</b> 1615 mm	<b>5'0"</b> 1520 mm
Height to hinge pin (fully raised)		<b>14'7"</b> 4445 mm	<b>14'7"</b> 4445 mm	<b>14'7"</b> 4445 mm	<b>16'3"</b> 4945 mm
Operating height (fully raised)		<b>19'11"</b> 6075 mm	<b>20'4"</b> 6185 mm	<b>20'7"</b> 6265 mm	<b>21'11"</b> 6675 mm
Overall length	Bucket on ground	<b>29'8"</b> 9053 mm	<b>30'1"</b> 9175 mm	<b>30'10"</b> 9405 mm	<b>31'3"</b> 9530 mm
	Bucket at carry	<b>29'4"</b> 8935 mm	<b>29'9"</b> 9075 mm	<b>30'3"</b> 9215 mm	<b>31'0"</b> 9455 mm
Turning Radius (bucket at carry outside corner of bucket)		<b>23'9"</b> 7230 mm	<b>23'10"</b> 7275 mm	<b>23'10"</b> 7275 mm	<b>24'8"</b> 7515 mm
Digging Depth	0°	<b>6'4"</b> 163 mm	<b>5'7"</b> 145 mm	<b>6'1"</b> 155 mm	<b>2'1"</b> 52 mm
	10°	<b>16'9"</b> 430 mm	<b>15'4"</b> 390 mm	<b>17'1"</b> 435 mm	<b>15'4"</b> 390 mm
Breakout Force		<b>55,555 lbs</b> 25200 kg	<b>59,520 lbs</b> 27000 kg	<b>50,045 lbs</b> 22700 kg	<b>56,284 lbs</b> 25530 kg
Operating Weight		<b>63,711 lbs</b> 28899 kg	<b>63,824 lbs</b> 28950 kg	<b>64,419 lbs</b> 29220 kg	<b>66,073 lbs</b> 29970 kg

- Specifications and ratings conform to all applicable standards recommended by the Society of Automotive Engineers. SAE standard J732c and J742b.
- Static tipping load and operating weight shown include 29.5-25-22PR (L-3) tires, enclosed cab, ROPS canopy, additional counterweight, lubricant, full fuel tank, and

- operator. (WA500 high lift includes high-lift counterweight)
- Machine stability and operating weight are affected by counterweight, tire size and other attachments. Use either tire ballast or counterweight, but not both.
- B.O.C. = Bolt on Cutting Edge

#### Weight Change

Tires & Options	Change in Operating Weight		Change in Static Tipping Load		Full Turn	
Additional Counterweight Removed	<b>-1,545 lbs</b>	-700 kg	<b>-3,525 lbs</b>	-1600 kg	<b>-3,085 lbs</b>	-1400 kg
ROPS Canopy (less cab)	<b>-685 lbs</b>	-310 kg	<b>-575 lbs</b>	-260 kg	<b>-560 lbs</b>	-255 kg
29.5 - 25 - 22PR (L3)	o		o		o	
w/Ballast	<b>+4,321 lbs*</b>	+1919 kg*	<b>+6,283 lbs*</b>	+2850 kg*	<b>+5,529 lbs*</b>	+2508 kg*
29.5 - 25 - 22PR (L4)	<b>+1,631 lbs</b>	+740 kg	<b>+1,219 lbs</b>	+550 kg	<b>+1,067 lbs</b>	+484 kg
w/Ballast	<b>+5,862 lbs*</b>	+2659 kg*	<b>+7,496 lbs*</b>	+3400 kg*	<b>+6,596 lbs*</b>	+2992 kg*
29.5 - 25 - 22PR (L5)	<b>+3,393 lbs</b>	+1540 kg	<b>+2,522 lbs</b>	+1144 kg	<b>+2,220 lbs</b>	+1007 kg
w/Ballast	<b>+7,826 lbs*</b>	+3550 kg*	<b>+9,103 lbs*</b>	+4129 kg*	<b>+8,012 lbs*</b>	+3634 kg*
29.5 R25 XHAT Radials	<b>+35 lbs</b>	+16 kg	<b>+26 lbs</b>	+12 kg	<b>+24 lbs</b>	+11 kg
w/Ballast	<b>+4,654 lbs*</b>	+2111 kg*	<b>+6,887 lbs*</b>	+3124 kg*	<b>+6,061 lbs*</b>	+2749 kg*
29.5 R25 XMINE D2T Radials	<b>+2,584 lbs</b>	+1172 kg	<b>+1,918 lbs</b>	+870 kg	<b>+1,689 lbs</b>	+766 kg
w/Ballast	<b>+6,559 lbs*</b>	+2975 kg*	<b>+7,824 lbs*</b>	+3549 kg*	<b>+6,885 lbs*</b>	+3123 kg*
26.5 - 25 - 20PR (L3)	<b>-758 lbs</b>	-344 kg	<b>-562 lbs</b>	-255 kg	<b>-494 lbs</b>	-224 kg
w/Ballast	<b>+2,650 lbs*</b>	+1202 kg*	<b>+4,500 lbs*</b>	+2041 kg*	<b>+3,960 lbs*</b>	+1796 kg*
26.5 - 25 - 20PR (L4)	<b>+291 lbs</b>	+132 kg	<b>+216 lbs</b>	+98 kg	<b>+190 lbs</b>	+86 kg
w/Ballast	<b>+3,020 lbs*</b>	+1370 kg*	<b>+4,270 lbs*</b>	+1937 kg*	<b>+3,759 lbs*</b>	+1705 kg*
26.5 R25 XHAT Radials	<b>-1173 lbs</b>	-532 kg	<b>-871 lbs</b>	-395 kg	<b>-767 lbs</b>	-348 kg
w/Ballast	<b>+2,517 lbs*</b>	+1142 kg*	<b>+4,610 lbs*</b>	+2091 kg*	<b>+4,055 lbs*</b>	+1840 kg*
26.5 R25 XRD/AT Radials	<b>+282 lbs</b>	+128 kg	<b>+209 lbs</b>	+95 kg	<b>+185 lbs</b>	+84 kg
w/Ballast	<b>+3,973 lbs*</b>	+1804 kg*	<b>+5,692 lbs*</b>	+2582 kg*	<b>+5,009 lbs*</b>	+2272 kg*

\* 75% CaCl<sub>2</sub> filled ballast for rear tires only.



## Standard Equipment

- Alternator 50 amp
- Axles, full floating
- Back-up alarm
- Batteries 2 x 12V/170 Ah
- Boom kickout (automatic)
- Brakes, service, wet multiple disc
- Bucket positioner (automatic)
- Electronic display & monitoring system
- Fenders, front (LH & RH)
- Steps with rear fenders (LH & RH)
- Hitch
- Horn
- Lights: back up light, stop & tail lights, turn signals with hazard switch (2 front, 2 rear), working lights
- PPC hydraulic controls
- Mirrors, rearview
- Seat belt
- Seat, suspension type
- Starter 24V, 11 kW Direct Electric
- Steering, full hydraulic power
- Steering wheel, tilt type
- Transmission, F4 - R4, planetary
- Transmission, control levers, Electric Type with Kickdown switch
- Vandalism protection kit
- Unit must be equipped with ROPS canopy

## Optional Equipment

- Additional counterweight
- Air conditioner with Heater/defroster/pressurizer
- Air fryer
- Auxiliary steering kit
- Bucket cylinder for logging attachment
- Counterweight for logging
- Electronically Controlled Suspension System (Boom Suspension)
- Heater/defroster/pressurizer
- Hydraulic adapter kit
- ROPS canopy (required)
- Steel Cab, includes: windshield washer & wiper, (front & rear) inside mounted mirror, 2 cab mounted working lights and floor mat.
- Vandalism protection for instrument panel (for ROPS canopy)

### Tires

- 26.5 - 25 - 20PR (L3)
- 26.5 - 25 - 20PR (L4)
- 29.5 - 25 - 22PR (L3)
- 29.5 - 25 - 22PR (L4)
- 29.5 - 25 - 22PR (L5)
- 26.5 - R25 XHAT Michelin
- 26.5 - R25 XRD1AT Michelin
- 29.5 - R25 XMINE D2T Michelin

### Work Equipment

- High lift boom arrangement
- **5.0yd<sup>3</sup>** 3.8m<sup>3</sup> Straight Edge Excavating Bucket for high - lift boom arrangement.
- **5.2yd<sup>3</sup>** 4.0m<sup>3</sup> Spade Nose excavating bucket
- **5.2yd<sup>3</sup>** 4.0m<sup>3</sup> Straight Edge excavating bucket
- **6.05yd<sup>3</sup>** 4.6m<sup>3</sup> Straight Edge general purpose bucket
- Bolt-on Cutting Edge - for straight edge bucket.
- Bucket Teeth - Weld on for spade nose bucket.
- Bucket Teeth - Bolt - on Type for straight edge bucket.

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Materials and specifications are subject to change without notice.

# KOMATSU