



Volvo BM L120B



- **Engine output gross:**
SAE J1349 148 kW (200 hp)
- **Operating weight:**
15,3 t (33 735 lb)
- **Buckets:**
2,8-10,0 m³ (3,7-13,1 yd³)
- *Direct-injected, turbocharged Volvo diesel*
- *Volvo BM Automatic Power Shift*
- *Precision steering and small turning radius*
- *Care Cab – the cab with great comfort and safety*
- *Contronic monitoring system*
- *Loader unit with parallel lift-arm action, high lift height and long reach*
- *Pilot operated hydraulic system*
- *Ample breakout and lifting forces*
- *The largest family of attachments on the market*

VOLVO BM

ENGINE



The engine is a 6-cylinder, direct-injection, 4-stroke, turbocharged diesel engine with wet, replaceable cylinder liners.

Air claning:

1. Cyclone cleaner with automatic exhaust ejector.
2. Paper filter with indicator in the cab.
3. Safety filter.

Make			Volvo	
Model			TD 71 G	
Output, at	r/s	(r/min)	36,7	(2200)
SAE J1349 Gross	kW	(hp)	148	(200)
Flywheel output at	r/s	(r/min)	36,7	(2200)
SAE J1349 Net	kW	(hp)	140	(190)
DIN 70020 / 6271 Net	kW	(hp)	140	(190)
Max. torque at	r/s	(r/min)	23,3	(1400)
SAE J1349 Gross	Nm	(lbf ft)	730	(538,4)
SAE J1349 Net	Nm	(lbf ft)	705	(520)
DIN 70020 / 6271 Net	Nm	(lbf ft)	705	(520)
No. of cylinders			6	
Displacement, total	l	(in ³)	6,7	(409)
Bore	mm	(in)	104,77	(4,1)
Stroke	mm	(in)	130	(5,1)
Compression ratio			15,5:1	

ELECTRICAL SYSTEM



Contronic monitoring system with extended function surveillance. Solid-state electrical distribution box. The electrical system is well-protected by fuses. Prewired for optional equipment.

Central warning:

Central warning lamp for following functions: engine oil pressure, brake pressure, parking brake (buzzer as well), engine temperature (buzzer as well), transmission temperature, transmission oil pressure, secondary steering (optional equipment).

Voltage	V	24		
Batteries	V	2x12		
Battery capacity	Ah	2x140		
Alternator rating	W / A	1680 / 60		
Starter motor output	kW	(hp)	5,4	(7,3)

SERVICE REFILL CAPACITIES



Crankcase	l	(US gal)	25	(6,9)
Fuel tank	l	(US gal)	255	(67)
Cooling system	l	(US gal)	65	(17,2)
Transmission, total	l	(US gal)	33	(8,7)
Drop-box	l	(US gal)	4,7	(1,2)
Front axle, total	l	(US gal)	35	(9,2)
Rear axle, total	l	(US gal)	38	(10)
Hydraulic system	l	(US gal)	220	(58)
Hydraulic tank	l	(US gal)	155	(41)

DRIVE TRAIN



Torque converter: single-stage.

Transmission: Volvo BM power shift-transmission of countershaft type with directional clutch modulation.

Axes: fully floating half-shafts. One-piece cast steel axle housing. Rigid front axle and oscillating rear axle.

Differential: 100% differential lock on front axle. Engagement and disengagement by means of switch on cab floor.

Hub reduction: Volvo BM manufacture with planetary type hub reduction gears. Low-friction roller bearings on each planetary wheel. The hub reduction gears can be removed without having to remove wheels and brakes.

Tires: alternative tires are available for different working operations.

Torque multiplication			2,33 : 1	
Transmission, make			Volvo BM	
Model			HT 131	
Running speeds				
1, forward/reverse	km/h	(mile/h)	6,8	(4,2)
2, forward/reverse	km/h	(mile/h)	12,7	(7,9)
3, forward/reverse	km/h	(mile/h)	26,9	(16,7)
4, forward	km/h	(mile/h)	38,6	(24,0)
Measurement with tires			23.5 R 25*	
Front axle, make			Volvo BM	
Model			AH 60 I	
Rear axle, make			Volvo BM	
Model			AH 53 F	
Oscillation	± °		13	
	mm	(in)	450	(18)

BRAKE SYSTEM



The brake system meets requirements according to SAE J1473, EG 71/320 och ISO 3450.

Service brakes: fully hydraulically operated power disc brakes. Four brake callipers on the front axle and two brake callipers on the rear axle. Transmission disengagement when braking preselected with a switch on the instrument panel.

Secondary: dual-circuit system. Front brake callipers on front axle and one brake calliper on rear axle included in one system and rear brake callipers on front axle and one brake calliper on rear axle in the other.

Parking brake: disc brake on front axle pinion drive flange. A warning lamp indicates when the parking brake is applied and gear lever is in forward or reverse.

Brake friction area				
front/wheel ea.	cm ²	(in ²)	810	(126)
rear/wheel ea.	cm ²	(in ²)	405	(63)
Accumulators			2	
volume, total	l	(in ³)	2,0	(122)
Parking brake area, total	cm ²	(in ²)	100	(15,5)

STEERING SYSTEM



Load-sensing hydrostatic articulated steering with power amplification.

Pump: variable flow axial piston pump fitted to a power take-off on the transmission.

System supply: steering system supplied from separate steering pump.

Cylinders: two double-acting cylinders.

Steering cylinders			2	
Bore	mm (in)	80	(3,3)	
Piston rod diameter	mm (in)	50	(2)	
Stroke	mm (in)	440	(17,3)	
Relief pressure	MPa (psi)	21	(2755)	
Flow	l/min	91		
	(US gal/min)		(24)	
at	MPa (psi)	10	(1450)	
and engine speed	r/s (r/min)	36,7	(2200)	

CAB



Safety and comfort: Tested and approved according to standards: ROPS (ISO/CD 3471, SAE J1040), FOPS (ISO 3449, SAE J231), and meets standard according to "Overhead guards for rider lift trucks" (ISO 6055) and "Operator Restraint System" (SAE J386).

The *Care Cab* has convenient boarding steps and a wide door opening. It is lined on the inside with sound-absorbent material and mounted on 4 rubber pads to damp sound and inhibit vibration.

Large glazed areas, good all-round visibility. The windshield is curved and made of laminated green-tinted glass.

All important operator information is presented clearly visible in front of the operator. Information panel for *Contronic* monitoring system (optional).

Heater and defroster: Heating element with filtered fresh air and 4-speed fan with defroster outlets for all windows.

Operator's seat: Spring-suspended, adjustable operator's seat with lap belt. The seat is hung on a bracket on the rear wall. The force from the lap belt is absorbed by the seat rails.

Emergency exits		3	
Ventilation	m ³ /min (ft ³)	10	(353)
Heating capacity	kW (Btu/h)	11,6	(39600)
Operator's seat	ISRI	6000/575	

HYDRAULIC SYSTEM



Open center system pilot operated, and filtered breather on reservoir.

Pump: a double-pump (vane pumps) fitted to a power take-off on transmission.

System supply: system supplied from two separate pumps, one large (pump 1) and one small (pump 2). Only the large pump operates when the system pressure exceeds 18 MPa (2610 psi). 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 governed by a 3 spool pilot valve.

Lifting function: the valve has four positions: lifting, neutral, lowering and floating. Disengageable electromagnetic boom kick-out. Adjustable for all positions between maximum reach and full lifting height.

Tilting function: the valve has three positions: rollback, neutral and forward tilting. Disengageable electromagnetic tilt positioner adjustable for all desired loading angles.

Cylinders: double-acting.

Filter: full-flow filtering through 10 µm filter cartridge in combination with magnetic core.

Load unit: hydraulic cylinders fitted in line with lifting arms.

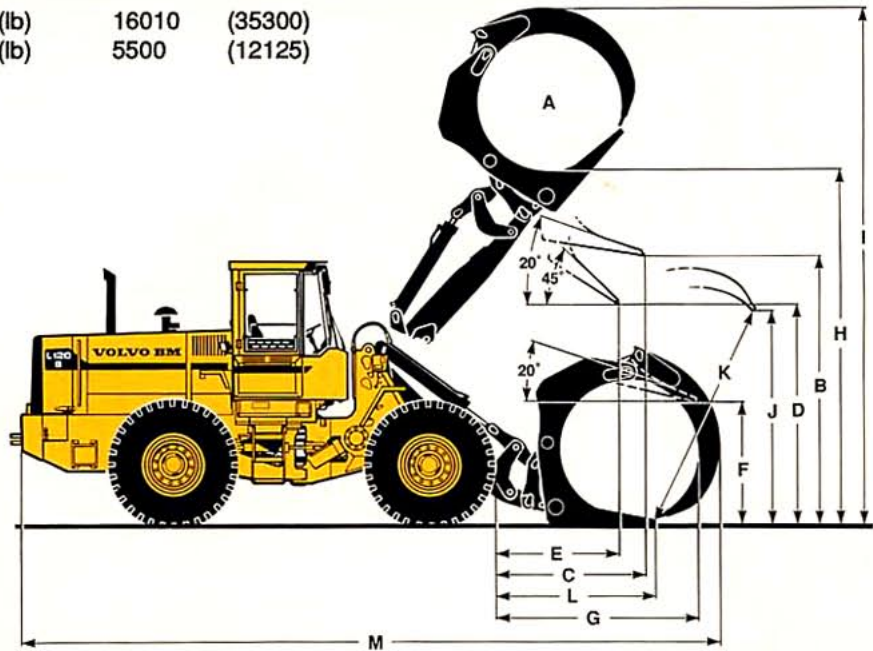
Main pump 1				
Relief pressure	MPa (psi)	21	(3050)	
Flow	l/min	196		
	(US gal/min)		(51,8)	
at	MPa (psi)	10	(1450)	
and engine speed	r/s (r/min)	36,7	(2200)	
Main pump 2				
Relief pressure	MPa (psi)	18	(2600)	
Flow	l/min	81		
	(US gal/min)		(21,4)	
at	MPa (psi)	10	(1450)	
and engine speed	r/s (r/min)	36,7	(2200)	
Pilot pump				
Relief pressure	MPa (psi)	3,0	(435)	
Flow	l/min	25		
	(US gal/min)		(6,6)	
at	MPa (psi)	10	(1450)	
and engine speed	r/s (r/min)	36,7	(2200)	
Lifting cylinder				
Bore	mm (in)	140	(5,5)	
Piston rod diameter	mm (in)	70	(2,8)	
Stroke	mm (in)	980	(38,6)	
Tilting cylinder				
Bore	mm (in)	125	(4,9)	
Piston rod diameter	mm (in)	60	(2,4)	
Stroke	mm (in)	830	(32,7)	
Lifting time *	s	6,5		
Tipping time *	s	1,5		
Lowering time (empty)	s	3,1		
Total cycle time	s	11,1		

* with load, SAE

SORTING GRAPPLE (90354 Hook-On)

Operating weight	kg	(lb)	16010	(35300)
Operating load	kg	(lb)	5500	(12125)

A	m ²	(ft ²)	2,2	(23,7)
B	mm	(ft in)	3480	(11'5")
C	mm	(ft in)	1830	(6')
D	mm	(ft in)	2880	(9'6")
E	mm	(ft in)	1470	(4'10")
F	mm	(ft in)	1580	(5'2")
G	mm	(ft in)	2640	(8'8")
H	mm	(ft in)	4560	(14'11")
I	mm	(ft in)	6550	(21'6")
J	mm	(ft in)	2750	(9')
K	mm	(ft in)	2960	(9'9")
L	mm	(ft in)	1950	(6'5")
M	mm	(ft in)	8120	(26'8")



ATTACHMENTS (for further information please contact your local dealer)

Buckets

Straight bucket without teeth	2,8/3,1/3,3 m ³ (3,7/4,0/4,3 yd ³)
Straight bucket with teeth	2,8/3,1 m ³ (3,7/4,0 yd ³)
Spade nose bucket without teeth	2,8 m ³ (3,7 yd ³)
Spade nose bucket with teeth	2,8 m ³ (3,7 yd ³)
Light materials bucket	5,4/10,0 m ³ (7,1/13,0 yd ³)
High-dump light materials bucket	4,8/8,8 m ³ (6,3/11,3 yd ³)

Timber grapples

Unloading grapple	2,2 m ² (23,7 ft ²)
Sorting grapple	2,2 m ² (23,7 ft ²)
Tree length grapple	1,3 m ² (13,9 ft ²)
Tropical timber grapple	0,9 m ² (9,7 ft ²)
Hi-lift swivel wood clamp (SWC)	0,7-2,0 m ² (7,5-21,5ft ²)
Heel kickout	
Log pusher	

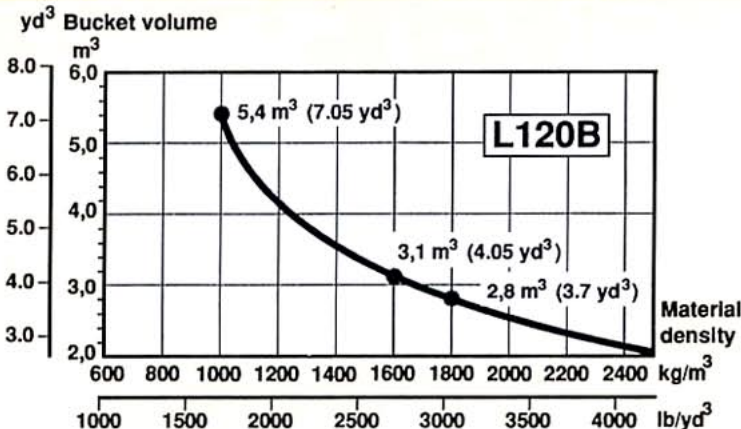
Examples of other attachments

- Pallet forks
- Breakout forks
- Fork tine extension
- Pallet fork with fork positioner
- Combination forks
- Material handling arms
- Hydraulic clamping grapple
- Asphalt cutter
- Diagonal snow blade
- Bromms

ALTERATION OF DIMENSIONAL DATA

Tires		23.5 - 25/16		Counterw. 1	Counterw. 2
Extra counterweight	kg (lb)			320* (705)	680** (1500)
Width over wheels	mm (in)	± 0			
Ground clearance	mm (in)	± 0			
Tippling load					
at full turn	kg (lb)	-150 (-330)		+580 (1280)	+1100 (2425)
Operating weight	kg (lb)	-256 (-570)		+320 (705)	+680 (1500)

BUCKET SELECTION DIAGRAM



***) Counterweight 1, 320 kg (705 lb) may be used in all handling.**

*****) Counterweight 2, 680 kg (1500 lb) may only be used for stabilizing purposes within timber and pallet handling on a flat surface. Counterweight 2 replaces hydroinflation of rear tires.**

Combination of counterweights 1 + 2 may only be used for stabilizing purposes within timber and pallet handling on a flat surface.

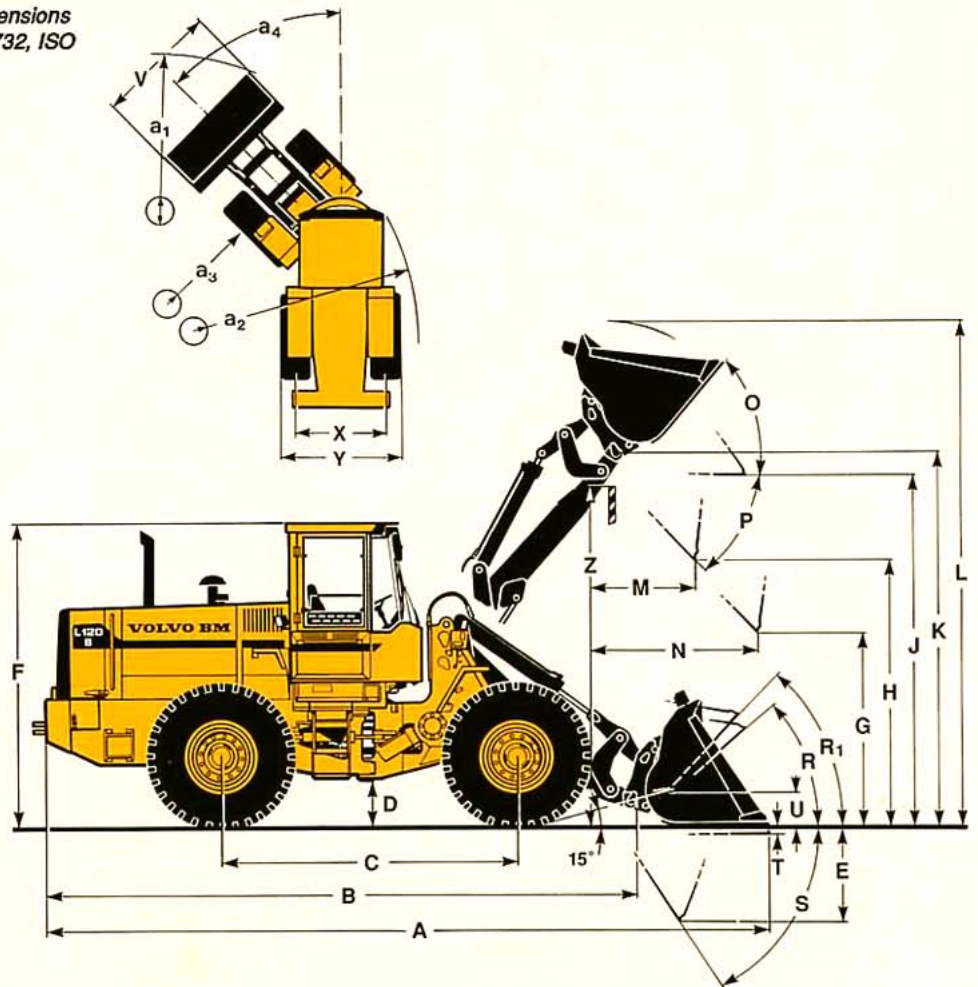
DIMENSIONAL DATA VOLVO BM L120B

Tires: 23.5 R 25*

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

B	mm	(ft in)	6330	(20'10")
C	mm	(ft in)	3200	(10'6")
D	mm	(ft in)	435	(1'5")
F	mm	(ft in)	3345	(10'7")
G	mm	(ft in)	2135	(7')
J	mm	(ft in)	3760	(12'4")
K	mm	(ft in)	3990	(13'1")
O	°		54	
P	°		45	
R	°		42	
R ₁ *	°		46	
**	°		56	
S	°		58	
T	mm	(ft in)	50	(2")
U	mm	(ft in)	350	(1'2")
X	mm	(ft in)	2070	(6'9")
Y	mm	(ft in)	2680	(8'10")
Z	mm	(ft in)	3690	(12'1")
a ₂	mm	(ft in)	5730	(18'10")
a ₃	mm	(ft in)	3070	(10'1")
a ₄	± °		40	

* Carrying position SAE
** In practical carry position



Bucket type

- 1 = Straight without teeth
- R = Hook-On
- D = Pin-On

Order No.		91381	91374	91382	91375	91383	91376
Mounting / Bucket type		D / 1	R / 1	D / 1	R / 1	D / 1	R / 1
Volume, heaped	m ³ (yd ³)	2,8 (3,7)	2,8 (3,7)	3,1 (4,1)	3,1 (4,1)	3,3 (4,3)	3,3 (4,3)
Static tipping load, straight	kg	12700	12200	12700	12200	12500	12000
	(lb)	(28000)	(26900)	(28000)	(26900)	(27600)	(26500)
at 35° turn	kg	11200	10700	11200	10700	11000	10600
	(lb)	(24700)	(23700)	(24700)	(23700)	(24300)	(23400)
at full turn	kg	10700	10300	10700	10300	10500	10100
	(lb)	(23400)	(22700)	(23400)	(22700)	(23200)	(22300)
Breakout force	kN	152,7	140,7	151,8	139,9	138,0	127,8
	(lbf)	(34330)	(31630)	(34120)	(31450)	(31020)	(28730)
A	mm	7620	7710	7640	7710	7740	7830
	(ft in)	(25')	(25'4")	(25'1")	(25'4")	(25'5")	(25'8")
L	mm	5310	5350	5410	5460	5430	5470
	(ft in)	(17'5")	(17'7")	(17'9")	(17'11")	(17'10")	(17'11")
V	mm	2850	2850	2850	2850	2850	2850
	(ft in)	(9'4")	(9'4")	(9'4")	(9'4")	(9'4")	(9'4")
a ₁ clearance circle	mm	12560	12610	12560	12610	12630	12680
	(ft in)	(41'2")	(41'5")	(41'2")	(41'5")	(41'5")	(41'7")
E	mm	1070	1140	1070	1140	1170	1240
	(ft in)	(3'6")	(3'9")	(3'6")	(3'9")	(3'10")	(4'1")
H	mm	2890	2830	2890	2830	2800	2740
	(ft in)	(9'6")	(9'4")	(9'6")	(9'4")	(9'2")	(8'11")
M	mm	1070	1140	1070	1140	1160	1220
	(ft in)	(3'6")	(3'9")	(3'6")	(3'9")	(3'10")	(4')
N	mm	1620	1650	1620	1650	1660	1690
	(ft in)	(5'4")	(5'5")	(5'4")	(5'5")	(5'5")	(5'6")
Weight distribution, front	kg	6220	6390	6290	6460	6380	6560
	(lb)	(13715)	(14090)	(13869)	(14244)	(14068)	(14465)
Weight distribution, rear	kg	9170	9090	9130	9060	9125	9040
	(lb)	(20220)	(20040)	(20130)	(19970)	(20120)	(19930)
Operating weight	kg	15390	15480	15420	15520	15505	15600
	(lb)	(33930)	(34130)	(33990)	(34220)	(34180)	(34390)

STANDARD EQUIPMENT

Safety & comfort

ROPS- and FOPS-cab
Cab heating with filtered fresh air intake and defroster
Tinted glass
Ergonomically designed and adjustable operator's seat with seat belt
Rear-view mirrors, external, two
Rear-view mirrors, internal, one
Lighting:
main headlamps, full-dipped beam/asym. (halogen)
working lights, front (two, halogen)
working lights, rear (two, halogen)
parking lights
brake lights
tail lights
cab lighting
instrument lighting
workinglight dependent parkinglight

Instrument panel with symbols
Sun visor
Safety start
Hazard warning flashers
Windscreen wipers, front and rear
Intermittent wipers, front
Horn
Ashtray
Cigarette lighter
Lifting eyes
Opening window
Wrist support
Antiskid tape
Filepocket
Leverlock
Radio console without radio
Lockable engine hoods

Engine & electrical system

Contronic monitoring system
Electric socket 24V
Battery disconnection switch
Alternator
Rain cap
Air cleaner with ejector discharge
Engine temperature gauge
Hydraulic transmission temperature gauge
Warning lamps for:
working lights, front / rear charging
full-beam headlights
direction indicators
engine oil pressure
transmission oil pressure
differential lock
parking brake
brake pressure
hazard flashers
air cleaner
Hour recorder
Fuel gauge

Central warning (with buzzer):

Engine oil pressure
brake pressure
parking brake
engine temperature
transmission temperature
transmission oil pressure

Drivetrain

Power Shift transmission
Automatic Power Shift (APS)
Differential lock, front axle
Single-lever shift control
Tires 23.5 R25*

Hydraulic system

Vane pump (tandem pump)
Control valve (3-spool)
Pilot valve (3-spool)
Bucket positioner
Boom kick-out
Bucket position Indicator
Hydraulic oil cooler

OPTIONAL EQUIPMENT *(Standard on certain markets)*

Service and maintenance equipment

Lockable tool box
Tool kit
Wheel nut wrench kit
Extended lube points
Air pressure equipment

Engine equipment

Electrical engine block heater
Preheating coil
Oil-bath pre-cleaner
Low-emission version
Extra fuel filter
Cyclone pre-cleaner
Coolant filter
High-altitude version
Radiator corrosion protected

Electrical equipment

Back-up alarm
Brushless alternator

Extra working lights, front (two), halogen
Extra working lights, rear (two), halogen
Attachment light, (halogen)
Left-hand asymmetrical headlights (halogen)
Side marker lights
Rotating beacon with collapsible mounting
Registration plate light
Radio

Transmission equipment

Switch, forward/reverse shifting
Dual brake pedals

Cab equipment

Heated operator's seat
Air suspended operators seat
Speedometer and tachometer
Sliding window
Instructor's seat
Parking-brake alarm, acoustic

Information panel Contronic:
startup, settings language and units, operating hours
operating information, stop watch, tripmeter, cycle counter
service intervals
engine
electrical system
transmission
Cable, information panel service
Air conditioning
Titable steering wheel
Windshield washers, front / rear
Throttle lockable

Hydraulic equipment

3rd hydraulic control
3rd and 4th hydraulic control
5th hydraulic control
Single-acting lifting function
Boom lowering system
Hydraulic attachment bracket
Separate attachment locking

Automatic hose coupler (AHC)
Hydraulic parking brake
Boom Suspension System

External equipment

Extended mudguards
Towing hitch
Counterweight 1
Counterweight 2

Protective equipment

Protective grilles for headlights
Protective grilles for rear working lights
Protective grilles for rear lights
Underbody protection guard

Other equipment

Secondary steering
Air horn
Tires 23.5 x 25
Comfort Drive Control (CDC)
Fueling strainer
Slow moving vehicle sign

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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