



Volvo BM L180C

High-lift



- **Operating weight: 30,5 t**
- **Grapples: 3,2-3,8 m²**
- The capacity loader for timber handling**
- **Powerful lift-arm system with high lift and long reach gives:**
 - fast and effective loading and unloading
 - higher stacks
 - more efficient turnover of stored timber
- **Rotating grapple, 360 °**
- **Grapples suited to various types of work**
- **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 incl. external oil cooling**
 - **Care Cab** – pressurized cab with high comfort and safety
 - **Contronic** monitoring system
 - **Pilot-operated working hydraulics**
 - **Sturdy and easily operated precision steering**

VOLVO BM

SERVICE REFILL CAPACITIES



Contronic monitoring system gives: Information on regular service. Minimized time for fault tracing. Information on the condition of the machine.

Service accessibility: Large, easy-opening, gas-sprung hatches. Top-hung lift-up radiator grille and tilt-out radiator.

Central lubrication: Long lubrication and oil-change intervals.

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

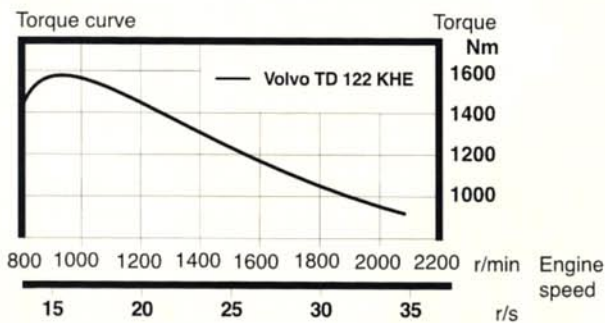


Engine delivering high and uniform torque even at low speeds. Lively acceleration even from low engine speeds and under full load. Low max. speed contributes to better fuel economy, less noise, less wear and longer life.

Engine: Volvo TD 122 KHE low emission high performance, 6-cylinder, in-line, direct-injected, turbocharged, intercooled 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
SAE J1349 net	198 kW	269 hp
Max. torque at	15,0 r/s	900 r/min
SAE J1349 gross	1580 Nm	
SAE J1349 net	1570 Nm	
Displacement	12,0 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, and 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	1680/60W/A
Starter-motor output	6,6/9,0 kW/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 shift.

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 220
Torque converter	2,27 : 1
Speeds	
forward/reverse	
1	6,5 km/h
2	12 km/h
3	24 km/h
4 (forward only)	35 km/h
Measurement with tires	30/65-29
Front and rear axles	Volvo BM / AWB 40
Oscillation	±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

GRAPPLES

SEE ALTERNATIVE EQUIPMENT WHEN CHOOSING GRAPPLES

						
Grapples						
Grip area	m ²	3,2	3,2	3,2	3,5	3,8
Performance						
Working load	kg	8500	8500	8500	8500	8500
Dimensions						
A	mm	5670	5540	5670	5570	5540
B	mm	6560	6490	6560	6490	6490
C	mm	3630	3930	3630	3750	3930
D	mm	2900	3040	2900	3000	3040
E	mm	1220	1460	1220	1320	1460
F	mm	2270	2140	2270	2170	2140
G	mm	1100	1100	1100	1100	1100
BA	mm	5590	5460	5590	5460	5460
BB	mm	6480	6410	6480	6410	6410
BE	mm	550	680	550	650	680
BF	mm	1270	1140	1270	1170	1140
Weight						
Machine weight*)	kg	30400	30450	30600	30500	30600
Item No.		91852	91853	91854	92340	91855

*) Including liquid in rear tires. The pusher increases the machine weight by 800 kg.

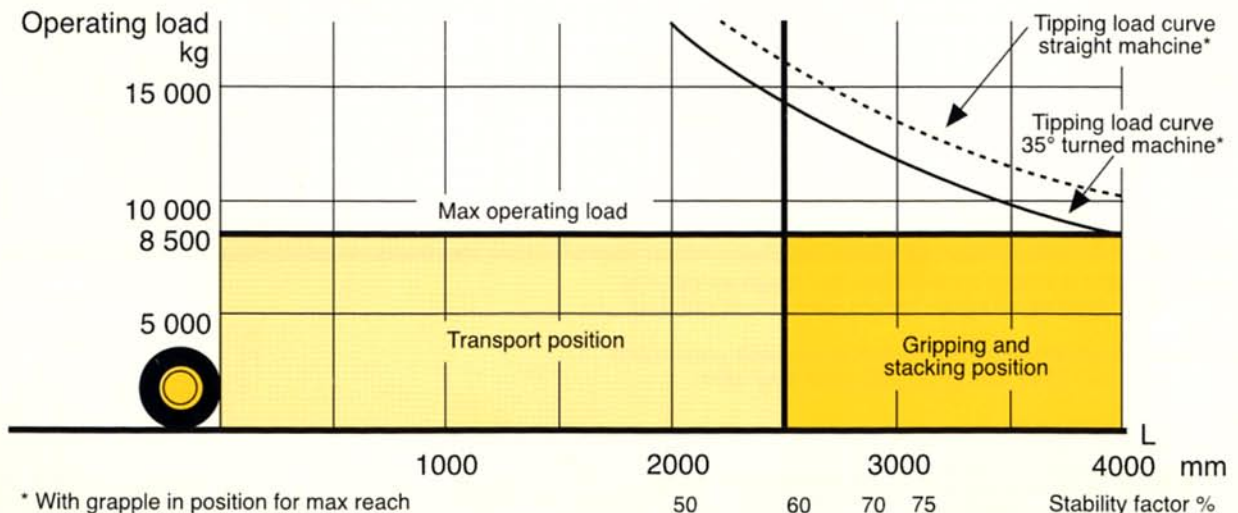
ALTERNATIVE EQUIPMENT*)

92309	Pusher		91854	Grapple equipped with hydraulic clamping arms suitable for long logs	3,2 m ²
92366	Cylinder guard		92340	Grapple with clinch chain** suitable for low density or short logs	3,5 m ²
91851	Rotator		91855	Grapple with clinch chain** suitable for loading/unloading rail freight cars	3,8 m ²
91850	Cross-beam				
-	Cross-beam with grapple mounting lowered 350 mm in order to increase dimension E				
91852	Grapple with clinch chain**	3,2 m ²			
91853	Grapple with clinch chain** suitable for loading/unloading trucks	3,2 m ²			

*) A standard-equipped machine does not include grapple, cross-beam or rotator.

**) The clinch chain consists of double triplex chains.

OPERATING LOAD DIAGRAM

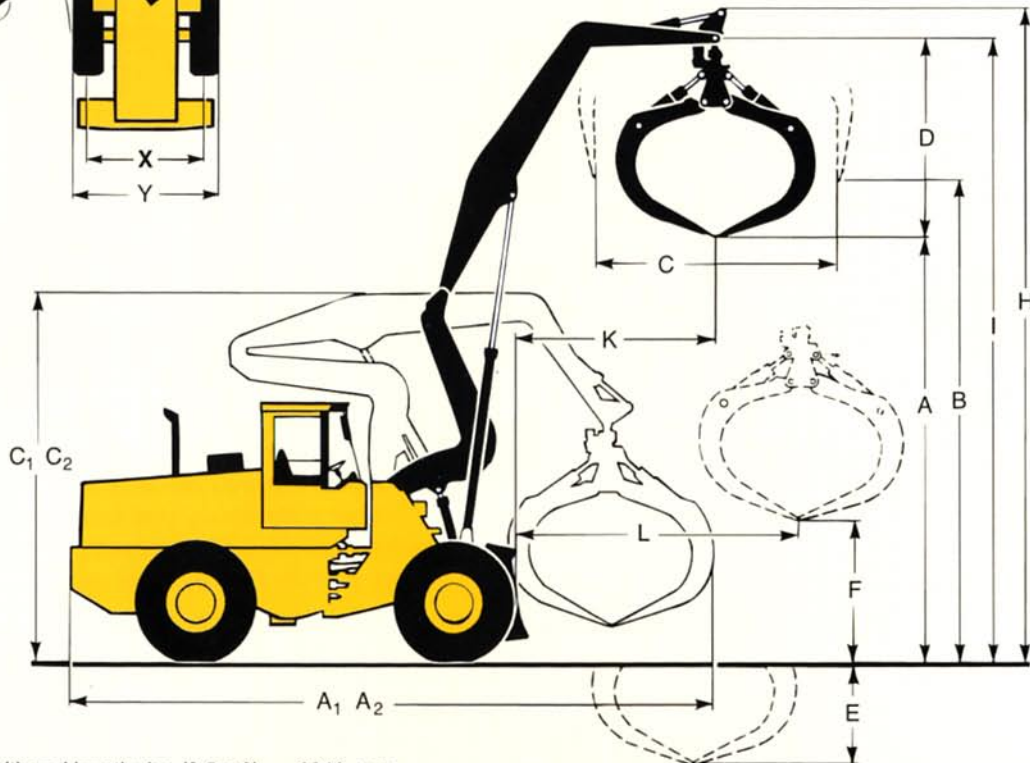
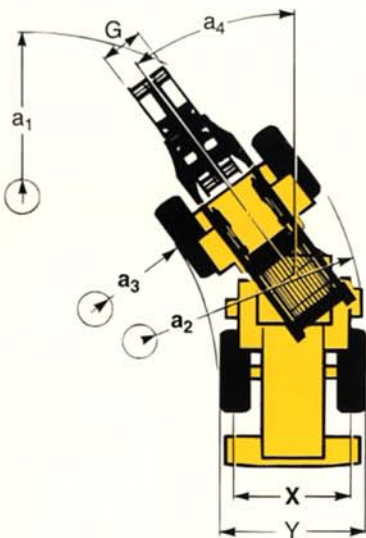
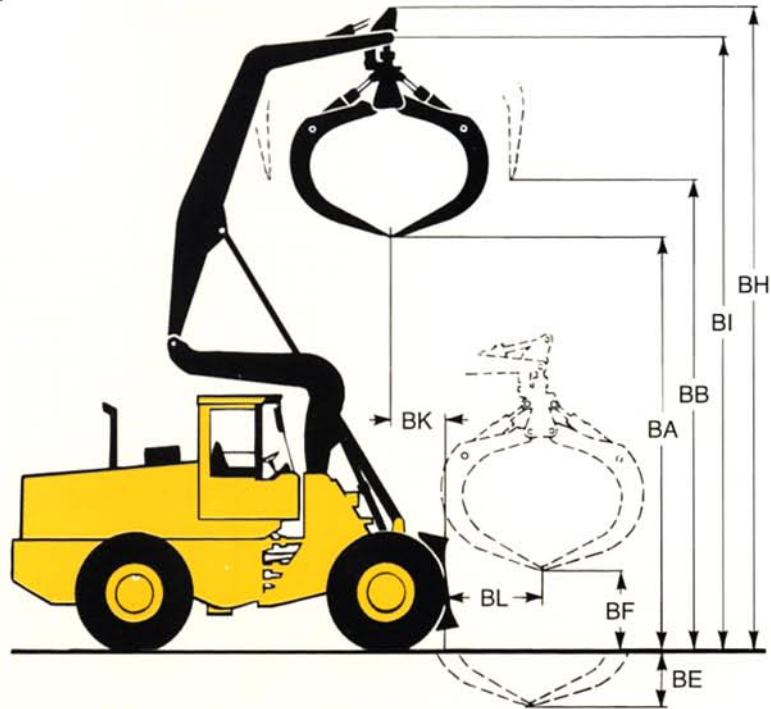


OPERATIONAL DIMENSIONAL & DATA

Rotating grapple, 360°, 3,2 m²

Tires: Michelin 30/65 R29* XRDNA

H	8960	mm
I	8570	mm
K	2790	mm
L	4000	mm
BH	8850	mm
BI	8490	mm
BK	850	mm
BL	1300	mm
X	2280	mm
Y	3180	mm
a ₁	7530	mm
a ₂	6780	mm
a ₃	3830	mm
a ₄	37	± °



A ₁	Grapple positioned lengthwise (3,5 m ²)	9240	mm
A ₂	Grapple angled up	10350	mm
C ₁	Grapple positioned lengthwise	4940	mm
C ₂	Grapple angled up	4640	mm

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 boost.

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

Pump: Variable-flow axial piston pump mounted on a power take-off on the transmission.

Cylinders: Two double-acting cylinders.

Working pressure	21 MPa
Flow	116,6 l/min
Max. steering angle	± 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 Con-tronic 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	110 dB(A)	
Ventilation	10 m ³ /min	
Heating capacity	11 kW	37 500 Btu/h
Air conditioning	8 kW	27 300 Btu/h
(optional)		

HYDRAULIC SYSTEM



High pump capacity gives fast movements. Good control in all working positions, even when working with heavy loads. Precision manoeuvring of attachments.

Hydraulic system: Open centre system with pilot-operated hydraulic valves.

Pump: One double vane pump mounted on a power take-off on the transmission.

Pilot operation: The pilot system is supplied from a separate pump, shared with the brake system. An electric servo-control actuates the two control valves via a servo unit.

Valves: Two pilot-operated 3-spool valves. The *primary control valve* governs: *lift, tilt and grapple*. The *secondary control valve* governs: *tilt grapple, rotator and pusher* (extra equipment).

Filter: Full-flow filtration through 20 µm nominal filter cartridge.

Main pump

Working pressure,		
circuit 1	19 MPa	
circuit 2	14 MPa	
Flow,		
circuit 1	414 l/min	
circuit 2	92 l/min	
at	10 MPa	
and engine speed	36,7 r/s	2200 r/min

Pilot pump

Working pressure	3,0-4,5 MPa
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Cycle times (without load)

Lift	8,8 s
Lower	7,4 s
Tilt forward	2,9 s
Tilt backward	3,6 s
Grapple opening	2,2 s
Grapple closing	2,8 s

LIFT-ARM SYSTEM



A powerful high-lift arm system with high lift height and long reach. The various attachments can be manoeuvred over a large area from a stationary machine. Grapples suited to various types of work. Good stability while travelling under load permits high average speed.

Cylinders: Double-acting.

STANDARD EQUIPMENT

Service and maintenance equipment

Central lubrication

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 30/65 R29*

Brake System

Wet, internal oil circulation cooled disc brakes, 4-wheel, dual circuit brake system, with separate cooling 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

Control Valve (3-spool), 2
Hydraulic oil cooler
Vane pump
Electro-hydraulic servocontrol

External Equipment

Mudguards
Cross-beam
Rotator

Other Equipment

Lift fittings

OPTIONAL EQUIPMENT *(standard on certain markets)*

Service and maintenance equipment

Tool kit
Wheel-nut wrench kit
Lockable tool box

Engine Equipment

Electric engine heater
Pre-cleaner, oil-bath type
Coolant filter

Electrical System

Rotating beacon, 2
Side marker light
Left-hand asymmetrical headlight (halogen)
Extra working light, front, (two), halogen
Extra working light, rear, (two), halogen
Attachment light (halogen)
Air horn
Acoustic back-up alarm

Cab

Installation kit for radio (loudspeaker, antenna, etc.)
Instructor's seat
Electrically heated operator's seat
Air-sprung operator's seat
Windshield washers, front and rear
Interlocked brake pedals
Hand throttle
Seatbelt retractable
Sliding vent window
Air conditioning
Speedometer
Tiltable steering wheel
Information panel (Contronic): start figuration, setting language and units, operating hours, general operating information, stop watch/trip meter, cycle counter, service interval
engine
electrical system
transmission
axles/brakes

Hydraulic System

Boom Suspension System

External Equipment

Tow fitting
Slow Moving Vehicle sign
Covering mudguards

Protective Equipment

Protective grille for headlight
Protective grille for rear working light
Protective grille for rear light
Muffler guard

Other Equipment

Secondary steering
Comfort Drive Control (CDC)
Fueling strainer
Pusher
Piston-rod guards

We reserve the right to change specifications and design without prior notice. The illustrations do not always show a machine with standard equipment.

Specifications and dimensional data conform in applicable parts to ISO 7131, SAE J732, ISO 7546, SAE J742, ISO 5998, SAE J818.

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