

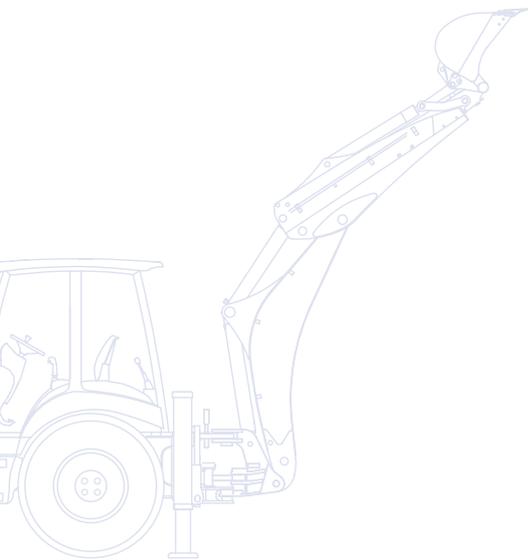
# KOMATSU

**WB**  
**93s**



4 Wheel Steering Backhoe Loader

**WB93S-5**



**ENGINE POWER**  
74 kW / 99,2 HP @ 2.200 rpm

**OPERATING WEIGHT**  
8.550 kg

# Walk-Around

The WB93S-5 belongs to the latest generation of Komatsu backhoe loaders, which comes to market with a number of innovations. It has been developed with constant attention to the needs of customers from all over the world. The result is a user-friendly machine that offers top class performance.

## Exclusive design

- Optimal parallel lifting
- Excellent loading performances
- S-shape backhoe
- Functional layout with hydraulic piping and hoses along the boom
- Highest breakout force and lifting capacities

## Unique comfort

- Ergonomic interior design
- Reduced noise inside cab
- Air condition available as option
- Suspended seats include full adjustable air version

## Premium performance

- High productivity
- CLSS (Closed Load Sensing System)
- Variable flow piston pump
- “Power” and “Economy” working modes
- PPC servo-controls for the front loader



# WB93S-5

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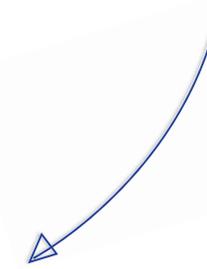
## Excellent visibility

- Wide round glass surfaces
- Sloped and narrow engine bonnet
- Upper front window for full visibility of the front bucket
- Total control of the surrounding area



## Total versatility

- 3 steering modes: 2WS, 4WS, crab
- Hydraulic side shift available
- Flip over forks and pallet forks available
- Quick couplers for the front and rear buckets



**KOMTRAX**

Komatsu Satellite  
Monitoring System

# Premium Performance



## Hydraulic system

The WB93S-5 offers high productivity and top performance, with increased breakout force and lifting capacities. The core of the Komatsu backhoe loader hydraulics is certainly the consolidated CLSS (Closed Load Sensing System). Thanks to its variable flow, the system efficiently supplies the power the machine requires, when it is needed. With two working modes, “Power” and “Economy”, the operator can choose between maximum power and minimum fuel consumption.

## Absolute control

PPC servo-control is standard for the front loader. The “Power Shuttle” transmission provides the machine with four forward and four reverse speeds, with synchronised mechanical shifting. The electro-hydraulic differential lock, together with the “Heavy duty” axles, increases efficiency and the operator’s confidence under any working conditions.





## Loader

The front loader design ensures optimal parallel lifting; in addition, the divergent shape of the arm greatly improves visibility and provides excellent loading performance. The design of the backhoe is completely new: it features a clean and functional layout, with hydraulic piping and hoses along the boom.

## S-shape backhoe

The rounded shape of the backhoe enhances the loading ability of the machine and its capacity to overcome obstacles, while ensuring a high breakout force. The telescopic arm significantly increases the machine's versatility.



# Unique Comfort

## Operator's environment

The cab has a modern design, a ROPS and FOPS structure and is fully equipped. Its increased internal volume and wide, round glass surface optimises the ventilation system that includes several conveniently located vents. Particular attention was given to the internal lay-out: an easy-to-reach control panel, ergonomic controls, and plenty of holders and storage compartments show Komatsu's dedication to provide operators with optimal working conditions.

## New seat range

The air suspended Deluxe seat or the more traditional mechanical suspended seat both guarantee the best interface between the machine and the operator. The air suspended seat also offers adjustable armrests, headrests and lumbar regulation as standard.



## Custom made

It's possible to select 3 steering modes: 2 wheel steering (standard operation), 4WS (agile and fast operation) and crab (confined areas). The many options offer a high level of customisation: hydraulic side-shift for the backhoe, LSS (Load Stabilizer System), radial tyres, offset boom and quick couplers are just a few.



# Excellent Visibility



## Perfect all round view

The wide round glass surface presents a highly increased visibility. The bonnet shape and the upper front window make it easy and safe to work with the front loader. When operating the backhoe excavator, the operator can easily open the single frame window and comfortably overlook the surrounding area.



# Komatsu Satellite Monitoring System



Komtrax is a revolutionary machine tracking system designed to save you time and money. You can now monitor your equipment anytime and anywhere. Use valuable machine data received via the Komtrax web site to optimise your maintenance planning and machine performances.

With Komtrax, you can:

- Check when & where your machines are at work
- Be informed of unauthorized machine use or movement
- Set and receive e-mail notification for security alarms

For further details on Komtrax, please ask your Komatsu dealer for the latest Komtrax brochure.



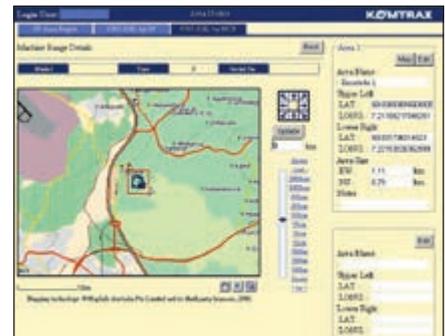
*Machine working time - With the "daily working record" chart, get precise engine running time data: when your machine was started and when it was shut down, as well as total engine running time.*



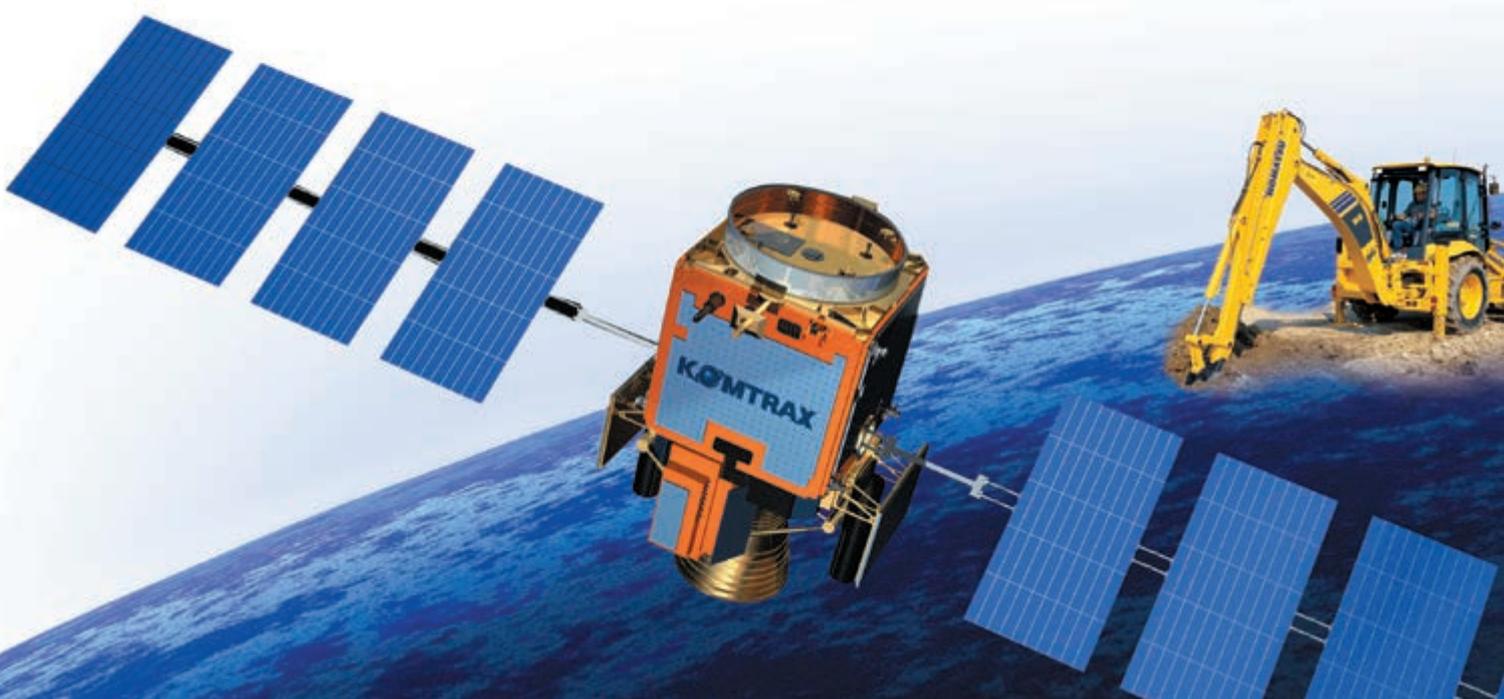
*Fleet location - The machine list instantly locates all your machines, even those in other countries.*



*Alarm notifications - You can receive notification of alarms both via the Komtrax website and by e-mail.*



*Added security - The "engine lock" feature allows to program when a machine's engine can be started. And with "geo-fence", Komtrax sends notification every time your machine moves in or out of a predetermined operating area.*



# Specifications

## ENGINE

The engine has been developed in compliance with the strictest European standards (97/68EC 2004/26/EC – EU Stage IIIA) on the reduction of exhaust emissions.

Model .....	Komatsu SAA4D104E-1
Type .....	vertical, 4-cycle water-cooled diesel engine
Displacement.....	4.485 cm <sup>3</sup>
Bore × stroke.....	104 × 132 mm
No. of cylinders .....	4
Compression ratio .....	17,5:1
Combustion.....	direct injection (DI)
Aspiration .....	turbo-intercooled
Engine power	
at rated engine speed.....	2.200 rpm
ISO 14396 .....	74 kW / 99,2 HP
Max. torque/engine speed .....	420 Nm/1.200 rpm
Cooling system.....	radiator
Air filter type .....	dry filter with safety element
Starting system .....	electric motor with pre-heating air system for cold climate

## OPERATING WEIGHT

Standard machine operating weight .....	8.550 kg
Total machine weight.....	9.500 kg
Operating weight increase	
standard bucket.....	-300 kg
offset boom.....	+190 kg
standard arm.....	-260 kg
pallet forks .....	-280 kg
forks for 4×1 bucket .....	+150 kg

## HYDRAULIC SYSTEM

SyncroSystem hydraulics allows the operator very precise and simultaneous movements. This system incorporates two different working modes: Power and Economy. The advanced hydraulic system includes also the function “Speed Up” to increase the working speed of the front loader.

System .....	SyncroSystem
Type .....	Closed Load Sensing System, CLSS
Pumps type .....	variable displacement axial pistons
Pumps control system.....	Load Sensing
Main valve .....	LIFD “Load Independent Flow Divider” modular type
Max delivery .....	165 ltr/min
Working pressure.....	250 bar

## ELECTRIC SYSTEM

The electric system is easily accessible and protected: connections are sealed and waterproof, and comply with the strictest international safety rules.

Voltage.....	12 V
Battery .....	155 Ah
Alternator.....	120 A
Starter.....	3 kW

## ENVIRONMENT

Vibration levels (EN 12096:1997)

Hand/arm.....	≤ 2,5 m/s <sup>2</sup> (uncertainty K = 1,2 m/s <sup>2</sup> )
Body .....	≤ 0,5 m/s <sup>2</sup> (uncertainty K = 0,2 m/s <sup>2</sup> )
Contains fluorinated greenhouse gas HFC-134a (GWP 1430).	
Quantity of gas 2,5 kg, CO <sub>2</sub> equivalent 3,58 t.	

## STEERING SYSTEM

The front steering wheels are controlled by a hydrostatic “Load Sensing” with steering priority valve system. Turning radius (without using brakes), with 4 wheel steering:

Loader outer angle .....	4.770 mm
Outer wheel .....	4.175 mm

The values are valid with 24” tyres.

## TRANSMISSION

Switching between 4WD and 2WD is obtained through an electrohydraulic system. The 4 speed mechanical shift is synchronised. The transmission is operated through a torque converter and a power shuttle reversing shift “Power Shuttle” type. Travelling speeds with 28” tyres:

### TRAVELLING SPEEDS

GEAR	FORWARD	REVERSE
1st	6 km/h	6 km/h
2nd	10 km/h	10 km/h
3rd	23 km/h	23 km/h
4th	40 km/h	40 km/h

## AXLES

“Heavy duty” axles with planetary reduction gears in the wheel hubs. Front axle total oscillation angle 16°. Limited slip differential on both axles.

Max. front strength (Dynamic).....	8.000 daN
Max. rear strength (Dynamic) .....	8.000 daN

## BRAKES

Oil immersed disc brakes are actuated by individual braking on each rear wheel with 2 separate pedals. Total integral braking on the 4 wheels is activated by operating the two pedals at the same time. Disc diameter .....

Disc diameter .....	270 mm
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The calliper parking or safety brake is operated through a hand lever.

## TYRES

Standard.....	16.9 × 24 - 12 PR
Option.....	16.9 × 28 - 12 PR 440/80 R28

## CABIN

ROPS (ISO 3471, SAEJ1040) and FOPS (ISO 3449, SAEJ 231) cab designed in order to offer the best visibility, ergonomics, low noise and comfort. Two doors, full opening rear window with front and rear windscreen wipers. Internal lay out includes full adjustable seat, fresh filtered air intake ventilation and easy to read front and side dash board.

## FRAME

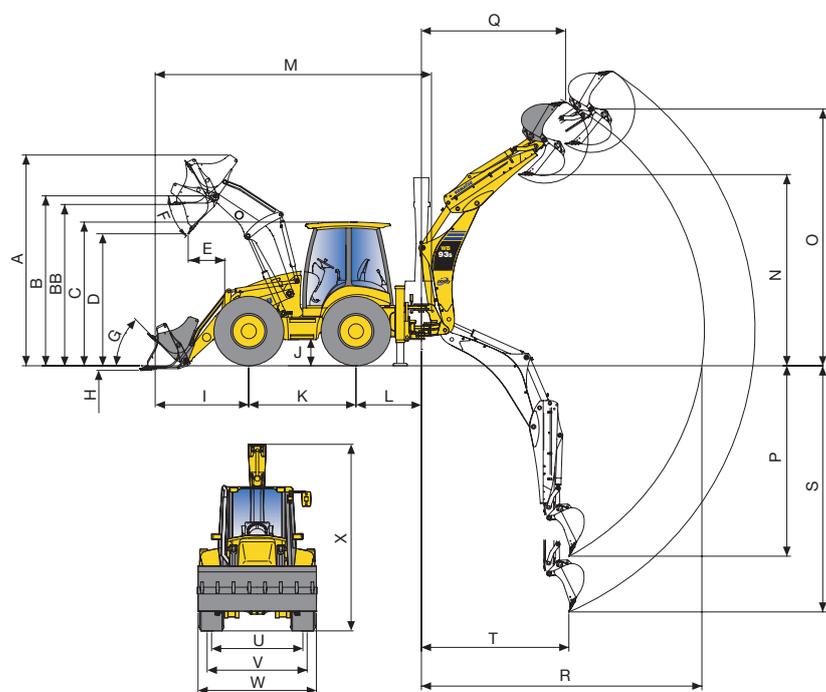
The frame is a reinforced and closed box structure, which increases stiffness and reliability.

## LOADER

The design of the front loader allows excellent parallelism when lifting and lowering the bucket. Furthermore, thanks to the linkage geometry, the greasing points have been reduced.

Standard bucket width	2.420 mm
Standard bucket capacity (ISO 7546)	1,1 m <sup>3</sup>
STD bucket weight	450 kg
Lifting capacity	
at maximum height	3.820 daN (3.900 kg)
Lifting capacity	
at ground level (ISO 14397)	5.195 daN (5.300 kg)
Breakout force (ISO 14397)	6.383 daN (6.500 kg)
4x1 bucket width	2.440 mm
4x1 bucket capacity (ISO 7546)	1,03 m <sup>3</sup>

## DIMENSIONS



A	max height	4.267 mm
B	pin height	3.480 mm
BB	forks loading max height	3.165 mm
C	cab height	2.960 mm
D	max dumping height	2.820 mm
E	max dumping reach (45°)	650 mm
F	dumping angle	40°
G	rollback angle	45°
H	digging depth	184 mm
I	bucket reach (in transport)	2.056 mm
J	ground clearance	450 mm
K	wheel base	2.215 mm
L	backhoe swing centre distance	1.325 mm
M	transport length	5.880 mm
N	dumping height SAE	3.800 mm
	max dumping height	4.200 mm
	- with extended telescopic SAE	4.650 mm
	- with extended telescopic max	4.950 mm

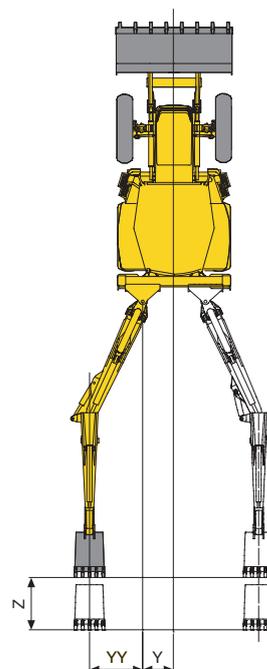
## REFILLS

Engine oil	12,8 ltr
Cooling system	16,5 ltr
Fuel tank	150 ltr
Hydraulic oil tank	41 ltr
Hydraulic oil system capacity	97 ltr
Front axle oil	13 ltr
Rear axle oil	13 ltr
Gearbox oil	16 ltr

## BACKHOE

The boom has a reinforced structure and allows 180° rotation, still preserving high torque. The casted swing support and arm ends ensure high fatigue resistance. Vertical outriggers with adjustable wear device.

Bucket breakout force (ISO 6015)	5.980 daN (6.100 kg)
Arm breakout force (ISO 6015)	3.920 daN (4.000 kg)



O	max digging height	5.830 mm
	- with extended telescopic	6.525 mm
P	digging depth SAE	4.158 mm
	- with extended telescopic	5.300 mm
Q	reach at max height	2.454 mm
	- with extended telescopic	3.704 mm
R	max reach from swing centre	5.760 mm
	- with extended telescopic	6.770 mm
S	max digging depth	4.850 mm
	- with telescopic	5.900 mm
T	digging reach	1.990 mm
U	rear tread	1.950 mm
V	front tread	1.950 mm
W	overall width (with bucket)	2.420 mm
X	transport hoe height	3.850 mm
	- with telescopic	3.953 mm
Y	side shift	605 mm
YY	side shift with off-set	1.080 mm
Z	telescopic stroke	1.140 mm

When used in object handling operations, the backhoe portion must be equipped with hose burst valves (boom, arm and overload warning device) in compliance with EN474-4 and must operate in accordance with the related local regulations.

# 4 Wheel Steering Backhoe Loader

## WB93S-5

### Standard Equipment

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- Komatsu EU Stage IIIA compliant turbo engine
  - Komtrax - Komatsu satellite monitoring system
  - Load sensing, variable displacement axial piston pump
  - Side-by-side radiator
  - 4 wheel drive
  - Limited slip differential on both axles
  - 4 wheel steering (3 modes) with electronic alignment
  - Front mudguards
  - Declutch switch
  - Foot pedal and hand control accelerator
  - Horn
  - Maintenance free battery 155 Ah
  - 12 V external electric plug
  - 12 V internal electric plug
  - Antifreeze (-36 °C)
  - Front and rear working lights
  - Road homologation
  - Lights for road travel
  - Rotating beacon
  - External rear-view mirror (left)
  - ROPS/FOPS cab with heater and fan
  - Tinted glass
  - Adjustable steering column
  - Adjustable seat with safety belt
  - Front and rear washer and windshield wipers
  - Internal storage compartments (one lockable)
  - Cup holder
  - Sun visor
  - Fully opening bonnet
  - External lockable toolbox
  - Dry type air cleaner with clogging indicator
  - Fuel filter with integrated water separator
  - Gauges & indicators: transmission oil temperature, 4WD engagement, brake oil level, fuel level, hour meter, pre-heating, engine speed, engine coolant temperature, engine oil pressure, air filter clogging, steering mode, wheels alignment
  - Safe position seat sensor
  - PPC servo-controls for stabilisers
  - PPC lock switch
  - Tyres: 16.9 × 24 - 12 PR
  - Backhoe boom and arm safety valves, overload warning device (for EU countries only)
- LOADER**
- PPC servo-controls
  - Speed-up function
  - Heavy duty safety bar
  - Self-levelling
  - General purpose bucket with standard teeth
- BACKHOE**
- Mechanical control levers
  - Power/Economy working modes
  - Electro-hydraulic backhoe boom lock
  - Backhoe swing transport lock
  - Electro-hydraulic backhoe slide frame release lock
  - Hydraulic cushions

### Optional Equipment

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- Air conditioning
  - Additional front counterweights (170 kg, 375 kg)
  - Deluxe pneumatic suspension seat
  - Drive shaft guard (front)
  - Cold area arrangement (-30 °C) with 185 Ah battery and pre-heating systems
  - High ambient/altitude arrangement
  - TÜV + TBG version (20 km/h or 40 km/h)
  - Battery disconnection safety switch
  - Rubber pads for stabilisers
  - Hose burst valves:
    - loader arm
    - backhoe boom and arm safety valves, overload warning device (for non-EU countries only)
    - stabilisers
  - Biodegradable hydraulic oil
  - Hydraulic hand hammer circuit
  - Hydraulic oil filter clogging indicator
  - Air cyclone pre-filter
  - Refuelling pump
  - Additional rear-view mirror (right)
  - Four additional working lights on cab
  - Radio pre-setting
  - Radio
  - Backup alarm
  - Tyres:
    - 16.9 × 28 - 12 PR
    - 440/80 R28
- LOADER**
- LSS (Load Stabiliser System)
  - Safety valve deactivation switch
  - Auxiliary hydraulic circuits:
    - floating function
    - floating and "Return-To-Dig" function
    - front auxiliary hydraulic circuit
    - additional front auxiliary hydraulic circuit (6-way valve)
- Attachments:**
- bolt-on cutting edge
  - cutting edge on teeth
  - 4×1 bucket with pre-setting for flip-over forks and angle opening indicator
  - flip-over forks on 4×1 bucket
  - hydraulic and mechanical quick-coupler
  - forks (for quick-coupler)
  - general purpose bucket (for quick-coupler)
  - 4×1 bucket (for quick-coupler)
  - dozer blade
  - snow blade
  - hand hammer
  - heavy duty 4×1 bucket
- BACKHOE**
- PPC servo-controls
  - Alternative control pattern
  - Hydraulic backhoe side shift
  - Auxiliary hydraulic circuits:
    - hammer circuit
    - 2-way circuit for attachments (auger, tilting bucket)
  - Offset boom
  - Telescopic arm
  - Offset boom and telescopic arm
  - Attachments:
    - mechanical quick-coupler (for std buckets)
    - full range of buckets (300 mm - 900 mm)
    - ditch cleaning bucket (1.400 mm)
    - ditch digging bucket (1.000 mm)
    - hydraulic hammer
    - bucket linkage with lifting hook

Your Komatsu partner:

**KOMATSU**

**Komatsu Europe International NV**  
Mechelsesteenweg 586  
B-1800 VILVOORDE (BELGIUM)  
Tel. +32-2-255 24 11  
Fax +32-2-252 19 81  
[www.komatsu.eu](http://www.komatsu.eu)

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