

# KOMATSU

## WA600-6

ENGINE POWER  
396 kW / 531 HP @ 1.800 rpm

OPERATING WEIGHT  
52.930 kg

BUCKET CAPACITY  
6,4 - 7,0 m<sup>3</sup>

**WA**  
**600**

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**WA600-6**

# WALK-AROUND



## **High productivity and fuel efficiency**

- High performance SAA6D170E-5 engine
- High fuel efficiency
- Dual-mode engine power select system
- Automatic transmission with shift timing select system
- Torque converter lock-up
- Closed load sensing hydraulic system (CLSS) with variable displacement pumps
- Bucket capacity suited to your machine matching requirements
- Long wheelbase

*See pages 4 and 5*



## **Excellent reliability and durability**

- Reliable original Komatsu components
- Robust torsionally resistant frame
- Maintenance-free fully hydraulic wet disc service and parking brakes
- Sealed DT wiring harness connectors

*See page 8*

## **Harmony with the environment**

- Meets EU Stage IIIA and EPA Tier III emission regulations
- Low sound levels
- High fuel efficiency

**ENGINE POWER**

396 kW / 531 HP @ 1.800 rpm

**OPERATING WEIGHT**

52.930 kg

**BUCKET CAPACITY**6,4 - 7,0 m<sup>3</sup>***Excellent operator comfort***

- Electronically controlled ECMV automatic transmission
- Low cab noise levels
- Electronically controlled transmission lever
- Modulated clutch system
- Engine RPM set system with auto decel (optional)
- “EPC” (Electronic Pilot Control) levers
- Pillar-less large ROPS/FOPS integrated cab
- Easy entry cab, front-hinged door
- Advanced Joystick Steering System (AJSS) control

*See pages 6 and 7****Easy maintenance***

- EMMS (Equipment Management Monitoring System)
- VHMS (Vehicle Health Monitoring System)
- Easier radiator cleaning
- Modular radiator core system

*See page 9*

# HIGH PRODUCTIVITY AND FUEL EFFICIENCY



## High performance SAA6D170E-5 engine

### Electronic control system

Komatsu's electronic control system monitors the vehicle performance, optimizing emissions, fuel efficiency and noise levels, even under extreme conditions.

### Heavy duty HPCR system

A high pressure pump pumps fuel into an accumulator chamber or 'Common Rail'. An ECU (electronic control unit) then optimizes fuel injection from the common rail into the engine cylinders. This improves engine power and fuel efficiency, reducing emission and noise levels.

### Heavy-duty cooled EGR system

Cooled exhaust gas returned to the cylinders prevents nitrogen and oxygen bonding during combustion, reducing NOx emissions, lowering thermal stress and improving fuel efficiency.

### New combustion system

Our new combustion system optimises combustion timing and ignition. Thanks to extensive computer simulations and analyses, its specially designed combustion chamber reduces NOx and particulates emissions, fuel consumption and noise levels.

### Air-to-air charge air cooling system

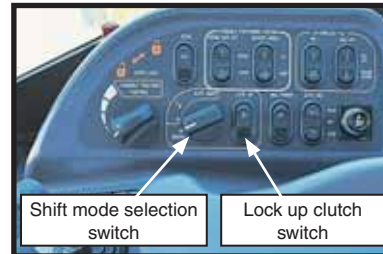
By cooling the compressed air supplied by the turbo-charger to the cylinders, this system optimizes combustion efficiency, reduces emissions and improves engine performance.

### Dual-mode engine power select system

This wheel loader offers two selectable operating modes – E and P. The operator can adjust the machine's performance with the selection switch.

- **E mode:** This mode provides maximum fuel efficiency for general loading.
- **P mode:** This mode provides maximum power output for hard digging operations or hill climbs.

### Automatic transmission with mode select system



This operator controlled system allows the operator to select manual shifting or two levels of automatic shifting (low and high).

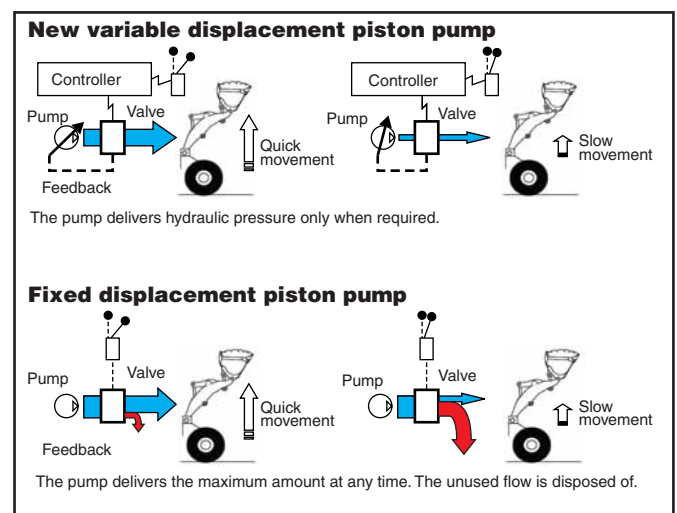
Auto L mode is for fuel saving operation with the gear shift timing set at lower speeds than Auto H mode. Therefore Auto L mode keeps the engine in a relatively low rpm range for fuel efficiency while also giving tractive force at the touch of the accelerator pedal.

### Lock-up torque converter

The Komatsu designed lock-up torque converter provides increased production efficiency, reduced cycle times and optimum fuel savings in Load & Carry or hill-climb operations. This feature allows the operator to activate the system on/off with a switch located on the right-side control panel.

### Variable displacement piston pump & CLSS

New design variable displacement piston pump combined with the Closed-centre Load Sensing System delivers hydraulic flow just as the job requires, preventing wasted hydraulic pressure, for better fuel efficiency.



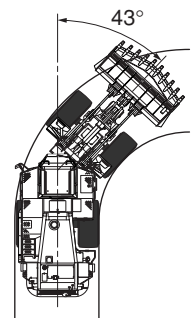
**Increased bucket capacity matches with one class higher dump truck**

The WA600-6 can load 60 t trucks with the 3.990 mm boom. Thanks to its increased height, the operator has greater overall visibility – especially for loading.



**Long wheelbase/articulation angle of 43°**

The widest tread in its class and long wheelbase provide improved machine stability in both longitudinal and lateral directions. As the articulation angle is 43°, the operator can work efficiently even in the tightest job sites.



Bucket capacity:	7,0 m <sup>3</sup>	6,4 m <sup>3</sup>
Boom length:	3.850 mm	3.990 mm
Dumping clearance:	3.730 mm	3.995 mm
Dumping reach:	1.885 mm	1.800 mm
Hinge pin height:	5.665 mm	5.885 mm

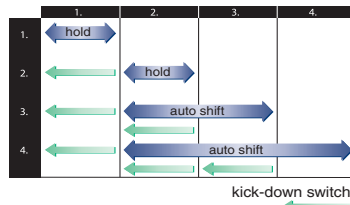
Tread	2.650 mm
Wheelbase	4.500 mm
Minimum turning radius (centre of outside tyre)	7.075 mm

# EXCELLENT OPERATOR COMFORT

## Easy operation

### Automatic transmission with ECMV

The automatic transmission with ECMV automatically selects the proper gear speed based on travel speed, engine speed, and other travel conditions. The ECMV (Electronically Controlled Modulation Valve) system engages the clutch smoothly to prevent lags and shocks when shifting. This system provides efficient machine operation and a comfortable ride.



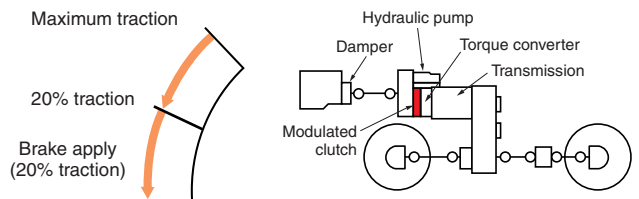
- Kick-down switch: With the touch of a finger, the kick-down switch automatically downshifts from second to first when beginning the digging cycle. It automatically shifts up from first to second when the direction control lever is placed in reverse. This results in increased rim pull for better bucket penetration and reduced cycle times for higher productivity.
- Hold switch: Auto shift is selected and if the operator turns on this switch when the lever is in 3rd or 4th gear, the transmission is held in that gear speed.

### Modulated clutch system

The modulated clutch system controls the tractive effort with the left brake pedal from 100% to 20% of the converter output torque.



- Useful for smooth speed reduction when approaching dump trucks for loading
- Easy control of tyre slippage
- Reduction of shift shock when moving from forward to reverse



### Engine RPM set system with auto decel (optional)

Engine low idle RPM can be easily preset using a push button switch. The system provides auto decel for better fuel consumption.



1. ECSS
2. Remote boom positioner switch
3. Remote bucket digging angle control switch
4. RPM set (on/off) (option)
5. RPM idle set (option)
6. Semi-auto digging system (option)
7. Boom control
8. Bucket control

### Steering wheel with telescopic/tilt column

As an alternative to the AJSS system, a steering wheel is also available. The operator can tilt and telescope the steering column to provide a comfortable working position.

### Electronic controlled transmission lever

Change direction or shift gears with a touch of a finger without removing the shifting hand from the steering wheel. Solid state electronics and conveniently located direction and gear shift controls make this possible. Automatic shifts in ranges 2 to 4 keep production high and manual shifting at a minimum.

## Comfortable operation

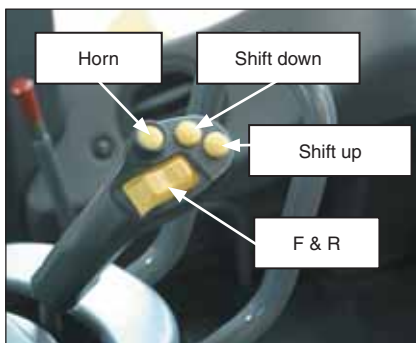
### EPC (Electronic Pilot Control) levers

The EPC levers are easy to use thanks to their light operating effort and short stroke. Large, adjustable arm rests also add to the operators comfort. Combined with CLSS, this system allows the following new functions for easy and efficient operation:

- Remote boom positioner with shockless stop function: The highest and lowest position of the bucket can be set from the cab to match any truck body. Once the positioner is set, the bucket stops smoothly at the required position.
- Remote bucket digging angle control: The digging bucket angle can be easily set from the cab to match the ground condition.
- Semi-auto digging system (option): The bucket can be tilted automatically when digging.

### AJSS (Advanced Joystick Steering System)

AJSS is a feedback steering system which incorporates steering and forward and reverse selection. Thanks to the feedback function, the machine steering angle is exactly the same as the lever tilt angle.



### Low-noise design

Noise at operator's ear:  
73 dB(A) (ISO 6396)  
Dynamic noise level (outside):  
111 dB(A) (ISO 6395)



### Pillar-less large cab

A wide pillar-less wind-screen provides excellent front visibility. The wiper arm covers a large area to provide great visibility even on rainy days.

The cab area is the largest in its class providing maximum space for the operator.

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. The cab sealing is improved to provide a quiet, low-vibration, dustproof pressurised, and comfortable operating environment. Also, the exterior noise level is the lowest in its class.



### Rear access stairs

For all access and egress to the machine, a rear access stair with safety rail is provided. The step width, clearance, and step angle have been designed with the operator's safety in mind. A step light provides light for night boarding.



# EXCELLENT RELIABILITY AND DURABILITY

## Komatsu components

Komatsu manufactures the engine, torque converter, transmission, hydraulic units, and electric parts on this wheel loader. Komatsu wheel loaders are manufactured with an integrated production system using a strict quality control.



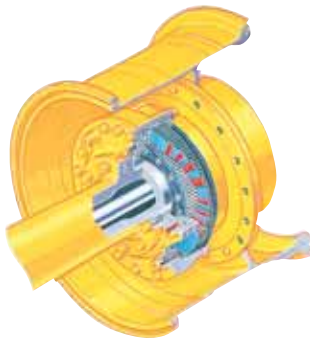
## High-rigidity frames and loader linkage

The front and rear frames and loader linkage have more torsional rigidity providing longer frame life. Extensive testing has proved that frame and loader linkage have the ability to accommodate actual work loads.



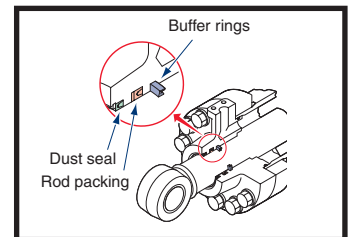
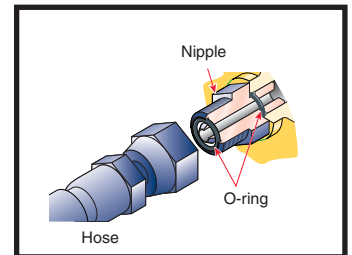
## Wet multi-disc brakes and fully hydraulic braking system

This system provides lower maintenance costs and higher reliability. Wet disc brakes are fully sealed. Contaminants are kept out, reducing wear and maintenance. Brakes require no adjustments for wear, meaning even lower maintenance. The new parking brake is also an adjustment-free, wet multi-disc for high reliability and long life. Added reliability is designed into the braking system by the use of two independent hydraulic circuits. This system provides hydraulic backup should one of the circuits fail.



## Flat face-to-face O-ring seals

Flat face-to-face O-ring seals are used to securely seal hydraulic hose connections and to prevent oil leakage. In addition, buffer rings are installed on the head side of the all-hydraulic cylinders to lower the load on the rod seals and maximise reliability.



## Sealed DT connectors

Main harnesses and controller connectors are equipped with sealed DT connectors providing high reliability, water and dust resistance.



# EASY MAINTENANCE

## EMMS (Equipment Management Monitoring System)

The monitor is mounted in front of the operator for easy viewing, allowing the operator to easily check gauges and warning lights.



## Maintenance control and troubleshooting functions

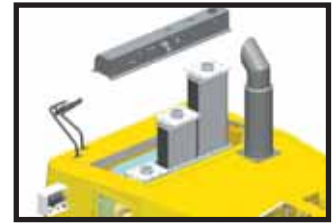
- Action code display: If any abnormality should occur, the monitor displays action details and faults to the operator.
- Monitor: Amongst other functions, the controller monitors engine oil level, pressure and coolant temperature. All errors are displayed on the LCD.
- Replacement time notice: The monitor informs replacement time of oil and filters on the LCD when replacement intervals are reached.
- Trouble data memory: The monitor stores abnormalities for effective troubleshooting.

## VHMS (Vehicle Health Monitoring System)

The VHMS controller monitors the health conditions of major components and enables analysis of the machine and its operations. The VHMS controller monitors and stores all data received from the engine and transmission controller and various additional sensors on the major components. This way, it's possible to record the evolution of the machine's health condition. This data can be downloaded via a portable computer or via satellite communication (option). In both cases, Komatsu specialists can analyse this downloaded data and follow up trends in the machine's condition. When using the optional satellite communications, the Komatsu specialist can inform you whenever an abnormal condition occurs. This way, repair and maintenance costs can be optimised, and maximum machine availability can be maintained.

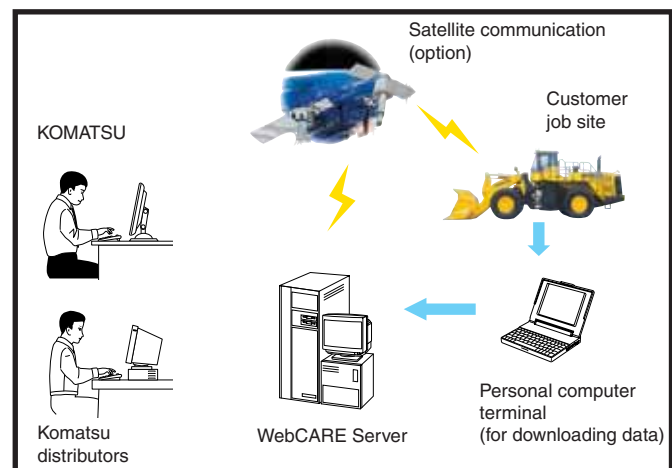
## Modular radiator core system

The modular radiator core is easy to replace without removing the entire radiator assembly.

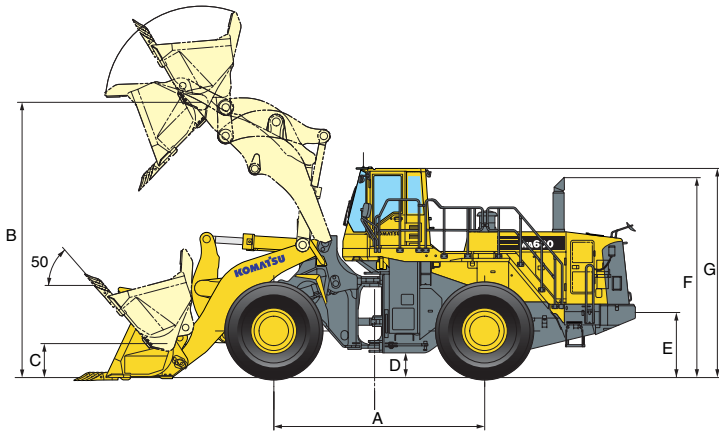


## Ease of radiator cleaning

If the machine is operating in adverse conditions, the operator can reverse the hydraulic cooling fan from inside the cab by using a switch on the control panel.



# DIMENSIONS AND PERFORMANCE FIGURES



Measured with 35/65-33-36PR(L-4) tyres

WA600-6		
	Tread	2.650 mm
	Width over tyres	3.540 mm
A	Wheelbase	4.500 mm
B	Hinge pin height, maximum height	
	with 3.990 mm boom	5.885 mm
	with 3.850 mm boom	5.665 mm
C	Hinge pin height, carry position	
	with 3.990 mm boom	720 mm
	with 3.850 mm boom	670 mm
D	Ground clearance	525 mm
E	Hitch height	1.385 mm
F	Overall height, exhaust stack	4.270 mm
G	Overall height, ROPS cab	4.460 mm

## Measurements and working specifications (standard buckets)

Bucket type		3.990 mm boom			3.850 mm boom		Load & Carry spec
		Excavating bucket		Stock pile bucket	Excavating bucket		Excavating bucket
		Spade nose	Straight edge	Spade nose	Spade nose	Straight edge	Spade nose
Bucket capacity, heaped	m <sup>3</sup>	6,4	6,5	7,0	7,0	7,0	7,8
Bucket capacity, struck	m <sup>3</sup>	5,3	5,4	5,8	5,8	5,8	6,5
Material density	kg/m <sup>3</sup>	1,8	1,8	1,65	1,8	1,8	1,8
Bucket width	mm	3.685	3.685	3.685	3.685	3.685	3.685
Bucket weight	kg	5.115	4.735	5.225	5.245	4.865	5.485
Static tipping load, straight	kg	34.470	34.850	34.330	35.680	36.060	43.200
Static tipping load, 43° articulated	kg	28.720	29.100	28.580	29.730	30.110	36.000
Dump clearance, max. height and 45° discharge angle *	mm	3.995	4.180	3.945	3.730	3.905	3.645
Reach at maximum height and 45° discharge angle *	mm	1.800	1.610	1.850	1.885	1.690	1.965
Operating height, fully raised	mm	7.925	7.925	7.995	7.775	7.775	7.900
Breakout force	kN	388	448	375	378	433	355
Digging depth, when digging angle 0°	mm	130	135	130	130	140	130
Digging depth, when digging angle 10°	mm	515	480	530	530	495	550
Operating weight	kg	52.930	52.550	53.070	53.130	52.730	56.890
Overall length	mm	11.985	11.725	12.055	11.870	11.610	11.990
Turning radius, outside corner of bucket	mm	8.500	8.530	8.520	8.440	8.460	8.470

\* at end of tooth or BOC

Change in data caused by:	Weight	Stat. tipping load, straight	Stat. tipping load, 43° angle	Width over tyres	Ground clearance	Overall height
35/65-33-36PR (L-4)	0 kg	0 kg	0 kg	+3.540 mm	+525 mm	0 mm
35/65-33-36PR (L-5)	-80 kg	-55 kg	-50 kg	+3.540 mm	+525 mm	0 mm
35/65-33-42PR (L-4)	+20 kg	+15 kg	+10 kg	+3.555 mm	+525 mm	0 mm
35/65-R33 (L-4)	-780 kg	-555 kg	-465 kg	+3.565 mm	+460 mm	-65 mm
35/65-R33 (L-5)	-235 kg	-170 kg	-140 kg	+3.565 mm	+460 mm	-65 mm
Add. counterweight	+1.000 kg	+2.380 kg	+1.985 kg	-	-	-

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 are affected by counterweight, tyre size, and other attachments.  
 Apply the following weight changes to operating weight and static tipping load.

# SPECIFICATIONS



## ENGINE

Model.....Komatsu SAA6D170E-5  
 Type..... Common rail direct injection, water-cooled, emissionised, turbocharged, after-cooled 4-cycle diesel  
 Engine power  
     at rated engine speed ..... 1.800 rpm  
     ISO 14396..... 396 kW / 531 HP  
     ISO 9249 (net engine power)..... 393 kW / 527 HP  
 No. of cylinders ..... 6  
 Bore × stroke ..... 170 × 170 mm  
 Displacement..... 23,15 ltr  
 Governor..... Electronic, all speed  
 Fan drive method for radiator cooling ..... Hydraulic  
 Injection system.....Direct injection  
 Lubricating system .....Gear pump, force-lubrication  
 Filter..... Full-flow type  
 Air-filter type ..... Dry type with dust indicator and auto dust evacuator



## TRANSMISSION

Torque converter.....One-stage, two-phase, 3-element  
 Transmission.....Full-powershift, planetary gear

Travel speed (35/65-33 tyres)				
Gear	1.	2.	3.	4.
Forwards	6,7 km/h	11,7 km/h	20,3 km/h	33,8 km/h
with lock-up clutch ON	-	12,4 km/h	21,7 km/h	37,7 km/h
Backwards	7,3 km/h	12,8 km/h	22,0 km/h	37,0 km/h



## SERVICE REFILL CAPACITIES

Cooling system ..... 147 ltr  
 Fuel tank..... 718 ltr  
 Engine oil..... 86 ltr  
 Hydraulic system ..... 443 ltr  
 Axle (both front and rear axle)..... 155 ltr  
 Torque converter and transmission ..... 83 ltr



## ENVIRONMENT

Engine emissions .....Fully complies with EU Stage IIIA and EPA III exhaust emission regulations

Noise levels  
 LpA operator ear ..... 73 dB(A) (ISO 6396 dynamic test)  
 LwA external ..... 111 dB(A) (2000/14/EC Stage 2)



## BRAKES

Operating brakes .....Hydraulically actuated, wet multi-disc brakes on all wheels  
 Parking brake..... Wet-disc  
 Emergency brake ..... Uses the parking brake



## HYDRAULIC SYSTEM

Loader pump ..... Piston pump  
 Circulating capacities..... 239 + 239 ltr/min  
 Working pressure (relief valve setting) ..... 350 kgf/cm<sup>2</sup>  
 Control valve..... 2-spool  
 No. of boom/bucket cylinders..... 2/1  
 Hydraulic cylinders ..... Double acting, piston type  
 Bore diameter × stroke  
     Boom cylinder ..... 200 × 1.067 mm  
     Bucket cylinder..... 225 × 776 mm  
 Hydraulic control lever positions  
     Boom..... Raise, hold, lower, and float  
     Bucket..... Tilt back, hold and dump  
 Hydraulic cycle with rated load bucket filling  
     Stroke time (raise time)..... 9,3 s  
     Lowering time (empty) ..... 4,1 s  
     Dumping time..... 2,3 s



## STEERING SYSTEM

System..... Articulated  
 Type ..... Completely hydraulic power steering  
 Steering angle to either side.....43°  
 No. of steering cylinders ..... 2  
 Bore diameter × stroke ..... 115 × 510 mm  
 Smallest turn (outer edge of tyre) ..... 7.075 mm  
 Steering pump ..... Piston pump  
 Capacity..... 163 ltr/min  
 Working pressure (relief valve setting) ..... 350 kgf/cm<sup>2</sup>



## AXLES AND FINAL DRIVES

System.....4-wheel drive  
 Front axle..... HD axle, fixed  
 Rear axle .....HD axle, full-floating, 26° swing angle  
 Reduction gear ..... Spiral bevel gear  
 Differential gear ..... Conventional gear  
 Final drive .....Planetary gear, single reduction

# WHEEL LOADER

## STANDARD EQUIPMENT

**Engine**

- Komatsu SAA6D170E-5 engine, EU Stage IIIA compliant
- Alternator 90 A/24 V
- Batteries 2 × 12 V/200 Ah
- Hydraulically-driven radiator fan with reversing function
- Water separator

**Cab**

- ROPS/FOPS cab
- Electronically controlled air conditioning
- EMMS (Equipment Management Monitoring System) with self-diagnostic function and maintenance display
- 12 Volt power supply

- Advanced Joystick Steering System (AJSS)
- Air-suspended seat with seat belt
- Sun visor
- Floor mat
- Washer, front & rear
- Wiper, front & rear, front intermittent
- Defroster rear window

**Powertrain**

- Electronically controlled ECMV automatic transmission with mode selector (4F/4R)
- Torque converter lock-up
- Fully hydraulic brake system
- Wet disc parking brake
- Full floating axles
- Power train underguard

**Hydraulics**

- 2-spool main control valve
- Automatic return-to-dig
- Automatic boom kick-out
- EPC fingertip control levers with automatic leveller and positioner

**Others**

- 3.990 mm boom
- Counterweight, 2.780 kg
- Corrosion resistor
- Front fenders
- Rear access stairs
- Radiator mask, lattice type
- Toolkit and spare parts for first service
- VHMS (Vehicle Health Monitoring System)

**Safety**

- Back-up alarm
- Rear-view mirrors
- Rear under view mirror
- Electric horn
- Emergency steering system
- In-line filter for emergency steering system

**Tyres**

- Tyres (35/65-R33 L4 tubeless) and rims

**Lights**

- Reverse lights
- Stop and tail lights
- Turn signal with hazard switch (2 front, 2 rear)

## OPTIONAL EQUIPMENT

**Engine**

- Engine RPM set

**Cab**

- Radio-cassette
- Front blinds, roller
- Rear blinds, roller
- Wiper, front side
- Tilttable steering wheel

**Hydraulics**

- 3-spool main control valve
- Electronically controlled load stabiliser (ECSS)
- Semi-automatic dig function

**Buckets**

- 3.990 mm boom:
  - 6,4 m<sup>3</sup> spade nose excavating bucket
  - 6,5 m<sup>3</sup> straight edge excavating bucket
- 3.850 mm boom:
  - 7,0 m<sup>3</sup> spade nose stockpile bucket
  - 7,0 m<sup>3</sup> spade nose excavating bucket
  - 7,0 m<sup>3</sup> straight edge excavating bucket
  - 7,8 m<sup>3</sup> spade nose excavating bucket
  - Special buckets on request

**Tyres**

- Bias and radial ply tyres
- Foldable rear fender

**Machine**

- 3.850 mm boom
- Load & Carry specification
- Counterweight, 3.780 kg
- Counterweight, 4.780 kg for Load & Carry specification
- Limited-slip differential (LSD) front and rear
- Satellite communication system for VHMS

- Cold area arrangement (-30°)
- Auto greasing
- Brake cooling system (front & rear)
- Provision for fast fuel fill
- In-line filter
- Folding rear fender, right hand

**Safety**

- Battery main switch
- Fire extinguisher



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