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

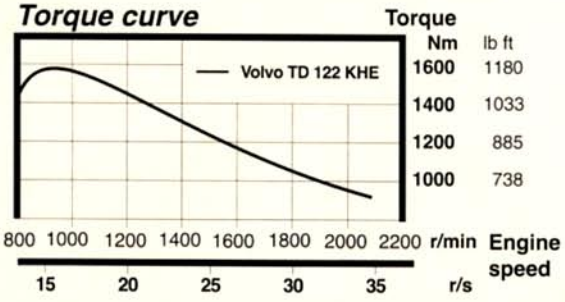
Engine delivers high torque and quick response at low rpm even under full load. The machine can work at low engine speeds, which contributes to good fuel economy, less noise, less wear and longer life.

Engine: Volvo TD 122 KHE low emission high performance, 6-cylinder, in-line, direct-injected, turbocharged, 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
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).

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 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 -25 L3	
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 VOLVO BM L180C

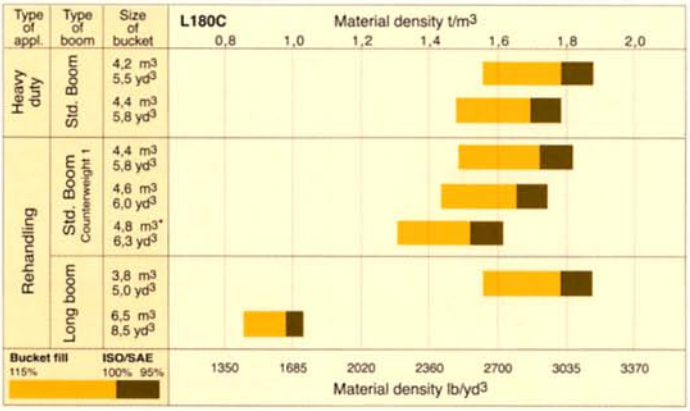
Type of application		REHANDLING			HEAVY DUTY				LIGHT MTRL	LONG BOOM	
Tires 26.5-R 25 L3											
Volume, heaped	m^3	4,6	4,6	4,4	4,4	4,2	4,2	4,2	7,5	3,8	6,5
incl. bolt-on cutting edge	m^3	4,8	4,8	4,6	–	–	–	–	7,8	4,0	6,8
Static tipping load, straight	kg	19950	19250	20070	18760	18740	18530	18220	19160	16900	16100
at 35° turn	kg	17710	17040	17800	16620	16620	16400	16080	16960	14990	14210
at full turn	kg	17440	16780	17540	16370	16370	16160	15830	16700	14770	13990
Breakout force	kN	202,9	191,0	211,7	211,6	211,6	212,5	186,8	153,0	209,9	149,7
A	mm	8540	8630	8470	8710	8710	8710	8910	9020	8870	9420
E	mm	1330	1410	1270	1270	1270	1270	1450	1770	1240	1710
H	mm	3150	3090	3190	3030	3030	3030	2910	2780	3740	3340
L	mm	6180	6230	6170	6170	6130	6180	6130	6300	6510	6730
M	mm	1290	1350	1240	1420	1420	1420	1560	1580	1210	1560
N	mm	1950	1990	1920	2040	2040	2030	2120	2070	2290	2490
V	mm	3200	3200	3200	3200	3200	3200	3200	3400	3200	3200
a_1 clearance circle	mm	14920	14960	14880	15060	15060	15060	14930	15370	15210	15510
Operating weight	kg	24600	24890	24560	24180	24160	24350	24610	24820	24510	24890
Product no		92183	92182	92675	92538	91613	92799	91618	92117	92180	92032
		Including counterweight 1							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

*) Incl. edge savers



SUPPLEMENTAL OPERATING DATA

		Standard Boom					Long Boom			
		26.5 R25 L5	30/65 R29 L3	Cw 1	Cw 2	Cw3*	26.5 R25 L5	30/65 R29 L3	Cw 2	Cw3*
Width over tires	mm	+14	+170	–	–	–	+14	+170	–	–
Ground clearance	mm	+35	+50	–	–	–	+35	+50	–	–
Tipping load,full turn	kg	+371	+350	+985	+1430	+450	+321	+300	+1250	+410
Operating weight	kg	+552	+515	+520	+750	+260	+552	+515	+750	+260

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.

Counterweight 2 must never be combined with tire chains.
*For the purpose of stabilizing in log operations counterweight 3 may be added to counterweight 1 and 2.
Counterweight 3 must never be used in combination with L5 tires.

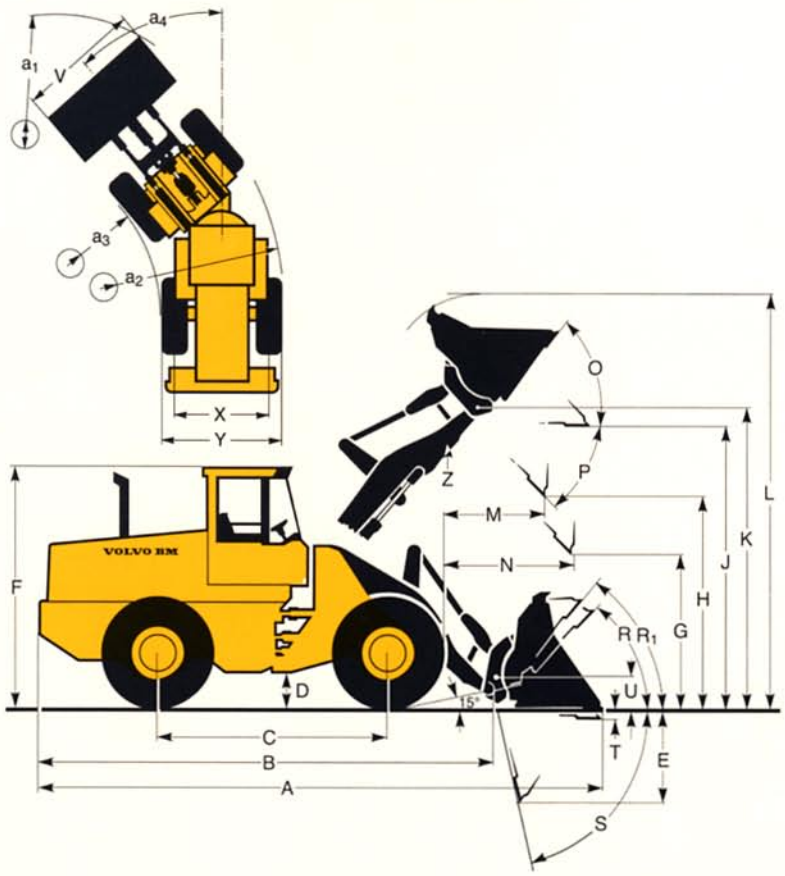
OPERATIONAL DATA & DIMENSIONS

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

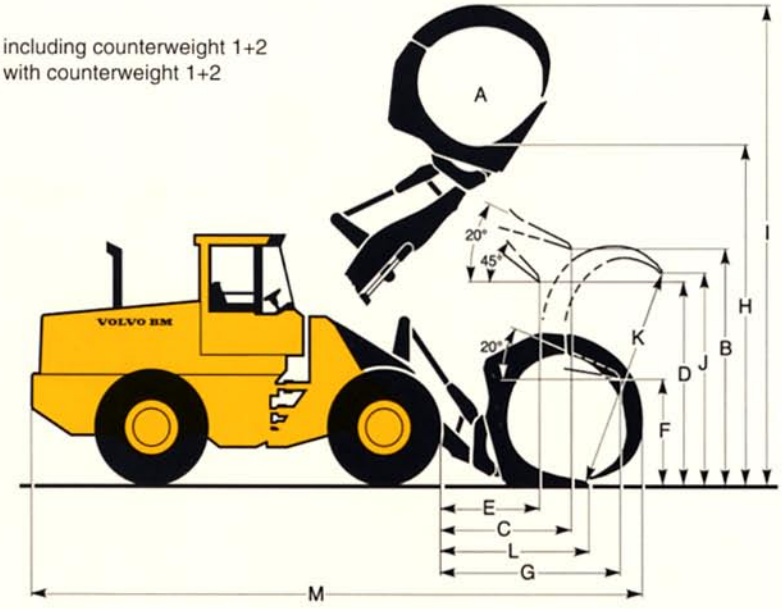


LOG GRAPPLE (hook on)

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 1works 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		
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