

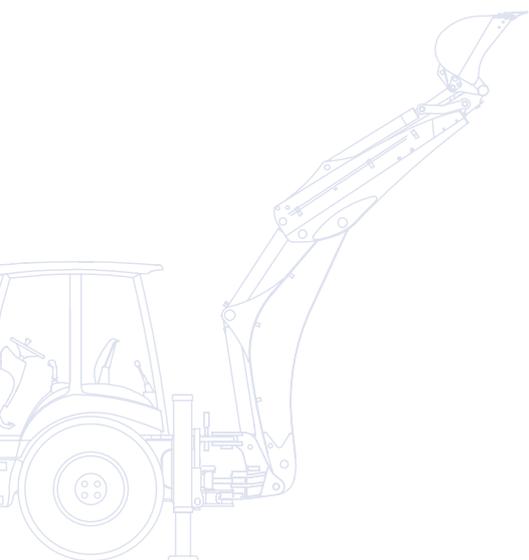
KOMATSU

WB
93R



Rigid Backhoe Loader

WB93R-5



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

OPERATING WEIGHT
8.070 kg

Walk-Around

The WB93R-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



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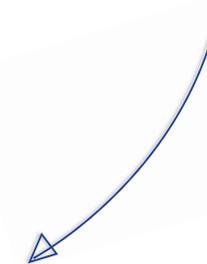
Excellent visibility

- 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

- Several different configurations
- 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

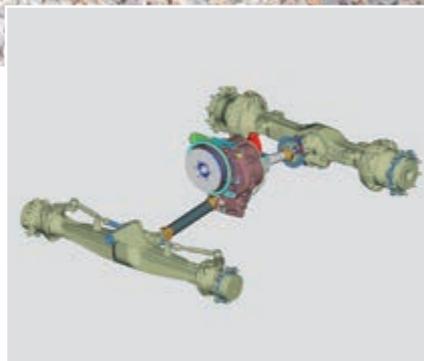


Hydraulic system

The WB93R-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.



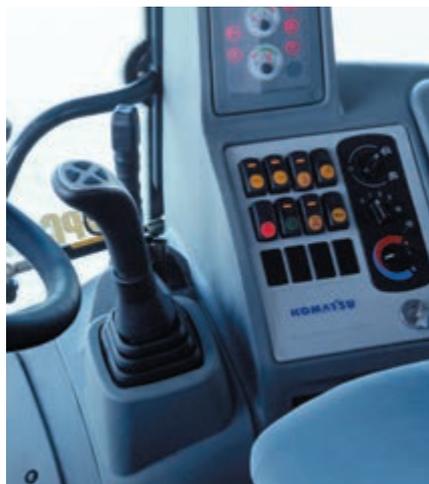
Unique Comfort

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

Several different configurations make this machine suitable for a wide variety of customers. 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.



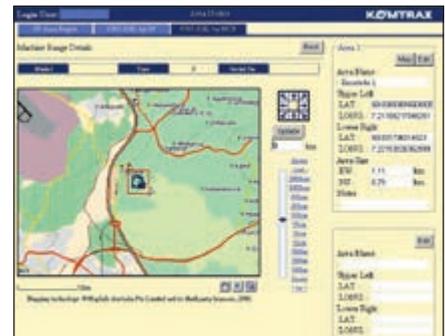
Machine working time - With the "daily working record" chart, get precise engine running time data: when your machine was started and when it was shut down, as well as total engine running time.



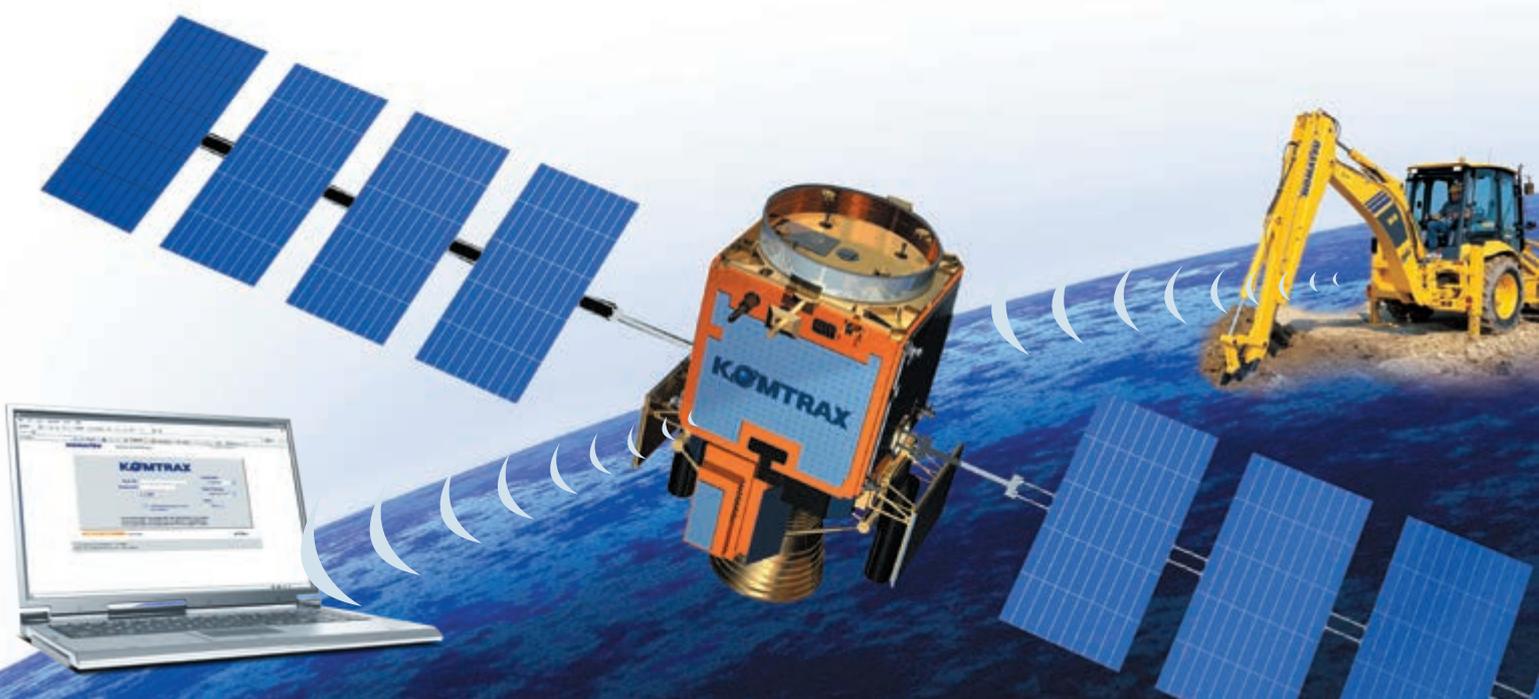
Fleet location - The machine list instantly locates all your machines, even those in other countries.



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 ³
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	8.070 kg
Total machine weight.....	9.000 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 ² (uncertainty K = 1,2 m/s ²)
Body	≤ 0,5 m/s ² (uncertainty K = 0,2 m/s ²)
Contains fluorinated greenhouse gas HFC-134a (GWP 1430).	
Quantity of gas 2,5 kg, CO ₂ 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):	
at the corner of the bucket	4.350 mm
at outer edge of front tyre.....	4.000 mm
Turning radius (using brakes):	
at the corner of the bucket	4.700 mm
at outer edge of front tyre.....	3.200 mm

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

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 20°. Differential total lock in the rear axle controlled by a switch on the loader’s lever.

Max. front strength (Dynamic)	8.500 daN
Max. rear strength (Dynamic)	7.600 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 300 mm
The calliper parking or safety brake is operated through a hand lever.

TYRES

Standard:	
front	12.5/80 R18 - 10 PR
rear	16.9 × 28 - 12 PR
Option:	
front	365/70 R18; 320/80 R18 IT 530; 12.5 - 20 MPT 10 PR
rear	18.4 × 26 - 12 PR; 440/80 R28 IT 530; 16.9 - 30 IND 10 PR

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

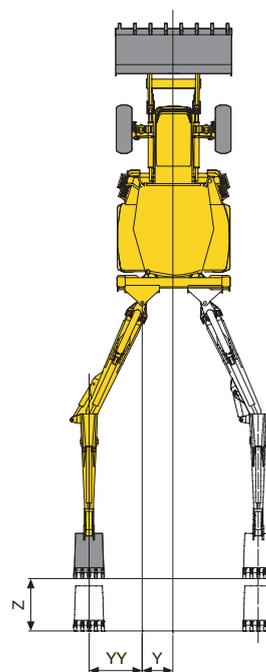
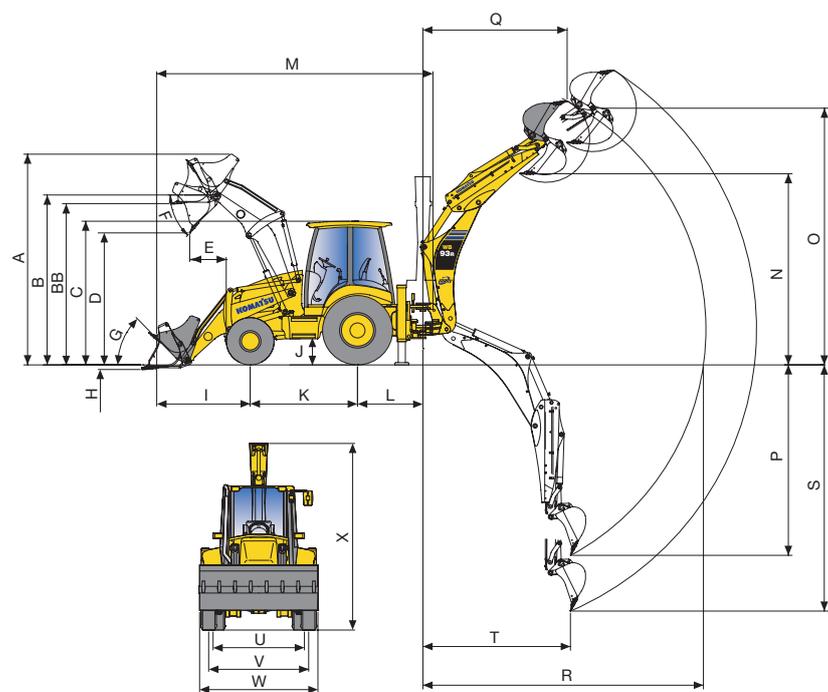
The frame is a reinforced and closed box structure, which increases stiffness and reliability.

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.....	2.320 mm
Standard bucket capacity (ISO 7546)	1,03 m ³
STD bucket weight	430 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.....	2.340 mm
4x1 bucket capacity (ISO 7546).....	1,0 m ³

DIMENSIONS



A	max height	4.298 mm
B	pin height	3.428 mm
BB	forks loading max height	3.182 mm
C	cab height	2.900 mm
D	max dumping height	2.778 mm
E	max dumping reach (45°)	724 mm
F	dumping angle	43°
G	rollback angle	45°
H	digging depth	137 mm
I	bucket reach (in transport)	2.017 mm
J	ground clearance	416 mm
K	wheel base	2.173 mm
L	backhoe swing centre distance	1.325 mm
M	transport length	5.817 mm
N	dumping height SAE	3.720 mm
	max dumping height	4.171 mm
	- with extended telescopic SAE	4.550 mm
	- with extended telescopic max	4.891 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.....	8,5 ltr
Rear axle oil.....	14,5 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	5.792 mm
	- with extended telescopic	6.497 mm
P	digging depth SAE	4.257 mm
	- with extended telescopic	5.369 mm
Q	reach at max height	2.554 mm
	- with extended telescopic	3.816 mm
R	max reach from swing centre	5.754 mm
	- with extended telescopic	6.767 mm
S	max digging depth	4.977 mm
	- with telescopic	6.021 mm
T	digging reach	1.973 mm
U	rear tread	1.800 mm
V	front tread	1.910 mm
W	overall width (with bucket)	2.320 mm
X	transport hoe height	3.750 mm
	- with telescopic	3.810 mm
Y	side shift	605 mm
YY	side shift with offset	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.

Rigid Backhoe Loader

WB93R-5

Standard Equipment

- Komatsu EU Stage IIIA compliant turbo engine
 - Komtrax - Komatsu satellite monitoring system
 - Power Shuttle transmission with 4 synchronised gears
 - Load sensing, variable displacement axial piston pump
 - Side-by-side radiator
 - 4 wheel drive
 - Electro-hydraulic 100% differential lock
 - 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, differential lock, fuel level, hour meter, pre-heating, engine speed, engine coolant temperature, engine oil pressure, air filter clogging
 - Safe position seat sensor
 - PPC lock switch
 - Front tyres: 12.5/80 R18 - 10 PR
 - Rear tyres: 16.9 × 28 - 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
 - PPC servo-controls for stabilisers
 - Hydraulic cushions

Optional Equipment

- Air conditioning
 - Additional front counterweights (150 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
 - Front mudguards
 - Front tyres:
 - 365/70 R18
 - 320/80 R18 IT 530
 - 12.5 - 20 MPT 10 PR
 - Rear tyres:
 - 18.4 × 26 - 12 PR
 - 440/80 R28 IT 530
 - 16.9 - 30 IND 10 PR
- LOADER**
- LSS (Load Stabiliser System)
 - Safety valve deactivation switch
 - Auxiliary hydraulic circuits:
 - floating function
 - front auxiliary hydraulic circuit
 - floating and "Return-To-Dig" function
 - additional front auxiliary hydraulic circuit (6-way valve)
- Attachments:**
- bolt-on cutting edge
 - cutting edge on teeth
 - flip-over forks on 4×1 bucket
 - forks (for quick-coupler)
 - hydraulic and mechanical quick-coupler
 - 4×1 bucket with pre-setting for flip-over forks and angle opening indicator
 - 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:
 - 2-way circuit for attachments (auger, tilting bucket)
 - hammer circuit
 - Offset boom
 - Telescopic arm
 - Offset boom and telescopic arm
 - Attachments:
 - ditch cleaning bucket (1.400 mm)
 - full range of buckets (300 mm - 900 mm)
 - ditch digging bucket (1.000 mm)
 - mechanical quick-coupler (for std buckets)
 - hydraulic hammer
 - Bucket linkage with lifting hook

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