

Volvo BM L150C



- **Engine output SAE J1349:**
gross 189kW (257 hp)
net 180kW (245 hp)
 - **Operating weight:** 21,9-25,8 t.
 - **Buckets:** 3,5 – 12,0m³.
 - **Volvo Low Emission high performance engine** with excellent low rpm. lugging performance.
The engine meets all known regulations regarding exhaust emissions for off road machines until year 2001.
 - **Volvo BM transmission with APS II**, the new generation of Automatic Power Shift with mode selector optimizes the performance.
 - **Torque Parallel Linkage**
– high breakout torque throughout the working range.
– excellent parallel lift-arm action.
 - Fully sealed oil-circulation cooled wet disc brakes.
 - **Care Cab** – pressurized cab with high comfort and safety.
 - **Contronic** monitoring system.
 - Pilot-operated working hydraulics
- Optional Equipment**
- Hydraulic attachment bracket
 - Long Boom
 - Boom Suspension
 - Comfort Drive Control

VOLVO BM

SERVICE REFILL CAPACITIES



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.

Capacities

Fuel tank	339 l	Transmission	35 l
Engine coolant	65 l	Engine oil	27 l
Hydraulic tank	165 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: Volvo TD 103 KCE low emission, high performance, 6-cylinder, in-line, direct-injected, turbocharged, inter-cooled 4-stroke diesel engine with wet replaceable cylinder liners.

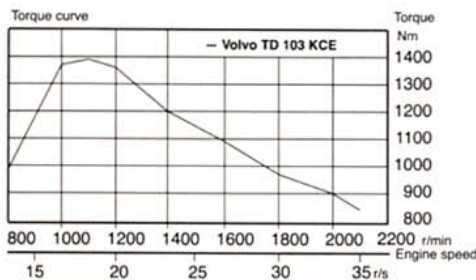
Air cleaning: three-stage.

Engine

Flywheel output at	35 r/s	2100 r/min
SAE J1349 gross	189 kW	257 hp
net	180 kW	245 hp
Max. torque at	18,3 r/s	1100 r/min
SAE J1349 gross	1390 Nm	
net	1380 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: Central warning lamp for the following functions: engine oil pressure, engine coolant temperature (with buzzer), transmission oil pressure, transmission oil temperature, brake pressure, parking brake (buzzer), steering pressure, high speed/gear, transmission oil filter, axle oil temperature.

Voltage	24 V
Batteries	2x12 V
Battery capacity	2x140 Ah
Cold cranking capacity, ea	1050 A
Reserve capacity, ea	290 min
Alternator rating	1680 / 60 W/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 BM system-compatible design facilitates servicing.

Torque converter: Single-stage.

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

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

Axles: Volvo BM, 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 BM HT 210
Torque multiplication	2,40:1
Speeds, max forward/reverse	
1	6,4 km/h
2	11,8 km/h
3	23,3 km/h
4 (forward only)	33,9 km/h
Measured with tires	26.5R25 L3
Front axle and rear axle	Volvo BM / 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 BM, 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
Accumulator, parking brake	1x0,5 l

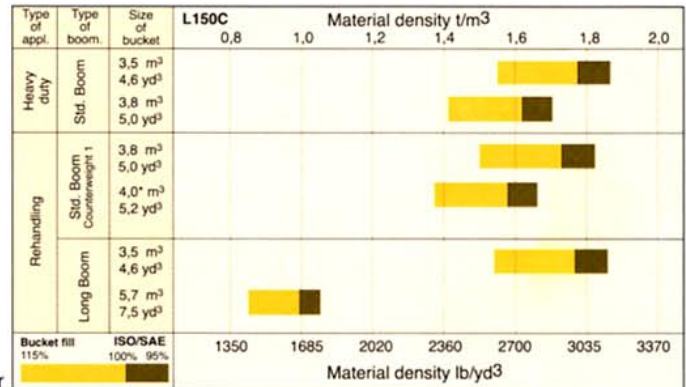
OPERATIONAL DATA VOLVO BM L150C

Type of application		REHANDLING		HEAVY DUTY			LIGHT MTRL	LONG BOOM		
										
Tires 26.5R 25 L3										
Volume, heaped	m ³	3,8	3,8	3,8	3,5	3,6	3,5	–	3,5	–
incl. bolt-on cutting edge	m ³	4,0	4,0	–	–	–	–	6,8	3,7	5,7
Static tipping load, straight	kg	16920	16300	15890	16020	15720	15520	16060	15030	13820
at 35° turn	kg	15090	14500	14150	14280	13970	13780	14250	13340	12160
at full turn	kg	14870	14290	13950	14080	13760	13570	14030	13140	11970
Breakout force	kN	186,4	174,7	186,4	193,1	190,4	169,0	133,0	183,3	133,4
A	mm	8110	8200	8350	8300	8320	8490	8660	8580	9090
E	mm	1130	1210	1130	1080	1100	1250	1610	1100	1530
H**)	mm	3120	3060	2960	3000	2980	2870	2720	3720	3340
L	mm	5890	5940	5890	5820	5920	5890	6100	6400	6510
M**)	mm	1170	1240	1360	1320	1330	1460	1590	1120	1430
N**)	mm	1790	1840	1910	1890	1900	1980	1960	2210	2360
V	mm	3200	3200	3200	3200	3200	3200	3200	3200	3200
a ₁ clearance circle	mm	14730	14780	14900	14880	14890	14750	15030	15120	15400
Operating weight	kg	22210	22470	21960	21850	22150	22270	22580	22930	23630
Product no		94744	94743	92181	92207	92800	92209	92032	94740	94686
**) at dump angle 45°		Including counterweight 1						Incl. CW1	Including counterweight 1+2	

BUCKET SELECTION CHART

The volume handled varies with the bucket fill and is often greater than indicated by the bucket's ISO/SAE volume. The table shows optimum bucket choice with regard to the material density.

Material m ³	Bucket fill %	Density t/m ³
Earth	100–115	1,4–1,6
Clay	110–120	1,4–1,6
Sand	100–110	1,6–1,9
Gravel	100–110	1,7–1,9
Rock	75–100	1,5–1,9



*) Incl. edge saver

SUPPLEMENTAL OPERATING DATA

		Standard Boom					Long Boom				
		23.5 R25 L3	23.5 R25 L5	26.5 R25 L5	30/65 R 25 L2	Cw 1	Cw2	*Cw3	26.5 R25 L5	30/65 R 25 L2	*Cw3
Width over tires	mm	-155	-140	+14	+90	–	–	–	+14	+90	–
Ground clearance	mm	-25	-73	+35	-20	–	–	–	+35	-20	–
Tipping load, full turn	kg	-380	-10	+385	-95	+735	+1185	+465	+326	-80	+405
Operating weight	kg	-695	-165	+552	-230	+375	+600	+260	+552	-230	+260

Counterweight 1 may be used in rehandling and material handling. Counterweight 2, and 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 must never be combined with tire chains. *For the purpose of stabilizing in log operations counterweight 3 may be added to counterweight 1 and 2. Counterweight 3 must never be used in combination with L5 tires.

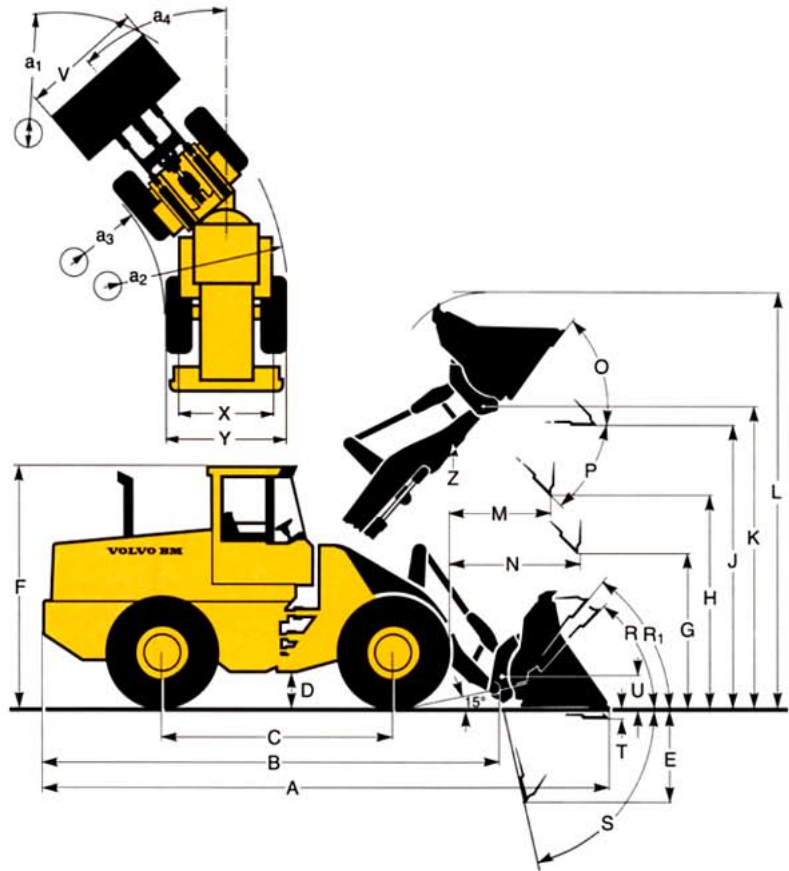
OPERATIONAL DATA & DIMENSIONS

Tires: 26.5 R 25 L3

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

	Standard Boom	Long Boom
B	6710 mm	7210 mm
C	3550 mm	3550 mm
D	480 mm	480 mm
F	3560 mm	3560 mm
G	2135 mm	2135 mm
J	3970 mm	4550 mm
K	4350 mm	4920 mm
O	58 °	59 °
P**	45 °	45 °
R	44 °	47 °
R ₁ *	47 °	52 °
S	66 °	61 °
T	40 mm	90 mm
U	490 mm	620 mm
X	2280 mm	2280 mm
Y	2950 mm	2950 mm
Z	3690 mm	4160 mm
a ₂	6780 mm	6780 mm
a ₃	3830 mm	3830 mm
a ₄	±37 °	±37 °

* Carry position SAE
** P max 49°

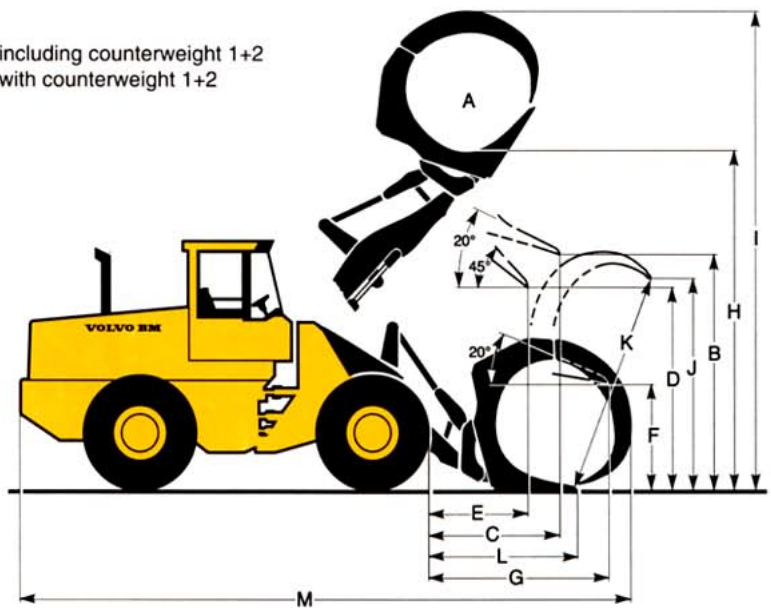


LOG GRAPPLE (hook on)

Tires: 26.5 R 25 L3

A	3,1 m ²
B	3660 mm
C	2120 mm
D	2950 mm
E	1660 mm
F	1620 mm
G	2940 mm
H	4990 mm
I	7250 mm
J	3000 mm
K	3280 mm
L	2290 mm
M	

Order No: 91724
 Operating weight: 23290 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, max.	75 dB (A)
Fan position 2	73 dB (A)
Exterior sound level	
ISO 6393	LwA 109 dB (A)
Ventilation	10 m ³ /min
Heating capacity	11 kW 37 500 Btu/h
Air conditioning (optional)	8 kW 27 300 Btu/h

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 fuelfilter
Watertrap

Electrical System

24V – prewired for optional accessories
Alternator, 24V, 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
• steering pressure
• axle oil temperature
• transmission oil filter
• high speed gear
• engine oil pressure
• engine coolant temperature (buzzer)
• *Parking brake applied and transmission in forward or reverse (buzzer)*
Brake fast 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 26.5R25

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 37500 Btu/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
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 (220V/1500 W)
Pre-cleaner, oil bath type
Radiator, corrosion protected
Preair-cleaner, Turbo type
Suction fan

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 horn electrically
Alternator, 100 amp.
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

Cab

Installation kit for radio
Hand throttle
Sliding ventilation window
Seat belt retractable
Speedometer
Air conditioner
Dual service brake pedals
Contronic display
Cab filter for environment cont. asbestos
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
Arctic kit

External Equipment

Counterweight 1 375 kg
Counterweight 2 600 kg
Counterweight 3 260 kg
Fenders, extended
Fenders, axle mounted
Drawbar with pin

Other Equipment

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

Protective Equipment

Protective grids for front running light
Protection guard radiator grille
Protective grids for rear working lights
Window guards for side and rear window
Windshield guard
Fan protection

Protective grids for rear lights
Bellyguard front and rear
Screen for suction fan
Muffler guard
Protection plates under cab

Tires

23.5 R25
26.5 R25
30/65 R25

Attachments

Buckets
• rock buckets straight edge
• rock buckets spade nose
• rehandling buckets
• lightmaterial buckets
• high-dump buckets
• side-dump buckets
Bucket teeth, bolt-on
Cutting edge, 3 pc reversible, bolt-on
Bucket spillguard
Fork equipment
Material handling arm
Timber grapples

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 Construction Equipment

Ref. No. 21 4 669 2223 English
Printed in Sweden 6.0.11.95. WLO
Trycksaksbyrå, Eskilstuna 1995