VOLVO

Volvo Electric Compact Wheel Loaders 4.5 - 5.4 t / 9,921 - 11,905 lb

L20 ELECTRIC

Volvo Construction Equipment

L20 ELECTRIC

Uptime you can count on

- Work a full day – Operating time calculator available (contact your dealer)
- Make the most of every charge: fully electric driveline with energy recuperation and auto-shutoff function
- Choice of charging solutions | 0-100% in up to 3 hours
- 6 years or 5,000 hours full machine warranty

Open up new opportunities

- Perfect fit for noise sensitive areas
- Ability to work out of standard hours
- Zero-tailpipe emissions: work indoors and in emission-restricted zones
- Reduced environmental impact

Electrifying performance

Proven performance

- High lifting and breakout forces, superior roll-back and dump angles for bucket applications
- 100% parallel movements, outstanding lifting height and forward visibility for fork applications
- Rigid planetary axles, with 100% mechanical differential locks on the front and rear axles, offer maximum traction and minimal tire wear
- Articulating-oscillating center joint provides the best off-road capability and stability
- Faster response and instant torque in the driveline. Independent fast and powerful hydraulic movements controlled by joystick movement.

30% less maintenance

- Maintenance-free electric motors, featuring auto shutoff to reduce wear
- Fully electric driveline reduces hydraulic oil need by half
- Easy ground level access to lubrication and maintenance points

A new level of operator comfort

- Low vibration, low noise levels, no exhaust fumes
- Wide 3-point cab access
- Best all-round visibility
- Intuitive interface, electro-hydraulic controls
- Electric parking brake with auto-hold functionality. Keeps the brakes engaged indefinitely until you press the accelerator, even on flat ground
- Programmable cab heater
- Air conditioning system

The best battery and charging technology

- Lithium-Ion 48 V battery – 56 kWh
- Standard Electric Vehicles (EV) charging protocol
- Charging according automotive standard (IEC 61851/SAE J1772), required to use in conjunction with energy management systems
- Programmable maximum charging level and charging power
- Simplified charging strategy with automatic charge re-start
- Charging status indicated by external coloured LEDs
- On-board charging done via Level 1 or Level 2 automotive standard inlet or dedicated fast charging connector
- Comes standard with up to 9.2 kW on-board charger capacity charging from 10-100% in 3 hours 45 min.
- Fast charging possibilities, charging from 20-80% in 1 hour 45 min.
- Can be charged at any State Of Charge (SOC)
- With My Equipment App you can track the status of all your electric machines, designed with operator in mind

Work anything, anywhere

- Perfect fit for confined and narrow spaces
- Wide range of Volvo Attachments
- Attachment bracket with integrated third hydraulic function
- Customizable work modes including traction force, joystick and accelerator pedal sensitivity, flow control third hydraulic function
- Maximum speed of 20 km/h (12 mph)

Work anywhere, anytime: open up new opportunities

- Perfect fit for noise sensitive areas
- Ability to work outside standard hours
- Zero-tailpipe emissions: work indoors and in emission restricted zones
- Maximum speed of 20 km/h / 12.5 mph

Highest level of operator comfort

- Low vibration, relaxed working
- Low noise level inside and outside cab
- Wide door opening for easy getting in and out
- Electric parking brake with auto-hold function
- Efficient and powerful heating & ventilation system
- Programmable cab heater
- Air conditioning system

Proven performance

- High lifting and breakout forces, superior roll-back and dump angles for bucket applications
- 100% parallel movements, outstanding lifting height and forward visibility for fork applications
- Rigid planetary axles, with 100% mechanical differential locks on the front and rear axles, offer maximum traction and minimal tire wear
- Volvo attachment bracket: efficient attachment changes
- Articulating-oscillating center joint provides the best off-road capability and stability

The best battery technology

- Lithium-ion battery 48 V – 56 kWh
- Can be charged at any state of charge

Advanced charging technology

- On-board charging capacity of up to 9.2 kW
- Fast charging function 20-80% in 1 hour 45 min
- Charging when energy is cheap: charging protocol according automotive standard (IEC 61851/SAE J1772), required to use in conjunction with energy management system for example charge your electric machine when your solar panel system is generating electricity
- Charging status indicated by coloured LEDs
- Programmable maximum charging level and charging power

30% less maintenance

- Maintenance-free electric motors, featuring auto shut-off to safe energy and reduce wear
- Fully electric driveline reduces hydraulic oil need by half
- Ground level access to all service points

Useful functionality

- Configure working modes to suit your needs
- Flow rate adjustable proportionally as required in 3rd and 4th hydraulic function
- Proportional independent 4th hydraulic function (Option)
- Lift & tilt speed limiter (Option)
- Socket 8 pin attachment control & Configurable joystick buttons for maximum flexibility
- Rear view camera

Volvo L20 Electric in detail

Electrical Motor		
Induction motor		
Driveline Motor power (net)	kW (hp)	22 (29.5)
Permanent magnet synchronous motor		
Working Hydraulics Motor power (net)	kW (hp)	14 (18.8)

Electrical System		
Battery type		Lithium-ion
Battery Voltage	V	48
Battery Capacity	kWh	56
	Ah	1,250
Indicative runtime	h	5 to 8 hours*

Battery capacity 56 kWh / 1,250 Ah

On board charging time (10-100%)**:		
AC Level 1 on 120 V standard outlet		~41 h 20 min
AC Level 2 charging on 240 V		~3 h 45 min
Off board DC fast charging time (20-80%):		
Input 3P 480 V or 3P 600 V Output 48VDC 240 A	11.6 kW	~2 h 35 min
Input 3P 480 V Output 48VDC 360 A	17.3 kW	~1 h 45 min

		Auxiliary Battery
Type		AGM
Voltage	V	12
Capacity	Ah	50

*Depending on application
**Specifications for charging power and time refer to optimum conditions. The maximum charging capacity depends on the local grid conditions. For detailed information, please visit Charging calculator on www.volvoce.com or contact your local dealer.

Linkage

The parallel linkage system offers 100% parallel lift with the loading fork. The linkage system and the attachment bracket are designed for an excellent visibility to the front attachment, fork tines and fork tines end. The Volvo Attachment Bracket P (parallel) is equipped with long guide pins and an additional sealing ring for protection against dust and mud.

Linkage system		P-Kinematics
Lift cylinders		1
Tilt cylinders		1
Lift time (loaded)	s	6
Lowering time (empty)	s	4
Dump time	s	2.5

Wheels and Tires	
Size	405/70 R18
Rim	13 x 18

Brake System

Central wet disc brake, hydraulic activated service brake and SAHR (spring applied hydraulically released) parking brake.

Hydraulic System

Thermal controlled oil circuit with integrated cooling system. Electric-Hydraulic control valve: double acting control valve with three spool system. Independent flow share function and fully controllable via joystick.

Flow	l/min (gal/min)	55 (14.5)
Working pressure max	MPa (bar)	20 (200)
3rd Hydraulic circuit flow	l/min (gal/min)	55 (14.5)
3rd Hydraulic circuit pressure max	MPa (bar)	17.5 (175)

Drivetrain		
Angle of oscillation	±°	10
Oscillation at wheel, max.	mm (in)	221 (8.7)
Track	mm (in)	1,300 (51.2)
Travel speed, forward/reverse		
1st gear	km/h (mph)	8 (5.0)
2nd gear	km/h (mph)	20 (12.4)

Steering System

Hydrostatic steering. Central articulating-oscillating joint. Gear pump with priority valve.

Steering cylinders		1
Working pressure	MPa (psi)	19 (2,756)
Max articulation	±°	38

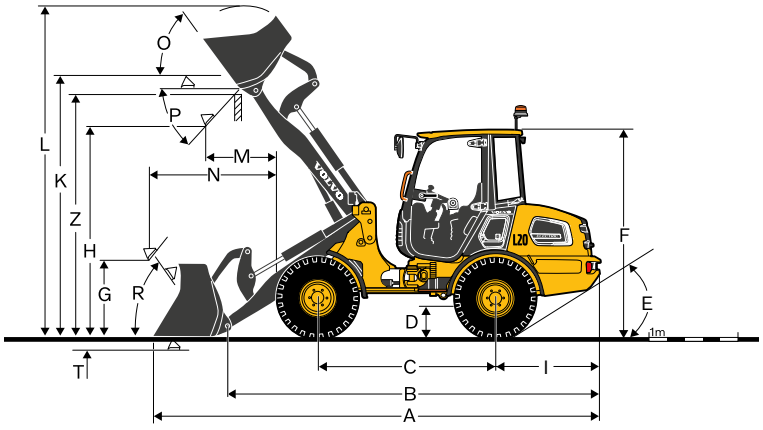
Service Refill		
Hydraulic tank	l (gal.)	40.5 (10.7)
Transmission oil	l (gal.)	0.6 (0.16)
Front axle oil	l (gal.)	3.9 (1.03)
Rear axle oil	l (gal.)	4.1 (1.08)

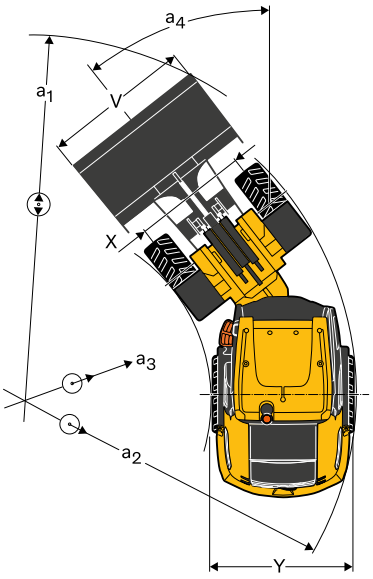
Cab

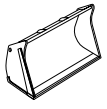
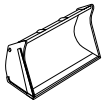
Instrumentation: All important information is located in the operator's field of vision.

Sound Level		
Sound level in cab according to ISO 6396		
L_{pA}	dB	72
Sound level in cab, without cab fan		
L_{pA}	dB	62
External sound level according to ISO 6395 and EU Noise Directive 2000/14/EC		
L_{WA}	dB	89

Specifications



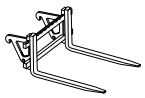


Bucket type L20 Electric with P-Kinematics, P attachment bracket and 335/80R18 tires*			General Purpose 55278500		Light Material 11391063		4 in 1 11391094	
								
Capacity heaped	m^3	yd^3	0.8	1.05	1.2	1.57	0.65	0.85
Material density	kg/m^3	lb/yd^3	1,900	3,205	1,200	2,025	2,100	3,540
Static tipping load, straight (ISO 14397)	kg	lb	3,391	7,476	3,212	7,081	3,045	6,713
Static tipping load, full turn 38° (ISO 14397)	kg	lb	3,040	6,702	2,880	6,349	2,730	9,019
Hydraulic lifting capacity, max.	kN	lbf	35	7,865	34	7,640	33	7,415
Breakout force	kN	lbf	35	7,865	28	6,295	40	8,990
A Total length	mm	ft in	5,120	16'10"	5,300	17'5"	5,035	16'6"
G Height of the lowest bucket edge	mm	ft in	715	2'4"	710	2'4"	765	2'6"
L Lift height, max.	mm	ft in	4,170	13'8"	4,300	14'1"	4,060	13'4"
V Bucket width	mm	ft in	1,650	5'5"	1,800	5'11"	1,650	5'5"
a_1 Radius to outer point of machine incl. Bucket	mm	ft in	4,195	13'9"	4,275	14'0"	4,170	13'8"
T Digging depth	mm	in	45	1.77	40	1.57	70	2.76
H Dump height, 45°	mm	ft in	2,350	7'9"	2,340	7'8"	2,400	7'10"
M Reach at max. height	mm	ft in	800	2'7"	810	2'8"	690	2'3"
N Reach, max.	mm	ft in	1,630	5'4"	1,640	5'5"	1,520	5'0"
Operating weight	kg	lb	4,500	9,920	4,550	10,030	4,650	10,250

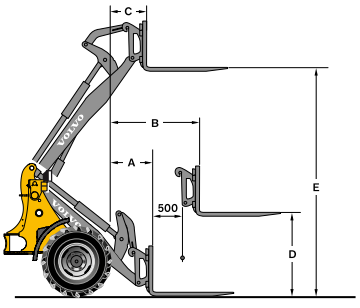
*Technical specifications and features may vary depending on the market.

DIMENSIONS L20 Electric P-Kinematics, P-attachment bracket and 335/80 R18 tires*				
B	mm	ft in	4,280	14'1"
C	mm	ft in	2,050	6'9"
D	mm	in	290	11.4
E	°		31	
F	mm	ft in	2,480	8'2"
I	mm	ft in	1,265	4'2"
K	mm	ft in	3,140	10'4"
O	°		56	
P	°		45	
R	°		56	
X	mm	ft in	1,300	4'3"
Y	mm	ft in	1,635	5'4"
Z	mm	ft in	2,905	9'6"
a_2	mm	ft in	3,890	12'9"
a_3	mm	ft in	2,100	6'11"
a_4	°		±38	

*Technical specifications and features may vary depending on the market.

L20 Electric P-Kinematics, P-attachment bracket and 335/80 R18 tires* Data with loading fork frame 1,345 mm (4'5") (11390275) and tines 1,000 mm (3'3") (2890382) Centre of gravity 500 mm (1'8")				
Payload according to EN 474-3, 60/80%	kg	lb	1,350 / 1,800	2,975 / 3,970
A	mm	ft in	694	2'3"
B	mm	ft in	1 170	3'10"
C	mm	ft in	350	1'2"
D	mm	ft in	1 385	4'7"
E	mm	ft in	3 025	9'11"

*Technical specifications and features may vary depending on the market.



Equipment

STANDARD EQUIPMENT
Electric / Electronic control system
Maintenance-free Lithium-ion (NMC) 48V battery - protected and embedded in the machine structure
7 Pack Battery System - 56 kWh Gross Capacity
9.2 kW On-board charger with J1772 plug
Charging status for AC and DC indicated by external coloured LEDs
AC-Charging cable
Preparation for fast charger
Maintenance-free 12 V auxiliary battery
High quality connectors
Auto shut dow function
Programmable maximum charging level and charging power
Charging according automotive standard (IEC 61851/SAE J1772), required to use in conjunction with energy management systems
Protected battery cut-off switch
Full LED lights - Travel light equipment (Main Head Lights, Parking-, Rear-, Brake-, Hazard warning lights and direction indicators)
LED work lights (2,000 lm) on cab roof, 4 front / 4 rear
Electric powertrain
Full electric drive with energy recuperation
Operator-selected 100% differential locks in both axles
Electric parking brake with auto-hold function
Maintenance free wet brake system
Hydraulic System
Gear-type pump
Electric-Hydraulic control valve three-spool system with flow share function
3rd hydraulic circuit with proportional flow regulation
Hydraulic couplings for 3rd hydraulic circuit
Return line direct to filter
Boom Suspension system

STANDARD EQUIPMENT
Instrumentation & controls
Single lever including 3rd function - Electroproportional
Configurable joystick buttons
Cruise Control
Simplified HMI
12 Volt accessories socket
USB charging socket (USB-A + USB-C)
Signal horn
Hazard warning switch
Jogwheel for menu navigation
5 inch multicolor display
Digital information on 5 inch display:
Battery state of charge (SOC)
Working hours
Vehicle speed
Differential locks
Battery charging
Indicators (left/right)
Main beam head lamp
Direction (forward/reverse)
Hydraulic oil temperature
Hydraulic oil filter
Electrically operated parking brake
Jog-Dial for menu navigation and machine controls
Preset Work modes for different applications
Safety
Driveline shut off via buckle
Orange handrail on cab
Orange seat belt 3”
Anti-theft system
Audible reverse alarm 92 dB (white noise)
Wheel chock
Rear view camera
Foldable LED rotating beacon
Cab, interior
Programmable cab heater
Adjustable steering column
Air conditioning system
4-way adjustable operator’s seat
Storage box in cab
Cab heating & ventilation navigation fully integrated in display
Sunvisor
DAB Radio with Bluetooth/USB and AUX connection
Extended backrest for mechnical seat

STANDARD EQUIPMENT

Cab, Exterior

- LED work lights (2,000 lm) on cab roof, 4 front / 4 rear
- ROPS/FOPS-cab
- Lockable door
- All-round tinted safety glass
- Windscreen wiper (front/rear)
- Windscreen washer (front/rear)
- Openable & lockable window on the right side
- Door & window stops
- External rear view mirrors (right/left)
- Heater with air-filter and defroster (front/rear)
- Heated rear view mirrors

Working Equipment

- Hydraulic P-Attachment bracket
- Bucket level indicator
- Socket attachment control 8 pin

Carriage Body

- Fenders (front/rear)
- Lockable engine hood
- Towing device
- Lifting eyes
- Tying down eyes
- Protective wax coating for overseas transport only

Wheels and tires

- 405/70R18

Working equipment

- Attachment bracket SSL
- Socket attachment control 8 pin

Other

- Preparation for multiline license plate (340 x 245 mm(13.4 x 9.65 in)) rear

Service and Maintenance

- Tool kit

Official approval

- Quality: DIN/ISO 9001
- Environment: DIN/ISO 14001
- Safety: CE compliant acc. Machinery Directive 2006/42/EC and EN 474-series
- Electromagnetic compatiblity (EMC) confirming to European directive 2014/30/EC
- Noise Emission Directive: 2000/14/EC
- Tipping load / Payload: ISO 14397-1
- ROPS conforming to ISO 3471
- FOPS conforming to ISO 3449 (Level 2)
- ECE R100 (approval of vehicles with regard to specific requirements for the electric power train)
- Vehicle Homologation for public road traffic usage according German StVZO-Requirements

OPTIONAL EQUIPMENT

Electric / Electronic control system

- Off Board Fast charger IP54 360 A – 17.3 kW Outdoor
- Off Board Fast charger IP21 200 A – 9.6 kW Indoor
- Off Board Fast charger IP21 360 A – 17.3 kW Indoor

Hydraulic System

- Return line direct to filter*
- Safety valves on lift and tilt cylinders (hose rupture valves)*
- Combination of Boom Suspension system & Safety valves*
- Lift and tilt speed limiter*
- 4th independent proportional hydraulic function with flow control*

Safety

- Safety brace
- Preparation for LED Rotating beacon (magnetic)
- LED Rotating beacon (magnetic)
- Audible reverse alarm

Cab, interior

- Air suspended and heated operator's seat

Cab, exterior

- Elevated Headlights 300 mm (11.8 in)
- Daytime running headlights
- Enhanced rear view mirrors outside cab

Carriage Body

- Full light protection
- Headlight protection*
- Worklight protection*
- Rearlight protection*

Wheels and tires

- 335/80R18
- 340/80R18
- 365/70R18
- 400/70R18

Other

- Special color painting
- Slow Moving Vehicle (SMV) warning triangle
- Socket front 7 pin (sweeper preparation)*

Attachments

- Forks with mechanical tines movements
- Fork with hydraulically operated tines positioning
- Fork with hydraulically operated tines positioning & side shift
- Refuse bucket with clamp
- Light Material bucket
- Side-Tip bucket
- High-Tip bucket
- Material Handling Arm
- Multi-Purpose bucket
- Grading bucket with / without extension
- Hay and manure fork
- General Purpose bucket
- Custom-Built Attachments

*Available as Aftermarket option (AMO) incl.installation instruction

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.

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Ref. No 20066714_B / English-22 / 2026.08 / CWL / Volvo, Global Marketing

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