

WA250-3 *avance*[®] *plus*

KOMATSU[®]

BUCKET CAPACITIES

2.5 – 3.5 yd³

1.9 – 2.7 m³



WA250-3

avance[®]
WHEEL LOADER
plus

WA250-3 *AVANCE* **plus** Wheel Loader Features:

WALK-AROUND

Komatsu-integrated design offers the best value, reliability, and versatility. Hydraulics, power train, frame, and all other major components are engineered by Komatsu. You get a machine whose components are designed to work together for higher production, greater reliability, and more versatility.

plus Quieter operator's environment.

plus Externally mounted front worklights for increased visibility.

plus Comfortable operator's seat with optional air ride.

plus New pilot operated mono-lever loader controls for increased productivity.

plus New fuel strainer with clear sediment trap for fast checking and servicing.

plus Increased lifting capacity.

plus Higher dumping clearance.

plus New larger 3.0 yd³ stockpile bucket.

Optional bucket teeth meet the demands of the toughest applications.

plus New automatic transmission with kick-down switch. See page 7.

plus New optional limited slip differentials for greater traction.

Optional JRB Hydraulic Quick Coupler for added versatility.

plus New spin-on transmission filter for easy servicing.

Ground level greasing reduces and simplifies maintenance. See page 8.

WA250-3

WHEEL LOADER

It all adds up to more value and better return for your investment. It's what you should expect when you select Komatsu.

NET HORSEPOWER
131 HP 98 kW @ 2400 rpm

OPERATING WEIGHT
25,573 lb 11600 kg

BUCKET CAPACITY
2.5 – 3.5 yd³
1.9 – 2.7 m³

plus *New cab increases operator productivity.* New operator's cab provides better visibility, increased comfort, see-at-a-glance console, rearward opening doors, and fingertip shifting. See page 5.

plus *New electrically heated rear window.*



plus *Increased engine horsepower* Komatsu S6D102E-1 diesel power provides greater productivity and reliability. See page 6.

Underhood mounted muffler provides operator with great rearward vision.

Rear-mount battery box for easy checking and servicing.

Large rear-mounted fuel tank allows for ground level fueling.

plus *Improved Optional Electrically Controlled Suspension System.* Takes the bounce out of travel on rough ground surfaces. Provides greater comfort and confidence for the operator as well as increased travel speed and steering stability, while improving the material retention in the bucket. Here's how it works. A switch in the operator's compartment initiates the electrical circuit that actuates the solenoid selector valve for the boom cylinders as well as a pressure switch for the accumulator. This allows the accumulator to absorb the shocks during roading.

Easy access to engine for servicing. Large gull-wing hood doors lock with cab key. Easy access to all engine and fuel filters.

OPERATOR'S COMPARTMENT

Ask the man who runs one—he will tell you the operator's cab sets the Komatsu Avance Plus Wheel Loader apart from the others. That's a productivity feature you can't ignore. No matter how a machine specs out, or how much is promised for productivity, unless the operator can work a full shift without becoming fatigued, you will never get the full measure of promised productivity.

Cloth covered high-back bucket seat features:

- *Low frequency mechanical suspension, with helical springs and double acting hydraulic dampers.*
- *An air suspension fabric seat is optional.*
- *Retractable seat belt.*

The cab improvements on the WA250-3 Avance Plus go beyond providing a large cab with a comfortable seat. Improvements include these production-enhancing standard and optional features:

The WA250-3 Avance Plus has one of the largest cabs ever offered on a Komatsu wheel loader. A **large flat glass windshield** with externally mounted front worklights provides the operator an unobstructed view of the working area and attachment.

Two-door walk-through cab.

Rearward opening doors provide good ventilation as well as easy entry and exit from either side of the cab.

Low-effort brake pedals actuate full hydraulic brakes. Both the service and parking brakes are wet disc type.

Steer with ease. Komatsu's full hydraulic steering provides fast response with low effort, even at low engine rpm.

See the monitor through the steering wheel, not around it. A specially designed two-spoke steering wheel allows the operator to easily see the instrument panel.



Kick-down switch is conveniently located on the mono-lever. A simple motion of the thumb actuates this valuable productivity feature.

New automatic transmission. Automatic shift control gives the operator maximum control with minimum effort. The transmission hold switch allows the operator to select either automatic or manual shifting. The unique combination of the hold and kick-down switches, located on the hydraulic mono-lever, offers the operator optimum control in all conditions.

At-a-glance instrument monitor. Monitor is mounted in front of the operator and is tilted for easy view, allowing the operator to easily check gauges and warning lights.

The **EDIMOS II instrument gauge cluster** has a well-equipped diagnostic display and a functional display which is only a glance away on the side panel.



Increased Visibility and Comfort

- **Flat front windshield glass** and **externally mounted front worklights** provide greater visibility of the work area.
- **Improved five-mode air conditioner.** Nine strategically located vents direct cool air to the operator, keeping you comfortable even on the hottest days.
- Improved, easier to operate **mono-lever (joystick) loader controls** increase operator comfort and reduce operator fatigue.
- Optional **air ride seat** and **improved Electronically Controlled Suspension System (ECSS)** help take the bumps out of the work area.
- **Retractable seat belt** that increases the possibility of wearing a clean and dry seat belt.
- Optional automatic tuning **AM/FM Stereo with cassette player and digital clock** makes operation a pleasure.
- The **cool box** keeps your meal and beverages cold for a more refreshing lunch or break.

Air conditioner



Cool box



KOMATSU DESIGNED POWER TRAIN

Engine

The Komatsu S6D102E-1 delivers the power and efficiency to get the job done quickly and cost effectively while meeting off-road emission requirements.

Komatsu S6D102E-1 is a water-cooled, four-stroke cycle, six-cylinder in-line, turbocharged direct injection engine that produces high performance and excellent fuel economy.

The **gear pump-driven force lubrication** has full flow filtration while all fuel and oil filters are spin-on for easy maintenance.

Komatsu S6D102E-1 features include:

- Environmentally friendly emissions. Meets EPA and EU emission standards for NOX, CO, and HC.
- Large capacity, double-wrapped muffler mounted under the hood reduces noise and increases operator visibility.

- Automatic electric cold-weather heating system preheats incoming air according to engine water temperature. Provides for quick starts and reduces added wear of cold-weather starts made without this heating system.

- Dry, two-stage air cleaner.

Large gull-wing doors allow easy access to the engine and radiator for routine maintenance and cleaning.

Spin-on filters and easily accessible lubrication points reduce maintenance time and the chance of missing maintenance items.

With a piston displacement of 359 in³ 5.9 ltr, the Komatsu S6D102E-1 has a net flywheel horsepower of 131 HP 98 kW @ 2400 rpm.



Komatsu integrated design means components are matched to provide most efficient use of power, whether you're working the face of a material bank or traveling with a loaded bucket.

Four-Speed Automatic Transmission

Provides maximum speed of **23.6 mph** 38.0 km/h in forward and **24.2 mph** 39.0 km/h in reverse. The transmission is a full power shift, countershaft transmission.

Other features include:

- **Gear indicator** conveniently located on the monitor panel allows the operator to easily check gear-shifts during operations.
- **Fingertip shifting** from forward to reverse or from one gear to another.
- **Automatic gear selection** with a hold switch on the mono-lever control lever provides control with low effort.
- **Four forward and four reverse gears** help match cycle conditions, providing increased efficiency and fuel economy.

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.

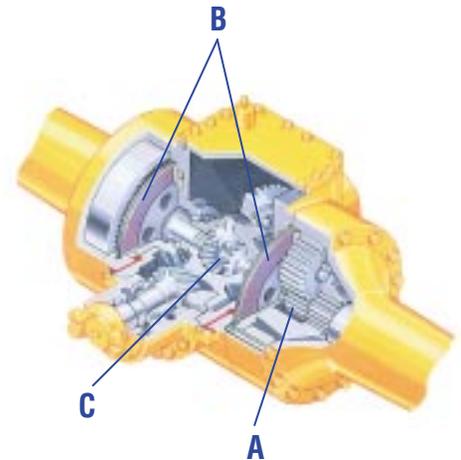
Komatsu designed axles and final drives provide rugged reliability with low maintenance. Axle shafts are semi-floating. The front axle is fixed, while the rear axle is a center-pin support design that provides a total oscillation of up to 30 degrees.

The differential reduction gear is a heavy-duty spiral bevel gear for strength and reliable performance. Rugged, inboard planetary final drives carry the total gear reduction of the drive train to the wheel, which is mounted to the axle hub.

Optional limited slip differentials are available which provide greater traction in demanding work environments.

Wet, single-disc brakes (front and rear) are fully sealed. Contaminants are kept out, reducing wear and maintenance. Brakes require no adjustments for wear, further reducing maintenance costs. There is no air system to bleed, which eliminates the condensation of water in the system that can lead to contamination and corrosion.

The parking brake is also an adjustment-free, wet, multi-disc with increased reliability and long life.



A) planetary reduction
B) wet, enclosed brakes
C) torque proportioning differential



EASY MAINTENANCE

Servicing With a Smile

It would be better if most of us approached routine maintenance and service as something that made us smile. That's why Komatsu designed the WA250-3 Avance Plus Wheel Loader to make servicing as easy as possible. We know by doing this, routine maintenance and servicing are less likely to be skipped, which can mean a reduction in costly downtime later on. Here are some of the many service features found on the WA250-3 Avance Plus:

- Large gull-wing service doors provide easy access to the engine compartment.
- Ground Level Greasing—all grease points are easily reached from ground level, and grease banks are provided in strategic areas to reduce maintenance time.
- Full hydraulic service and parking brakes eliminate air system maintenance.
- Batteries are located inside the counterweight for ground level access.
- Spin-on filters for engine, coolant, transmission, and fuel provides easier service.
- Large platforms provide easy access to cab windows.
- Sealed Loader Linkage Pins—designed to keep grease contained longer and prevent the entrance of dust, thereby lengthening greasing intervals.



SPECIFICATIONS



ENGINE

Model Komatsu S6D102E-1
 Type Water-cooled, 4-stroke cycle
 Aspiration Turbocharged
 Number of cylinders 6
 Bore x stroke **4.0" x 4.7"** 102 mm x 120 mm
 Piston displacement **359 in³** 5.9 ltr
 Governor Mechanical, all-speed control
 Horsepower rating @ 2400 rpm (SAE J1349)
 Gross horsepower **139 HP** 104 kW
 Net horsepower **131 HP** 98 kW
 Meets EPA emissions regulations

Fuel system Direct injection
 Lubrication system
 Method Gear pump, force-lubrication
 Filter Full-flow
 Air cleaner Dry-type with double elements
 and dust evacuator, plus dust indicator



TRANSMISSION

Torque converter 3-element, single-stage, single-phase
 Transmission Full power shift, countershaft, automatic

Travel Speed*	Forward		Reverse	
	mph	km/h	mph	km/h
1st	5.3	8.5	5.3	8.5
2nd	7.8	12.5	8.1	13.0
3rd	14.6	23.5	14.9	24.0
4th	23.6	38.0	24.2	39.0

*Measured with 20.5/25 (L2) tires



AXLES AND FINAL DRIVES

Drive system Four-wheel drive
 Front Fixed, semi-floating
 Rear Center-pin support, semi-floating
 30° total oscillation
 Reduction gear Spiral bevel gear
 Differential gear Torque proportioning
 Final reduction gear Planetary gear, single reduction



BRAKES

Service brakes: Hydraulically-actuated, wet disc brakes actuate on four wheels.

Parking brake: Wet, single-disc brake on transmission output shaft.



STEERING SYSTEM

Type Orbital, full-hydraulic power steering independent of engine rpm
 Steering angle 40° each direction
 Minimum turning radius at the center of outside tire **16'3"** 4950 mm



BOOM AND BUCKET

Z-bar loader linkage is designed for maximum rigidity and offers powerful breakout. Rap-out loader linkage design enables shock dumping for removing sticky materials. Sealed loader linkage pins with dust seals extend greasing intervals. The bucket is made of high-tensile strength steel.



BUCKET CONTROLS

The use of a PPC hydraulic control valve offers lighter operating effort for the work equipment control levers. The reduction in the lever force and travel makes it easy to operate in the work environment.

Control positions

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



HYDRAULIC SYSTEM

Capacity (discharge flow) @ engine-rated rpm

Maximum flow for loader circuit
 loader + steering pump **46.2 U.S. gal/min** 175 ltr/min
 Pilot pump **5.5 U.S. gal/min** 21 ltr/min
 (Gear-type pumps)

Relief valve setting

Loader **3,000 psi** 210 kg/cm²
 Steering **2,700 psi** 190 kg/cm²

Control valve

2-spool open center type

Hydraulic cylinders

Loader and steering Double-acting, piston

Hydraulic Cylinders	Number of Cylinders	Bore		Stroke	
		in	mm	in	mm
Boom	2	5.1"	130 mm	28.2"	717 mm
Bucket	1	5.9"	150 mm	19.6"	498 mm
Steering	2	2.8"	70 mm	18.1"	460 mm

Hydraulic cycle time (rated load in bucket)

Raise 6.3 sec
 Dump 1.7 sec
 Lower (empty) 3.0 sec
 Total cycle time 11.0 sec

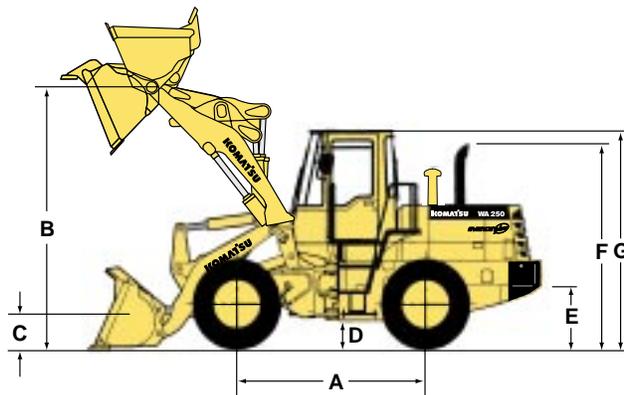


SERVICE REFILL CAPACITIES

Cooling system **9.6 U.S. gal** 36.5 ltr
 Fuel tank **48.6 U.S. gal** 184.0 ltr
 Engine **5.1 U.S. gal** 19.5 ltr
 Hydraulic system **16.9 U.S. gal** 64.0 ltr
 Axle (each, front and rear) **4.5 U.S. gal** 17.0 ltr
 Torque converter and transmission **7.9 U.S. gal** 30.0 ltr



DIMENSIONS



Standard tires	17.5/25-12PR (L2)
Tread	6'4" 1930 mm
Width over tires	8'1" 2465 mm
A Wheelbase	9'6" 2900 mm
B Hinge pin height, maximum height	12'4" 3770 mm
C Hinge pin height, carry position	1'6" 445 mm
D Ground clearance	1'6" 465 mm
E Hitch height	3'3" 980 mm
F Overall height, top of the stack	10'4" 3145 mm
G Overall height, ROPS cab	10'9" 3265 mm

Bucket		Stockpile Bucket with Bolt-on Cutting Edge		Excavating Bucket with Bolt-on Cutting Edge		Light Material Bucket with Bolt-on Cutting Edge	
Bucket capacity	SAE rated	3.0 yd³	2.3 m ³	2.5 yd³	1.9 m ³	3.5 yd³	2.7 m ³
	Struck	2.6 yd³	2.0 m ³	2.1 yd³	1.6 m ³	3.0 yd³	2.3 m ³
Bucket width		8'10"	2685 mm	8'10"	2685 mm	8'10"	2685 mm
Bucket weight		2,183 lb	990 kg	2,060 lb	935 kg	2,270 lb	1030 kg
Static tipping load	Straight	22,071 lb	10010 kg	21,991 lb	9975 kg	21,631 lb	9810 kg
	Full turn (40°)	19,425 lb	8810 kg	19,355 lb	8780 kg	19,035 lb	8635 kg
Dump clearance, maximum height and 45° dump angle		9'3"	2825 mm	9'6"	2885 mm	8'11"	2720 mm
Reach at 7' 2130 mm and 45° dump angle		4'8"	1430 mm	4'10"	1470 mm	4'10"	1480 mm
Reach at maximum height and 45° dump angle		3'2"	975 mm	3'0"	910 mm	3'7"	1080 mm
Reach with boom/bucket level		7'3"	2215 mm	6'11"	2120 mm	7'9"	2355 mm
Operating height	Fully raised	16'6"	5020 mm	16'1"	4900 mm	16'11"	5150 mm
Overall length	Bucket ground	23'0"	7015 mm	22'7"	6890 mm	23'5"	7125 mm
	Bucket at carry	22'10"	6965 mm	22'8"	6900 mm	23'2"	7050 mm
Turning radius*		19'0"	5795 mm	18'11"	5770 mm	19'2"	5830 mm
Digging depth	0°	3"	70 mm	3"	70 mm	3"	65 mm
	10°	10"	260 mm	10"	245 mm	11"	285 mm
Breakout force		26,896 lb	12200 kg	29,540 lb	13400 kg	23,370 lb	10600 kg
Operating weight		25,573 lb	11600 kg	25,485 lb	11560 kg	25,705 lb	11660 kg

• All dimensions, weights, and performance values based on SAE J732c and J742b standards. Static tipping load and operating weight shown include 20.5/25-12PR (L2) tires, additional counterweight, lubricant, coolant, full fuel tank, ROPS cab, and operator. Machine stability and operating weight are affected by counterweight, tire size, and other attachments. Do not use tire ballast with additional counterweight. Apply the following weight changes to operating weight and static tipping load.

* Turning radius measured with bucket at carry position, outside corner of bucket.

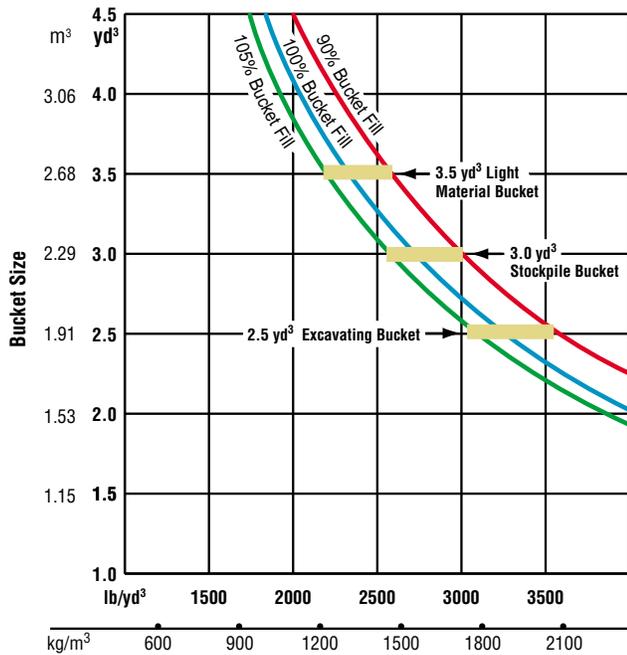
Weight Changes

	Change in Operating Weight		Change in Tipping Load			
			Straight		Full Turn	
17.5/25-12PR (L2)	-727 lb	-330 kg	-551 lb	-250 kg	-485 lb	-220 kg
17.5/25-12PR (L3)	-639 lb	-290 kg	-485 lb	-220 kg	-430 lb	-195 kg
20.5/25-12PR (L3)	199 lb	90 kg	176 lb	80 kg	154 lb	70 kg
555/70 R25	816 lb	370 kg	617 lb	280 kg	551 lb	250 kg
Install ROPS canopy (instead of cab)	-530 lb	-240 kg	-460 lb	-210 kg	-410 lb	-185 kg



BUCKET SELECTION GUIDE

WA250-3 Avance Plus



Material (loose weight)	lb/yd ³	kg/m ³
Caliche	2,100	1250
Cinders	1,000	590
Clay and gravel, dry	2,400	1420
Clay and gravel, wet	2,600	1540
Clay, dry	2,500	1480
Clay, natural bed	2,800	1660
Clay, wet	2,800	1660
Coal, anthracite, broken	1,850	1100
Coal, bituminous, broken	1,400	830
Earth, dry, packed	2,550	1510
Earth, loam	2,100	1250
Earth, wet, excavated	2,700	1600
Granite, broken or large crushed	2,800	1660
Gravel, dry	2,550	1510
Gravel, dry 1/2" to 2" 13 to 50 mm	2,850	1690
Gravel, pit run (graveled sand)	3,250	1930
Gravel, wet 1/2" to 2" 13 to 50 mm	3,400	2020
Gypsum, crushed	2,700	1600
Limestone, broken or crushed	2,600	1540
Magnetite, iron ore	4,700	2790
Phosphate rock	2,160	1280
Pyrite, iron ore	4,350	2580
Sand and gravel, dry	2,900	1720
Sand and gravel, wet	3,400	2020
Sand, dry	2,400	1420
Sand, wet	3,100	1840
Sandstone, broken	2,550	1510
Shale	2,100	1250
Slag, broken	2,950	1750
Stone, crushed	2,700	1600
Topsoil	1,600	950

* This guide, representing bucket sizes not necessarily manufactured by Komatsu, will help you select the proper bucket size for material density, loader configuration, and operating conditions. Optimum bucket size is determined after adding or subtracting all tipping load changes due to optional equipment. Bucket fill factors represent the approximate amount of material as a percent of rated bucket capacity. Fill factors are primarily affected by material, ground conditions, breakout force, bucket profile, and the cutting edge of the bucket used.



STANDARD EQUIPMENT

- Alternator, 50A, 24 volt
- Back-up alarm
- Back-up light, rear
- Batteries, **2 x 12 V/110 Ah**, 950 CCA
- Bucket positioner, automatic
- Counterweight, standard and additional
- Differentials, torque proportioning
- Engine, Komatsu S6D102E-1
- Engine shut-off system, electric
- Fenders, full front, partial rear
- Floor mat
- Horn, electric
- Lights
 - Stop and tail
 - Turn signal (2 front, 2 rear)
 - Working (2 front, 2 rear, 2 outside cab)
- Maintenance monitor panel
- Mono-lever loader control
- Radiator mask, hinged
- Rearview mirrors (2 inside, 2 outside)
- ROPS cab
- Seat belt, retractable, **3"** wide
- Seat, cloth, suspension, reclining with armrests and headrest, and a document holder
- Service brakes, wet disc
- Speedometer (mph)
- Starting aid, intake manifold preheater
- Starting motor, **24 V/4.5 kW**
- Steering wheel, tiltable
- Sun visor
- Tires 17.5/25-12PR (L2), tubeless and rims
- Transmission (4F, 4R), automatic
- Transmission control, electric, two-lever type
- 2-spool valve mono-lever for boom and bucket controls with PPC
- Vandalism protection kit
- Window, rear, electrically heated
- Wiper/washer, front (2 speed intermittent) and rear



OPTIONAL EQUIPMENT

- Air conditioner with heater/defroster/pressurizer
- Air ride seat
- Automatic boom kickout
- Auxiliary steering
- Brand preference, Goodyear
- Bucket, excavating, 1.9 m³ **2.5 yd³**
- Bucket, stockpile, 2.5 m³ **3.0 yd³**
- Bucket, light material, 2.7 m³ **3.5 yd³**
- Bucket teeth, bolt-on
- Cutting edge, bolt-on, reversible
- ECSS (Electronically Controlled Suspension System)
- Fenders, rear full
- Heater and defroster
- High-lift boom arrangement
- Hydraulic adapter kit (3rd spool), includes valve, lever, and piping
- JRB 1524 mm **60"** construction forks for use with coupler
- JRB 1372 mm **54"** utility pallet forks for use with coupler
- JRB extendable boom for use with coupler
- JRB Hydraulic Quick Coupler
- JRB 1.9 m³ **2.5 yd³** general purpose bucket for use with coupler
- JRB 2.3 m³ **3.0 yd³** general purpose bucket for use with coupler
- JRB 2.0 m³ **2.63 yd³** multi-purpose bucket for use with coupler
- Limited-slip differential, front and rear
- Mud guard, front fenders
- Radio, AM/FM stereo with cassette
- Rims only, less tires
 - Fits 17.5/25, 20.5/25, and 555/65 tires
- ROPS canopy
- Third valve, lever, piping
- Tires (bias ply)
 - 17.5/25-12PR (L3)
 - 20.5/25-12PR (L2)
 - 20.5/25-12PR (L3)
- Tires (radial ply)
 - 17.5-R25 VKT (L2) Bridgestone
 - 17.5-R25 XTLA 1-star (L2) Michelin
 - 17.5-R25 XHA 1-star (L3) Michelin
 - 20.5-R25 VUT (L2) Bridgestone
 - 20.5-R25 XTLA1-star (L3) Michelin
 - 20.5-R25 XHA (L3) Michelin
 - 550/65 R25 XTLA (L2) Michelin
 - 550/65 R25 XLD (L3) Michelin
- Vinyl seat

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KOMATSU®

440 N. Fairway Drive
P.O. Box 8112
Vernon Hills, IL 60061

