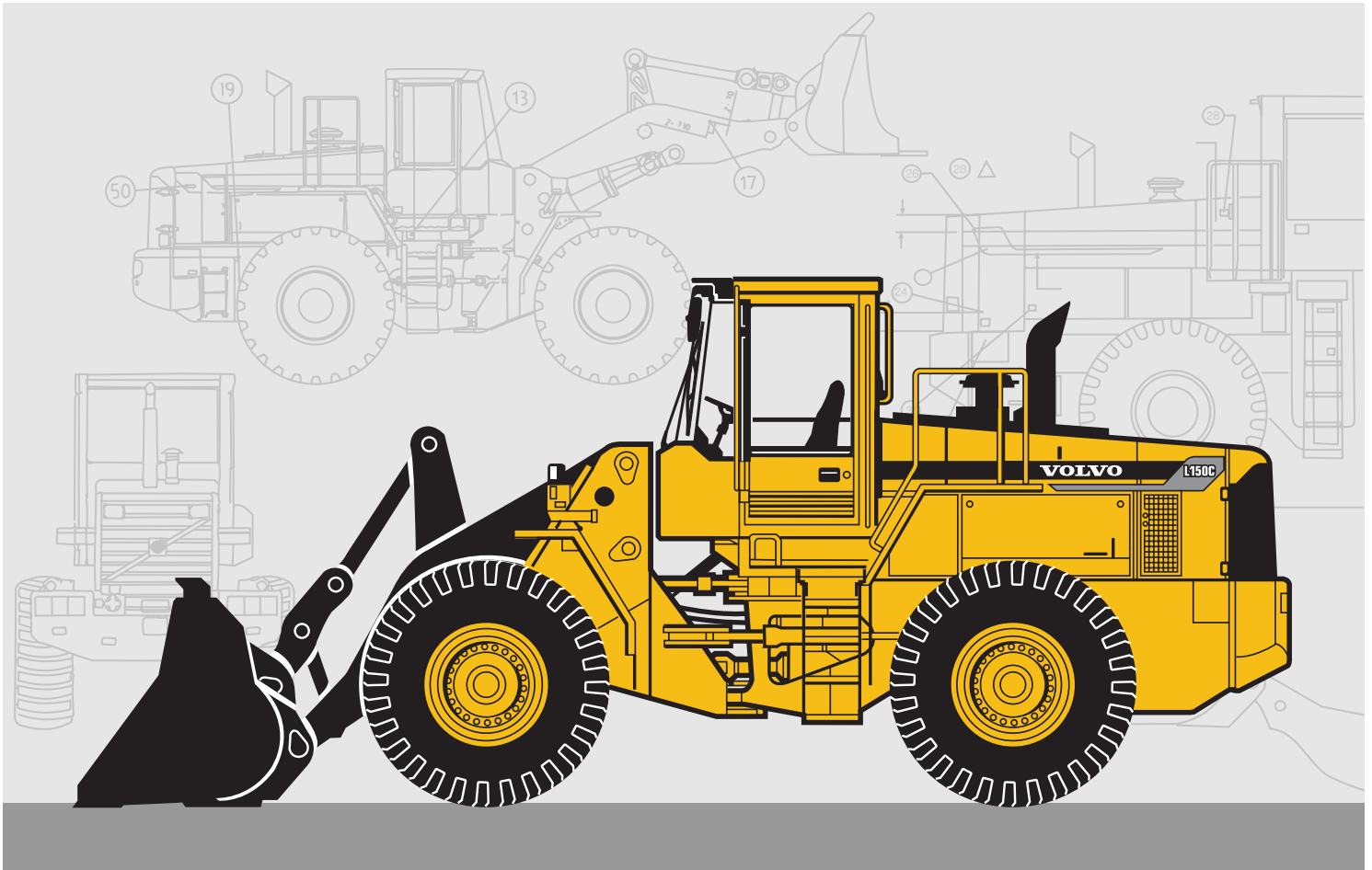


VOLVO WHEEL LOADER

L150C



- **Engine output SAE J1349:**
gross 189 kW (257 hp)
net 183 kW (249 hp)
 - **Operating weight:** 21,9-25,8 t
 - **Buckets:** 3,5-12,0 m³
 - **Volvo high performance low emission engine**
 - with excellent low rpm performance
 - meets all known exhaust emission regulations for off road machines until year 2001
 - hydrostatically driven, cooling fan
 - **Volvo transmission with APS II**
 - the 2nd generation of Automatic Power Shift with mode selector
 - optimizes performance
 - **Wet disc brakes**
 - fully sealed oil-circulation cooled wet disc brakes
 - **Torque Parallel Linkage**
 - high breakout torque throughout the working range
 - excellent parallel lift-arm action
 - **Care Cab** – pressurized cab with high comfort and safety
 - **Contronic** monitoring system
 - **Load-sensing** steering system
 - Pilot-operated working hydraulics
- Optional Equipment**
- Boom Suspension
 - Comfort Drive Control
 - Long Boom
 - Hydraulic attachment bracket

VOLVO



SERVICE

Contronic monitoring system provides information on machine condition, routine maintenance schedules and minimizes time required for troubleshooting.

Service accessibility: Large, easy-to-open engine access doors with gas struts. Hinged radiator grill and radiator.

Refill capacities

Fuel tank	318 l
Engine coolant	70 l
Hydraulic tank	165 l
Transmission	35 l
Engine oil	27 l
Axle front/rear	55/54 l



ENGINE

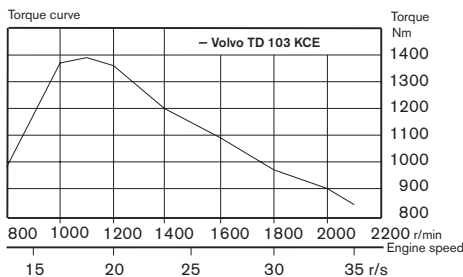
Engine delivers high torque and quick response at low rpm even under full load. The machine can work at low engine speeds, which contributes to good fuel economy, less noise, less wear and longer life.

Engine: High performance-low emission, 6-cylinder, in-line, direct-injected, turbocharged, intercooled 4-stroke diesel engine with wet replaceable cylinder liners.

Air cleaning: three-stage.

Cooling system: Hydrostatically driven fan with separate cooling for the intercooler circuit.

Engine	Volvo TD 103 KCE
Flywheel output at	35 r/s (2100 r/min)
SAE J1349 gross	189 kW (257 hp)
SAE J1349 net	183 kW (249 hp)
Max. torque at	18,3 r/s (1100 r/min)
SAE J1349 gross	1390 Nm
SAE J1349 net	1390 Nm
Displacement	9,6 l



ELECTRICAL SYSTEM

Contronic monitoring system with complete information on the status of the machine's various systems is standard. Electrical system with circuit board is well protected by fuses. Prepared for retrofitting of optional equipment.

Central warning lamp for the following functions: Engine oil pressure, transmission oil pressure, transmission oil temperature, transmission oil filter, brake system pressure, steering pressure.

Central warning lamp with buzzer for the following functions: engine coolant temperature, overspeeding of engine/transmission, axle temperature, parking brake (if applied when operating), low brake pressure (when gear is engaged).

Voltage	24 V
Batteries	2x12 V
Battery capacity	2x140 Ah
Cold cranking capacity, ea	1050 A
Reserve capacity, ea	290 min
Alternator rating	1680 W / 60 A
Starter-motor output	5,4 kW (7,3 hp)



DRIVETRAIN

Drivetrain and working hydraulics well-matched to each other. Dependable design. Quick acceleration boosts productivity. Volvo system-compatible design facilitates servicing.

Torque converter: Single-stage.

Transmission: Volvo Automatic Power Shift transmission of countershaft type with single-lever control. Fast and smooth forward/reverse shifting.

Shifting system: Volvo Automatic Power Shift generation II with mode selector (APS II).

Axles: Volvo, fully floating axle shafts with planetary-type hub reductions. Cast-steel axle housing. Fixed front axle and oscillating rear axle. 100% differential lock on front axle.

Transmission	Volvo HT 210
Torque multiplication	2,40:1
Speeds, max forward/reverse	
1	6,3 km/h
2	11,8 km/h
3	23,3 km/h
4 (forward only)	33,9 km/h
Measured with tires	26.5 R25* L3
Front axle and rear axle	Volvo / AWB 40
Oscillation, rear axle	±15 °
Ground clearance at	
15° oscillation	610 mm



BRAKE SYSTEM

Simple, reliable system with few parts ensures high availability and safety. Self-adjusting internal oil circulation-cooled disc brakes give long service intervals.

Service brakes: Volvo, dual-circuit system with nitrogen-charged accumulators. Fully hydraulically operated enclosed internal oil circulation-cooled outboard mounted disc brakes. Transmission declutch during braking can be preselected by a switch on the instrument panel.










Parking brake: Enclosed wet multi-disc brake built into the transmission. Spring applied, electro-hydraulic released via a switch on the instrument panel. Applies automatically when the key is turned off.

Secondary brake: Dual-circuit system with rechargeable accumulators. One circuit or the parking brake fulfills the requirements.

Standards: The brake system complies with the requirements of ISO 3450, SAE J1473

Number of discs/wheel	1
Accumulators, volume each	3x1,0 l

OPERATIONAL DATA VOLVO L150C




		STANDARD BOOM						LONG BOOM		
		GENERAL PURPOSE				ROCK*	LIGHT MTRL	GENR. PURP.	ROCK*	
Tires 26.5 R25*L3										
		Teeth	Teeth & Segments	Teeth	Bolt-on edges	Bolt-on edges	Teeth & Segments	Bolt-on edges	Bolt-on edges	Teeth & Segments
Volume, heaped, ISO/SAE	m ³	3,5	3,7	3,8	4,0	4,0	3,5	6,8	3,7	3,2
Volume at 110% fill factor	m ³	3,9	4,1	4,2	4,4	4,4	–	–	4,1	–
Static tipping load, straight	kg	17040	16580	16920	16510	15840	16520	15840	14580	14550
at 35° turn	kg	15760	14700	15030	14620	13980	14630	13980	12860	12820
at full turn	kg	14940	14480	14800	14400	13760	14400	13760	12660	12620
Breakout force	kN	192,7	182,5	186,0	176,3	165,8	165,8	128,1	172,9	159,6
A	mm	8320	8350	8370	8240	8320	8600	8780	8700	9080
E	mm	1090	1170	1130	1220	1290	1340	1690	1190	1320
H**)	mm	2990	2970	2960	3040	2990	2790	2640	3650	3380
L	mm	5830	5830	5890	5890	5940	5920	6100	6400	6470
M**)	mm	1320	1300	1360	1220	1280	1520	1570	1170	1480
N**)	mm	1890	1860	1910	1810	1840	1990	1960	2220	2430
V	mm	3230	3230	3230	3200	3200	3230	3200	3200	3030
a ₁ clearance circle	mm	14910	14910	14930	14790	14830	15060	15090	15180	15310
Operating weight	kg	22570	22780	22660	22820	23130	23420	23070	23570	24100
		Including counterweight 1						Including counterweight 1+2		

*) with L5 tires

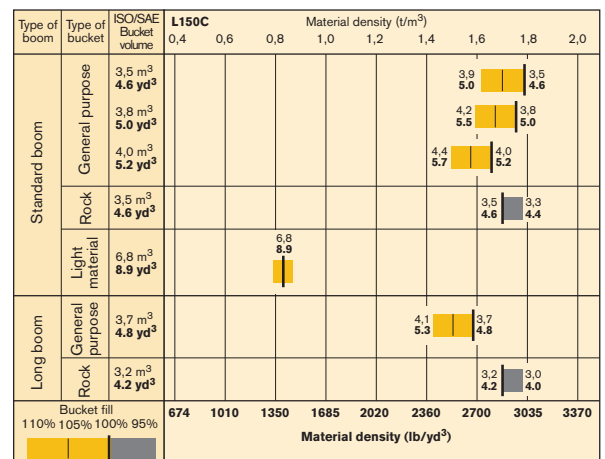
**) at dump angle 45°

Bucket selection chart

The choice of bucket is determined by the density of the material and the bucket fill factor. The TP-linkage uses a very open bucket design, has very good roll back in all positions plus fills the bucket very well. This means that the actual volume carried is often larger than the rated capacity of the bucket. Bucket fill factor in different materials and how they affect the actual bucket volume are shown below. **Example: Sand and gravel. Fill factor ~105%. Density 1,70 ton/m³. Result: The 3,5 m³ bucket carries 3,7 m³.** For optimum stability always consult the bucket selection chart.

Material	Bucket fill, %	Material density, ton/m ³	ISO/SAE bucket volume, m ³	Actual volume, m ³
Earth/Clay		~1,65	3,5	~3,9
		~1,60	3,8	~4,2
		~1,50	4,0	~4,4
Sand/Gravel		~1,70	3,5	~3,7
		~1,65	3,8	~4,0
		~1,60	4,0	~4,2
Aggregate		~1,80	3,5	~3,5
		~1,75	3,8	~3,8
		~1,65	4,0	~4,0
Rock	≤100	~1,70	3,5	~3,5

The size of rock buckets is optimized for optimal penetration and filling capability rather than the density of the material.



Supplemental operating data

		Standard Boom					Long Boom		
		23.5 R25* L3	23.5 R25* L5	26.5 R25* L5	705/70 R25 L3	Cw 1	Cw2	26.5 R25* L5	705/70 R25 L3
Width over tires	mm	-150	-130	+30	+30	–	–	+30	+30
Ground clearance	mm	-70	-40	+20	-80	–	–	+20	-80
Tipping load, full turn	kg	-310	+190	+830	-95	-690	+1160	+710	-85
Operating weight	kg	-600	+120	+990	-220	-350	+590	+980	-220

Combinations of counterweight 1 and 2, may be used within pallet and material arms handling for stabilizing purposes on firm and level ground. Counterweight 2 replaces hydroinflation of rear tires.

Counterweight 2 or hydroinflation must never be combined with tire protection chains. Combinations of L4 and L5 tires and chains are strictly forbidden.

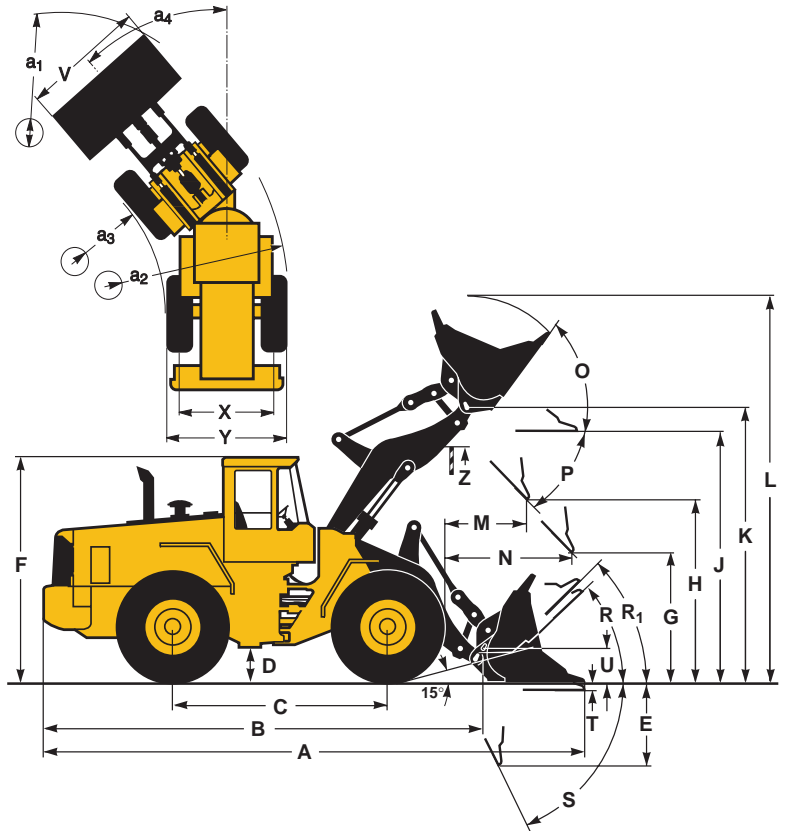
OPERATIONAL DATA & DIMENSIONS

Tires: 26.5 R25* L3

Standard Boom	Long Boom
B	6730 mm
C	3550 mm
D	480 mm
F	3560 mm
G	2135 mm
J	3980 mm
K	4350 mm
O	58 °
P**	45 °
R	44 °
R ₁ *	47 °
S	66 °
T	40 mm
U	490 mm
X	2280 mm
Y	2950 mm
Z	3690 mm
a ₂	6780 mm
a ₃	3830 mm
a ₄	±37 °

* Carry position SAE
 ** P max 49°

Where applicable, specifications and dimensions are in accordance with ISO 7131, SAE J732, ISO 7546, SAE J742, ISO 5998, SAE J818, ISO 8313.

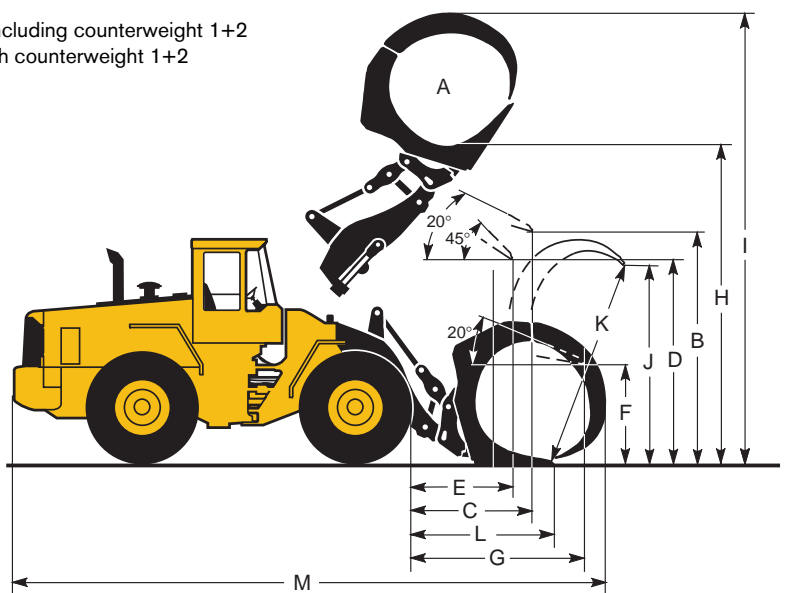


LOG GRAPPLE (hook on)

Tires: 26.5 R25* L3

A	3,1	m ²
B	3660	mm
C	2120	mm
D	2950	mm
E	1660	mm
F	1630	mm
G	2940	mm
H	4990	mm
I	7250	mm
J	3000	mm
K	3280	mm
L	2290	mm
M	9440	mm

Operating weight: 23530 kg including counterweight 1+2
 Operating load: 7700 kg with counterweight 1+2





STEERING SYSTEM

Low-effort steering gives short work cycle times. Power-efficient system provides good fuel economy, good directional stability and smooth ride.

Steering system: Load-sensing hydrostatic articulated steering with power amplification.

System supply: The steering system is supplied from a separate steering pump.

Pump: Variable-flow axial piston pump.

Cylinders: Two double-acting cylinders.

Steering cylinder	2
Bore	90 mm
Piston rod diameter	50 mm
Stroke	418 mm
Relief pressure	21 MPa
Max. flow	91 l/min.
Articulation	± 37°



CAB

Care Cab with easy entry and wide door opening. Lined with sound-absorbent material. Sound- and vibration-suppressing suspension. Good all-round visibility, large glass areas. Curved windshield of laminated, green-tinted glass. Ergonomically located controls and instruments permit a comfortable operating position.

Instrumentation: All information important to the operator is readily visible in front of him. Cab display for Contronic monitoring system (option).

Heater and defroster: Heating element with filtered fresh air and four-speed fan. Defroster outlets for all windows.

Operator's seat: Spring suspended, adjustable operator's seat with belt. The seat is mounted on a bracket on the rear wall. The force from the belt is absorbed by the seat rails.

Standards: Tested and approved according to the following standards: ROPS (ISO/ 3471, SAE J1040), FOPS (ISO 3449, SAE J231). Complies with "Overhead guards for rider lift trucks" (ISO 6055) and "Operator Restraint System" (SAE J386).

Emergency exits	2
Sound level in cab as per ISO 6394, SAE J919	76 dB (A)
Exterior sound level ISO 6393, SAE J2104	LwA 110 dB (A)
Ventilation	10 m ³ /min
Heating capacity	11 kW
Air conditioning (optional)	8 kW



HYDRAULIC SYSTEM

Open center hydraulics with highly efficient vane pumps allows precision control and quick movements even at low rpm's thanks to the high capacity pumps.

Pump: A single vane pump mounted on a power take-off on the transmission.

Valve: Double-acting 3-spool valve actuated by a 3-spool pilot valve.

Lift function: The valve has four functions: raise, hold, lower and float. Inductive/magnetic automatic boom kickout can be switched on and off and is adjustable to any position between maximum reach and full lift height.

Tilt function: The valve has three functions: rollback, hold and dump. Inductive/magnetic automatic bucket positioner, that can be switched on and off.

Cylinders: Double-acting

Filter: Full-flow filtration through 20 µm (absolute) filter cartridge.

Vane pump	
Relief pressure	21,0 MPa
Flow	313 l/min
at	10 MPa
and engine speed	35 r/s (2100 r/min)
Pilot system	
Relief pressure	3,0-4,5 MPa
Cycle times	
Raise*	6,7 s
Dump*	1,9 s
Lower, empty	3,2 s
Total cycle time	11,8 s

* with load as per ISO 5998 and SAE J818



LIFT ARM SYSTEM

TP Linkage combines high break-out torque throughout the working range with parallel lift-arm action. These features together with high lift height and long reach make the lift-arm system equally as good in bucket loading as in work with fork attachments and material handling arms.

Lift cylinder	2
Bore	170 mm
Piston rod diameter	80 mm
Stroke	788 mm
Tilt cylinder	1
Bore	250 mm
Piston rod diameter	120 mm
Stroke	452 mm

STANDARD EQUIPMENT

Engine

Air cleaner, dry type, dual element, exhaust aspirated precleaner
Coolant level, sight gauge
Engine intake manifold preheater
Muffler, spark arresting
Dual fuel filter
Watertrap

Electrical System

24 V – prewired for optional accessories
Alternator, 24 V/60 A
Battery disconnect switch
Fuel gauge
Engine coolant temperature
Transmission oil temperature
Hourmeter
Horn, electric
Instrument panel with symbols
Lights:
• driving (2-front), halogen with high/low beam
• parking lights
• stop/tail combination (2 rear)
• turn signals with hazard
• warning switch
• working lights, halogen (2 front, 2 rear)
• instrument lightning

Contronic Monitoring System, ECU

Neutral start feature
Test function for warning & monitoring lights
Warning & monitoring lights:
• engine oil pressure
• engine coolant temperature
• air cleaner restriction
• alternator malfunction
• working lights
• high beam driving lights
• direction indicator, hazard
Central warning:
• transmission oil pressure
• transmission oil temperature
• brake system pressure (buzzer)
• steering pressure
• axle oil temperature (buzzer)
• transmission oil filter
• overspeeding of engine/transmission (buzzer)
• engine oil pressure
• engine coolant temperature (buzzer)
• Parking brake applied and transmission in forward or reverse (buzzer)
• Brake test by contronic

Drivetrain

Transmission: modulated with single lever control, automatic

power shift, and operator controlled declutch
Differentials:
front 100%, hydraulic differential
lock rear, conventional
Tires 26.5 R25*

Brake System

Wet, internal oil circulation cooled disc brakes, 4-wheel, dual circuit
Brake system, secondary
Parking brake alarm

Cab

ROPS (SAE J1040CC) (ISO 3471), FOPS (SAE J 231) (ISO 3449).
Acoustical lining
Ashtray
Cigarette lighter
Door lockable (left side access)
Heater/defroster/pressurizer
11 kW/h with four speed blower fan
Filtered air
Floor mat
Interior light
Interior rearview mirror
Mirrors rearview (2), exterior
Openable window, right-hand side
Safety glass, tinted
Retractable seat belt (SAE J386)
Seat, heated, ergonomically designed, suspension adjustable

Storage compartment
Sun visor
Windshield wiper, front & rear
Intermittent wiper, front
Cab access steps and handrails
Fenders, front & rear with anti-skid-tape

Hydraulic System

Main valve, 3-spool
Pilot valve, 3-spool
Vane pump
Bucket lever detent
Bucket leveler, automatic with position indicator, adjustable
Boom lever detents
Boom kickout, automatic, adjustable
Hydraulic control lever safety latch
Hydraulic oil cooler
Boom lowering

External Equipment

Isolation mounts: cab, engine, gearbox
Lifting lugs
Side panels, engine hood
Steering frame lock
Vandalism lock, provision for: batteries, engine oil

OPTIONAL EQUIPMENT *(Standard on certain markets)*

Service and maintenance equipment

Tool box
Tool kit
Auto lube system
Refill pump
Wheel nut wrench kit

Engine

Coolant filter
Cold starting aid, engine coolant preheater (220 V/1500 W)
Pre-cleaner, oil bath type
Radiator, corrosion protected
Preair-cleaner, Turbo type

Electrical System

Reverse alarm (SAE J994)
Attachment lights (halogen)
Light registration plate
Working lights front, extra
Working lights rear, extra
Rotating beacon, amber with collapsible mount
Loud torn horn electrically
Head lights assym. left
Side marking lamp

Shut down to idle at
• high engine coolant temp
• low engine oil pressure
• high transm. oil temp

Drivetrain

Forward and reverse switch
Speed limiter, 3-speed version
Limited slip diff. rear axle

Cab

Installation kit for radio
Hand throttle
Sliding ventilation window
Seat belt retractable
Speedometer
Air conditioner
Dual service brake pedals
Contronic display
Instructor seat
Noise reduction kit, cab
Windshield washer, front & rear
Adjustable steering wheel

Hydraulic System

Hydraulic control, 3rd function
Hydraulic control, 4th function
Boom Suspension System

Biodegradable hydraulic fluid
Hydraulic control 3rd, hydraulic pilot hoses
Return line 3rd hydraulic control
Attachment bracket with separate locking system

External Equipment

Counterweight 1: 350 kg
Counterweight 2: 590 kg
Fenders, extended
Fenders, axle mounted
Drawbar with pin

Other Equipment

Comfort Drive Control (CDC)
Secondary steering
Fuel fill strainer
External brake oil cooling system
Long Boom

Protective Equipment

Protective grids for front running light
Protective grids for rear working lights
Window guards for side and rear window

Windshield guard
Protective grids for rear lights
Bellyguard front and rear
Protection plates under cab

Tires

23.5 R25*
26.5 R25*
705/70 R25

Attachments

Buckets
• straight edge
• spade nose
• general purpose
• light material
• high-dump
Bucket teeth, bolt-on/weld-on
Cutting edge, 3 pc reversible, bolt-on
Bucket spillguard
Fork equipment
Material handling arm
Timber grapples

For further information see attachment catalogue

Under our policy of continuous product improvement, we reserve the right to change specifications and design without prior notice. The illustrations do not necessarily show the standard version of the machine.

VOLVO

Volvo Construction Equipment Group