

## WA 320-8 EPA Tier 4 Final Engine

### **Australia & New Zealand Specifications**

### WHEEL LOADER





NET HORSEPOWER 123 kW/165 HP @ 2100 rpm **OPERATING WEIGHT** 15,480 – 15,870 kg **BUCKET CAPACITY** 2.3 – 3.2 m<sup>3</sup>

# WALK-AROUND



NET HORSEPOWER 123 kW/165 HP @ 2100 rpm **OPERATING WEIGHT** 15,480 – 15,870 kg Photos may include optional equipment.

**BUCKET CAPACITY** 2.3 – 3.2 m<sup>3</sup>

### **HIGH PRODUCTION WITH LOW FUEL CONSUMPTION**

#### Proven, Fourth Generation Hydrostatic Transmission:

- Quick Acceleration
- Dynamic Braking
- Variable Speed Traction Control
- Creeping Mode

**Komatsu SmartLoader Logic** helps reduce fuel consumption with no decrease in production.



A powerful Komatsu SAA6D107E-3 engine provides a net output of 123 kW 165 HP with up to 12% improved fuel consumption. This engine is EPA Tier 4 Final emissions certified.

Variable Geometry Turbocharger (VGT) is hydraulically actuated to provide optimum air flow under all speed and load conditions. This Tier 4 Final version has improved performance.

Komatsu Diesel Particulate Filter (KDPF) and Selective Catalytic Reduction (SCR) systems reduce particulate matter and NOx while providing automatic regeneration that does not interfere with daily operation.

#### Ample cooling capacity

- Auto-reversing fan is standard
- Wider core coolers

#### Fluid neutral or better

Combined fuel and DEF consumption is less than the WA320-6 fuel consumption.

**Spacious cab** provides the operator with improved comfort and visibility.

#### New high resolution monitor panel:

- Enhanced and intuitive on-board diagnostics
- Integrated with KOMTRAX Level 5
- Integrated with Komatsu Tier 4 Final technology

#### Rearview monitoring system is standard.

New high capacity air suspension seat with heat is standard.

#### Energy saving guidance:

- Six operator guiding messages
- · Enhanced ecology gauge

Komatsu auto idle shutdown helps reduce idle time and operating costs.

Remote boom positioner can set kickout.

Versatile Parallel Z-bar (PZ) linkage for parallel lift.

Variable displacement piston pumps with Closed-Center Load Sensing System (CLSS) help reduce fuel consumption.

**KOMTRAX®** equipped machines send location, SMR and operation maps to a secure website or smart phone via wireless technology. Machines also relay error codes, cautions, maintenance items, fuel & Diesel Exhaust Fluid (DEF) levels, and much more.

**Operator identification system** tracks machine operation for up to 100 operators.

# **PERFORMANCE FEATURES**

#### KOMATSU NEW ENGINE TECHNOLOGIES

#### **New Tier 4 Final Engine**

The Komatsu SAA6D107E-3 engine is EPA Tier 4 Final emissions certified, reduces fuel consumption, and provides exceptional performance. Based on Komatsu proprietary technologies developed over many years, this new diesel engine reduces nitrogen oxides (NOx) by more than 80% compared to Tier 4 interim levels.



#### **Technologies Applied to New Engine**

#### Heavy-duty After Treatment System

This new system combines a Komatsu Diesel Particulate Filter (KDPF) and Selective Catalytic Reduction (SCR). The SCR NOx reduction system injects the precise amount of Diesel Exhaust Fluid (DEF) to break down NOx into non-toxic water vapour ( $H_2O$ ) and nitrogen gas ( $N_2$ ).



## Heavy-duty Cooled Exhaust Gas Recirculation (EGR) System

The system recirculates a portion of exhaust gas into the air intake and lowers combustion temperatures, thereby

reducing NOx emissions. EGR gas flow is lower for Tier 4 Final with the addition of SCR technology. The system dramatically reduces NOx, while helping cut fuel consumption below Tier 4 Interim levels.



#### Advanced Electronic Control System

An improved electronic control system more effectively manages engine parameters such as airflow rate, EGR gas flow rate, fuel injection parameters, and after treatment function. The control system also provides enhanced diagnostics through the monitor panel. Additionally, managing information via KOMTRAX helps customers track required maintenance.

#### Variable Geometry Turbocharger (VGT) system

The VGT features proven Komatsu-designed hydraulic technology for robust and accurate control under all speed and load conditions for optimal engine performance. The VGT also provides precise exhaust temperature control for efficient KDPF regeneration. The Tier 4 Final version has a smaller impeller for improved performance.



## Heavy-Duty High-Pressure Common Rail (HPCR) fuel injection system

The system is specifically designed to achieve the optimal

injection of fuel for nearcomplete combustion, which helps reduce Particulate Matter (PM) emissions.



#### Komatsu SmartLoader Logic

The WA320-8 features Komatsu SmartLoader Logic, which controls engine torque to match machine demands. For example, engine torque needs are higher for digging in V-shape loading, but lower when driving with an empty bucket. This system optimizes the engine torque for all applications to minimise fuel consumption. Komatsu SmartLoader Logic functions automatically and doesn't interfere with operation, saving fuel without decreasing production.

#### Hydrostatic Transmission (HST)

The HST provides quick travel response and aggressive drive into the pile. Full auto-shifting eliminates any gear shifting and kick-down operation to allow the operator to concentrate on the digging and loading. The HST also acts as a dynamic brake to slow the loader. This dramatically extends the life of the wet disc brakes.

#### Variable Traction Control System

The variable traction control system is designed to adjust the traction control for each working condition. S-mode reduces tyre spin in slippery or snowy conditions. Auto-mode automatically optimises the tractive effort for various working conditions. Max traction provides the full, 100%, tractive effort.



#### **Creep Mode**

Creep mode limits the travel speed in 1st speed range, while still allowing for full hydraulic flow.



#### Closed-Center Load Sensing System (CLSS)

The one-pump, two-motor system utilises a Closed-Center Load Sensing System (CLSS) pump. This system minimises hydraulic loss for better fuel economy by delivering only as much flow as the job requires.



#### Komatsu Auto Idle Shutdown

In order to reduce unwanted 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.



# **OPERATOR ENVIRONMENT**



#### **New Operator Seat**

A new standard, heated, airsuspension seat provides enhanced support on rough roads and dampens machine vibrations, providing 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 into the standard multi-function mono lever.



#### Low Noise Design

Operator's ear noise level: 68 dB(A) Dynamic noise level (outside): 105 dB(A)

The large ROPS/FOPS cab is mounted with Komatsu's unique 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, comfortable operating environment.



#### Tiltable / Telescopic Steering Wheel

The operator can 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.



#### **Increased Cab Storage Area**

The WA320-8 cab features a storage box on each side of the cab to allow the operator to store items such as a beverage or lunch.





#### **Standard Rear View Monitoring System**

The dedicated full-colour monitor on the right side of the cab provides the operator with a rear view from the machine. This monitor can be always on or only on when the loader shifts into reverse. Guidelines provide the operator with visual cues for the width of the loader.





#### Auxiliary Input (MP3 Jack) 12 V Outlets

An Aux input for audio devices is standard as well as two 12 volt outlets. These are all located on the rear wall of the cab.



#### **Engine Shutdown Secondary Switch**

The engine stop switch enables machine shutdown when accessing the key switch is not possible.





#### **Emergency Stop**

The cabin E-Stop provides the operator with immediate access from the operator's seat and is located on the RHS forward cabin pillar.



# **OPERATOR ENVIRONMENT**



#### **Easy Entry and Exit**

The WA320-8 has an inclined ladder with wide steps and well-placed hand holds to ease entry and exit from the cab. The door latch can be reached from ground level to ease opening and closing the door.

#### **Electronically Controlled Suspension System**

The standard Electronically Controlled Suspension System or ride control system uses an accumulator, which absorbs some of the shock in the boom arm, giving the operator a much smoother ride. This reduces operator fatigue and reduces material spillage during load and carry operations. Ride control is speed sensitive and the activation speed can be adjusted in the monitor panel.

#### **Multi-Function Mono Lever (Optional)**

The multi-function mono lever with EPC control for 3rd spool is standard. It includes a forward-neutral-reverse switch for quick and easy travel. Third spool attachments can be set to continual or proportional control via the monitor panel allowing the operator to control the boom, bucket and attachment all with a single lever.



#### **Remote Boom Positioner**

The operator can set the upper boom limit from the cab.



Attachment selector switch

#### **Attachment Selector Switch**

Coupler equipped machines which use buckets and forks require a different flat level setting when switching between attachments. The attachment selector switch found in coupler equipped machines tells the loader which flat level to use.

### INFORMATION & COMMUNICATION TECHNOLOGY

#### New High Resolution LCD Monitor Panel

The new 7" colour LCD monitor panel displays operational information, ecology guidance and maintenance records. Information such as traction mode, coolant temp, oil and fuel levels are easy to read to keep the operator informed of the machine's settings and conditions.

1 LCD unit	8 Engine coolant temperature gauge		
2 LED unit	9 Fuel gauge		
3 Engine tachometre	HST oil temperature gauge		
4 Speedometre	1 Variable speed display		
5 Ecology gauge	12 Message pilot lamp		
6 Air conditioner display	13 Pilot lamps		
7 Traction level	🚺 DEF level gauge		
Switch panel			

#### Visual user menu

Pressing the menu button on the switch panel accesses the user-menu screen. The menus are grouped by function, with easy-to-understand, intuitive icons for easier machine operation.



- 1 Energy saving guidance
- 2 Machine settings
- 3 Aftertreatment devices regeneration
- 4 SCR information
- 5 Maintenance
- 6 Monitor setting
- 7 Mail check



#### **Operator identification function**

An operator identification (ID) code can be set for each operator, and used to manage operation information of individual machines through KOMTRAX. Data sent from

KOMTRAX can be used to analyse operation status by operator job, as well as by machine.



## Monitor Panel with troubleshooting function minimises downtime

Various metres, gauges and warning functions are centrally arranged on the monitor panel. The monitor simplifies start-up inspection and warns the operator with a lamp and buzzer if any abnormalities occur. Warnings are indicated in four levels, which the operator must acknowledge and clear. Replacement

times for oil and filters are also indicated.



# **MAINTENANCE FEATURES**



#### Automatic Greasing System

4 kg reservoir.



#### Auto 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.

Machine Setting and Information				
🛉 🛞 Manual Fan Reverse Mode	Reverse			
Automatic Fan Reverse Mode	Mode A			
😭 Semi-auto Digging Mode Selection	Loose			
Bucket Level Position Selection	Α			
▼ Auto Kick Down Setting	ON			

#### **DEF Tank**

The DEF tank is easily accessed behind the RH side ladder. An external sight gauge helps prevent overflow and spillage while refilling.



#### **Battery Isolation Switch**

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



#### Side-opening Gull-wing Engine Doors

The large, gull-wing-type engine doors require minimal effort to open and close, thanks to gas assisted struts. The doors make access and daily maintenance easy. Large steps on

each side of the frame also enhance accessibility.



#### Swing-Out Type Cooling Fan and Wide Core Radiator

The cooling fan swings out for easier cleaning. The coolers feature wide-spaced cooling fins to reduce clogging.



#### **Engine Compartment**

The WA320-8 engine compartment is designed for easy serviceability. Placement of maintenance items, such as filters, dipsticks, and oil-fill locations are laid out for easy-to-reach, ground-level access.



DEF tank

#### Cab Air Filter

The inside and outside air filters can be replaced easily without the need for tools. The outside filter is located behind a

lockable door for security.





Inside air filter

Outside air filter



#### Wheel Chocks

standard.

Engine Air Cleaner and Pre-Cleaner

Turbo II centrifugal type precleaner for extended filter life and engine protection is

Steel type wheel chocks for safe parking during service work.





#### "Maintenance time caution lamp" display

When the time before required maintenance dips below 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.





#### Supports DEF level and refill timing

The DEF level gauge is displayed continuously on the monitor panel. In addition, when the refill timing is reached, the DEF-low-level icon appears to alert the operator.





DEF low level guidance



Engine oil dipstick Fuel filter Engine oil fill

#### **Rear Full Fenders**

The rear fenders open upward and use gas-assist struts, which require low lift force. The fenders swing up with the gull-wing doors to give the technician easy access to the engine

compartment. Mud flaps are also included on the rear fenders.



### KOMTRAX EQUIPMENT MONITORING



- KOMTRAX is Komatsu's remote equipment monitoring and management system
- KOMTRAX continuously monitors and records machine health and operational data
- Information such as fuel consumption, utilisation, and a detailed history lowering owning and operating cost



- Know when your machines are running or idling and make decisions that will improve your fleet utilisation
- Detailed movement records ensure you know when and where your equipment is moved
- Up to date records allow you to know when maintenance is due and help you plan for future maintenance needs



- KOMTRAX data can be accessed virtually anywhere through your computer, the web or your smart phone
- Automatic alerts keep fleet managers up to date on the latest machine notifications



- Knowledge is power make informed decisions to manage your fleet better
- Knowing your idle time and fuel consumption will help maximise your machine efficiency
- Take control of your equipment - any time, anywhere



KOMTRAX is
standard equipment
on all Komatsu
construction products







For production and mining class machines.

For construction and compact equipment.

## **SPECIFICATIONS**



Type Aspiration	Komatsu SAA6D107E-3* Water-cooled, 4-cycle . Variable geometry turbo-charged, after-cooled, cooled EGR
Number of cylinders	
	107 mm
Stroke	124 mm
Piston displacement	6.69 ltr
Governor	All-speed, electronic
Horsepower:	
SAĖ J1995	Gross 127 kW 170 HP
ISO 9249 / SAE J1349	Net 123 kW 165 HP
	2100 rpm
	126 kW 169 HP @ 1900 rpm
	tor coolingHydraulic
	Direct injection
Lubrication system:	
	Gear pump, force-lubrication
Air cleaner	Dry type with double elements and dust evacuator, plus dust indicator

\*EPA Tier 4 Final emissions certified



Transmission ...... Hydrostatic, 1 pump, 2 motors with speed range select

Travel speed	Forward	Reverse
1st	1.0 - 13.0 km/h	1.0 - 13.0 km/h
2nd	13.0 km/h	13.0 km/h
3rd	18.7 km/h	18.7 km/h
4th	38.0 km/h	38.0 km/h

Measured with 20.5-R25 tyres



#### AXLES AND FINAL DRIVES

	Four-wheel drive Fixed, semi-floating
	Center-pin support, semi-floating,
	24° total oscillation
	Spiral bevel gear
Differential gear	Torque proportioning
Final reduction gear	Planetary gear, single reduction



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

Parking brake ... Wet, multi-disc brake on transfer output shaft Secondary brake ..... Parking brake is commonly used



Type.....Articulated type, fully-hydraulic power steering Steering angle ..... 38.5° each direction (40° to max end stop) Minimum turning radius at

the center of outside tyre ..... 5380 mm

# YDRAULIC SYSTEM

Steering system:	
Hydraulic pump	Piston pump, in common with loader control
Capacity	
Relief valve setting	
Hydraulic cylinders:	3,1
Туре	Double-acting, piston type
	2
Bore x stroke	
Loader control:	
Hydraulic pump	Piston pump, in common with
	steering system
	180 ltr/min at rated rpm
Hydraulic cylinders:	
	Double-acting, piston type
Number of cylinders—bore	
Control positions:	2-spool type
	Raise, hold, lower, and float
Hydraulic cycle time (rated lo	
, , , , , , , , , , , , , , , , , , ,	
	1.9 sec

#### SERVICE REFILL CAPACITIES



**Bucket capacity:** m<sup>3</sup>





## SPECIFICATIONS

DIMENSIONS

Measured with 20.5-R25(L3) tyres, ROPS/FOPS cab





C Hinge pin height,	Standard Boom	545 mm
carry position	High Lift Boom	705 mm
D Ground clearance		425 mm
E Hitch height		1085 mm
F Overall height, top of the stack		3040 mm
G Overall height, ROPS cab		3200 mm

#### BUCKET

E	SUCKET					High Lift
		General Purpose Bucket w/ Pin On	Light Material Bucket w/ Pin On	Excavating Bucket w/ Pin On	General Purpose Bucket w/ Quick Coupler	General Purpose Bucket w/ Pin On
		B.O.C.E.	B.O.C.E.	B.O.C.E.	B.O.C.E.	B.O.C.E.
	Bucket capacity: heaped	3.0 m <sup>3</sup>	3.2 m <sup>3</sup>	2.3 m <sup>3</sup>	2.7 m <sup>3</sup>	2.3 m <sup>3</sup>
	struck	2.4 m <sup>3</sup>	2.8 m <sup>3</sup>	1.9 m <sup>3</sup>	2.2 m <sup>3</sup>	1.9 m <sup>3</sup>
	Bucket width	2740 mm	2740 mm	2740 mm	2740 mm	2740 mm
	Bucket weight	1330 kg	1445 kg	1370 kg	1260 kg	1255 kg
Н	Dumping clearance, max. height and 45° dump angle*	2880 mm	2745 mm	2965 mm	2785 mm	3525 mm
I	Reach at max. height and 45° dump angle*	1000 mm	1110 mm	840 mm	1240 mm	980 mm
J	Reach at 2130 mm clearance and 45° dump angle*	1595 mm	1620 mm	1540 mm	1765 mm	2060 mm
K	Reach with arm horizontal and bucket level*	2500 mm	2665 mm	2350 mm	2735 mm	2825 mm
L	Operating height (fully raised)	5375 mm	5465 mm	5175 mm	5425 mm	5845 mm
М	Overall length (bucket on ground)	7690 mm	7855 mm	7540 mm	7840 mm	8125 mm
	Loader clearance circle (bucket at carry, outside corner of bucket)	12620 mm	12715 mm	12500 mm	12655 mm	13010 mm
	Digging depth: 0°	165 mm	165 mm	165 mm	65 mm	270 mm
	10°	375 mm	410 mm	350 mm	320 mm	460 mm
	Static tipping load: straight	11500 kg	11410 kg	11485 kg	11255 kg	9175 kg
	40° full turn	9780 kg	9670 kg	9745 kg	9520 kg	7710 kg
	Breakout force	162 kN	139 kN	185 kN	140 kN	197 kN
		16470 kgf	14130 kgf	18870 kgf	14240 kgf	20088 kgf
	Operating weight	15480 kg	15600 kg	15520 kg	15870 kg	15680 kg

#### \*At the end of tooth or B.O.C.E.

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 tyre size and attachments.

#### FORK

			Fork With Quick Coupler
0	Fork tine length		1524 mm
Ρ	Ground to top of tine at maximum	lift	3855 mm
Q	Reach at maximum lift		840 mm
R	Ground to top of tine - boom and tine level		1845 mm
S	Reach - boom and tine level		1730 mm
Т	Reach - tine level on ground		1060 mm
U	Overall length - tine level on ground		8375 mm
	Static tipping load - boom level:	straight	8550 kg
		40° full turn	7440 kg
	Operating weight		15140 kg

Operating load per SAE J1197 (Feb. 1991), 50% of static tipping load. Static tipping load and operating weight shown include lubricant, coolant, full fuel tank, ROPS cab and operator. Machine stability and operating weight affected by tyre size and attachments.



Tires or attachments	Change in operating weight	Change in tipping load		Width over tyres	Ground clearance	Change in vertical dimensions
		Straight	Full turn			uningnatona
	kg	kg	kg	mm	mm	mm
Remove additional counterweight	-250	-440	-380	0	0	0

### STANDARD EQUIPMENT

#### ENGINE:

- Automatic hydraulic-driven fan with
- automatic reverse rotation
- Engine Pre-cleaner, Turbo II
- Engine, Komatsu SAA6D107E-3 diesel
- Fuel pre-filter with water separator .
- . Komatsu SmartLoader Logic
- Radiator mask, swing up
- Radiator, wider core

#### ELECTRICAL SYSTEM:

- Alternator, 90 A, 24 V
- Batteries, 92 Ah/12 V (2), 680 CCA .
- Komatsu Auto Idle Shutdown
- Lights
- Back-up light
- Flashing Beacon, LED with Guard
- Stop and tail light \_
- Turn signal, 2 front and 2 rear with hazard switch
- \_ Working lights, halogen, 2 front cab mount
- Working lights, halogen, 2 front fender mount
- Working lights halogen, 2 rear grill mount
- Starting motor, 5.5 kW

#### CAB:

- 2 x DC12V electrical outlets
- Auto air conditioner
- . Colour LCD/TFT multi-monitor
- Door LH and RH egress
- Electronically Controlled Suspension System (ECSS)

- Equipment Management Monitoring System (EMMS)
- Lights (central warning, brake oil pressure, engine oil pressure, parking brake, cooling fan reverse, KDPF restriction, seat belt caution, Komtrax message)
- Gauges (engine water temperature, ecology, fuel level, DEF level, HST oil temperature, speedometer/tachometer), variable speed display
- Floor mat
- Operator seat, reclining, air suspensions type, heated
- Radio, AM/FM with AUX input jack
- Rear defroster, electric
- ROPS/FOPS Cab Level 2
- Seatbelt, 2-point retractable, 76mm width
- Steering wheel, tilt and telescopic
- Sun visor, front window
- Windshield washer and wiper, front with intermittent
- Windshield washer and wiper, rear

#### SAFETY EQUIPMENT:

- Back-up alarm
- Battery isolation switch
- Colour rear view camera and monitor
- Emergency stop switches (3)
- Horn, electric
- Overcentre Safety Valves (Coupler model only)
- Parking brake, electric
- Rear view mirrors, outside (2) inside (2)

- Service brakes, wet disk type
- Wheel chocks, steel type
- TYRES:
- 20.5-R25 tyres

#### OTHER:

- 2-spool valve for boom and bucket, lever control
- 3-spool valve, lever control (will utilise integrated proportional control switch included in the multi-function mono-lever) and piping
- Automatic greasing system
- Boom kick-out, in-cab adjustable
- Bucket positioner
- Counterweight, standard and additional
- Front fenders
- KOMTRAX® Level 5
- Lift cylinders and bucket cylinder
- Loader linkage with standard lift arm
- Multifunction mono-lever loader control with
- transmission F/R switch (optional) Quick coupler (Coupler model only)
- Rear full fenders
- Transmission speed ranges,
- 4 forward and 4 reverse
- Vandalism protection kit, padlocks for battery box (2)

- **OPTIONAL EQUIPMENT**
- Additional LED Lighting
- Bluetooth Media system
- Clean Air Cab Pressurisation systems
- Fire Extinguishers
- Fire Suppression systems
- Hi Vis Decals
- High-Lift Boom and bucket cylinder Limited slip differential (F&R)
- Powertrain Underguard
- Reverse Sensor

- SMART Alarm Broadband reverse alarm
- UHF/CB Radio
- Various bucket and fork options
- Various Scale Systems
- Window Tinting

www.Komatsu.com.au



Form No: ZESS004700\_AUGUST2018 Materials

Materials and specifications are subject to change without notice. **KOMATSU** is a trademark of Komatsu Ltd. Japan.

Printed in Australia