Volvo Wheel Loaders 19.7 - 21.0 t / 43,431 - 46,297 lb

L120 ELECTRIC

Volvo Construction Equipment

L120 ELECTRIC

A valuable asset for customers looking to maintain maximum efficiency with minimal environmental impact. Reduced maintenance and quiet operation make this 20-tonne electric wheel loader with a 6-tonne payload capacity the perfect partner across a range of applications.

More valuable choice

Achieve your fossil-free ambitions, widen business opportunities and lower your operating costs:

- Access jobsites with low carbon and low noise requirements
- Operate indoors without needing costly fume extraction systems or spark arrestors
- Energy cost reduction
- 30% less maintenance

Safety

Safety of product and operation remains high level, thanks to:

- High ingress protection rating for battery pack (IP68), Master box (IP67), and the Motor (IP69)
- Reinforced structure and optional grille guards for Battery
- Advanced active cooling and heating for battery
- High Voltage Interlock Loop
- Optional Seats with 3 point seat belt, Parking brake alarm, RBB, Radar detect system, CMS, Hill Assist

Powerful, quiet and valuable

The Volvo L120 Electric, a 22-Tons (48,501 lb) wheel loader with a 6.6-Tons (14,550 lb) payload, matches the powerful performance of equivalent diesel models and operates across multiple segments, while delivering zero emissions and near-silent operation. What's more, thanks to reduced energy expenses and 30% less maintenance, it has lower operating costs and longer uptime to boost productivity.

Runtime and charging

Deliver a full work shift of around 5-9 hours of runtime, depending on the environment, and applications. Stay charged with fast charging options including:

- A range of fast chargers including the 180 kW DC charger allowing a powerup from 10-95% in one hour and 30 minutes
- The My Equipment App digital tool ensures your machine is ready for action with valuable insights into battery status, machine hours and geographic location

A strong performance

Enjoy the same, or better, power and performance as a conventional model, plus faster response and shorter cycle times thanks to:

- Renowned Branded LFP Battery
- Dedicated, High-Speed Flat-Wire Permanent Magnet Synchronous Motors for propulsion and hydraulics
- Dual thermal system
- Renowned Volvo Torque Parallel linkage
- A range of Volvo Attachments
- Tailored application package
- Customer Build Attachments

Energy recovery function

Electrical drive motors recuperate energy by acting as generators when decelerating:

- Reuse of braking energy to charge the battery and prolong your runtime
- Decreased brake wear
- Reduced need of axle oil cooling.
- Machine can recoup up to 15 % of the energy depending on application

Operator comfort

Enjoy a more comfortable operation with less noise and vibrations. A quieter jobsite facilitates communication and reduces fatigue:

- Suite of Load Assist applications, including On-Board Weighing
- Electro-hydraulic multiple or single lever controls
- Auto bucket leveling functions
- Optional Premium Seats
- Optional Comfort Drive Comfort

Volvo L120 Electric in detail

Electric / Electronic control system

600 V system.
282 kWh battery pack.

Electric motor		Permanent-Magnet Synchronous Motor
Nominal power	kW (hp)	228 (306)
Peak power	kW (hp)	290 (390)
Battery type		Lithium Iron Phosphate (LFP)
Battery voltage	V	618
Battery capacity	kWh	285
Battery capacity	Ah	456
Usable battery energy	kWh	268 (95% of battery capacity)
DC Charging capacity	kW	max 165, depends on DC charger power capacity
Charging protocol		CCS1
Operating ambient temperature		-13°F to 122°F

Electrical System

24 V Electrical system.
Central warning system: Contronic electrical system with central warning light and buzzer for following functions: - Serious high voltage system fault - Low steering system pressure - Interruption in communication (computer fault) Central warning light and buzzer with the gear engaged for the following functions. - Low transmission oil pressure - High transmission oil temperature - Low brake pressure - Engaged parking brake - Fault on brake charging - High hydraulic oil temperature - Overspeeding in engaged gear - High brake cooling oil temperature front and rear axles - Inverter temperature - Electric motor temperature - Main battery SOC - Main battery discharge warning.

24 Volt System	V	24
Batteries	V	2 x 12
Battery capacity	Ah	2 x 80

Drivetrain

Transmission: Volvo countershaft transmission with single lever control. Fast and smooth shifting of gears with Pulse Width Modulation (PWM) valve.
Transmission: Volvo Automatic Power Shift (APS) with fully automatic shifting 1-4.
Axles: Volvo fully floating axle shafts with planetary hub reductions and nodular iron axle housing. Fixed front axle and oscillating rear axle. 100% differential lock on the front axle. Optional: Limslip rear

Transmission		E-TM EHT220
1st gear	km/h (mph)	8 (4.97)
2nd gear	km/h (mph)	18 (11.2)
3rd gear	km/h (mph)	37 (23)
4th gear	km/h (mph)	40 (24.9)
Measured with tires		23.5R25
Front axle/rear axle		AWB 31 / AWB 30
Rear axle oscillation	±°	13
Ground clearance	mm (in)	430 (16.9)
at oscillation	°	13

Steering System

Steering system: Load-sensing hydrostatic articulated steering.
System supply: The steering system has priority feed from a load-sensing axial piston pump with variable displacement.
Steering cylinders: Two double-acting cylinders.

Steering cylinders		2
Cylinder bore	mm (in)	75 (2.95)
Rod diameter	mm (in)	50 (1.97)
Stroke	mm (in)	48 (19.1)
Working pressure	MPa (bar)	26.5 (265)
Maximum flow	l/min (gal/min)	74.5 (20)
Maximum articulation	±°	38

Cab

Instrumentation: All important information is centrally located in the operator's field of vision. Display for Contronic monitoring system.
Heater and defroster: Heater coil with filtered fresh air and fan with manual setting.
Operator's seat: Operator's seat with adjustable suspension and retractable seatbelt. The seat is mounted on a bracket on the rear cab wall and floor. The forces from the retractable seatbelt are absorbed by the seat rails.
Standard: The cab is tested and approved according to ROPS (ISO 3471, SAE J1040), FOPS (ISO 3449). The cab meets with requirements according to ISO 6055 (Operator overhead protection - Industrial trucks) and SAE J386 ("Operator Restraint System").
Refrigerant of the type R134a is used when this machine is equipped with air conditioning. Contains fluorinated greenhouse gas R134a, Global Warming Potential 1.430 t CO_2-eq.

Ventilation	m^3/min (yd^3/min)	9 (11.8)
Heating capacity	kW	6
Air conditioning	kW	5.3

Sound Level

Sound level in cab according to ISO 6396 - L_{pA}	dB	70
External sound level (ISO 6395 and EU Noise Directive 2000/14/EC) - L_{WA} with noise reduction kit	dB	97

Service Refill

Service accessibility: Electrically openable hood with large opening angle giving excellent access to the electric powertrain compartment.
A quick-fit adapter on the hydraulic tank provides faster hydraulic oil drainage.
Possibility to monitor, log and analyze data to facilitate troubleshooting.

Hydraulic oil tank	lit (gal.)	133 (35.1)
Transmission oil	lit (gal.)	39 (10.3)
Axle oil front	lit (gal.)	36 (9.51)
Axle oil rear	lit (gal.)	41 (10.8)

Hydraulic System

System supply: Two load-sensing axial piston pumps with variable displacement. The steering system always has priority.
Valves: Double-acting 2-spool valve. The main valve is controlled by a 2-spool pilot valve.
Lift function: The valve has four positions; raise, hold, lower and floating position. Inductive/magnetic automatic boom kickout can be switched on and off and is adjustable to any position between maximum reach and full lifting height.
Tilt function: The valve has three functions including rollback, hold and dump. Inductive/magnetic automatic tilt can be adjusted to the desired bucket angle.
Cylinders: Double-acting cylinders for all functions
Filter: Full flow filtration through 10 micron (absolute) filter cartridge.

Working pressure maximum, pump 1 for working hydraulic system	MPa (bar)	29 (290)
Flow	l/min (gal/min)	128 (33.8)
at	MPa (bar)	10 (100)
pump speed	rpm (rps)	1.9 (32)
Working pressure maximum, pump 2 for steering-, brake-, pilot- and working hydraulic system	MPa (bar)	31 (310)
Flow	l/min (gal/min)	128 (33.8)
Flow	gal/min	33.8
at	MPa (bar)	10 (100)
at	bar	100
pump speed	rpm (rps)	1.9 (32)
Working pressure maximum, pump 3 for brake- and cooling fan system	MPa (bar)	21 (210)
Flow	l/min (gal/min)	32 (33.8)
Flow	gal/min	8.45
at	MPa (bar)	10 (100)
at	bar	100
pump speed	rpm (rps)	1.9 (32)
Pilot system, working pressure	MPa (bar)	3.5 (35)
Lift	s	5.6
Tilt	s	2.7
Lower, empty	s	3.1
Total cycle time	s	11.4

Lift Arm System

Torque Parallel linkage (TP-linkage) with high breakout torque and parallel movement throughout the entire lifting range.

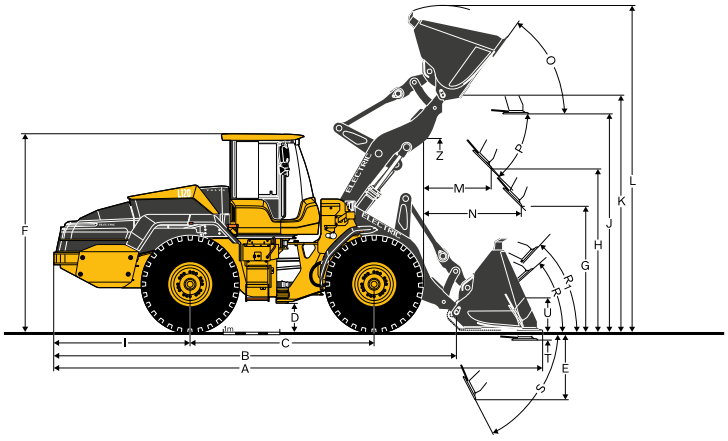
Lift cylinders		2
Lift cylinder bore	mm (in)	150 (5.91)
Lift cylinder piston rod diameter	mm (in)	80 (3.15)
Lift cylinder stroke	mm (in)	676 (26.6)
Tilt cylinder		1
Tilt cylinder bore	mm (in)	210 (6.3)
Tilt cylinder piston rod diameter	mm (in)	110 (3.9)
Tilt cylinder stroke	mm (in)	412 (21.5)

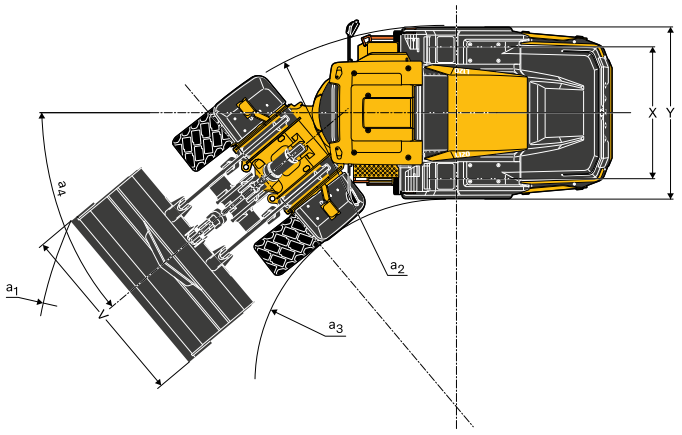
Brake System

Service brake: Volvo dual-circuit system with nitrogen charged acculmulators. Outboard mounted hydraulically operated, fully sealed oil circulation cooled wet disc brakes.
Parking brake: Dry disc brake mounted on the transmission output shaft. Applied by spring force, electro-hydraulically released with a switch on the instrument panel.
Secondary brake: Dual brake circuits with rechargeable accumulators. One circuit or the parking brake fulfills all safety requirements.
Standard: The brake system complies with the requirements of ISO 3450.

Number of brake discs per wheel front		1
Accumulators	lit (gal.)	3 x 1 (3 x 0.26)

Specifications





DIMENSIONS						
Tires 23.5 R25 VJT BRIDGESTONE			L120 Electric			
			Standard boom		Long boom	
B	mm	ft in	6,920	22'8"	7,405	24'4"
C	mm	ft in	3,200	10'6"	3,200	10'6"
I	mm	ft in	2,374	7'9"	2,374	7'9"
D	mm	ft in	430	1'5"	430	1'5"
F	mm	ft in	3,380	11'1"	3,375	11'1"
G	mm	ft in	2,135	7'0"	2,135	7'0"
J	mm	ft in	3,770	12'4"	4,285	14'1"
K	mm	ft in	4,090	13'5"	4,610	15'1"
O	°		54		55	
P_{max}	°		50		50	
R	°		42		43	
R_1*	°		47		50	
S	°		67		64	
T	mm	in	110	4.3	160	6.3
U	mm	in	510	20.1	635	25
X	mm	ft in	2,070	6'9"	2,070	6'9"
Y	mm	ft in	2,680	8'10"	2,680	8'10"
Z	mm	ft in	3,330	10'11"	3,705	12'2"
a_2	mm	ft in	5,740	18'10"	5,740	18'10"
a_3	mm	ft in	3,050	10'0"	3,050	10'0"
a_4	±°		40		40	
			Standard boom with 3.5 m³ (4.6 yd³) STE P BOE bucket Long boom with 3.5 m³ (4.6 yd³) STE P BOE bucket			

* Carry position SAE

Where applicable, specifications and dimensions are according to ISO 7131, SAE J732, ISO 7546, SAE J742, ISO 14397, SAE J818.

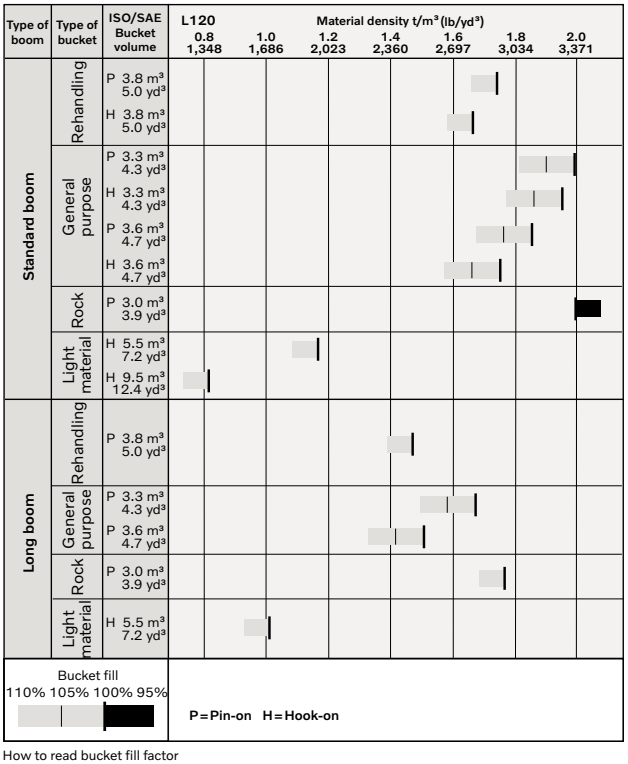
L120 Electric																				
Tires 23.5R25 VJT BRIDGESTONE			GENERAL PURPOSE												REHANDLING		LIGHT MATERIAL		LONG BOOM	
			3.3 m³ (4.3 yd³) STE P T		3.3 m³ (4.3 yd³) STE H T		3.5 m³ (4.6 yd³) STE P T		3.6 m³ (4.7 yd³) STE P BOE		3.5 m³ (4.6 yd³) STE H T		3.6 m³ (4.7 yd³) STE H BOE		3.8 m³ (5.0 yd³) STE P BOE		5.5 m³ (7.2 yd³) LM P BOE		3.6 m³ (4.7 yd³) STE P BOE	
Volume, heaped ISO/SAE	m³	yd³	3.3	4.3	3.3	4.3	3.5	4.6	3.6	4.7	3.5	4.6	3.6	4.7	3.8	5.0	5.5	7.2	3.6	4.7
Volume at 110% fill factor	m³	yd³	3.6	4.7	3.6	4.7	3.9	5.1	4.0	5.2	3.9	5.1	4.0	5.2	4.2	5.5	6.0	7.8	4.0	5.2
Static tipping load, straight	kg	lb	15,700	34,613	14,960	32,981	15,200	33,510	14,880	32,805	14,500	31,967	14,190	31,284	14,720	32,452	15,460	34,083	12,110	26,698
at 35° turn	kg	lb	14,030	30,931	13,340	29,410	13,520	29,806	13,220	29,145	12,870	28,373	12,580	27,734	13,060	28,792	13,680	30,159	10,690	23,567
at full turn	kg	lb	13,540	29,851	12,870	28,373	13,030	28,726	12,730	28,065	12,390	27,315	12,110	26,698	12,580	27,734	13,160	29,013	10,280	22,663
Breakout force	kN	lbf	172	38,667	157	35,295	166	37,318	170	38,218	152	34,171	160	35,969	151	33,946	122	27,427	162	36,419
A	mm	ft in	8,540	28'0"	8,640	28'4"	8,570	28'1"	8,430	27'8"	8,680	28'6"	8,540	28'0"	8,480	27'10"	8,850	29'0"	8,930	29'4"
E	mm	ft in	1,370	4'6"	1,450	4'9"	1,380	4'6"	1,270	4'2"	1,480	4'10"	1,370	4'6"	1,310	4'4"	1,640	5'5"	1,290	4'3"
H	mm	ft in	2,800	9'2"	2,730	8'11"	2,780	9'1"	2,870	9'5"	2,700	8'10"	2,800	9'2"	2,840	9'4"	2,560	8'5"	3,390	11'1"
L	mm	ft in	5,510	18'1"	5,580	18'4"	5,560	18'3"	5,560	18'3"	5,630	18'6"	5,630	18'6"	5,700	18'8"	5,830	19'2"	6,080	19'11"
M	mm	ft in	1,340	4'5"	1,360	4'6"	1,310	4'4"	1,220	4'0"	1,390	4'7"	1,310	4'4"	1,260	4'2"	1,510	4'11"	1,200	3'11"
N	mm	ft in	1,890	6'2"	1,870	6'2"	1,840	6'0"	1,810	5'11"	1,880	6'2"	1,850	6'1"	1,830	6'0"	1,890	6'2"	2,250	7'5"
V	mm	ft in	3,000	9'10"	3,000	9'10"	3,000	9'10"	3,000	9'10"	3,000	9'10"	3,000	9'10"	3,000	9'10"	3,000	9'10"	3,000	9'10"
a_1 clearance circle	mm	ft in	13,080	42'11"	13,130	43'1"	13,100	43'0"	13,010	42'8"	13,150	43'2"	13,070	42'11"	13,040	42'9"	13,260	43'6"	13,470	44'2"
Operating weight	kg	lb	19,520	43,034	19,730	43,497	19,560	43,122	19,680	43,387	19,760	43,563	19,890	43,850	19,790	43,629	20,080	44,269	19,940	43,960

Bucket Selection Chart

The chosen bucket is determined by the density of the material and the expected bucket fill factor. The actual bucket volume is often larger than the rated capacity, due to the features of the TP linkage, including an open bucket design, good rollback angles in all positions and good bucket filling performance. The example represents a standard boom configuration. Example: Sand and gravel. Fill factor ~ 105%. Density 1.6 t/m³ (2,700 lb/yd³). Result: The 3.4 m³ (4.5 yd³) bucket carries 3.6 m³ (4.7 yd³). For optimum stability always consult the bucket selection chart.

Material	Bucket fill, %		Material density		ISO/SAE bucket volume		Actual volume	
			t/m³	lb/yd³	m³	yd³	m³	yd³
Earth/ Clay	~ 110		1.8 1.6	3,030 2,700	3.3 3.6	4.3 4.7	3.6 3.9	4.7 5.1
Sand/ Gravel	~ 105		1.8 1.7	3,030 2,866	3.3 3.6	4.3 4.7	3.5 3.8	4.6 5.0
Aggregate	~ 100		1.7	2,866	3.8	5.0	3.8	5.0
Rock	≤100		1.7	2,866	3.0	3.9	3.0	3.9

The size of rock buckets is optimized for optimal penetration and filling capability rather than the density of the material.



How to read bucket fill factor

Equipment

STANDARD EQUIPMENT
Traction voltage system
Engergy recuperation function with 3 adjustable levels
Motor brake
Hill slow down function
Off board fast DC charging
HVIL function (High voltage Interlock Loop)
High charging power with single charging plug
Active cooling for traction batteries
Preheating of traction voltage battery
Wheels and tires
23.5R25
Drivetrain
Electrical transmission without torque converter
Automatic Power Shift
Fully automatic gear shifting, 1-4
PWM-controlled gear shifting
Forward and reverse switch by hydraulic lever console
Indicator glass for transmission oil level
Differentials: Front, 100% hydraulic diff lock. Rear, conventional
Rimpull control
Electrical system
24 V, pre-wired for optional accessories
Battery disconnect switch with removable key
Battery box, steel
Electric horn
Electric fan
Emergency stop
Rear view mirrors, std arm
Instrument cluster:
SOC level
Traction battery temperature
Energy recuperation level
Transmission oil temperature
Hydraulic oil temperature
Coolant temperature
Instrument lighting
Lighting:
Twin LED front headlights with high and low beams
Parking lights
Double brake and tail lights
Turn signals with flashing hazard light function
LED work lights (2 front and 2 rear)
Headlights, assym. right LED
Volvo Co-Pilot 2nd Generation
On Board Weighing software
Warning beacon(flasher), LED
Headlight bracket, std arm
E-WLO Reverse By Braking
Hill Assist

STANDARD EQUIPMENT
Contronic monitoring system
Monitoring and logging of machine data
Contronic display
Ambient temperature
Clock
Test function for warning and indicator lights
Brake test
Warning and indicator lights:
24 V Battery charging
Parking brake
Warning and display message:
Traction battery temperature
Transmission oil temperature
Transmission oil pressure
Hydraulic oil temperature
Brake pressure
Parking brake applied
Brake accumulator charging
Overspeed at direction change
Axle oil temperature
Level warnings:
SOC level
Coolant level
Transmission oil level
Hydraulic oil level
Hydraulic System
Main valve, double acting 2-spool with hydraulic pilots
Three variable displacement axial piston pumps for:
Working hydraulics, Pilot hydraulics and Brake system
Working hydraulics, Pilot hydraulics, Steering and Brake system
Hydraulic cooling and Brake system
Electro-hydraulic servo controls
Electronic hydraulic lever lock
Automatic boom kick-out
Automatic bucket positioner with position indicator
Double acting hydraulic cylinders
Indicator glass for hydraulic oil level
Hydraulic oil cooler
Secondary steering
Boom Suspension System
Mineral hydraulic fluid

STANDARD EQUIPMENT
Brake system
Dual brake circuits
Single brake pedals
Secondary brake system
Parking brake, electrical-hydraulic
Brake wear indicators
Wet disc brakes on all four wheels
Cab
ROPS (ISO 3471), FOPS (ISO 3449)
Acoustic inner lining
Ashtray
Lockable door
Floor mat
Single interior light
Single interior rear view mirror
Sliding window, right side
Tinted safety glass
Retractable seatbelt (SAE J386)
Adjustable steering wheel
Storage compartment
Document pocket
Sun blinds, front windows
Beverage holder
Windshield washer front
Foot step, left side, rigid (toolbox lockable included)
A/C as standard
Cab heating with fresh air inlet and defroster
Fresh air inlet with two filters
Manual heat control
Left side door, with Sliding window
12 V outlet, right side A-pillar
Foot step, right side

STANDARD EQUIPMENT
Service and Maintenance
Lubrication manifolds, ground accessible
Pressure test ports: transmission and hydraulic, quick connects
Service platforms with anti-slip surfaces
Toolbox, lockable
Telematics system
Telematics Subscription
Protective equipment
Cover Plates, rear frame
Cover plate, front frame
Guards for front headlights, no grating
External equipment
Fenders, front, plastic
Viscous cab mounts
Frame, joint lock
Electric hood opening
Lifting eyes
Tie-down eyes
Mudguard, rear, basic cover 80 tire
Other equipment
Pin plate without CE-marking
Rear windshield wiper
Anchorage OM

Equipment

OPTIONAL EQUIPMENT
Wheels and tires
Rims for Radial tire 25-19.5/2.5 (for 23.5R25)
Tires Bridgestone 23.5R25 VSDL*
Tires Bridgestone 23.5R25 VJT* L3
Tires Michelin 23.5R25 XHA2*
Tires Michelin 23.5R25 XLDN*
Tires MAXAM 23.5-25 TR AP
Tires MAXAM 23.5-25 SM AP
Electrical system
Extra emergency stop outside Cab
Working lights, front on cab, extra 2 LED lamps
Rear view mirrors, el. Heated std arm
Rear view mirrors, Long arm
Rear view mirrors, el. Heated long arm
Reverse alarm, audible
Reverse alarm, audible, multi-frequency (white noise)
Side marking lamp
Reverse warning light, Strobe
Warning Beacon LED, Automatic
Seat belt indicator, external
Headlight bracket, short arm
Parking brake alarm
Radar detect system
Collision Monitoring System
Tire Pressure Monitoring System
OnBoard Weighing Task Mode
License plate holder, lighting

OPTIONAL EQUIPMENT
Hydraulic System
Separate attachment locking
Mineral oil for cold climate
Hydraulic fluid, for hot climate
Electro-hydraulic function, 3rd, multi lever
Electro-hydraulic function, 4th
Electro-hydraulic function, 2nd, single lever
Electro-hydraulic function, 3rd, single lever
Electro-hydraulic function, 4th, single lever
Hydraulic constant flow control with detent for 3rd function
Cab
Sun blinds, rear windows
Operator’s seat, Volvo air susp, heavy-duty, high back, headrest
Operator’s seat, Volvo air susp, heavy-duty, high back, heat, head rest
Radio kit with MP3
Cab ladder, rubber-suspended
Operator’s seat, comfort ISRI, 2 point seat belt
Operator’s seat, comfort ISRI, 3 point seat belt
Operator’s seat, premium ISRI, 2 point seat belt
Operator’s seat, premium ISRI, 3 point seat belt
Arm rest LH for ISRI seats
Cab air pre-cleaner, cyclone type
Service and Maintenance
Automatic lubrication system
Grease nipple guards
Tool kit
Wheel nut wrench kit

OPTIONAL EQUIPMENT
Protective equipment
Guards for front headlights, grating
Grill guard for traction battery
Cover plate at CTW, without towing pin
Taillight guards, heavy-duty
Cover plate, under cab
Belly plate - Front frame
Belly plate - Rear frame
Cover plate, heavy-duty, front frame
Center hinge and rear frame guard
Wheel / axle seal guards
Boom cylinder and tube guards
Windshield, guard
Tilt sensor protection
Bucket teeth protection
External equipment
Fenders, front, steel
Long boom
Deleted front mudguards and wideners rear
Mudguard, rear, full cover 80 tire

OPTIONAL EQUIPMENT
Other equipment
Towing hitch
Comfort Drive Control (CDC)
Sign, 50km/h
Sign, slow moving vehicle
Waste handler package
Attachments
Buckets:
General purpose (Straight)
Light material
Wear parts:
Bolt-on edge
Bolt-on or weld-on bucket teeth
Segments
Fork equipment
Attachment Bracket VAB cast
Drivetrain
Diff lock front 100%, Limited slip rear
Speed limiter, 20km/h
Speed limiter, 30km/h
Speed limiter, 40km/h

reddot winner 2025

Not all products are available in all markets. Under our policy of continuous 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

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