

Volvo L45H, L50H in detail

Engine

Volvo Stage V compliant, 4 liter, 4-cylinder in-line turbocharged diesel engine; featuring common rail fuel injection system and externally cooled exhaust gas recirculation (EGR). Exhaust aftertreatment system includes a diesel oxidation catalyst (DOC), a diesel particulate filter (DPF) and a selective catalytic reduction (SCR). Cooling pack includes side by side arranged radiators for engine coolant, hydraulic oil and charge air cooler.

		L45H	L50H
Engine	Volvo	D4J	D4J
Max power at	r/min	1 800 - 2 200	1 800 - 2 200
SAE J1995 gross	kW	75	87
	hp	102	118
SAE J1349, ISO 9249 net	kW	73	85
	hp	99,3	116
Max. torque at	r/min	1 450	1 450
SAE J1995 gross	Nm	425	490
	Nm	416	466
Economic working range	r/min	1 200 - 1 800	1 200 - 1 800
Displacement	l	4	4

Drivetrain

Hydrostatic transmission allows for of speed range change without any tractive power interruption. Maximum tractive power is available in all speed ranges, regardless of the driving direction. Automatic power regulation prevents engine stalling in case of additional power demand from the working hydraulics or the auxiliaries, and protects from overheating in case of overload. Fully floating axle shafts with planetary hub reductions and steel casted axle housing. Fixed front axle and oscillating rear axle, both self-lubricated. 100% differential lock on both axes.

		L45H	L50H
Angle of oscillation	± °	12	12
Oscillation at wheel, max.	mm	360	360
Track	mm	1 730	1 730
Travel speed, forward/reverse			
Low-speed version			
1st gear	km/h	0 - 6	0 - 6
2nd gear	km/h	0 - 20	0 - 20
High-speed version			
1st gear	km/h	0 - 6	0 - 6
2nd gear	km/h	0 - 30	0 - 30

Hydraulic system

Closed center load sensing hydraulic system with pilot operated control valves.

System supply:

A variable displacement piston pump provides flow to the working hydraulic and steering system. The steering function has always priority. A gear pump provides flow to the braking system and the cooling fan.

System control:

Double-acting 3-spools main control valve (4-spools valve as option). The lift function has four positions: lift, hold (neutral), lower and float position. An optional automatic boom kick-out can be switched on and off and is adjustable to any position between maximum reach and full lifting height. The tilt function has three positions: rollback, hold (neutral) and dump. The standard bucket positioner system allows to easily adjust the tilt angle to a predefined position.

A third and fourth hydraulic functions are available as options to power hydraulic implements (Volvo hydraulic Attachment Bracket, Hi-Tip bucket, angle sweeper etc...)

Filtration:

Full-flow filtration through 10 micron (absolute) filter cartridge in a combined suction-return-filter.

Cooling:

Thermostatically controlled oil flow to oil cooler (fast warm-up, optimized cooling).

		L45H	L50H
Working pressure max	MPa	26	26
Flow	l/min	132	158
at engine speed	r/min	2 200	2 200
Pilot working pressure	MPa	2,5	2,5

Linkage

Double acting cylinder for all functions

		L45H	L50H
Linkage system	Torque parallel (TP)	Torque parallel (TP)	Torque parallel (TP)
Lift cylinders		2	2
Tilt cylinders		1	1
Lift time (loaded)	s	4,8	4,7
Lowering time (empty)	s	3,2	3,9
Dump time	s	1,5	1,2

Steering System

Load sensing hydrostatic articulated steering with double acting cylinders.

System supply:

The steering system has priority feed from the load-sensing axial piston pump with variable displacement.

Steering cylinders:

Two double-acting cylinders. Elastic end-stops.

		L45H	L50H
Steering cylinders		2	2
Working pressure	MPa	17,5	17,5
Maximum flow	l/min	70	70
Max articulation	± °	40	40

Brake system

The brake system complies with ISO 3450 requirements.

Single circuit service brake featuring hydraulically operated wet disk brakes on rear axle.

An Inching-brake pedal provides hydrostatic wearless braking in the first stage for precise approach; if applied further the service brakes takes over for final braking and machine immobilization.

Parking brake: Mechanically operated dry disc brake located on the input shaft of the front axle.

Electrical system

Contronic electrical system with central warning light and buzzer, providing clear and easy to read information to the operator.

LCD display with main and sub information field, adjustable to various languages.

Display information in three categories:

- Information on continuous operating data,
- Check requests (based on vehicle and error messages)
- Warning (with alarm texts).

Additional audible warning by a buzzer.

Indicator and activation lights for various control and monitoring functions.

Gauges for AdBlue® level, fuel tank level, speedometer, engine speed, coolant temperature, transmission/hydraulic oil temperature.

A keypad allows easy navigation on the central instrument display.

Direct access buttons for Engine, Transmission, Hydraulics, Axles & Brakes, Electrical system, Vehicle information, Vehicle messages, Service, Settings and Cycle information.

		L45H	L50H
Voltage	V	24	24
Batteries	V	2x12	2x12
Battery capacity	Ah	2x100	2x100
Cold cranking capacity, approx	A	830	830
Alternator rating	W/A	3080 / 110	3080 / 110
Starter motor output	kW	5,5	5,5

Cab

The cab is tested and approved according to ROPS (ISO 3471, SAE J1040) and FOPS (ISO 3449).

The cab is compliant with ISO 6055 requirements regarding Operator overhead protection - Industrial trucks and SAE J386 regarding Operator Restraint System.

The operator's seat features an adjustable suspension and a retractable seatbelt. Fresh air is filtered through two large elements prior entering, ensuring extremely clean air distribution in the cab.

11 air flow settings or an automatic mode provides efficient ventilation.

Air vents are available to all windows enabling fast de-misting and defrosting.

The contronic monitoring system provides all important information in a central position and all machine controls are located in the operator's field of vision.

Sound Level

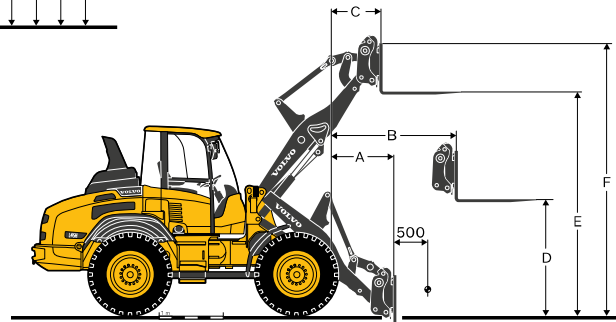
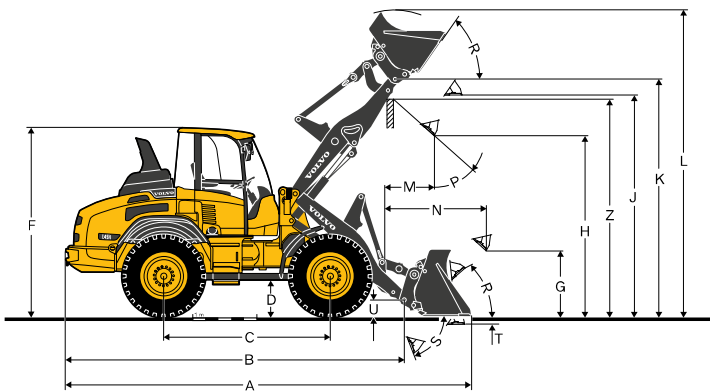
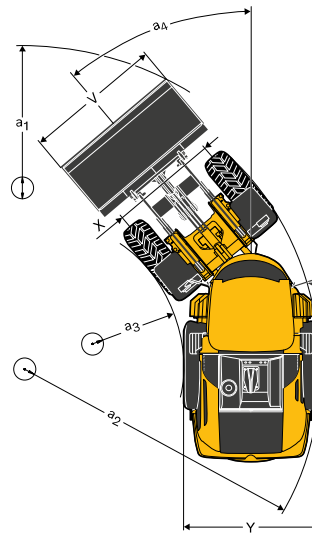
		L45H	L50H
Sound pressure level in cab according to ISO 6396			
L _{pA}	dB	70	70
L _{pA} (as option)	dB	68	68
External sound level according to ISO 6395 and EU Noise Directive 2000/14/EC			
L _{WA}	dB	102	102

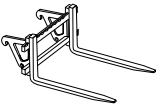
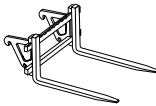
Service Refill







		L45H	L50H
Fuel tank	l	150	150
DEF/AdBlue® tank	l	20	20
Engine oil	l	14	14
Engine coolant	l	20	20
Hydraulic tank	l	95	95
Transmission oil	l	1,2	1,2
Front axle oil	l	17,5	17,5
Rear axle oil	l	17,5	17,5







Specifications L45H

		With TP-linkage, TPV attachment bracket and 15.5-25 tires	With TP-linkage, TPZ attachment bracket and 15.5-25 tires
B	mm	5 320	5 325
C	mm	2 650	2 650
D	mm	395	395
F	mm	2 950	2 950
G	mm	1 000	1 000
J	mm	3 430	3 430
K	mm	3 685	3 685
O	°	55	55
P	°	45	45
R	°	45	45
S	°	75	75
U	mm	255	255
X	mm	1 750	1 750
Y	mm	2 150	2 150
Z	mm	3 445	3 360
a ₂	mm	4 745	4 745
a ₃	mm	2 555	2 555
a ₄	°	40	40



With Loading Fork		TPV attachment bracket	TPV Attachment bracket Long Boom	TPZ attachment bracket	TPZ Attachment bracket Long Boom
					
Center of gravity 500 mm					
A	mm	785	1 135	650	1 020
B	mm	1 475	1 745	1 375	1 645
C	mm	650	825	550	725
D	mm	1 705	1 705	1 740	1 740
E	mm	3 490	3 695	3 530	3 735
F	mm	4 225	4 430	4 265	4 470
Tipping load full turn (ISO 14397)		kg	4 420	3 920	4 670
Working load acc. to EN 474-3, 60/80 %		kg	2 650 / 3 530	2 350 / 3 130	2 800 / 3 730
Working load 80%, transport position, 40 deg. and full turn		kg	4 000	-	4 000

		GENERAL PURPOSE		LIGHT MATERIAL		4-in-1	High-Tip	LONG BOOM
								
With TP-Linkage,TPV attachment bracket and 15.5-25 tires								
Capacity heaped	m ³	1.4	1.5	1.8	2.0	1.2	2.0	-
Material density	kg/m ³	1800	1700	1400	1200	1900	1000	-300
Static tipping load, straight (ISO 14397)	kg	5 940	5 860	5 710	5 600	5 580	4 880	-
Static tipping load, full turn 40° (ISO 14397)	kg	5 250	5 190	5 050	4 960	4 940	4 320	-640
Hydraulic lifting capacity, max.	kN	70	69	68	66	67	58	-
Breakout force	kN	71	69	62	56	77	-	-
A Total length	mm	6 370	6 385	6 505	6 615	6 295	6 955	-
L Lift height, max.	mm	4 740	4 790	4 810	4 940	4 815	5 695	200
V Bucket width	mm	2 250	2 250	2 250	2 250	2 250	2 250	-
a ₁ Clearance circle	mm	10 310	10 320	10 390	10 460	10 305	10 675	-
T Digging depth	mm	85	85	85	85	120	95	-
H Dump height, 45°	mm	2 800	2 780	2 690	2 610	2 790	4 230	200
M Reach at max. height	mm	940	960	1 040	1 115	830	1 500	170
N Reach, max.	mm	1 770	1 785	1 860	1 935	1 650	2 685	270
Operating weight	kg	8 770	8 790	8 800	8 830	8 990	9 230	-

		GENERAL PURPOSE		LIGHT MATERIAL		4-in-1	High-Tip	LONG BOOM
								
With TP-Linkage,TPZ attachment bracket and 15.5-25 tires								
Capacity heaped	m ³	1.4	1.6	1.8	2.0	1.3	2.0	-
Material density	kg/m ³	1900	1600	1400	1300	1900	1100	-300
Static tipping load, straight (ISO 14397)	kg	6 220	6 120	6 020	5 890	6 050	5 260	-
Static tipping load, full turn 40° (ISO 14397)	kg	5 500	5 420	5 330	5 210	5 350	4 650	-640
Hydraulic lifting capacity, max.	kN	74	73	71	70	72	62	-
Breakout force	kN	66	61	56	50	65	-	-
A Total length	mm	6 260	6 335	6 415	6 525	6 270	6 825	-
L Lift height, max.	mm	4 680	4 750	4 820	4 890	4 730	5 610	200
V Bucket width	mm	2 250	2 250	2 250	2 250	2 250	2 250	-
a ₁ Clearance circle	mm	10 125	10 165	10 210	10 275	10 165	10 590	-
T Digging depth	mm	90	90	90	90	45	80	-
H Dump height, 45°	mm	2 875	2 815	2 755	2 675	2 865	4 140	200
M Reach at max. height	mm	860	900	955	1 030	850	1 370	170
N Reach, max.	mm	1 685	1 725	1 780	1 855	1 670	2 540	240
Operating weight	kg	8 670	8 710	8 700	8 730	8 920	9 120	-