

Volvo L45H, L50H in detail

Engine

Volvo Tier 4f / Stage IV 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		Volvo D4J	
Max power at	r/min	1 800 - 2 200		1 800 - 2 200	
	r/s	30 - 36.7		30 - 36.7	
SAE J1995 gross	kW	75	100	87	116.7
ISO 9249, SAE J1349 net	kW	73	97.9	85	114
Max torque at	r/min	1 450		1 450	
	r/s	24.2		24.2	
SAE J1995 gross	Nm ft lbf	425 313.5	490 361.4		
ISO 9249, SAE J1349 net	Nm ft lbf	416 306.8	466 343.7		
Economic working range	r/min	1 200 - 1 800		1 200 - 1 800	
	r/s	20 - 30		20 - 30	
Displacement	l	4	244	4	244
	in ³				

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 axles.

		L45H		L50H	
Travel speeds (Forward / Reverse)					
1st speed range	km/h mi/h	0-5	0-3.1	0-5	0-3.1
2nd speed range	km/h mi/h	0-20	0-12.4	0-20	0-12.4
High speed option	km/h mi/h	0-30	0-18.6	0-30	0-18.6
Angle of rear axle oscillation	°	±12		±12	
Oscillation at wheel	mm	360	14.2	360	14.2
	in				
at Track width	mm	1 730	68.1	1 730	68.1
	in				

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	3,771	26	3,771
	psi				
Flow	l/min	132	34.8	158	41.7
	gal/min				
at engine speed	r/min	2 200		2 200	
	r/s	36.7		36.7	
Pilot working pressure	Mpa	2.5	362	2.5	362
	psi				

Linkage

Double acting cylinder for all functions

		L45H		L50H	
Linkage system		Torque parallel (TP)		Torque parallel (TP)	
		2		2	
Lift cylinders		1		1	
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 psi	17.5	2,538	17.5	2,538
Maximum flow	l/min gal/min	70	18.5	70	18.5
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 Diesel Exhaust Fluid 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	3 080/110		3 080/110	
Starter motor output	kW/hp	5.5/7.4		5.5/7.4	

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 level in cab according to ISO 6396					
LpA	dB(A)	70		70	
LpA (as option)	dB(A)	68		68	
External sound level according to ISO 6395					
LwA	dB(A)	102		102	

Service / Filling capacities

		L45H		L50H	
Fuel tank	l gal	150	39.6	150	39.6
Diesel Exhaust Fluid tank	l gal	20	5.3	20	5.3
Engine oil	l gal	14	3.7	14	3.7
Engine coolant	l gal	20	5.3	20	5.3
Hydraulic tank	l gal	95	25.1	95	25.1
Transmission oil	l gal	1.2	0.3	1.2	0.3
Front axle oil	l gal	17.5	4.6	17.5	4.6
Rear axle oil	l gal	17.5	4.6	17.5	4.6