



Volvo BM L180C



- **Engine output SAE J1349:**
*gross 209 kW, (284 hp)
net 198 kW, (269 hp).*
- **Operating weight:** 24,2-27,5 t.
- **Buckets:** 4,2 – 14,0 m³.
- **Volvo Low Emission 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 as well as engine shut down to idle.

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	80 l	Engine oil	34 l
Hydraulic tank	165 l	Axle front/rear	55/54 l

ENGINE



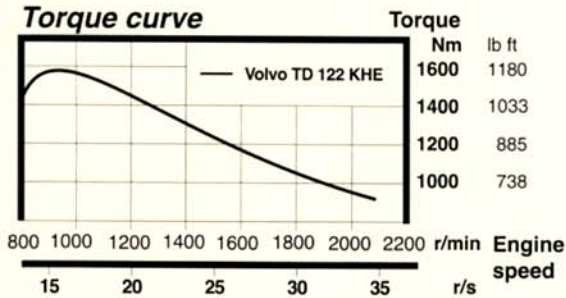
Engine delivers high torque and quick response at low rpm even under full load. The machine can work at low engine speeds, which contributes to good fuel economy, less noise, less wear and longer life.

Engine: Volvo TD 122 KHE 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.

output at	35 r/s	2100 r/min
SAE J1349 gross	209 kW	284 hp
net	198 kW	269 hp
Max. torque at	15,0 r/s	900 r/min
SAE J1349 gross	1580 Nm	
net	1570 Nm	
Displacement	12,0 l	

Torque curve



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	6,6 kW	9,0 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).

Axes: 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 220
Torque multiplication	2,27:1
Speeds, max forward/reverse	
1	6,5 km/h
2	12,1 km/h
3	24,0 km/h
4 (forward only)	35,1 km/h

Measured with tires	26.5 -25L3
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 of.

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

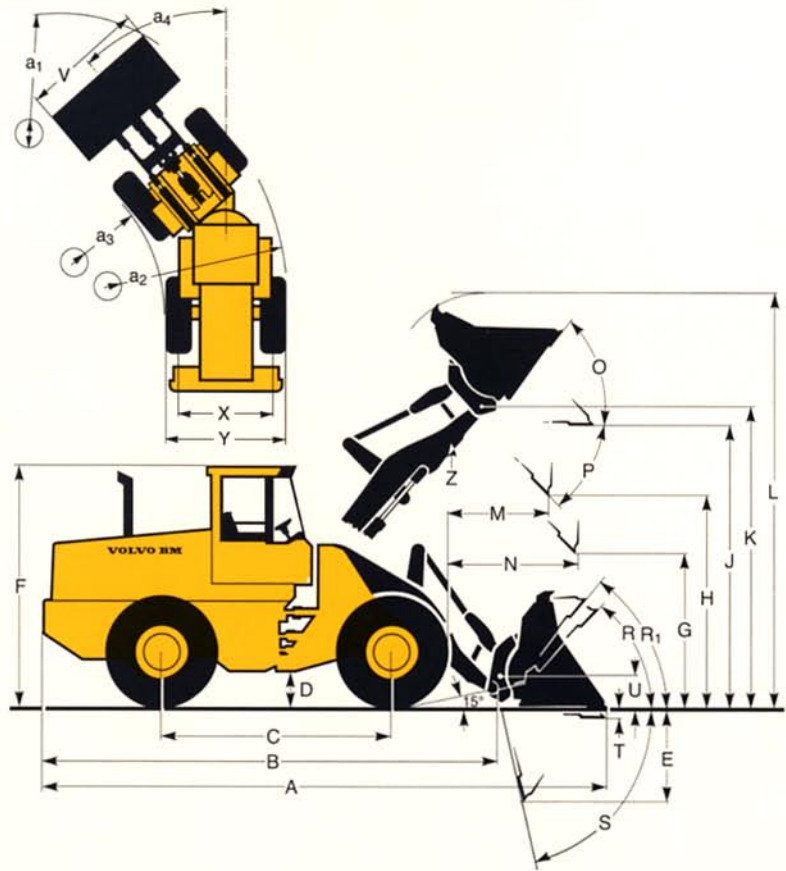
OPERATIONAL DATA & DIMENSIONS

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	6960 mm	7390 mm
C	3550 mm	3550 mm
D	480 mm	480 mm
F	3560 mm	3560 mm
G	2135 mm	2135 mm
J	4090 mm	4600 mm
K	4480 mm	4970 mm
O	57 °	55 °
P	49 °	49 °
R	44 °	48 °
R ₁ *	48 °	53 °
S	71 °	63 °
T	100 mm	170 mm
U	520 mm	630 mm
X	2280 mm	2280 mm
Y	2950 mm	2950 mm
Z	4030 mm	4180 mm
a ₂	6780 mm	6780 mm
a ₃	3830 mm	3830 mm
a ₄	±37 °	±37 °

* Carry position SAE

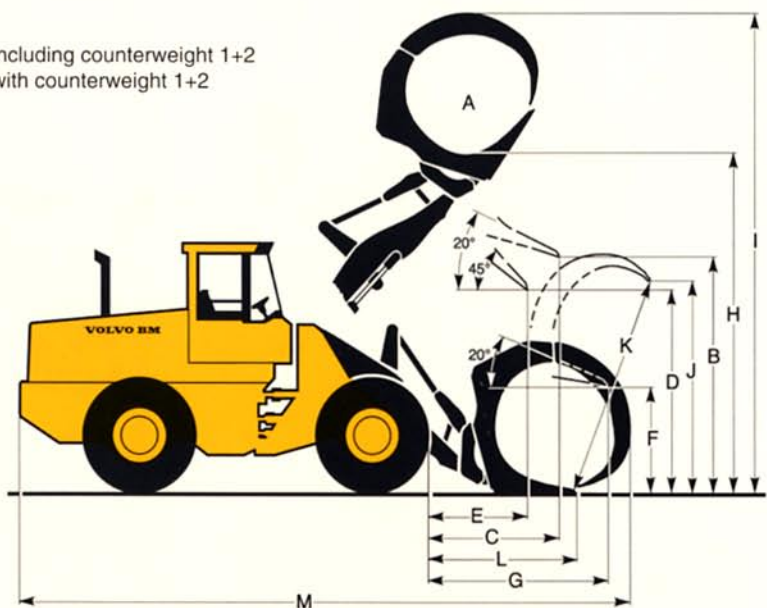


LOG GRAPPLE (hook on)

Tires: 26.5 R 25 L3

A	3,5 m ²
B	3780 mm
C	2130 mm
D	3090 mm
E	1620 mm
F	1620 mm
G	3020 mm
H	5120 mm
I	7800 mm
J	3400 mm
K	3650 mm
L	2410 mm
M	9880 mm

Order No: 91781
 Operating weight: 26050 kg including counterweight 1+2
 Operating load: 8800 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	100 mm
Piston rod diameter	50 mm
Stroke	418 mm
Relief pressure	21 MPa
Max. flow	116 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 110 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 double vane pump mounted on a power take-off on the transmission. Pump 1 works with all tilt and lift movements. Pump 2 works with tilt out and lift up to 20 MPa (2900 psi). A pilot-controlled selector valve cuts-in flow to the system.

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, pump 1	22,5 MPa	
Flow	313 l/min	
at	10 MPa	
and engine speed	35 r/s	2100 r/min
Relief pressure, pump 2	20 MPa	
Flow	91,5 l	
at	10 MPa	
and engine speed	35 r/s	2100 r/min

Pilot system

Relief pressure	3,0-4,5 MPa
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Cycle times

Raise*	6,6 s
Dump*	2,5 s
Lower, empty	3,5 s
Total cycle time	12,6 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	190 mm
Piston rod diameter	90 mm
Stroke	788 mm
Tilt cylinder	1
Bore	260 mm
Piston rod diameter	120 mm
Stroke	480 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
- parking brake applied
- steering pressure
- axle oil temperature
- transmission oil filter
- high speed gear
- engine oil pressure
- engine coolant temperature (buzzer)

Drivetrain

Transmission: modulated with single lever control, automatic power shift, and operator controlled declutch

Differentials:

front 100%, hydraulic differential lock
rear, conventional
Tires 26.5R-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 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
Suctions 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 torn 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

Parking brake applied and transmission in forward or reverse (buzzer)

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 function 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
Exterior noise reduction kit
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
Protection guard radiator sand grid
Fan protection
Protective grids for rear lights
Bellyguard front and rear
Screen for suction fan
Muffler guard
Protection plates under cab

Tires

26.5 R25
30/65 R25

Attachments

Buckets

- rock buckets straight edge
- rock buckets spade nose
- rehandling buckets
- lightmaterial buckets
- hi-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.

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