



Volvo Construction Equipment

# L120H

Volvo Wheel Loaders

21.6 t

276 hp





2009

Volvo sets the standard for the attachment bracket (ISO 23727)

2010

OptiShift  
CareTrack

2016

Load Assist, powered by the award-winning Volvo Co-Pilot

2017

New generation OptiShift

### With you for the long run

As your trusted partner in production, Volvo is here to support you with the best equipment for the job. Boasting a comprehensive portfolio of attachments designed to complement your machines performance, as well as a range of services to boost your profitability, we'll help you tailor the perfect package to suit your business needs.





# Volvo L120H in detail

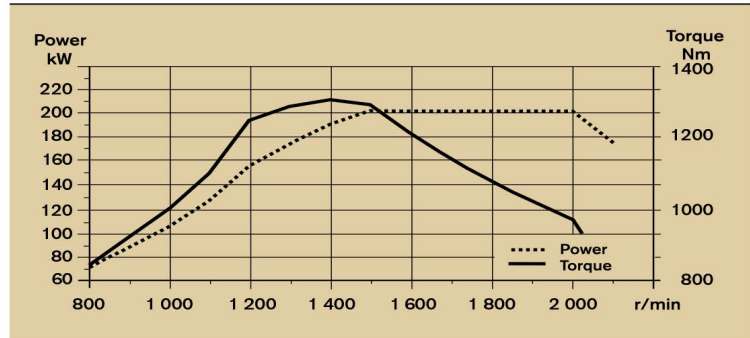
## Engine

The engine is a straight six cylinder, four stroke, turbo charged diesel engine with direct injection and charge air cooler. The engine meet US Tier 4 final and California Tier 4 final emission requirements and EU Stage IV emission requirements. The engine uses a common rail fuel system controlled by the engine control module (ECM). Engines with ACT (advanced combustion technology) feature split injection and turbocharger with mechanical wastegate. The exhaust after treatment system (EATS) is equipped with a diesel oxidation catalyst (DOC), a diesel particulate filter (DPF) and a SCR system to reduce emissions. Cooled exhaust gas recirculation (EGR) also reduces emissions.

## L120H

Engine	Volvo	D8J
Max. power at	r/min	1 500
SAE J1995 gross	kW	203
	hp	276
ISO 9249, SAE J1349 net	kW	203
	hp	276
Max. torque at	r/min	1 450
SAE J1995 gross	Nm	1 320
ISO 9249, SAE J1349 net	Nm	1 317
Economic working range	r/min	850 - 2 100
Displacement	l	7.8

## L120H



## Drivetrain

**Torque converter:** Single-stage.

**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 and mode selector with 4 different gear shifting programs, including AUTO. OptiShift transmission is also available as an option.

**Axes:** Volvo fully floating axle shafts with planetary hub reductions and cast steel axle housing. Fixed front axle and oscillating rear axle. % differential lock on the front axle.

		L120H
Transmission	Volvo	HTE 206C
Torque multiplication, stall ratio		2.47:1
Maximum speed, forward/reverse		
1st gear	km/h	7
2nd gear	km/h	13.5
3rd gear	km/h	28
4th gear	km/h	40
Note: 4th gear limited by ECU		
Measured with tires		750/65R25
Front axle/rear axle		AWB 31 / AWB 30
Rear axle oscillation	± °	13
Ground clearance	mm	460
at oscillation	°	130

## Electrical System

**Central warning system:** Contronic electrical system with central warning light and buzzer for following functions: - Serious engine fault - Low steering system pressure - Over speed warning engine - Interruption in communication (computer fault) Central warning light and buzzer with the gear engaged for the following functions: - Low engine oil pressure - High engine oil temperature - High charge air temperature - Low coolant level - High coolant temperature - High crank case pressure - Low transmission oil pressure - High transmission oil temperature - Low brake pressure - Engaged parking brake - Fault on brake charging - Low hydraulic oil level - High hydraulic oil temperature - Overspeeding in engaged gear - High brake cooling oil temperature front and rear axles.

		L120H
Voltage	V	24
Batteries	V	2 x 12
Battery capacity	Ah	2 x 170
Cold cranking capacity, approx	A	1 000
Alternator rating	W/A	2 280/80
Starter motor output	kW	5.5

## Brake System

**Service brake:** Volvo dual-circuit system with nitrogen charged accumulators. Outboard mounted hydraulically operated, fully sealed oil circulation cooled wet disc brakes. The operator can select automatic declutch of the transmission when braking by selecting the setting in the contronics.

**Parking brake:** Dry disc brake. Applied by spring force, electro-hydraulic release 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.

		L120H
Number of brake discs per wheel front		1
Accumulators		3 x 1.0



**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 auto and manual(11 speed) setting. Defroster vents for all window areas.  
**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 CO2-eq.

		<b>L120H</b>
Emergency exit: Use emergency hammer to b		
Ventilation	m <sup>3</sup> /min	9
Heating capacity	kW	16
Air conditioning (optional)	kW	7.5

**Lift Arm System**

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

		<b>L120H</b>
Lift cylinders		2
Cylinder bore	mm	150
Piston rod diameter	mm	80
Stroke	mm	676
Tilt cylinder		1
Cylinder bore	mm	210
Piston rod diameter	mm	110
Stroke	mm	412

**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.

		<b>L120H</b>
Working pressure maximum, pump 1 for working hydraulic system	MPa	29.0 ± 0.5
Flow	l/min	128
at	MPa	10
engine speed	r/min	1
Working pressure maximum, pump 2 for steering-, brake-, pilot- and working hydraulic system	MPa	31.0 ± 0.5
Flow	l/min	128
at	MPa	10
engine speed	r/min	1
Working pressure maximum, pump 3 for brake- and cooling fan system	MPa	21.0 ± 0.5
Flow	l/min	33
at	MPa	10
engine speed	r/min	1
Pilot system, working pressure	MPa	3.5
<b>Cycle times</b>		
Lift	s	5.4
Tilt	s	2.1
Lower, empty	s	2.5
Total cycle time	s	10

**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.

		<b>L120H</b>
Steering cylinders		2
Cylinder bore	mm	80
Rod diameter	mm	50
Stroke	mm	486
Working pressure	MPa	21
Maximum flow	l/min	120
Maximum articulation	± °	40

**Service Refill**

**Service accessibility:** Electrically openable engine hood with large opening angle giving excellent access to the engine compartment. Fluid filters and component breather air filters promote long service intervals. Possibility to monitor, log and analyze data to facilitate troubleshooting.

		<b>L120H</b>
Fuel tank	l	270
DEF/AdBlue® tank	l	25
Engine coolant	l	43
Hydraulic oil tank	l	133
Transmission oil	l	38
Engine oil	l	22
Axle oil front	l	36
Axle oil rear	l	41

**Sound Level**

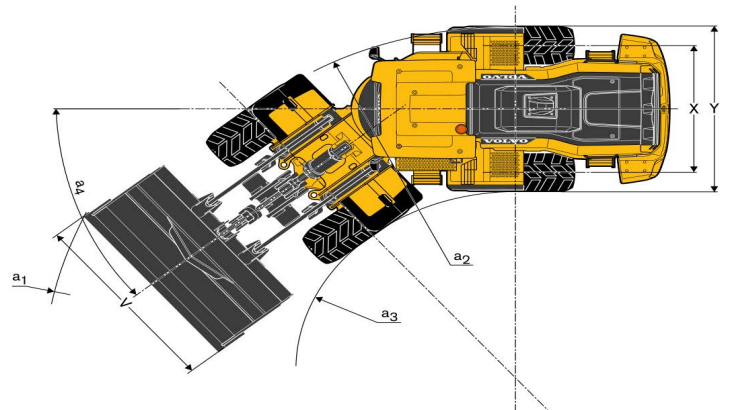
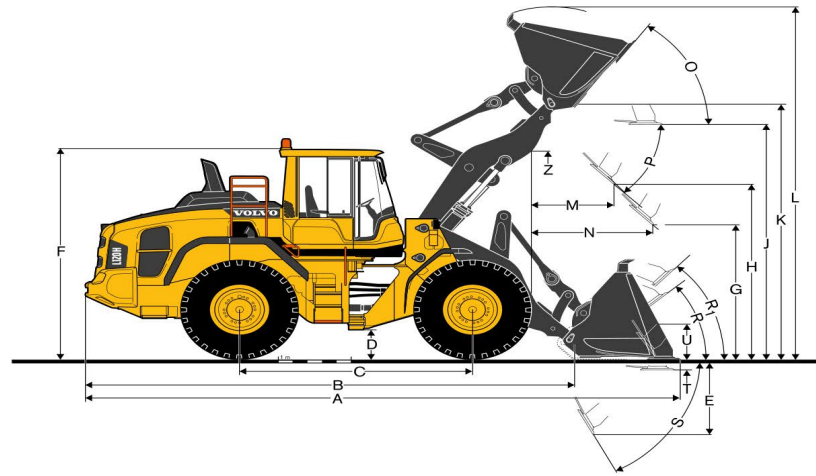
		<b>L120H</b>
Sound level in cab according to ISO 6396/SAE J2105		
LpA	dB(A)	68
External sound level according to ISO 6395/SAE J2104		
LwA	dB(A)	106

# Specifications

L120H		
Tires 23.5 R25 L3		
Standard boom		
B	mm	6 580
C	mm	3 200
D	mm	440
F	mm	3 380
G	mm	2 132
J	mm	3 760
K	mm	4 100
O	°	54
Pmax	°	50
R	°	42
R1*	°	45
S	°	68
T	mm	119
U	mm	450
X	mm	2 070
Y	mm	2 670
Z	mm	3 340
a2	mm	5 730
a3	mm	3 060
a4	±°	40
Standard boom with 3.3 m <sup>3</sup> STE H T bucket Long boom with 2.6 m <sup>3</sup> 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.



## L120H

Sales code: WLA80832

Operating weight


(incl. logging cw 685 kg): 20 713 kg

Operating load: 6 400 kg



# Specifications L120H

L120H

		GENERAL PURPOSE	
Tires 23.5R25 XHA2 L3			
		<b>3.6 m<sup>3</sup> STE P BOE</b>	
Volume, heaped ISO/SAE	m <sup>3</sup>	3.6	
Volume at 110% fill factor	m <sup>3</sup>	4.0	
Static tipping load, straight	kg	14 810	
at 35° turn	kg	13 110	
at full turn	kg	12 610	
Breakout force	kN	172.9	
A	mm	8 050	
E	mm	1 230	
H	mm	2 900	
L	mm	5 750	
M	mm	1 190	
N	mm	1 800	
V	mm	3 000	
a1 clearance circle	mm	12 800	
Operating weight	kg	19 420	

\* Measured with additional rehandling counterweight | \*\* With MICHELIN 23,5R25 XMINE D2 L5 Tire | \*\*\* Based on 3.0 m<sup>3</sup> STE H T bucket



# Equipment

## STANDARD EQUIPMENT

	L120H
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Engine	
Exhaust after-treatment system	•
Three stage air cleaner, pre-cleaner, primary and secondary filter	•
Indicator for coolant level	•
Preheating of induction air	•
Fuel pre-filter with water trap	•
Fuel filter	•
Crankcase breather oil trap	•
Exterior radiator air intake protection	•

Drivetrain	
Automatic Power Shift	•
Fully automatic gearshifting, 1-4	•
PWM-controlled gearshifting	•
Forward and reverse switch by hydraulic lever console	•
Indicator glass for transmission oil level	•
Differentials: Front, 100% hydraulic diff lock. Rear, conventional.	•
Lock-up first gear	•

Electrical System	
24 V, pre-wired for optional accessories	•
Alternator 24V/80A/2280W	•
Battery disconnect switch	•
Fuel gauge	•
Hour meter	•
Electric horn	•
Instrument cluster:	
Fuel level	•
Diesel Exhaust Fluid/AdBlue level	•
Transmission temperature	•
Coolant temperature	•
Instrument lighting	•

Lighting:	
Twin halogen front headlights with high and low beams	•
Parking lights	•
Double brake and tail lights	•
Turn signals with flashing hazard light function	•
Halogen work lights (2 front and 2 rear)	•

Contronic Monitoring System	
Monitoring and logging of machine data	•
Contronic display	•
Fuel consumption	•
Diesel Exhaust Fluid/AdBlue consumption	•
Ambient temperature	•
Clock	•
Test function for warning and indicator lights	•
Brake test	•
Test function, sound level at max fan speed	•

Warning and indicator lights:	
Battery charging	•
Parking brake	•

Warning and display message:	
Regeneration	•
Engine coolant temperature	•
Charge-air temperature	•
Engine oil temperature	•
Engine oil pressure	•
Transmission oil temperature	•
Transmission oil pressure	•
Hydraulic oil temperature	•
Brake pressure	•
Parking brake applied	•
Brake charging	•
Overspeed at direction change	•
Axle oil temperature	•
Steering pressure	•
Crankcase pressure	•
Attachment lock open	•
Safety Belt Warning	•

Level warnings:	
Fuel level	•
Diesel Exhaust Fluid/AdBlue level	•
Engine oil level	•
Engine coolant level	•
Transmission oil level	•
Hydraulic oil level	•
Washer fluid level	•

Engine torque reduction in case of malfunction indication:	
High engine coolant temperature	•
High engine oil temperature	•
Low engine oil pressure	•
High crankcase pressure	•
High charge-air temperature	•

Engine shutdown to idle in case of malfunction indication:	
High transmission oil temperature	•
Slip in transmission clutches	•

Keypad, background lit	•
Start interlock when gear is engaged	•

## STANDARD EQUIPMENT

	L120H
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Hydraulic System	
Main valve, double acting 2-spool with hydraulic pilots	•
Variable displacement axial piston pumps (3) for:	
1 Working hydraulics, Pilot hydraulics and Brake system	•
2 Working hydraulics, Pilot hydraulics, Steering and Brake system	•
3 Cooling fan and Brake system	•
Electro-hydraulic servo controls	•
Electronic hydraulic lever lock	•
Automatic boom kick-out	•
Automatic bucket positioner	•
Double-acting hydraulic cylinders	•
Indicator glass for hydraulic oil level	•
Hydraulic oil cooler	•

Brake System	
Dual brake circuits	•
Dual brake pedals	•
Secondary brake system	•
Parking brake, electro-hydraulic	•
Brake wear indicators	•

Cab	
ROPS (ISO 3471), FOPS (ISO 3449)	•
Single key kit door/start	•
Acoustic inner lining	•
Cigarette lighter, 24 V power outlet	•
Lockable door	•
Cab heating with fresh air inlet and defroster	•
Fresh air inlet with two filters	•
Automatic heat control	•
Floor mat	•
Dual interior lights	•
Interior rear-view mirrors	•
Dual exterior rear-view mirrors	•
Sliding window, right side	•
Tinted windshield glass	•
Retractable seatbelt (SAE J386)	•
Adjustable steering wheel	•
Storage compartment	•
Document pocket	•
Sun visor	•
Beverage holder	•
Windshield washer front and rear	•
Windshield wipers front and rear	•
Interval function for front and rear wipers	•

Service and Maintenance	
Engine oil remote drain and fill	•
Transmission oil remote drain and fill	•
Lubrication manifolds, ground accessible	•
Pressure check connections: transmission and hydraulic, quick-connects	•
Tool box, lockable	•

External Equipment	
Orange hand rails	•
Fenders, front and rear	•
Viscous cab mounts	•
Rubber engine and transmission mounts	•
Frame, joint lock	•
Vandalism lock prepared for	
Engine compartment	•
Radiator grille"	•
Lifting eyes	•
Tie-down eyes	•
Fabricated counterweight	•
Counterweight, pre-drilled for optional guards	•