



Volvo BM L50C



- **Engine output SAE J1349:**
 - Alt. 1 Low emission engine gross 74,5 kW (101 hp) net 71,0 kW (97 hp)*
 - Alt. 2 gross 71,5 kW (96 hp) net 68,0 kW (91 hp)*
- **Operating weight: 7,8–9,0 t**
- **Buckets: 1,2–3,9 m³**
- **Torque Parallel Linkage**
 - high breakout torque throughout the working range
 - excellent parallel lift-arm action
 - high lift height and long reach
- **Direct injection turbocharged diesel engine**
- **Hydrostatic transmission with kick-down function**
- **Fully sealed oil-circulation cooled wet disc brakes, out-board mounted**
- **Care Cab** – pressurized cab with high comfort and safety
- **Load-sensing hydraulic system** – working and steering hydraulics
- **Pilot-operated working hydraulics**
- **Optional equipment**
 - Hydraulic attachment bracket
 - Boom Suspension System
 - Contronic monitoring system

VOLVO BM



SERVICE REFILL CAPACITIES

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

Service accessibility: Large, easy-to-open engine access doors with gas struts. Radiator easy to clean.

Capacities

Fuel tank	170 l	Gearbox	7 l
Engine coolant	22 l	Engine oil	11 l
Hydraulic tank	65 l	Axle front/rear	22/22 l



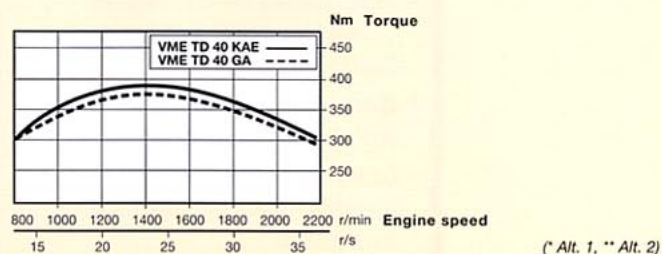
ENGINE

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: VME TD 40 KAE* / TD 40 GA**, 4-cylinder, in-line, direct-injected, turbocharged 4-stroke (* low emission) diesel engine with dry replaceable cylinder liners.

Air cleaning: three-stage.

Engine		TD 40 KAE*	TD 40 GA**
Flywheel output at	r/s (r/min)	36,6 (2200)	36,6 (2200)
SAE J1349 gross	kW (hp)	74,5 (101)	71,5 (96)
	net kW (hp)	71,0 (97)	68 (91)
Max. torque at	r/s (r/min)	23,3 (1400)	23,3 (1400)
SAE J1349 gross	Nm	390	373
	net Nm	380	363
Displacement	l	4,0	4,0



ELECTRICAL SYSTEM

The electrical system is built up around a distribution box and includes the following functions: Kick-down, downshift protection and central warning.

Central warning: Central warning lamp for the following functions: engine oil pressure, engine coolant temperature, hydrostatic charge pressure, hydrostatic oil temperature, gearbox oil pressure, brake pressure, parking brake (buzzer). The Contronic monitoring system can be selected as optional equipment.

Voltage	24 V
Batteries	2x12 V
Battery capacity	2x105 Ah
Cold cranking capacity, ea	690 A
Reserve capacity, ea	185 min
Alternator rating	1680 W / 60 A
Starter-motor output	6 kW (8 hp)



DRIVETRAIN

Drivetrain and working hydraulics well-matched to each other. Dependable design. Quick acceleration boosts productivity.

Hydrostatic transmission: The transmission consists of a hydraulic pump, hydraulic motor (both with variable displacement) and a two-stage VME Power Shift gearbox which is actuated via a kick-down function.

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 (option).

Speeds, max forward/reverse locked max displacement	Low range	High range
	0-18 km/h	0-39 km/h
	0-5 km/h	0-11 km/h

Measured with tires	15.5R25
Front and rear axle	Volvo BM / AWB 10
Oscillation, rear axle	±12 °
Ground clearance at 13° oscillation	365 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 disc brakes.

Parking brake: Mechanically operated drum brake on front axle input shaft.

Secondary brake: Either of the service brake circuits or the parking brake fulfills the safety requirements.

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

Number of discs/wheel	1
Number of accumulators	3
Volume, each	0,5 l



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.

System supply: The steering system has prioritized feed from the machine's load-sensing axial piston pump.

Pump: Variable-flow axial piston pump.

Cylinders: Two double-acting cylinders.

Steering cylinders	2
Bore	63 mm
Piston rod diameter	40 mm
Stroke	320 mm
Relief pressure	21 MPa
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 (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/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	70 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

Load-sensing hydraulics distribute exactly the quantity of oil required for the function used. Load-sensing gives precise control of the hydraulics throughout the lifting range. High pump capacity provides quick movements.

Pump: The load-sensing axial piston pump adjusts the oil requirements of the function used via indication through a load-sensing line. The flow is directed to the function used via a central valve block. Steering function always has priority.

Valve: Double-acting 2-spool valve. The control valve is actuated by a 2-spool pilot valve.

Lift function: The valve has four functions: raise, hold, lower and float. Inductive/magnetic automatic boom kickout (option) 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 (option).

Cylinders: Double-acting

Filter: Full-flow filtration through 10 µm (absolute) filter cartridge.

Axial piston pump

Relief pressure	26,0 MPa
Flow	120 l/min
at	10 MPa
and engine speed	36,7 r/s (2 200 r/min)

Pilot system

Relief pressure	3,0 MPa
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Cycle times

Raise*	5,4 s
Dump*	1,1 s
Lower, empty	3,0 s
Total cycle time	9,5 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 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	100 mm
Piston rod diameter	70 mm
Stroke	669 mm
Tilt cylinder	1
Bore	125 mm
Piston rod diameter	70 mm
Stroke	434 mm

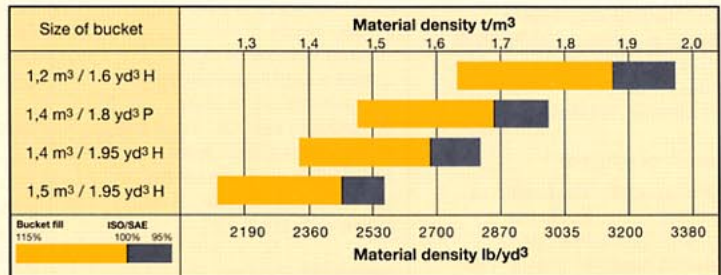
OPERATIONAL DATA

TYPE OF APPLICATION		GENERAL PURPOSE								LIGHT MATERIAL	
Tires 15.5 R25*L2 and counterweight 1											
Volume, heaped	m ³	–	–	1,4	1,4	1,4	1,4	1,2	1,2	2,1	–
incl. bolt-on cutting edge	m ³	1,5	1,5	–	–	–	–	–	–	(2,2)	3,9
Static tipping load, straight	kg	5 480	5 210	5 640	5 600	5 360	5 320	5 650	5 380	5 040	4 580
at 35° turn	kg	4 890	4 640	5 050	5 010	4 780	4 740	5 070	4 810	4 480	4 040
at full turn	kg	4 720	4 460	4 870	4 840	4 610	4 570	4 890	4 630	4 320	3 880
Breakout force	kN	64,4	59,7	68,1	68,1	62,9	62,9	72,7	66,8	49,2	36,8
A	mm	6 320	6 400	6 240	6 420	6 320	6 490	6 350	6 430	6 570	7 040
E	mm	930	1 000	870	870	940	940	810	880	1 200	1 640
H	mm	2 810	2 760	2 860	2 750	2 810	2 700	2 790	2 740	2 630	2 310
L	mm	4 770	4 730	4 770	4 770	4 730	4 810	4 720	4 710	4 910	5 370
M	mm	990	1 040	960	1 090	1 010	1 150	1 050	1 100	1 200	1 500
N	mm	1 540	1 560	1 540	1 610	1 560	1 630	1 590	1 610	1 600	1 640
V	mm	2 300	2 300	2 300	2 300	2 300	2 300	2 300	2 300	2 380	2 500
a ₁ clearance circle	mm	10 770	10 810	10 730	10 870	10 770	10 910	10 830	10 880	11 000	11 400
Operating weight	kg	8 140	8 280	8 060	8 080	8 200	8 240	8 060	8 210	8 310	8 560
Product no		92190	92170	92190	92482	92170	92481	92189	92169	92315	92316

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 OPERATIONAL DATA

		Tires		Counterweight 2	Excl counterweight 1	Extended fenders
		17.5R25*L2	600-26.5			
Width over tires	mm	+ 55	+ 280	–	–	–
Ground clearance	mm	+ 35	+ 20	–	–	–
Operating weight	kg	+ 165	+ 120	+ 300	– 150	+ 150
Buckets						
Tipping load, full turn	kg	+ 90	– 20	+ 460	– 235	+ 173

Counterweight 1 may be used in rehandling, pallet and material arms operations.

Counterweight 2, and combinations of counterweight 1 and 2, may be used within pallet and material handling arms operations for stabilizing purposes on firm and level ground.

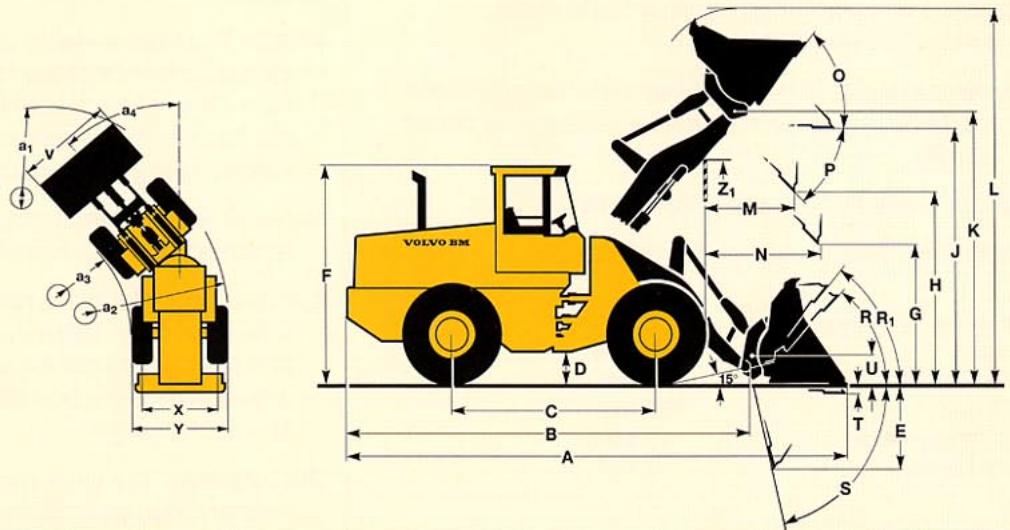
Counterweight 2 replaces hydroinflation of rear tires and must never be combined with tire chains. Counterweight 2 is not allowed in combination with 17.5-25 tires.

OPERATIONAL DATA & DIMENSIONS

Tires: 15.5R25*L2 and counterweight 1

B	5 220 mm
C	2 750 mm
D	380 mm
F	3 020 mm
G	2 135 mm
J	3 470 mm
K	3 710 mm
O	52 °
P	45 °
R	44 °
R ₁ *	49 °
S	90 °
T	80 mm
U	390 mm
X	1 750 mm
Y	2 140 mm
Z ₁	2 990 mm
a ₂	4 850 mm
a ₃	2 710 mm
a ₄	±40 °

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



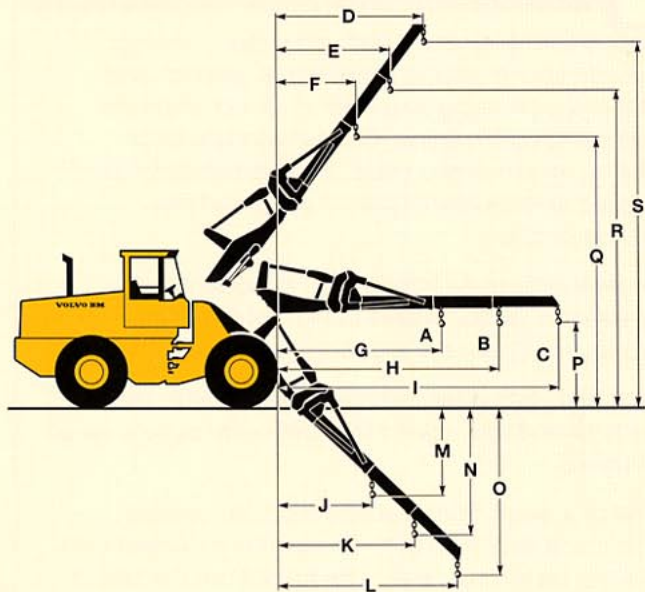
* Carry position SAE

MATERIAL HANDLING ARM (HOOK ON)

Tires: 15.5R25*L2 and counterweight 1

Order no.	92007
Operating weight	8 110 kg

A	1 120 kg
B	890 kg
C	720 kg
D	2 910 mm
E	2 260 mm
F	1 670 mm
G	3 320 mm
H	4 360 mm
I	5 490 mm
J	1 850 mm
K	2 580 mm
L	3 380 mm
M	1 780 mm
N	2 510 mm
O	3 310 mm
P	1 440 mm
Q	5 040 mm
R	5 890 mm
S	6 820 mm



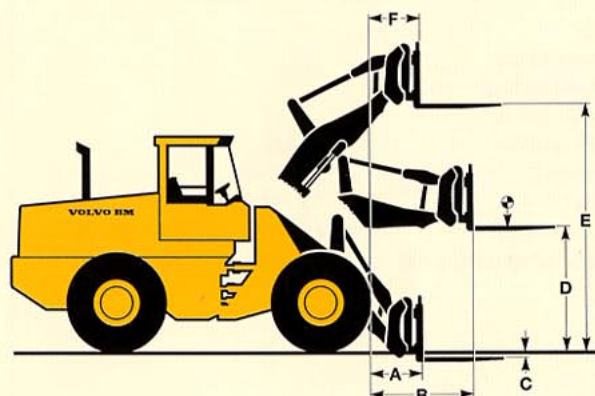
PALLET FORK (HOOK ON)

Tires: 15.5R25*L2 and counterweight 1

Fork tine order no. (per tine)	97789
Length	1 225 mm
Fork frame order no.	91177
Width	1 500 mm
Rated operating load* at load center distance	2 725 kg 600 mm
Operating weight	8 110 kg

* acc. std EN 474-3, firm and level ground

A	820 mm
B	1 590 mm
C	0 mm
D	1 750 mm
E	3 550 mm
F	750 mm



STANDARD EQUIPMENT

<p>Engine Low emission engine VME TD 40 KAE Air cleaner, dry type, dual element, exhaust aspirated precleaner Coolant level, sight gauge Muffler, spark arresting Pre-heater, thermostat</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</p> <p>Lights:</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 rear) • instrument lightning <p>Neutral start feature</p>	<p>Warning & monitoring lights:</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 • hydrostatic charge pressure • hydrostatic oil temperature • gearbox oil pressure • brake system pressure • parking brake applied • hydraulic oil level <p>Central warning (with buzzer):</p> <ul style="list-style-type: none"> • engine oil pressure • engine coolant temperature • hydrostatic charge pressure • hydrostatic oil temperature • gearbox oil pressure • brake system pressure • parking brake applied and transmission in forward or reverse (buzzer) • hydraulic oil level <p>Drivetrain Hydrostatic transmission Tires 15.5R25*L2</p>	<p>Brake System Wet, internal oil circulation cooled disc brakes, 4-wheel, dual circuit brake system Secondary brake system, accumulator supplied Parking brake alarm</p> <p>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 Openable window, right-hand side Safety glass, tinted Seat belt (SAE J386) Seat, ergonomically designed, suspension adjustable Storage compartment Sun visor Cab access steps and handrails Dual service brake pedals</p>	<p>Hydraulic System Main valve, 2-Spool, Pilot operated Pilot valve, 2-spool Axial piston pump 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 Tool box, lockable Tool kit Wheelnut wrench kit</p> <p>Engine VME TD40 GA Cold starting aid, engine coolant pre-heater (120V/1500 W) or (240V/ 1500 W) Coolant filter Pre-cleaner, oil bath</p> <p>Electrical system Working lights front, on cab Working lights front, extra Working lights rear, extra Rotating beacon, amber with collapsible mount Reverse alarm (SAE J994) Contronic electrical system Contronic display</p> <p>Drivetrain Forward and reverse switch 100% differential lock, front axle Speed control, inch Speed limiter, 20 km/h or 30 km/h</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 Heated operators seat Exterior rearview mirrors, 2 Windshield wiper, rear Windshield washer, front & rear Intermittent wiper, front Adjustable steering wheel, telescopic & tiltable Noise reduction kit</p> <p>Hydraulic system Hydraulic control, 3rd function Hydraulic control, 4th function Bucket lever detent Bucket leveler, automatic with position indicator, adjustable boom lever detents Boom kickout, automatic, adjustable</p>	<p>Hydraulic single acting lifting function Boom Suspension System Biodegradable hydraulic fluid</p> <p>External equipment Mudguards Mudguards extended Counterweight 1, 150 kg Counterweight 2, 300 kg Drawbar with pin</p> <p>Other equipment Comfort Drive Control (CDC) Slow moving vehicle emblem Attachment bracket with separate locking system External noise reduction kit Secondary steering</p> <p>Tires 15.5–25 L2 17.5–25 L2 15.5R25* 17.5R25* 600–26.5 Twin</p>	<p>Protective equipment Protective guards for front running light Protective guards for rear working lights Protective guards for rear lights Anti-vandalism equipment Cover plate under cab</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 Attachment rib kit</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.

VME Industries Sweden AB
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