WA320-8M1

WA320-8M1 Sugarcane Application



Photos may include optional equipment.

HORSEPOWER	OPERATING WEIGHT	BUCKET CAPACITY
Gross: 127 kW 170 HP/2100 rpm	STD: 14375 kg	STD: 2.7 m^3
Net: 123 kW 165 HP/2100 rpm	SC: 15070 kg	SC: 6.0 m^3

WALK-AROUND



Photos may include optional equipment.

HORSEPOWER

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Net: 123 kW 165 HP/2100 rpm

OPERATING WEIGHT

STD: 14375 kg
SC: 15070 kg

BUCKET CAPACITY

STD: 2.7 m^3
SC: 6.0 m^3

KOMATSU CARE®



Productivity & Ecology Features

- Komatsu SmartLoader Logic for low fuel consumption
- Komatsu Auto Idle Shutdown

Operator Environment

- New high performance air suspension seat — NEW
- Rear view monitoring system — NEW
- Pillar-less large cab
- Low noise design cab

Versatile Linkages

- One machine for all applications

Information and Communication Technology (ICT)

- High resolution 7-inch color Liquid Crystal Display (LCD) monitor
- Operator identification function — NEW
- Energy saving operation
- KOMTRAX

Easy Maintenance

- Wide core radiator
- Cooling fan with manual and automatic reverse rotation
- Maintenance monitor

Low Fuel Consumption

Komatsu installed new features on the WA320-8M1 to reduce fuel consumption. These features enable further fuel efficiency by optimally controlling engine power, the high efficiency power train and hydraulic system.

Fuel consumption reduced by

V-shape:	**5%**
Load & Carry:	**6%**

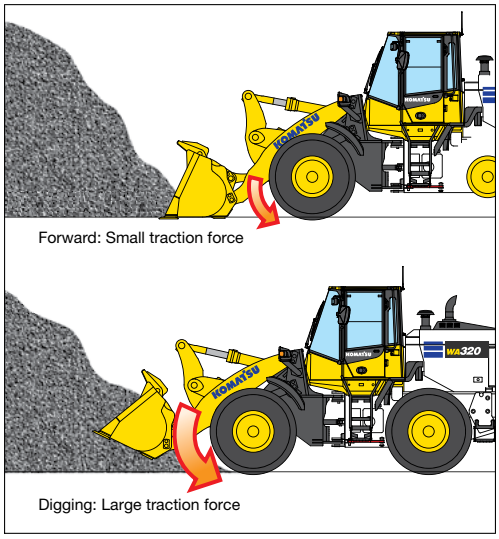
*The value at the internal measuring method.
(Compared with the WA320-6)

Komatsu SmartLoader Logic

The WA320-8M1 features Komatsu SmartLoader Logic, an engine control system. This technology acquires data from various sensors in the vehicle and controls the engine to yield enough torque for each work phase.

Engine torque requirement for a wheel loader varies depending on working conditions. For example, it requires higher torque for digging in V-shape loading, but less torque in driving with an empty bucket. This technology limits the engine torque during less demanding work, therefore saving fuel.

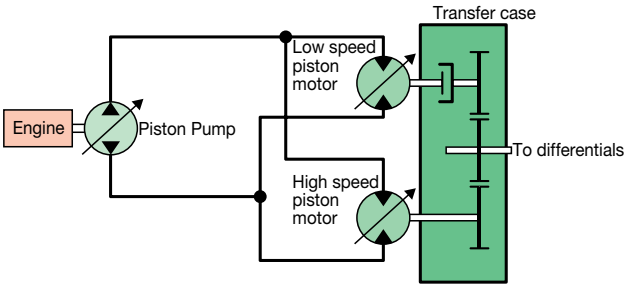
The automatic traction control system provides the optimum traction by controlling the Hydrostatic transmission (HST) pump, motor and engine in response to the working load. The operator is able to ensure optimum traction automatically without finely controlling the accelerator pedal. Thereby, the engine speed is suppressed and leads to improvement of combustion efficiency and fuel economy. Komatsu SmartLoader Logic functions automatically and doesn't interfere with operation, saving fuel without decreasing production.



Highly Efficient Hydrostatic Drive Line

The electronically controlled variable displacement pump and 2-motor system allow highly efficient and powerful operation. Increasing pump capacity and variable input torque control of the new electronically controlled HST pump allows the engine to run in the middle speed range and reduce fuel consumption. The efficiency of HST motors is improved, saving fuel.

At low speeds both motors are engaged to provide highest torque. Bucket filling and scooping are easy, as maximum rim pull is provided from zero travel speed. At high speeds, a clutch cuts off the low speed motor to eliminate drag and achieve excellent fuel efficiency.



Variable Displacement Piston Pump

The variable displacement piston pump combined with the closed-center load sensing system delivers hydraulic flow as the job requires, preventing wasted hydraulic flow. Minimized loss contributes to better fuel economy.

Komatsu Auto Idle Shutdown

In order to reduce idle time, Komatsu offers Komatsu Auto Idle Shutdown. This function will shut the engine off and apply the parking brake and hydraulic lock after a preset idle time limit. This time limit can be set by the operator or service technician and may range from 5 minutes to 60 minutes.



OPERATOR ENVIRONMENT



New Operator Seat

A new air suspension seat dampens vibrations transmitted from the machine and provides a more comfortable ride for the operator. The angle of the armrest is fully adjustable for optimum operator comfort.

A secondary F-N-R switch is incorporated in work equipment lever configurations. A heated seat is standard.



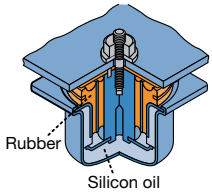
Tiltable / Telescopic Steering Wheel

The operator can both tilt and telescope the steering wheel to allow maximum comfort and control. The two spoke steering wheel allows maximum visibility of the monitor panel and the forward work environment.



Low Noise Design

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, and comfortable operating environment.



Operator's ear noise level (ISO 6396:2008)	68 dB(A)
Dynamic noise level (outside) (ISO 6395:2008)	105 dB(A)

Seat Belt Caution Indicator

A warning indicator on the monitor appears when the seat belt is not engaged.



Rear View Monitoring System

The operator can view the rear of the machine with a full color monitor that is located on the right side of the cab. This monitor can be always on or only on when the loader goes into reverse. Visual guidelines can also be added for more convenience.





Multifunction Mono-lever

The servo-assisted multi-function lever with an integrated forward/reverse switch allows the simplest and most comfortable operation of the equipment. The standard proportional control switch controls the 3rd spool. The operator can control the boom, bucket and 3rd spool attachment all with a single lever. This makes for very easy operation of 3rd spool attachments.



Max. Traction Switch

A single touch of this switch allows change over of ON/OFF setting of traction control or S-mode. Use this switch to increase the max traction during operations such as piling up work.



Right-side Control Panel

The operator can select the speed range, maximum travel speed in 1st, gear and tractive effort.



1. Proportional control switch
2. Directional selector (FNR) switch
3. Work equipment lock switch
4. Travel speed control dial
5. Traction control switch
6. Directional selector switch actuation switch
7. Economy mode switch
8. Remote positioner switch
9. 2 stage low idle switch
10. Manual fan reverse rotation switch



Pillar-less Large Cab with ROPS/FOPS

The ROPS/FOPS Cab is standard. 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

Standard Equipment

Large storage area



Hot or cool box



① Auxiliary input (MP3 jack)
② 12 V outlets



① Forward and reverse selector switch
② Work equipment lock switch



Engine shutdown secondary switch



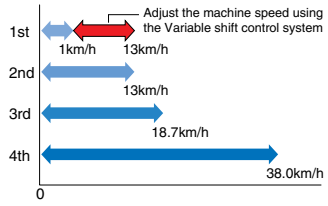
Parking brake switch



OPERATOR ENVIRONMENT

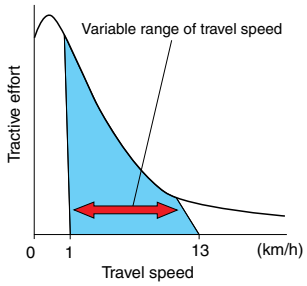
Electronically-Controlled HST with Variable Shift Control System

The variable shift control system allows setting the top speed for increased safety and precision. The operator can choose between first, second, third or fourth maximum speeds by dialing the speed range selector switch. For v-cycles, the operator can set the speed control switch to 1 or 2, which provides aggressive digging, quick response and fast hydraulics. For load and carry, select 3 or 4 which still provides aggressive digging but with much faster travel speed.



In the variable shift control switch for position 1, the creeping speed range is added. With the variable shift control switch in 1st speed, ground-speed can be adjusted between 1 km/h and 13 km/h with the fine control.This allows constant low speeds to be maintained, making it ideal for attachment applications.





Electronically Controlled HST Brake

Electronically controlled HST brake provides improved inching performance of the machine and demonstrates ideal braking control when the machine is travelling and working.

Pedal Angle Sensing HST Control

Finely-tuned HST control according to the accelerator pedal angle reduces shocks and allows smoother traveling and better energy-saving operation.



Electronically Controlled Suspension System (ECSS)

The electronically controlled suspension system reduces the shocks in the electronically controlled when driving with loads. Material can be transported at higher speeds with minimum spillage. When travelling below 4 km/h, the electronically controlled suspension is automatically deactivated for precise pallet loading into trucks.

Variable Traction Control System

The variable traction control system optimizes the digging traction automatically depending on working condition by controlling HST pump, motor and Engine. Combined with the function of torque proportioning differentials, or optional limited slip differential this system exerts the following effects.



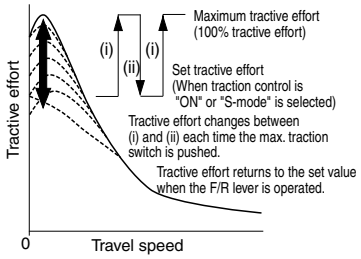
- Facilitates operation on soft ground where the tires of the machine are apt to slip.
- Eliminates excessive bucket penetration and reduces tire slippage during stockpile loading to improve the work efficiency.
- Reduces tire slippage to extend the life of tires.

Furthermore, the maximum tractive effort can be adjusted in five stages when the traction control switch is ON. This allows the operator to select the optimum tractive effort for diversified road conditions.

The “automatic traction control system” that is described in the “Komatsu SmartLoader Logic” (page 5) is included in this system.

Max. Traction Switch

Max. traction switch is located on the work equipment control lever. When traction control switch is at ON position or S-mode is selected, pushing this switch cancels the setting of the traction control temporarily and increases the tractive effort to its 100 % value. Then pushing the max. traction switch again or operating the F/R lever returns the tractive effort to the set value automatically. This switch is useful for operations such as piling up work where large tractive effort is required temporarily.



S-mode

Setting the switch to S-mode allows the machine to get the optimum driving force for operations on slippery road surfaces, like snow-removal on snow surface, resulting in reduced tire slippage and facilitation of the operation. Unexpected tire slippage on slippery road surface is suppressed by controlling the engine speed and HST motor when traveling at a low speed. (S-mode is effective only in forward traveling.).

High Resolution 7-inch Color LCD Monitor

The machine monitor displays various machine information and allows for various settings of the machine. The monitor is a 7-inch color LCD and displays maintenance information, operation record, ECO guidance record, etc. The switch panel is used to select various screens and the air conditioner control screen. By using the switch panel, you can display various user menus on the LCD screen and adjust the machine settings.



Machine monitor

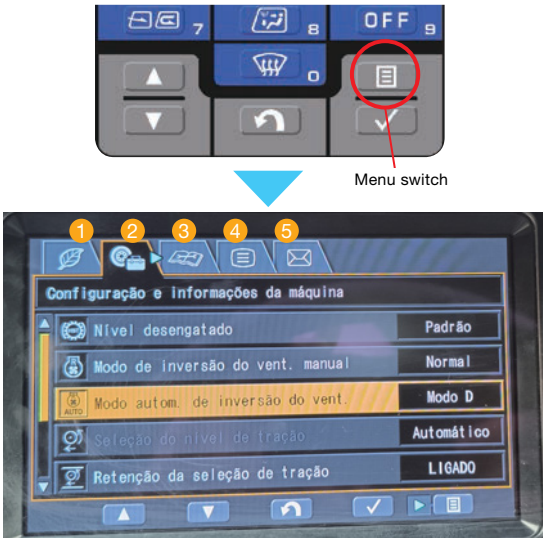
1. LCD unit
2. LED unit
3. Engine tachometer
4. Speedometer
5. ECO gauge
6. Air conditioner display
7. Traction level
8. Engine coolant temperature gauge
9. Fuel gauge
10. HST oil temperature gauge
11. Variable speed display
12. Message pilot lamp
13. Pilot lamps

Switch panel

1. Air conditioner switches / Numeral key pad
2. Function switches

Visual user menu

Pressing the menu switch on the switch panel displays the user menu screen. The menus are grouped for each function, and use easy-to-understand icons which enable the machine to be operated intuitively.



1. Energy saving guidance
2. Machine settings
3. Maintenance
4. Monitor setting
5. Mail check

Machine monitor with troubleshooting function to minimize downtime

Various meters, gauges and warning functions are centrally arranged on the machine monitor. The monitor simplifies start-up inspection and promptly warns the operator with a lamp and buzzer if any abnormalities should occur. In addition, countermeasures are indicated in 4 levels to ensure safety and help prevent the machine from having major problems. Replacement times for oil and filters are also indicated.



Energy Saving Operation

ECO guidance

In order to support optimum operation, the following 4 guidance messages are displayed for fuel saving operation:

1) Excessive engine idling event
2) Hydraulic relief pressure event
3) Excessive stepping on accelerator event
4) Recommendation of traction control



ECO gauge

In order to help the operator to perform in an environmentally friendly way and minimize energy consumption, an easy-to-read “ECO gauge” is displayed on the machine monitor screen..

Operation record, fuel consumption history, and ECO guidance record

The ECO guidance menu enables the operator to check the operation record, fuel consumption history and ECO guidance record by pushing the button. The records can be used to reduce the overall fuel consumption.



Operation record



Fuel consumption record



ECO guidance record

KOMTRAX

Assists Customer’s Equipment Management and Contributes to Fuel Cost Cutting



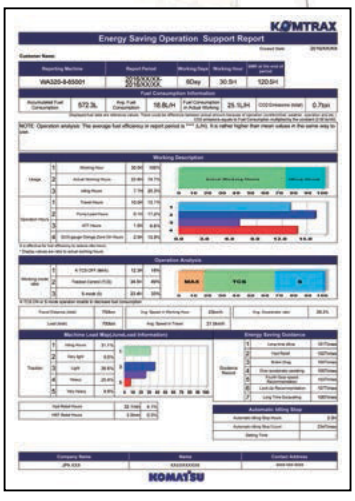
Equipment Management Support

A Komtrax terminal installed on your machine collects and sends information such as machine location, working record, machine conditions, etc. using wireless communication. You can review the Komtrax data remotely via the online application. Komtrax not only gives you the power of knowledge on your machine, but also the convenience of managing your fleet on the web. In addition to existing items, the following new information is provided.

- Operation information of each operator for operator identification function

Energy-saving Operation Support Report

Komtrax provides various useful information which includes the energy-saving operation support report based on the operating information of your machine such as fuel consumption and idle time.



MAINTENANCE FEATURES



Photos may include optional equipment.

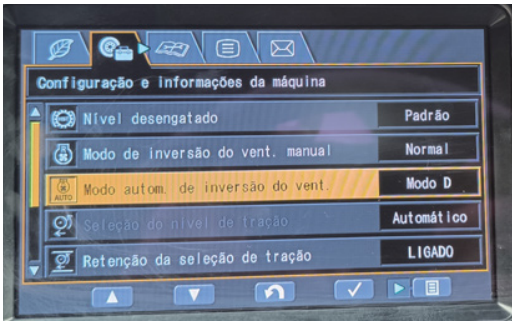
Full Side-opening Gull-wing Engine Doors

The large gull-wing type engine doors are gas springs requiring less power to open. Daily maintenance is easy since the opening area is wide. Large steps are provided on each side of the frame to help access.



Automatic Reversing Fan

The engine cooling fan is hydraulically driven. It can be set to reverse automatically during operation. Fan reverse mode and timing can be controlled through the monitor



Battery Disconnect Switch

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



Engine Compartment

The WA320-8M1 engine compartment was laid out for easy serviceability. Great attention was paid to the location of the maintenance items, such as the filters, dipsticks and oil fill locations. The same goes for the aftertreatment devices.



Air Conditioner Filter

The inside and outside air conditioner filters can be replaced easily without using a tool. The outside filter is located behind a lockable door for security.


Inside air filter


Outside air filter

Maintenance Information

“Maintenance time caution lamp” display

When the remaining time to maintenance becomes less than 30 hours*, the maintenance time monitor appears. Pressing the menu switch displays the maintenance screen.

*: The setting can be changed within the range between 10 and 200 hours.





Sealed DT connectors

The main wiring harnesses and controller connectors are equipped with sealed DT connectors, providing high reliability, protection against dust ingress, and superior corrosion resistance.



WA320-8M1 Standard Version





Photos may include optional equipment.

WA320-8M1 Sugarcane Application Version





Photos may include optional equipment.

SPECIFICATIONS

ENGINE

Model ..... Komatsu SAA6D107E-1
Type ..... Water-cooled, 4-cycle
Aspiration ..... Turbocharged, aftercooled, cooled
Number of cylinders 6
Bore x stroke ..... 107 mm x 124 mm
Piston displacement ..... 6,69 L
Governor ..... All-speed, electronic

Horsepower
SAE J1995 ..... Gross 127 kW (170 HP)
ISO 14396 ..... 127 kW (170 HP)
ISO 9249/SAE J1349* ..... Net 123 kW (165 HP)
Rated rpm ..... 2.100 rpm
Fan drive method for radiator cooling ..... Hydraulic
Fuel system ..... Direct injection
Lubrication system:
Method ..... Gear pump, force-lubrication
Filter ..... Full-flow type
Air cleaner ..... Dry type with double elements and dust evacuator, plus dust indicator

Meets PROCONVE-MAR1 emission standards.

TRANSMISSION

Type ..... Hydrostatic, 1 pump, 2 motors with speed range select
Travel speed: km/h

Measured with 20.5R25 tires

	1st	2nd	3rd	4th
Both Forward and Reverse	1.0–13.0	13.0	18.7	38.0

AXLES AND FINAL DRIVES

Drive system ..... Four-wheel drive
Front ..... Fixed, semi-floating
Rear ..... Center-pin support, semi-floating, 24˚ total oscillation
Reduction gear ..... Spiral bevel gear
Differential gear ..... Torque proportioning
Final reduction gear ..... Planetary gear, single reduction

BRAKES

Service brakes ..... Hydraulically actuated; wet multiple-disc brakes actuate on four wheels
Parking brake ..... Wet multiple-disc brake on transfer output shaft
Secondary brake ..... One of dual service brake circuits is commonly used

STEERING SYSTEM

Type ..... Articulated type, full-hydraulic power steering
Steering angle ..... 38.5˚ each direction (40˚ end stop)

Minimum turning radius at the center of outside tire ..... 5380 mm

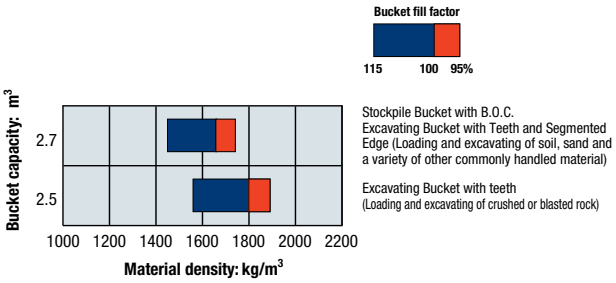
HYDRAULIC SYSTEM

Steering system:
Hydraulic pump ..... Piston pump
Capacity ..... 180 L/min
Relief valve setting ..... 20.6 MPa (210 kg/cm²)
Hydraulic cylinders:
Type ..... Double-acting, piston type
Number of cylinders 2
Bore x stroke ..... 70 mm x 453 mm
Loader control:
Hydraulic pump ..... Piston pump
Capacity ..... 180 L/min
Relief valve setting ..... 30.4 MPa (310 kg/cm²)
Hydraulic cylinders:
Type ..... Double-acting, piston type
Number of cylinders – bore x stroke:
Lift cylinder ..... 2 – 120 mm x 740 mm
Bucket cylinder ..... 1 – 140 mm x 532 mm
Control valve ..... 2-spool type
Control positions:
Boom ..... Raise, hold, lower, and float
Bucket ..... Tilt-back, hold, and dump
Hydraulic cycle time (rated load in bucket)
Raise ..... 6.3 s
Dump ..... 1.9 s
Lower (Empty) ..... 3.5 s

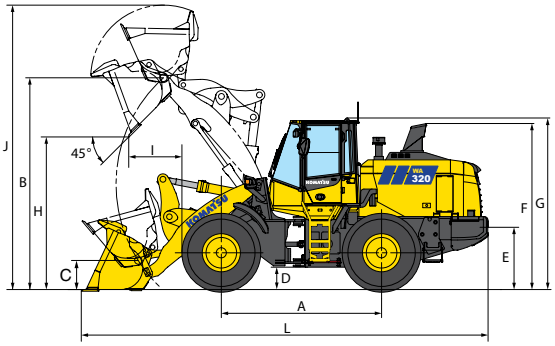
SERVICE REFILL CAPACITIES

Cooling system ..... 22.3 L
Fuel tank ..... 245 L
Engine ..... 23 L
Hydraulic system ..... 92 L
Axle front ..... 27 L
rear ..... 25.5 L
Transfer case ..... 5.8 L

BUCKET SELECTION GUIDE



DIMENSIONS



For illustration purposes only

(STD) Standard, (SC) Sugarcane

			STD	SC
	Tread		2050	2170
	Wide over tires		2590	2900
A	Wheelbase		3030	
B	Hinge pin height, maximum height.	Standard boom	3905	3950
C	Bucket hinge pin height above ground in loading position	Standard boom	480	525
D	Ground clearance		425	470
E	Hitch height		970	1015
F	Overall height, top of stack		3100	3145
G	Overall height with ROPS cab		3200	3245

	Measurements taken with 20.5-25-16PR (L3) tires, Level 2 ROPS/FOPS cab, and additional counterweight		Unit	W/ teeth	W/ teeth and segments	W/ cutting edge
	Bucket capacity	Heaped	m³	2.5	2.7	6.0
		Struck	m³	2.2	2.3	5.6
	Bucket width		mm	2760	2760	3060
	Bucket weight		kg	1185	1325	1815
H	Dumping clearance at maximum height and 45° dump angle**		mm	2765	2765	2535
I	Reach at maximum lift and 45° dump angle**		mm	1100	1100	1380
J	Operating height (bucket fully raised)		mm	5300	5300	5810
L	Overall length		mm	7750	7750	8145
	Turning radius	Bucket edge/tooth tip	mm	6330	6330	6680
		Center of outside tire	mm	5380	5380	5450
	Digging depth	0°	mm	100	100	45
		10°	mm	335	335	345
	Static tipping load	Straight	kg	11920	11780	11250
		Full turn (40°)	kg	10410	10270	9675
	Breakout force		kgf	16240	16240	9785
	Operating weight		kg	14235	14375	15070

* At the end of bolt-on cutting edge (B.O.C.) or tooth.

All dimensions, weights, and performance values based on SAE J732c e J742b standards.

The static tipping loads and operating weights listed above include lubricants, coolant, a full fuel tank, ROPS cab, and operator weight. Machine stability and operating weight are affected by the counterweight, tire size, and other attachments.

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

WEIGHT CHANGES

Tires	Change in Operating Weight (kg)	Change in Tipping Load		Width Over Tires (mm)	Ground Clearance (mm)
		Straight (kg)	Full turn (kg)		
20.5R25 XHA2 L3	+ 32	+25	+ 20	2590	425

NOTES

STANDARD EQUIPMENT

ENGINE
- Air cleaner, double element with dust indicator
- Power and Economy modes (P/E)
- Alternator, 24 V/90 A
- Batteries, 2 x 12 V/150 Ah
- Engine, Komatsu SAA6D107E-1
- Starting motor, 24 V/5,5 kW
- Cyclone-type air precleaner with extension

CAB
- 2 x DC12V electrical outlets
- Automatic digital air conditioner
- Bluetooth radio with AUX and USB inputs
- Color multi-monitor
- Cup holder
- Floor mat
- Front wiper (with washer and intermittent)
- Machine monitor with equipment management monitoring system
- Mono-lever joystick with F-N-R control
- Rear defroster (electric)
- Rear window washer and wiper
- Level 2 ROPS/FOPS cab (ISO 3471/ ISO 3449)
- Seat, air suspension type with reclining
- Hydraulic system electric lock
- Seat belt
- Cool box for water and fruit
- Steering wheel, tiltable, telescopic
- Sun visor

LIGHTING SYSTEM
- Back-up lamps
- Directional signal
- Hazard lamps
- Front work lamps, LED, LH and RH side
- Rear work lamps, LED, LH and RH side
- Stop and tail lamps, and turn signal lamps

SAFETY EQUIPMENT
- Back-up alarm
- Engine shutdown secondary switch
- Handrails for platform
- Horn, electric
- Parking brake, electric
- Rearview camera
- Wet multi-disc service brakes

TIRES
- 20.5-25-16PR(L3)

TRANSMISSION
- Hydrostatic (HST)
- Traction control
- Variable speed control
- Variable displacement piston pump

OTHER
- 2-spool valve for boom and bucket controls
- Auto shift transmission with mode select system
- Battery disconnect switch
- Bucket positioner
- Counterweight, standard
- ECO guidance
- E.C.S.S (Electronically Controlled Suspension System)
- Front fenders
- Fuel pre-filter with water separator
- Hydraulic-driven fan with automatic reverse rotation
- Automatic engine shutdown at idle
- Komatsu Smart Loader Logic
- KOMTRAX
- Lift cylinders and bucket cylinder
- Loader linkage with standard boom
- Radiator, wide core
- Remote boom positioner, in-cab adjustable
- Transmission speed ranges, 4 forward and 4 reverse
- Proportional differential
- 2.7 m³ bucket with teeth and segmented cutting edge
- Heavy-duty axle for Standard and Sugarcane versions

SUGARCANE CONFIGURATION
WA320-8M1 Sugarcane Application
6.0m³ bucket
Michelin 750/65 R25 agricultural tires
Battery protection

OPTIONAL EQUIPMENT

Standard/optional equipment may vary. For more details, consult your distributor.

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