

**KOMATSU**



# WA270-3



**Excellent performance  
with one of the largest dumping heights in its class.**

**Engine power: 103 kW/138 hp (ISO 9249)**

**Bucket sizes: 2.1 – 3.0 m<sup>3</sup>**

**Operating weight: 12.4 t**

**Loads better comfort · Loads better for environment · Loads better performance**



## The WA 270-3: The Earthmover with perfect features for versatile and profitable use all around.



*Powerful stockpiling - no problem.*

### **Even the "Baby" of this series is a typical WA-3 wheel loader.**

High load carrying capacity and long life combined with excellent handling, easy maintenance and inspection plus a maximum degree of comfort, safety and environmental compatibility - these are not just catchwords but the natural basic characteristics of this machine.

Its constructive features - from the frame via the engine design up to the bucket capacity - are perfectly matched to the requirements of earthworks, of gravel and sand winning or also of the lumber industry and landfill. Even under the most severe

conditions, the WA 270-3 will reliably render its services.

### **Earthwork - simple as that.**

The dump angle is designed in a way that the bucket (up to 3,0 m<sup>3</sup>) will be emptied completely even with cohesive material. The dumping height of up to 2,900 mm is one of the best in this loader class and makes the machine the ideal tool for the loading of feeding hoppers or as stand-by machine for larger loading machines.





**Well thought-out technology integrated in the loader design.**

What catches the eye with the WA 270-3 – as for all machines of the WA-3 series – is above all the rising slant rear of the loader. Dynamic optics which make sense – as the machine

can move into the material up to the rear wheels for stock-piling work.

**Bursting with power, fast and measuring up to any situation.**

The APS-2 two-stage hydraulic system guarantees crowding in



*Dumping height up to 2,900 mm – hardly beaten by any loader in this class.*

all applications and makes sure that the WA 270-3 offers high power in tearout work and sets to work with speed for loading tasks. Even on extremely slippery ground - thanks to the 45% multiple-disc self-locking differentials in both axles which are included in the standard equipment.

**Most simple operation and high comfort.**

An automatic power shift transmission supported by the extremely low-noise and vibration-free driver's cab sitting on hydro – bearings with all-around comfort and air-conditioning makes work for the operator as pleasant as can be.

*Precise operation due to excellent all-around view on bucket and wheels.*





# On the one hand a comfortable working place with all the trimmings and maximum safety . . .



*An ergonomically perfectly designed working place with air-conditioning as standard.*



*The main monitor keeps the operator constantly informed on the various travelling functions.*



*Easy operation of the automatic transmission.*



*The servo-controlled single-lever hydraulic system with kick-down system.*

## Right at the first glance – comfort which makes sense.

The less stress is put on the operator the more effectively he can work. Therefore, the interior of the driver's cab with integrated ROPS/FOPS system is a perfect example for maximum ergonomics. This not only includes the comfortable vibration-free seat and the steering wheel which can be angled with the monitor panel but also the perfect panoramic view and free view to the front wheels. The precise single-lever hydraulic operation is servo controlled, while a jerk-free automatic transmission matches the speeds to the individual operating conditions. Another feature facilitating the driver's work

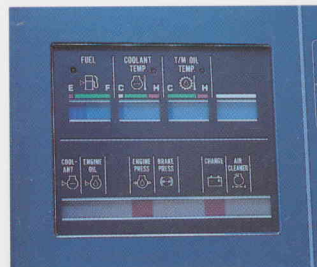
is the „kick down“ system allowing the operator to switch down to first gear in no time.

## Monitor information centre.

The main monitor in the centre of the cockpit shows the actually selected travelling functions. The maintenance – monitor to the right outputs all important data, for instance failures or service data. As you can see - nothing is left to chance with the WA 270-3.

## Always keeping calm – even when things get hectic.

The driver's cab is hydro mounted while the transmission „floats“ on rubber buffers. All lines and hose connections are



*EDIMOS II: Enhanced safety thanks to the monitor.*

also rubber supported. In this way, sound impacts transmitted from the driving units are reduced to a minimum.

Result: a measured value of just 74 dB (A) at the driver's ear.





... and the systematic conversion of the loader's performance into power and speed, on the other hand.

## ALS ELECTRONIC

*The Automatic Load Stabilisor Electronic protecting man and machine (option).*

### **Drastically reduced vibrations and impacts due to the ALS Electronic System.**

This excellent dampening system is automatically activated at 5 km/h. It drastically reduces vibrations and impacts. Result: Considerably less stress especially for man and machine, e.g. during the fast load & carry tasks on uneven ground or in transits on the road. The electronic system registers the input parameters „travelling speed“ and „driving gear“. The system will then automatically adapt itself to the varying operating conditions. The excellent load distribution of the machine supplements the high travelling stability and dumping load.

## APSI SYSTEM

**APS System: Speed or Power? The Automatic Power-Speed system makes the decision for you.**

*The Automatic Power-Speed system speed or power? The system decides.*

The APS system is a hydraulic system, which automatically adjusts to individual operating conditions.

The system decides for itself when power is called for, or when speed would be more advantageous.

The hydraulic system is precision-controlled using

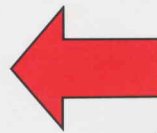
*Comfortable and safe access to the working place.*



**QUICK**

*Automatic Power Speed-System. The "intelligent brain".*

**POWERFUL  
WHEN DIGGING**



servo-activated, mono-lever controls (multi-function-lever control facility is also available as an option).

### **Short loading cycles in extremely restricted spaces.**

In such operating conditions, "fast" hydraulics are required. Main and alternating pumps together supply a high flow-rate of a maximum of 204 l/min at an oil pressure of up to 160 bar. The result: fast bucket lift and fast tipping.

### **Powerful breakout of the material.**

During heavy tear-out and lifting work, the resistance acting on the hydraulic system rises. At this point, the alternating pump switches off automatically and the main pump alone will supply a reduced oil flow-rate of 110 l/min. The system pressure rises to a maximum 210 bar and the entire power will be transferred to the bucket, or is made available to the transmission for powerful traction into the material.

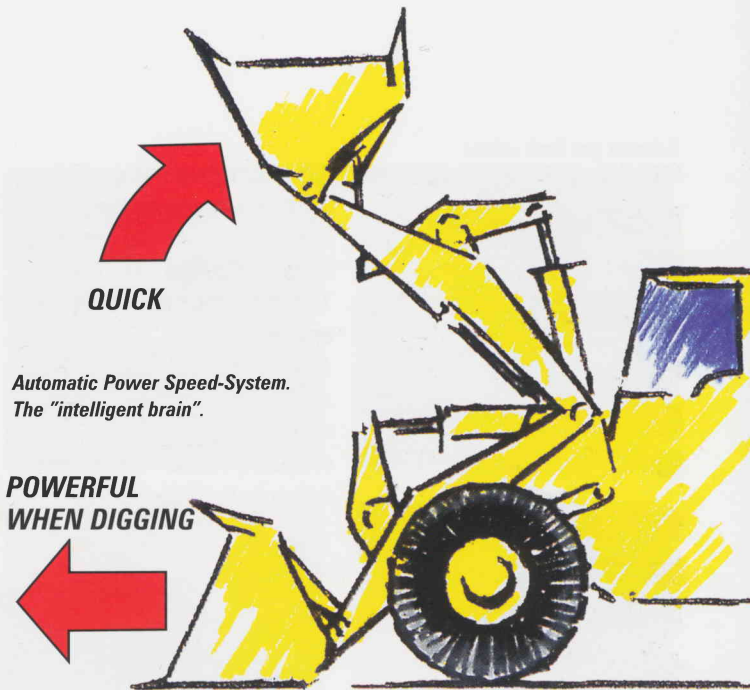
### **Power reversal via Z-kinematics.**

The Z-kinematics are characterised by a high tear-out force and fast bucket discharge. This is achieved by power reversal of the tilt ram.

When filling the bucket (tear-out) the oil pressure acts on the large piston surface, whereas it acts on the smaller, differential surface of the piston during the dumping process. This empties the bucket extremely rapidly and largely prevents the adhesion of cohesive materials. Due to the double-sealed bearing-joints, extremely long maintenance intervals are also achieved.

### **Rigid and torsion-free frame.**

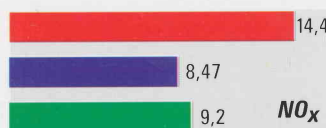
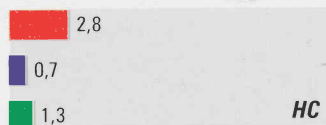
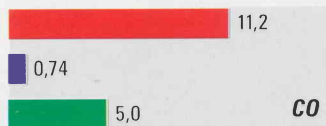
The frame is very stable due to large distances between joints. This reduces the load on the articulated joint and ensures good manoeuvrability.





# Latest state-of-the-art design: Safe, compatible with the environment, and easy to maintain.

Exhaust gas limit values  
(according to ISO 8178)



- EU standard
- WA270-3
- Planned EU standard 1998

## Already more compatible with the environmental limits than will be required by the planned EU standard: The new low emission engine.

The WA270-3 is equipped with a KOMATSU S6D 102 E turbo low-emission engine the exhaust emission values of which lie far below the EU

standard as planned for 1998 (see graphic). Pumps, pistons and nozzles optimise the injection process and provide for a further reduction in NO<sub>x</sub>, HC and soot particles. Thanks to the turbocharger, drastic reductions of the HC and CO emission and a lower

fuel consumption have been obtained. Compatibility with the environment without compromise - among others due to biologically degradable hydraulic oils, the cfc-free air conditioner, the use of water-soluble paint, the reduction of noise emission and the long service life of the WA270-3, most of the components of which can be recycled.





**Ruggedness, reliability - and much more - included in the specification.**

Actually, it goes without saying that we have equipped the machines with an especially rigid frame and heavy-duty axles.

However, the long service life also results from other technical features, for instance the fully hydraulic brake system

with oil-bath brakes, which makes water draining a thing of the past. Freezing problems in winter are thus eliminated.

**Optimised traction on slippery ground.**

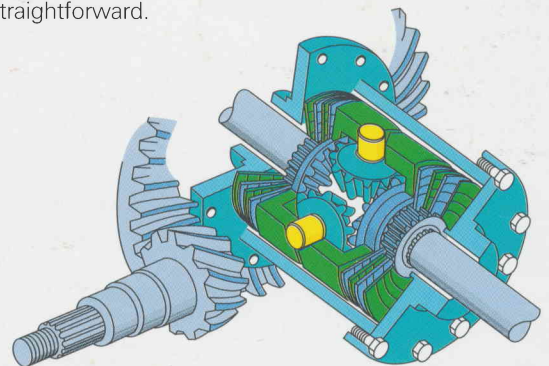
Both axles of the WA270-3 come equipped with 45° multi-disc self-locking differentials. In this way, even sludge or slippery clay cannot effect the optimized power feed and traction of the machine. The working and loading cycle continues as on normal ground.



**Trouble free servicing:**  
*all maintenance areas are easily accessible.*

**When it comes to maintenance the loader shows itself at its best.**

Besides the EDIMOS II, the electronic fault-diagnosis system, above all the integrated mudguard engine cover unit allows a simple and easy maintenance: all maintenance points are easily accessible, clean and straightforward.

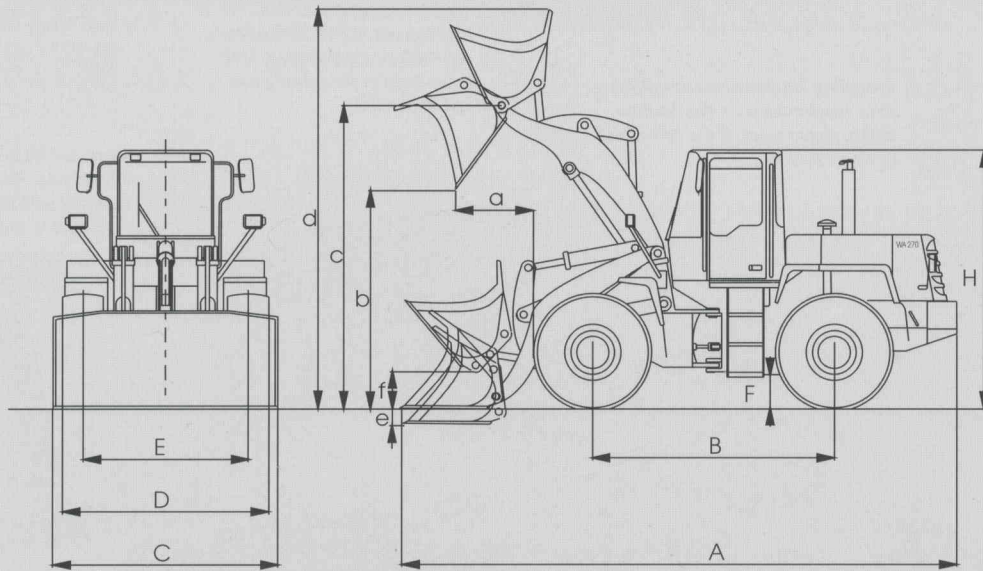


**Multi-disc self-locking differentials with 45% locking value in both axles:**  
*full traction even on slippery ground.*





# Dimensions and Operating Data.



Buckets (capacity according to ISO 7546)	m <sup>3</sup>	2.1	2.4
Material density	t/m <sup>3</sup>	1.8	1.6
Static tipping load, straight	kg	9,800	9,600
Static tipping load, 40° articulated	kg	8,600	8,500
Tear-out force, effective	kN	107	101
Lifting force, effective, on ground	kN	112	110
Operating weight*	kg	12,300	12,350
a Reach at 45°	mm	950	1,000
b Dumping height at 45°	mm	2,900	2,860
c Height of bucket pivoting point	mm	3,782	3,782
d Height of bucket upper edge	mm	5,075	5,075
e Digging depth at 0°	mm	27	27
f Height of bucket transport	mm	460	460
Max. dumping angle		56	56
Max. tilting angle (transport position SAE)		52	52
A Overall length	mm	7,060	7,120
B Wheel base	mm	2,900	2,900
C Bucket width	mm	2,550	2,550
D Width over tyres	mm	2,440	2,440
E Track	mm	1,880	1,880
F Ground clearance	mm	460	460
H Overall height	mm	3,250	3,250

Special buckets:  
3.4 m<sup>3</sup> light-material buckets

The 2.1/2.4 m<sup>3</sup> series buckets as specified in table are also available with screw-on bits and a capacity of 2.2/2.5 m<sup>3</sup>.

L<sub>pA</sub> = 74 dB(A)  
L<sub>wA</sub> = 105 dB(A)

\* Machine without additional counterweight.

These values refer to the 20.5-R25 tyres.

When using 555/70 R25 tyres, the vertical dimensions will be reduced by 60 mm.

Bucket type	Capacity in m <sup>3</sup>	
Bucket	2.1	
Bucket	2.4	
Light-mat. bucket	3.4	
Material density	in (t/m <sup>3</sup> )	0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0

not economical    recommended    fully utilised

In most cases, the actual volume ranges higher than the ISO/SAE classification. The table specifies the optimum bucket with reference to the material.

Material	Bucket filling %	Density t/m <sup>3</sup>
Earth	100-115	1.5-1.6
Clay	110-120	1.5-1.7
Sand	100-110	1.4-1.8
Gravel	85-110	1.5-2.0
Rock	75-100	1.6-2.0



# The specifications at a glance.

The actual standard equipment varies according to the sales territory. Please contact your KOMATSU HANOMAG distributor for any further information.



## Engine

Make	KOMATSU
Model	S6D102 E1
Type	Diesel
Power	103 kW/141 hp (DIN 70020)
at engine speed	103 kW/141 hp (ISO 9249)
Max. torque	2,200 rpm
Number of cylinders	566 Nm (DIN 70020)
Bore/stroke	6
Displacement	102/120 mm
Compression ratio	5,900 cm <sup>3</sup>
Combustion principal	17.3 : 1
Cooling system	Direct injection, turbocharged
Electrical system	Two-circuit liquid cooling, with thermostat control
Battery	24 volt
Three-phase alternator	2 x 12 volt, 105 Ah
Air filter type	50 A
	HD dry air filter



## Transmission

Type	Fully automatic Full Powershift transmission with "kick down" system
Converter type	W 300 02G0 4075
Conversion ratio	2.91 : 1



## Travel speeds

Forward	1st gear 0 -	7.2 km/h
	2nd gear 0 -	12.7 km/h
	3rd gear 0 -	27.2 km/h
	4th gear 0 -	41.8 km/h
Reverse	1st gear 0 -	7.2 km/h
	2nd gear 0 -	12.7 km/h
	3rd gear 0 -	27.2 km/h



## Filling capacities

Fuel	185 l
Engine oil	16 l
Cooling system	56 l
Torque converter/transmission power shift	16.7 l
Front axle	25.5 l
Rear axle	25.5 l
Operating hydraulics/brake system	120 l



## Hydraulic system

System	2-stage hydraulic system, 2-pump system with main and switch pump
Operating pressure	160 bar
stage 1	210 bar
stage 2	
Delivery capacity	
stage 1	204 l
stage 2	110 l
Loading times	
tilting (tearout)	1.1 sec.
lifting (full load)	5.7 sec.
dumping	1.0 sec.
lowering	3.5 sec.

Automatic bucket lift kickout, automatic digging angle adjustment.



## Chassis

System	All-wheel drive, planetary reduction gear in the wheel hubs
Front axle	HD axle with multi-disc self-locking differential, 45 % locking value
Rear axle	HD axle with multi-disc self-locking differential, oscillating suspension, 45 % locking value
Oscillating	12° per side
Tyres	20.5 R 25
	20.5-25
	555/70 R25
	555/70 R24



## Steering system

Type	Hydrostatic
System	Articulated steering
Centre pivot	adjustment free
Steering angle	40° per side
Steering pump	
operating pressure	190 bar
delivery capacity	110 l/min
Min. turning radius	
outer edge, wheel	5,250 mm
outer edge, standard bucket	5,760 mm
Emergency steering system	Via additional pump



## Brakes

Operating brake	Hydraulic pump energy storage brake system, oil-bath multi-disc brake in the wheel hubs (all-wheel brake)
Hand brake	Drum brake at transmission output



## Standard equipment

Sound-insulated high-comfort driver's cab with integrated (ROPS/FOPS) • air-conditioning (cfc free) • openable windows • 2 halogen front headlights • 2 halogen working lights each at front and rear • vandalism protection • fully automatic transmission with additional kick down device • multi-function lever for hydraulic system + transmission (MFL) • single-lever hydraulic actuation • multi-disc self-locking differentials in front and rear axle • emergency steering system • electronic monitoring system (EDIMOS II) • automatic power speed hydraulic system (APS system) • automatic digging angle adjustment (return to dig) • bucket lift kickout • 20.5 x 25 tyres (radial) • overall loading cinematics – sealed bearing points • integrated sound insulation • registered according StVZO.

The WA270-3 is equipped in accordance with safety regulations and its emission values correspond to the regulations of the international standard ISO 6393 and the EC directive 86/662/EEC, noise levels: L<sub>WA</sub> = 105 dB(A), L<sub>pA</sub> = 74 dB(A).



## Options

Hydraulic quick-coupler attachment • load stabiliser (ALS System) • stereo radio recorder • triple control device • weighing device • reverse warning device • central lubricating system • optional colours • special buckets • special tyres (e.g. rock, recycling, sand, clay etc.) • tyre protecting chains • catalyst • speed limit (20 km/h) • TURBO II pre-filter • biologically degradable hydraulic oil • electrical controlled immobilizer (anti theft-lock).



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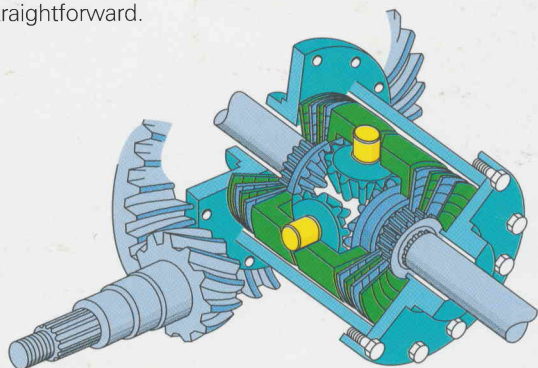
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# WA 270-3 *active* The advantages at a glance.

●  
APS: the Automatic Power Speed system matches the operating hydraulic units to the individual conditions. „fast“ for short loading cycles, „power“ for heavy digging.

Travelling functions and monitoring data are provided on the monitor within direct sight of the driver and can be checked.

Hydromount ROPS/FOPS driver's cab with air-conditioning, low noise level at the driver's ear. LpA = 74 dB(A).

6 cylinder KOMATSU low mission engine. Already today in harmony with the EU standard of tomorrow in noise and emission.

The Z-kinematics guarantee high tearout forces and fast bucket dumping. The system utilizes the force delivered by the tilt cylinder.

Excellent earthwork characteristics due to high bucket dumping angle.

The ALS electronic system: reduces vibrations and protects driver and machine depending on the actual speed. (option)

Fully automatic transmission with electric kickdown device: floating rubber suspension - thus almost eliminating sound impact.

Locking differentials for better traction. Offering a locking value of 45%. Fully floating axle design.

## KOMATSU HANOMAG – The best of both worlds

The wheel loaders of the WA-3 series are the first integrated products to be manufactured jointly by KOMATSU and HANOMAG

in Hanover for Europe. Besides the production of wheel loaders, the factory in Hanover is also specialized in the construction and manufacturing of bulldozers, landfill compactors, axles and transmissions.

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