

Volvo BM L120C



- **Engine output SAE J1349:**
gross 153 kW (208 hp)
net 148 kW (201 hp)
- **Operating weight:** 18,0–20,2 t
- **Buckets:** 3,0–9,5 m³
- **Torque Parallel Linkage**
 - high breakout torque throughout the working range
 - excellent parallel lift-arm action
- **Volvo low emission engine**
 - with excellent low rpm lugging performance
 - meets all known exhaust emission regulations for off-road vehicles until 2001
- **Volvo BM transmission with APS II**
 - 2nd generation Automatic Power Shift with mode selector
 - optimises performance
- Fully sealed oil-circulation cooled wet disc brakes, outboard mounted
- **Care Cab** – pressurized cab with high comfort and safety
- **Contronic** monitoring system
- **Load-sensing** steering system
- Pilot-operated working hydraulics
 - Hydraulic attachment bracket (option)

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 grille and radiator.

Capacities

Fuel tank	255 l	Transmission	33 l
Engine coolant	65 l	Engine oil	22 l
Hydraulic tank	155 l	Axle front/rear	36/41 l



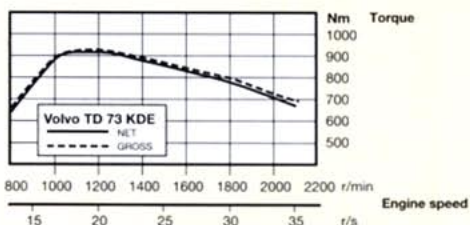
ENGINE

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 73 KDE, 6-cylinder, in-line, direct-injected, turbocharged, intercooled 4-stroke diesel engine with wet replaceable cylinder liners.

Air cleaning: three-stage.

Engine	TD 73 KDE
Flywheel output at	35 r/s (2100 r/min)
SAE J1349 gross	153 kW (208 hp)
net	148 kW (201 hp)
Max. torque at	18,3 r/s (1100 r/min)
SAE J1349 gross	925 Nm
net	920 Nm
Displacement	6,7 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), hydraulic oil pressure in transmission, transmission oil temperature, brake pressure, parking brake (buzzer), shut down to idle as standard.

Voltage	24 V
Batteries	2x12 V
Battery capacity	2x105 Ah
Cold cranking capacity, ea	560 A
Reserve capacity, ea	170 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 BM system-compatible design facilitates servicing.

Torque converter: Single-stage

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

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

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 HT205
Torque multiplication	2,85:1
Speeds, max forward/reverse	
1	7,3 km/h
2	13,3 km/h
3	25,2 km/h
4 (forward only)	35,5 km/h

Measured with tires	23R25" L2
Front axle	Volvo BM / AWB 31
Rear axle	Volvo BM / AWB 30
Oscillation, rear axle	±13°
Ground clearance at	
13° oscillation	463 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 for dead engine braking. 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. Brake performance test by the Contronic system.











Parking brake: Enclosed wet multi-disc brake built into the transmission. Spring-loaded application. Electro-hydraulic release via a switch on the instrument panel.

Secondary brake: Either of the service brake circuits or the parking brake fulfills ISO/SAE safety requirements. Automatically applied when the key is turned off.

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

Number of discs/wheel	1
Number of accumulators	2
Volume, each	0,5 l

OPERATIONAL DATA VOLVO BM L120C

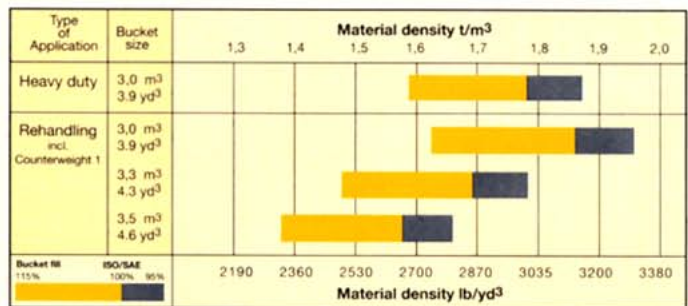
TYPE OF APPLICATION		REHANDLING *					HEAVY DUTY			LIGHT MATERIAL *	
Tires 23.5R25											
Volume, heaped	m ³	3,5	3,5	3,3	3,3	3,3	3,0	3,0	3,0	5,4	–
incl. bolt-on cutting edge	m	3,7	3,7	3,4	–	3,4	3,1	–	3,1	5,5	9,5
Static tipping load, straight	kg	13 950	13 050	14 070	13 960	13 150	13 550	13 440	12 650	12 500	12 190
at 35° turn	kg	12 310	11 480	12 430	12 320	11 580	11 990	11 880	11 150	10 950	10 610
at full turn	kg	11 820	11 000	11 940	11 820	11 100	11 510	11 400	10 700	10 480	10 130
Breakout force	kN	147,8	132,2	152,6	152,6	136,1	161,6	161,6	142,6	107,2	90,2
A	mm	7 990	8 160	7 940	8 160	8 100	7 860	8 080	8 040	8 510	8 910
E	mm	1 240	1 390	1 200	1 200	1 350	1 130	1 130	1 290	1 710	2 040
H	mm	2 900	2 790	2 930	2 790	2 820	2 980	2 840	2 870	2 520	2 230
L	mm	5 740	5 820	5 690	5 690	5 750	5 620	5 620	5 710	5 930	6 100
M	mm	1 230	1 340	1 200	1 360	1 310	1 140	1 310	1 260	1 570	1 800
N	mm	1 830	1 860	1 810	1 900	1 870	1 780	1 880	1 840	1 920	1 910
V	mm	2 850	2 850	2 850	2 850	2 850	2 850	2 850	2 850	3 000	3 400
a, clearance circle	mm	12 820	12 930	12 790	12 980	12 900	12 740	12 930	12 850	13 290	13 910
Operating weight	kg	18 530	18 740	18 460	18 540	18 670	18 060	18 140	18 280	18 990	19 400
Product No.		94556	94555	92778	92782	92777	92776	92781	92775	92689	92684

* Including counterweight 1

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



SUPPLEMENTAL OPERATING DATA

	Incl. / excl. counterweight 1	Counterweight 2			
Width over tires	mm	–	–		
Ground clearance	mm	–	–		
Operating weight	kg	± 320	+ 680		
Buckets	kg	± 550	+ 1 100		

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 and must never be combined with tire chains.

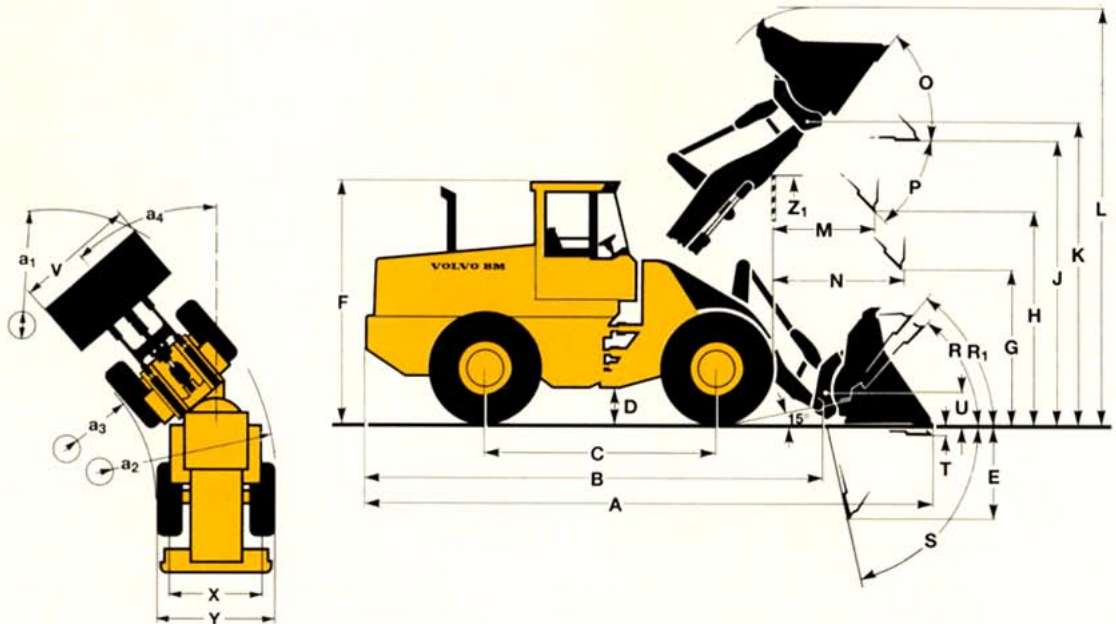
OPERATIONAL DATA & DIMENSIONS

Tires: 23.5R25* L2

B	6 510 mm
C	3 200 mm
D	440 mm
F	3 400 mm
G	2 135 mm
J	3 800 mm
K	4 100 mm
O	54 °
P	48 °
R	41 °
R ₁ *	46 °
S	67 °
T	70 mm
U	480 mm
X	2 060 mm
Y	2 680 mm
Z ₁	3 380 mm
a ₂	5 730 mm
a ₃	3 060 mm
a ₄	±40 °

* Carry position SAE

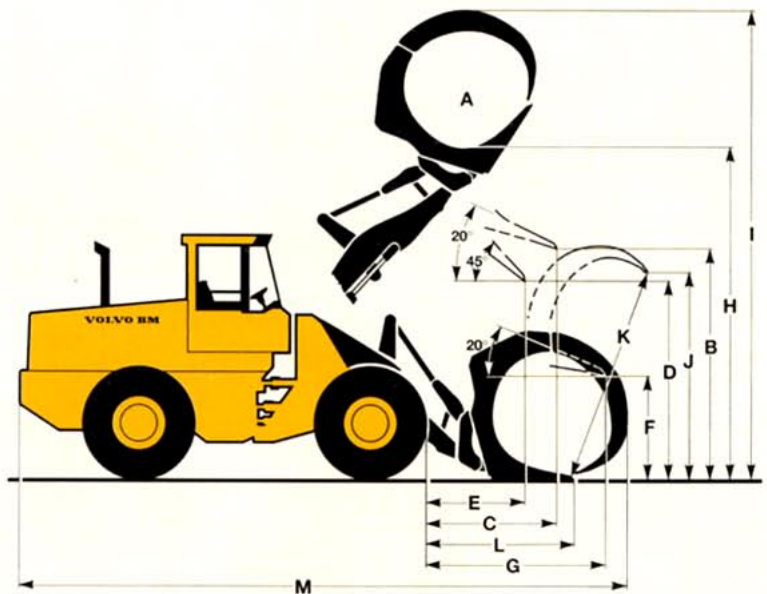
Where applicable, specifications and dimensions are in accordance with ISO 7131, SAE J732, ISO 7546, SAE J742, ISO 5998, SAE J818, ISO 8313.



SORTING-GRAPPLE (HOOK ON)

Order No:	92746
Operating weight	19 650 kg incl. counterweight 1 & 2
Operating load	6 400 kg

A	2,4 m ²
B	3 560 mm
C	1 920 mm
D	2 920 mm
E	1 540 mm
F	1 550 mm
G	2 830 mm
H	4 730 mm
I	6 700 mm
J	2 750 mm
K	2 960 mm
L	2 110 mm
M	8 860 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 amplification.

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

Pump: Double variable-flow axial piston pump.

Cylinders: Two double-acting cylinders.

Steering cylinders	2
Bore	80 mm
Piston rod diameter	50 mm
Stroke	476 mm
Relief pressure	21 MPa
Max. flow	91 l/min
Articulation	± 40 °



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.

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/CD 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 6396,	
max fan position	72 dB (A)
fan position 2	69 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 centre hydraulics with highly efficient vane pumps allows precision control even at low rpm's together with quick movements thanks to the high capacity pumps.

Pump: Vane pump fitted to a power take-off on the transmission. The pilot system is supplied from a combined pilot/brake pump which is mounted in series with the steering pump.

Valve: Double-acting 3-spool valve. The control valve is 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	22,5 MPa
Flow	280 l/min
at	10 MPa
and engine speed	35 r/s (2100 r/min)

Pilot system

Relief pressure	3,0 MPa
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Cycle times

Raise*	5.8 s
Dump*	1.8 s
Lower, empty	2.8 s
Total cycle time	10.4 s

* with load as per ISO 5998 and SAE J818



LIFT-ARM SYSTEM

TP Linkage combines high breakout torque throughout the working range with nearly exact 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	160 mm
Piston rod diameter	80 mm
Stroke	676 mm
Tilt cylinder	1
Bore	230 mm
Piston rod diameter	110 mm
Stroke	412 mm

STANDARD EQUIPMENT

<p>Engine Air cleaner, dry type, dual element, exhaust aspirated pre-cleaner Coolant level, sight gauge Engine intake manifold preheater Muffler, spark arresting</p> <p>Electrical System 24V – prewired for optional accessories Alternator, 24V, 60 A Battery disconnect switch Fuel gauge Hourmeter Horn, electric Instrument panel with symbols <i>Lights:</i></p> <ul style="list-style-type: none"> • 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 lighting <p>Contronic Monitoring System, ECU Neutral start feature Test function for warning & monitoring lights</p>	<p><i>Warning & monitoring lights:</i></p> <ul style="list-style-type: none"> • engine oil pressure • engine coolant temperature • air cleaner restriction • alternator malfunction • working lights • high beam driving lights • direction indicator, hazard <p><i>Warning flasher:</i></p> <ul style="list-style-type: none"> • transmission oil pressure • transmission oil temperature • brake system pressure • parking brake applied <p><i>Central warning (with buzzer):</i></p> <ul style="list-style-type: none"> • engine oil pressure • engine coolant temperature (buzzer) • transmission oil pressure • transmission oil temperature • brake system pressure <p>Drivetrain Transmission: modulated with single lever control, Automatic Power Shift, and operator controlled declutch</p> <p><i>Differentials:</i></p> <ul style="list-style-type: none"> • front 100%, hydraulic differential lock • rear, conventional <p>Tires 23.5R-25* L2 Goodyear</p>	<p>Brake System Wet, internal oil circulation cooled, disc brakes, 4-wheel, dual circuit Brake system, secondary Parking brake alarm</p> <p>Cab ROPS (SAE J10400C) (ISO 3471), FOPS (SAE J 231) (ISO 3449). Acoustical lining Ashtray Cigarette lighter Door lockable (left side access) Heater/defroster/pressurizer 11 kW, 37 500 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</p>	<p>Hydraulic System Main valve, 3-Spool, pilot operated 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 Boom lowering system Hydraulic pressure test ports, Quick connect Hydraulic fluid level, sight gauge Hydraulic oil cooler</p> <p>External Equipment Isolation mounts: cab, engine, gearbox Lifting lugs Side panels, engine hood Steering frame lock Vandalism lock, provision for: batteries, engine oil</p>
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OPTIONAL EQUIPMENT (May be standard in certain markets)

<p>Service and maintenance equipment Tool box Tool kit Air pressure equipment Anti-freeze container Wheel nut wrench kit</p> <p>Engine Coolant filter Extra fuel filter Cold starting aid, engine coolant preheater (220V/1500 W) Pre-cleaner, oil bath type Pre-cleaner, turbo type Radiator, corrosion protected</p> <p>Electrical System Reverse alarm (SAE J994) Attachment lights Working lights front, extra Working lights rear, extra Rotating beacon, amber with collapsible mount Alternator, brushless Head lights assym. left Jump-start connector (Nato) Light, registration plate Side marker lights Contronic display</p>	<p><i>Shut down to idle at</i></p> <ul style="list-style-type: none"> • high engine coolant temp • low engine oil pressure • high transm. oil temp <p><i>Parking brake applied and transmission in forward or reverse (buzzer)</i></p> <p>Drivetrain Forward and reverse switch Speed limiter, 3-speed version Limited-slip differentials, front/rear</p> <p>Cab Installation kit for radio Hand throttle Sliding ventilation window Speedometer Air suspended operator's seat Retractable seat belt Air conditioner 8 kW, 27 300 Btu/h Dual service brake pedals Armrest (left) Contronic display Cab filter for asbestos contaminated environment Instructor seat Noise reduction kit, cab</p>	<p>Steering wheel, adjustable tilt, telescopic Windshield washer, front & rear</p> <p>Hydraulic System Hydraulic control, 3rd function Hydraulic control, 4th function Hydraulic single acting lifting function Boom Suspension System Biodegradable hydraulic fluid Hydraulic function 3rd, hydraulic hoses Servo hoses for separate attachment locking Attachment bracket with separate locking system</p> <p>External Equipment Fenders, extended Counterweight 1 Counterweight 2 Fenders, axle mounted Drawbar with pin</p> <p>Other Equipment Comfort Drive Control (CDC) Slow moving vehicle emblem Secondary steering 50 km/h sign Fuel fill strainer</p>	<p>Tires 23.5-25 23.5R25*</p> <p>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 rear</p> <p>Attachments Buckets Fork equipment Material handling arm Timber grapples Diagonal snow blade Broom Cutting edge, 3 pc reversible, bolt-on Bucket teeth, bolt-on Bucket spillguard Bale clamp Drum rotator</p>
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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