KOMATSU

WE1850-3

Wheel loader general specifications

Safety

Reliability

Productivity

Sustainability

Operating capacities, weights and dimensions

	Standard lift		High lift	
Bucket capacity**	32.88m³	43 yd³	30.58 m³	40 yd³
Operating payload	58 967 kg	130,000 lbs.	54 431 kg	120,000 lbs.
Static tipping loads				
Straight	TBD	TBD	147 211 kg	324,545 lbs.
Full 40° turn	TBD	TBD	128 996 kg	284,388 lbs.
Breakout	1271 kN	285,694 lbs.	1322 kN	297,265 lbs.
Operating weight	268 481 kg	592,000 lbs.	269 887 kg	595,000 lbs.

*** Standard rock bucket based on a material density of 1 780 kg/m³ (3,000 lbs./yd³)*

Working ranges

Engine	1491 kW	2,000 HP
Kinetic Energy Storage System (KESS)***	1268 kW	1,700 HP
Payload		
Standard	58 967 kg	130,000 lbs.
High lift	54 331 kg	120,000 lbs.
Bucket capacity sized to material density		
Truck match	218-327 t	240-360 st

**** Kinetic Energy Storage System*

Power available for acceleration events and parasitic loads

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Power module

Diesel power options

Cummins diesel engine	Tier 1, Tier 2 or Tier 4	
Model	QSK 60 16 cylinders	
Type	4-cycle turbocharged	
Rated power	1491 kW (2,000 HP) @ 1,800 rpm	
MTU Detroit diesel engine	Tier 1, Tier 2	Tier 4
Model	16 V series 4000 16 cylinders	12 V series 4000 12 cylinders
Type	4-cycle turbocharged	
Rated power	1491 kW (2,000 HP) @ 1,800 rpm	

The independent power module mounting system, consisting of the engine coupled to the SR generator, is cradled within the rear frame by a three-point isolation system.

Radiator/oil cooler module
- Replaceable tube type, side-by-side split flow
- Thermostatically controlled, variable speed hydraulic motor-driven, radiator-mounted fan

Exhaust system
Dual, low restriction mufflers with vertical, mid-hood discharge

Control system-LINCS II

LINCS II
Microprocessor-based modular design Vehicle Control Unit (VCU) with monitoring and diagnostics, including integrated data logging and storage.

LINCS II uses a dash-mounted full-color, touch-screen display as the operator interface. Out-of-range conditions will cause an audible alarm along with a message screen that is color-coded to indicate severity.

In addition, the touch-screen display provides repair technicians with operational data and fault messages.

LINCS II load weight
Displays real-time load per pass, per truck and total loads
- Memory capable of retaining months of production information
- Capable of interfacing with radio dispatch systems for real-time monitoring

Steering and hoisting system

Steering
Steering function is controlled by a single joystick. Constant engine rpm assures full hydraulic steering response.

Articulation angle	40°	
Turning radius		
Standard lift	16.10 m	52 ft. 10 in
High lift	17.06 m	55 ft. 11 in

Hoist and bucket control
Hoist and bucket control functions are incorporated into a single joystick control. The proportional electro-hydraulic controlled hoist and bucket system is independent of the steering system.

Standard/high lift cycle times:

Hoist	12.6 seconds*
Dump	2.9 seconds*
Float	5 seconds*

HPD gear box cooler module
- Thermostatically controlled, variable speed 24 V electric motor-driven, radiator-mounted fan.

** Estimated*

Propulsion system

SR hybrid drive switched reluctance (SR) technology propulsion system
- Digital microprocessor-controlled traction drive
- SR hybrid drive advantages include:
  - No commutator, brushes or rotor windings on SR motors or generator
  - SR — Kinetic Energy Storage System KESS
  - Parts commonality — power conversion modules identical for motor and generator

Travel speed
Forward and reverse 0-19.31 km/h (0-12 mph)

Generator
- G200 SR generator
- Switched reluctance (SR)

Traction motors
- B60 SR motor

Planetary gearing
Model 57
- In-line gear train mounted within the rim of the tire, transmitting power from the traction motor through the tire/rim assembly.
- A four-stage planetary drive unit in each position
- Total reduction 99:1

Hydraulic system

HPD drive box
- Pressurized, cooled, and filtered lubrication
- Ratio 1:1

Pumps (maximum flow rate at 1800 rpm)

Main	Piston (5)	2 336 L/min	617 gpm
Steering	Piston (2)	469 L/min	124 gpm
Fan	Piston	170 L/min	45 gpm
Accessory	Piston	83 L/min	22 gpm
Cooling system		83 L/min	22 gpm
Circulating pump	Vane	409 L/min	108 gpm

Valves (flow per valve)

Main	Two (2)	1168 L/min	309 gpm
	Pump pressure	27 580 kPa	4,000 psi
Steering	One (1)	469 L/min	124 gpm
	Pump pressure	27 580 kPa	4,000 psi

Cylinders
Double-acting, single-stage (diameter and stroke), (standard and high lift)

Hoist	381 mm x 2108 mm	15 in x 83 in
Bucket	318 mm x 1086 mm	12.5 in x 42.8 in
Steering	200 mm x 762 mm	7.88 in x 30 in

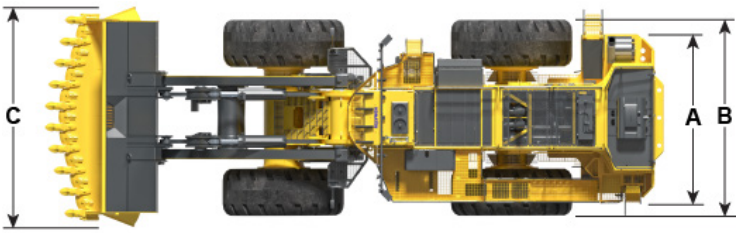
Braking system

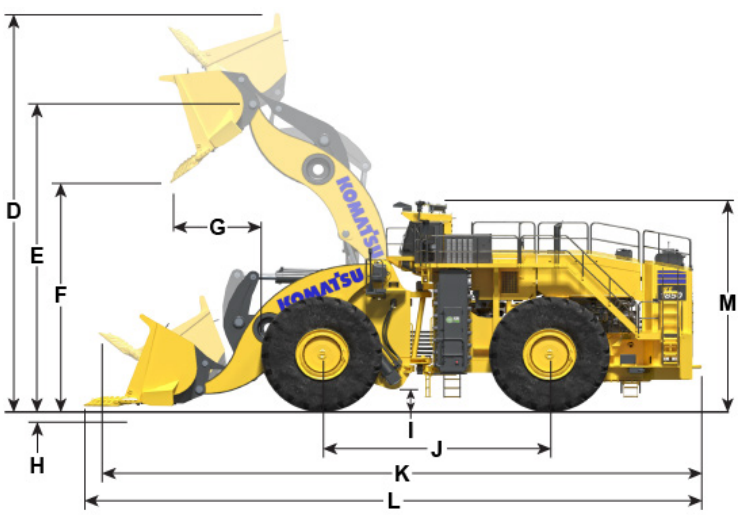
Primary brake system
Electric dynamic braking system is controlled from the accelerator pedal and can bring the loader to a full stop without application of mechanical brakes.

Secondary brake system
Air modulated traction motor speed disc brakes
- Single disc and caliper on each traction motor (4)
- Emergency fail safe brakes are spring applied in the event of air pressure loss

Parking brake system
Spring applied, air release traction motor speed disc brakes

Power electronics cooler mode
- Thermostatically controlled, variable speed 24 V electric motor-driven, radiator-mounted fan.





Overall dimensions

		Standard lift		High lift	
A	Tread	4.57 m	15 ft. 0 in	4.57 m	15 ft. 0 in
B	Width outside tires	6.04 m	19 ft. 10 in	6.04 m	19 ft. 10 in
C1	Rock bucket without deflectors	6.44 m	21 ft. 0 in	6.44 m	21 ft. 0 in
C2	Rock bucket with deflectors	6.71 m	22 ft. 0 in	6.71 m	22 ft. 0 in
C3	Coal bucket	7.44 m	24 ft. 5 in	7.44 m	24 ft. 5 in
D	Height bucket fully raised	12.62 m	41 ft. 5 in	13.39 m	43 ft. 11 in
E	Hinge – pin height	9.40 m	30 ft. 10 in	9.91 m	32 ft. 6 in
F	Dump clearance	6.48 m	21 ft. 3 in	7.57 m	24 ft. 10 in
G	Reach at full lift	3.81 m	12 ft. 6 in	3.43 m	11 ft. 3 in
H	Digging depth	0.10 m	0 ft. 4 in	0.10 m	0 ft. 4 in
I	Ground clearance	0.69 m	2 ft. 3 in	0.69 m	2 ft. 3 in
J	Wheelbase	7.47 m	24 ft. 6 in	7.47 m	24 ft. 6 in
K	Overall length carry position	19.12 m	62 ft. 9 in	19.81 m	65 ft. 0 in
L	Overall length bucket down	19.84 m	65 ft. 2 in	20.24 m	66 ft. 5 in
M	Height over cab	6.73 m	22 ft. 1 in	6.73 m	22 ft. 1 in

** All dimensions are based on standard tires and standard rock bucket with GET unless otherwise noted.*

Air filtration

Primary
- Self-cleaning KLENZ filtration system
- Replaceable filter media meets the MERV15 rating
- 5,000-hour filter life achievable
- Filtered air for engine, drive system cooling and pressurized cab

Secondary
Dual safety filters for engine

Fluid capacities

Fuel	4 542 L	1,200 gal
Hydraulic	1445 L	382 gal
SR converter cooling system	57 L	15 gal
Engine cooling system	490 L	130 gal
Crankcase (includes filters)		
Detroit	250 L	66 gal
Cummins	204 L	54 gal
Gearbox	27 L	7 gal
Planetaries (each)	151 L	40 gal

Structural

Frames are fabricated from high-strength, low-alloy steel with excellent weld characteristics and extreme low temperature properties. The front axle is an integral, fixed part of the front frame. The rear axle center oscillates 11 degrees.

Unique forged ball and socket joints are utilized in multiple pivot locations (lift arms, rear axle, frame articulation, hoist cylinders). These joints are superior in absorbing and distributing multi-directional stresses. Features easily replaceable brass liners for long life and easy maintenance.

High-strength castings are used in key areas of fabricated structures to reduce stress and improve structural life.

Tires/rims

Tires	58/85-57 L-4
Rims	47 x 57 with 6" flange

Standard features

- 120 V AC port
- 360 camera system
- Accelerometer
- Access ladder lights
- Air conditioning/heater-defroster (filtered and pressurized)
- Air dryer system
- Air horn
- Air tank bleed system
- Adjustable automatic lift height cut off
- Automatic bucket leveling control
- Automatic electrical cabinet lights
- Automatic lubrication system
- Back-up alarm, audible
- Battery disconnect switch
- Brake lights
- Central air regulator box
- Central service with fast fuel
- Data analysis and viewing software
- Data logging — downloadable production and maintenance logs
- Door interlock on electrical cabinet
- Drawbar with tow points
- Emergency stop buttons (cab and remote mounted)
- Engine compartment lights
- Fire extinguisher, manual, 9.07 kg (20 lbs.)
- FOPS — falling object protection system
- Idle timer
- Inclinometer
- Interior lights
- Isolation monitor
- Joystick hoist and bucket control
- Joystick steering control
- Jump start
- Ladder walkway (rear access w/retracting ladder)
- LED working lights (10 forward, 2 rear)
- LINCS II alarms
- LINCS II load weigh and monitoring
- Mirrors, rearview (parabolic)(2)
- Operator seat (11-way adjustable)
- Overspeed alarm
- Parking brake
- Retractable lap belt with shoulder harness
- Rock deflectors (bucket)
- ROPS — rollover protection structure
- Selectable throttle switch
- Starter disconnect switch
- Tinted safety glass throughout
- Training seat (with lap belt)
- Turn signals
- Twelve (12) volt power supply in cab
- Twelve (12) volt power port
- USB ports (2)
- Walk-around catwalk for cab
- Windshield washer reservoir (2.6 gal)
- Windshield wiper and washer (front and rear)

Optional features

- Auxiliary steering
- Beacon light kit
- Bucket GET options available
- Cold weather package, including:
  - Battery heater
  - Engine heating system (oil and water)
  - Grease reservoir heater
  - Hydraulic tank heater
- Exhaust discharge guard
- Fire detection and suppression system (manual)
- Fire suppression system (manual)
- Fluid sampling kit
- Lift arms — high lift
- Tires/rims
  - Tires - 60/80R57
  - Rims - 47 x 57 with 5" flange
- Windshield protection kit

Buckets

Standard, ISO-rated capacity:
58 967 kg / 130,000 lbs.

High lift, ISO-rated capacity:
54 331 kg / 120,000 lbs.

Rock and coal bucket configurations available
Buckets sized to material density

Bucket hardware options

- Skid plates (replaceable)
- Lip wear protection
- Wear liner kits

For actual bucket configuration and sizing, consult your local representative.

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