



Volvo BM L70C



- **Engine output SAE J1349:**
 - Alt. 1 Low emission engine
gross 96 kW (130 hp)
net 90 kW (122 hp)
 - Alt. 2 gross 93 kW (126 hp)
net 87 kW (118 hp)
- **Operating weight: 10,5–11,8 t**
- **Buckets: 1,6–5,0 m³**
- **Torque Parallel Linkage**
 - high breakout torque throughout the working range
 - excellent parallel lift-arm action
 - high lift height and long reach
- **6-cylinder Volvo engine**
 - Alt. 1: Volvo TD 63 KDE
– low emission engine
 - Alt. 2: Volvo TD 61 GD
- **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 hydraulic system**
 - working and steering hydraulics
- **Pilot-operated working hydraulics**
- **Optional equipment**
 - Hydraulic attachment bracket
 - Power take-off for hydraulically powered attachments
 - Boom Suspension System

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	190 l	Transmission	17 l
Engine coolant	40 l	Engine oil	16 l
Hydraulic tank	65 l	Axle front/rear	24/24 l



ENGINE

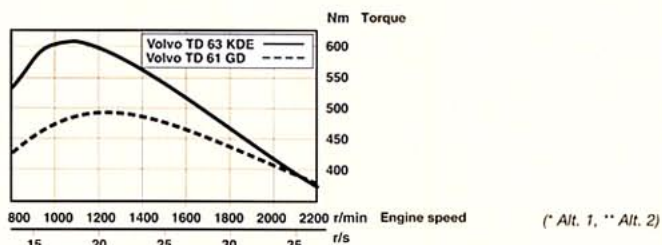
Engine delivers high torque and quick response at low rpm even under full load. The machine can work at low engine speeds, which contributes to good fuel economy, less noise, less wear and longer life.

Engine: Volvo TD 63 KDE* / TD 61 GD**, 6-cylinder, in-line, direct-injected, turbocharged 4-stroke diesel engine with wet replaceable cylinder liners.

(* This is a low emission high performance engine)

Air cleaning: three-stage.

Engine		TD 63 KDE*	TD 61 GD**
Flywheel output at	r/s (r/min)	35,0 (2100)	36,6 (2200)
SAE J1349 gross	kW (hp)	96 (130)	93 (126)
	net kW (hp)	90 (122)	87 (118)
Max. torque at	r/s (r/min)	18,3 (1100)	20 (1200)
SAE J1349 gross	Nm	615	500
	net Nm	610	495
Displacement	l	5,48	5,48



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), hydraulic oil level.

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	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 (option).

Transmission	Volvo BM HT90	
Torque multiplication	2,85:1	
Speeds, max forward/reverse	High	Low (option)
	1	7,0 km/h 1,9 km/h
	2	14,0 km/h 3,7 km/h
	3	26,0 km/h 7,3 km/h
	4 (forward only)	44,0 km/h 13,6 km/h

Measured with tires	20.5R25*L2
Front and rear axle	Volvo BM / AWB 15
Oscillation, rear axle	±13 °
Ground clearance at 13° oscillation	420 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. Transmission declutch during braking can be preselected by a switch on the instrument panel.

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

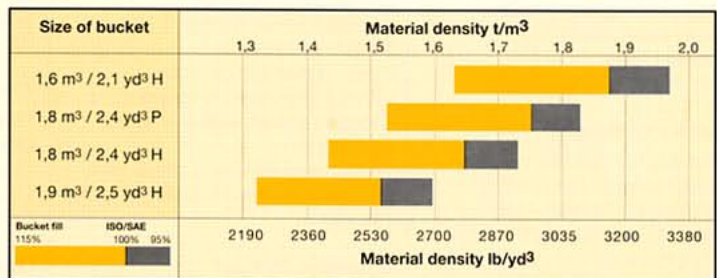
OPERATIONAL DATA

TYPE OF APPLICATION		GENERAL PURPOSE									LIGHT MATERIAL	
Tires 20.5R25 and counterweight 1												
Volume, heaped	m ³	–	–	1,8	1,8	1,8	1,8	1,6	1,6	3,0	–	
incl. bolt-on cutting edge	m ³	1,9	1,9	–	–	–	–	–	–	(3,1)	5,0	
Static tipping load, straight	kg	8 030	7 600	8 240	8 180	7 790	7 720	8 260	7 790	7 140	7 020	
at 35° turn	kg	7 170	6 750	7 380	7 310	6 940	6 880	7 390	6 950	6 340	6 200	
at full turn	kg	6 910	6 500	7 120	7 050	6 690	6 620	7 130	6 690	6 100	5 950	
Breakout force	kN	88,6	81,5	93,0	93,0	85,3	85,3	99,4	90,7	64,3	53,9	
A	mm	6 870	6 970	6 790	6 980	6 890	7 080	6 910	7 010	7 250	7 550	
E	mm	990	1 080	930	930	1 020	1 020	860	950	1 370	1 650	
H	mm	2 880	2 810	2 930	2 810	2 860	2 740	2 850	2 790	2 630	2 430	
L	mm	5 070	5 110	5 070	5 070	5 110	5 110	5 000	5 050	5 280	5 560	
M	mm	970	1 040	940	1 090	1 000	1 150	1 030	1 100	1 280	1 500	
N	mm	1 560	1 590	1 550	1 630	1 590	1 660	1 500	1 640	1 640	1 680	
V	mm	2 500	2 500	2 500	2 500	2 500	2 500	2 500	2 500	2 550	2 650	
a ₁ clearance circle	mm	11 260	11 310	11 210	11 370	11 270	11 430	11 320	11 380	11 530	11 810	
Operating weight	kg	10 840	11 050	10 730	10 780	10 950	11 000	10 740	10 960	11 100	11 470	
Product no		92560	92282	92560	92562	92282	92561	92559	92558	92564	92565	

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	- 90	+ 175	-	-	-
Ground clearance	mm	- 60	- 65	-	-	-
Operating weight	kg	- 330	- 510	+ 360	- 190	+ 200
Buckets						
Tipping load, full turn	kg	- 190	- 380	+ 570	- 330	+ 245

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.

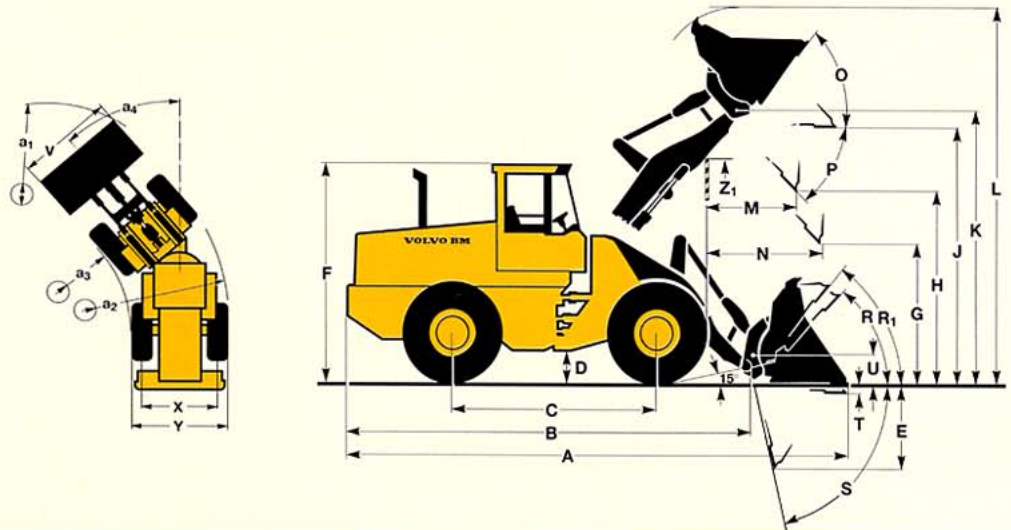
Counterweight 2 replaces hydroinflation of rear tires and must never be combined with tire chains. Counterweight 2 is not allowed in combination with 20.5-25 tires.

OPERATIONAL DATA & DIMENSION

Tires: 20.5R25* L2 and counterweight 1

B	5 700 mm
C	2 840 mm
D	450 mm
F	3 180 mm
G	2 135 mm
J	3 610 mm
K	3 860 mm
O	56 °
P	45 °
R	44 °
R ₁ *	48 °
S	78 °
T	30 mm
U	450 mm
X	1 860 mm
Y	2 390 mm
Z ₁	3 150 mm
a ₂	5 100 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.



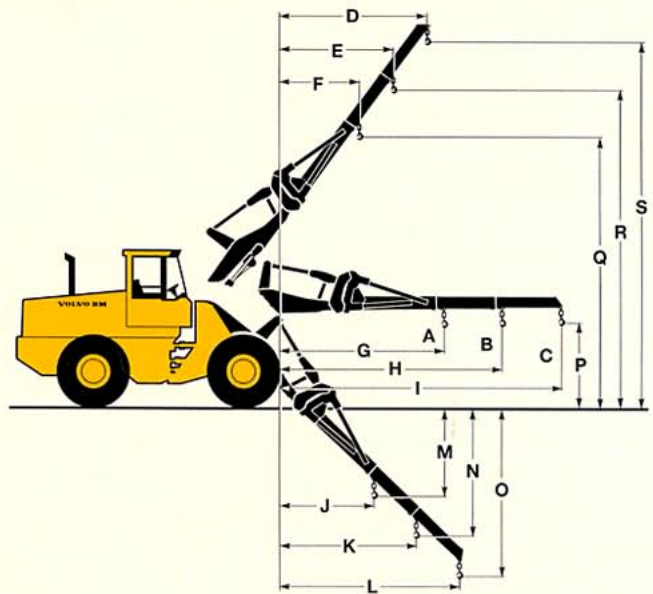
* Carry position SAE

MATERIAL HANDLING ARM (HOOK ON)

Tires: 20.5R25* L2 and counterweight 1

Order no.	92007
Operating weight	10 710 kg

A	1 620 kg
B	1 280 kg
C	1 050 kg
D	2 560 mm
E	1 990 mm
F	1 460 mm
G	3 280 mm
H	4 310 mm
I	5 440 mm
J	1 830 mm
K	2 560 mm
L	3 360 mm
M	1 740 mm
N	2 470 mm
O	3 270 mm
P	1 510 mm
Q	5 310 mm
R	6 190 mm
S	7 160 mm



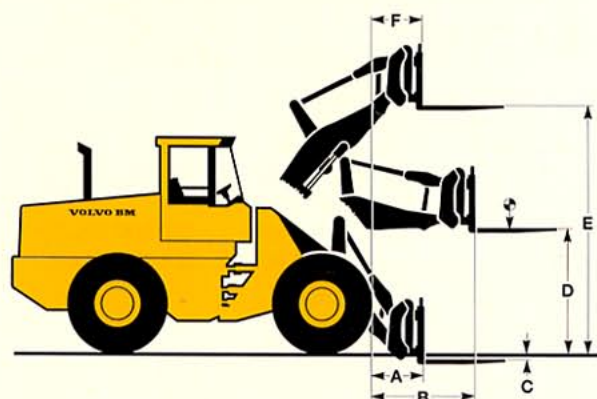
PALLET FORK (HOOK ON)

Tires: 20.5R25* 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	3 775 kg 600 mm
Operating weight	10 700 kg

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

A	810 mm
B	1 540 mm
C	-70 mm
D	1 830 mm
E	3 700 mm
F	680 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.

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

Pump: Double variable-flow axial piston pump.

Cylinders: Two double-acting cylinders.

Steering cylinders	2
Bore	63 mm
Piston rod diameter	40 mm
Stroke	370 mm
Relief pressure	21 MPa
Max. flow	80 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	70 dB (A)* 73 dB (A)**
fan position 2	68 dB (A)* 71 dB (A)**
Ventilation	10 m ³ /min
Heating capacity	11 kW (37 500 Btu/h)
Air conditioning (optional)	8 kW (27 300 Btu/h)

* with engine Volvo TD 63 KDE

** with engine Volvo TD 61 GD



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 double 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 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.

Axial piston pump

Relief pressure	26,0 MPa
Flow	160 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*	5,1 s
Dump*	1,3 s
Lower, empty	3,0 s
Total cycle time	9,4 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	734 mm
Tilt cylinder	1
Bore	150 mm
Piston rod diameter	80 mm
Stroke	440 mm

STANDARD EQUIPMENT

<p>Engine Low emission engine Volvo TD 63 KDE Air cleaner, dry type, dual element, exhaust aspirated precleaner Coolant level, sight gauge Muffler, spark arresting Engine intake manifold pre-heater</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 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 lighting 	<p>Contronic Monitoring System <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>Neutral start feature Test function for warning & monitoring lights 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 • transmission oil pressure • transmission oil temperature • 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 (buzzer) • transmission oil pressure • transmission oil temperature • brake system pressure • parking brake applied and transmission in forward or reverse (buzzer) • hydraulic oil level 	<p>Drivetrain Transmission: modulated with single lever control, automatic power shift, and operator controlled declutch Tires 20.5-25*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</p>	<p>Seat belt (SAE J386) Seat, ergonomically designed, suspension adjustable Storage compartment Sun visor Windshield wiper, front Intermittent wiper, front Cab access steps and handrails Dual service brake pedals</p> <p>Hydraulic System Main valve, 2-spool, pilot-operated Pilot valve, 2-spool Dual axial piston pump Bucket lever detent Hydraulic control lever safety latch Hydraulic pressure test ports, Quick connect Hydraulic fluid level, sight gauge Hydraulic oil cooler</p> <p>External Equipment Isolation mounts: cab, engine, transmission 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 Tool kit Wheel nut wrench kit</p> <p>Engine Volvo TD 61 GD Cold starting aid, engine coolant pre-heater Coolant filter Pre-cleaner, oil bath type</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 display</p> <p>Drivetrain Forward and reverse switch Transmission, 8-speed 100% Differential lock, front axle</p>	<p>Cab Installation kit for radio Hand throttle Sliding ventilation window Speedometer Operator's seat, heated Air suspended operator's seat Retractable seat belt Air conditioner 8 kW, 27 300 Btu/h Noise reduction kit, cab Mirrors rearview (2), exterior Steering wheel, adjustable tilt, telescopic Windshield washer, front & rear Mudguards, front & rear with anti-skid-tape</p> <p>Hydraulic System Hydraulic control, 3rd function Hydraulic control, 4th function Hydraulic controls, 5th/6th function Hydraulic power take off, heavy duty Hydraulic single acting lifting function Boom Suspension System</p>	<p>Attachment bracket with separate locking system Bucket leveler, automatic with position indicator, adjustable boom lever detents Boom kickout, automatic, adjustable Boom lowering system Single acting lifting function Biodegradeable hydraulic fluid</p> <p>External equipment Mudguards, extended Mudguards widener Counterweight 1, 190 kg Counterweight 2, 360 kg Drawbar with pin</p> <p>Other equipment Comfort Drive Control (CDC) Slow moving vehicle emblem Secondary steering</p> <p>Tires</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">17.5-25</td> <td style="width: 50%;">20.5-25</td> </tr> <tr> <td>17.5R25*</td> <td>20.5R25*</td> </tr> <tr> <td>600-26.5</td> <td></td> </tr> </table>	17.5-25	20.5-25	17.5R25*	20.5R25*	600-26.5		<p>Protective equipment Protective guards for front running light Protective guards for rear working lights Protective guards for rear lights</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>
17.5-25	20.5-25								
17.5R25*	20.5R25*								
600-26.5									

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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