

VOLVO WHEEL LOADER

L50C



- **Engine output SAE J1349:**
gross 74,6 kW (101 hp)
net 71,0 kW (97 hp)
- **Operating weight:** 7,8–9,0 t
- **Bucket volume:** 1,2–3,9 m³
- Direct injection turbocharged diesel engine
- Hydrostatic transmission with kick-down function

- **Wet disc brakes**
– fully sealed oil-circulation cooled, outboard mounted
- **Torque Parallel Linkage**
– high breakout torque throughout the working range
– excellent parallel lift-arm action
- **Care Cab** – pressurized cab with high comfort and safety

- **Load-sensing** working hydraulics and steering system
- Pilot-operated working hydraulics

Optional equipment

- Hydraulic attachment bracket
- Boom Suspension System
- Contronic monitoring system

VOLVO



SERVICE

Contronic monitoring system* provides information on machine condition, routine maintenance schedules and minimizes time required for troubleshooting. (* Option).

Service accessibility: Large, easy-to-open engine access doors with gas struts. Radiator easy to clean.

Fuel tank	170 l	Gearbox	7 l
Engine coolant	22 l	Engine oil	11 l
Hydraulic tank	65 l	Axle front / rear	22/22 l



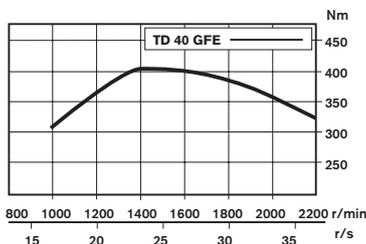
ENGINE

Engine delivers high torque and quick response at low rpm even under full load. The machine can work at low engine speeds, which contributes to good fuel economy, less noise, less wear and longer life.

Engine: 4-cylinder, in-line, direct-injected, turbocharged, 4-stroke low emission diesel engine with dry replaceable cylinder liners.

Air cleaning: three-stage.

Engine TD 40 GFE	
Flywheel output at	36,7 r/s (2 200 r/min)
SAE J1349 gross	74,6 kW (101 hp)
SAE J1349 net	71,0 kW (97 hp)
Max. torque at	23,3 r/s (1 400 r/min)
SAE J1349 gross	403 Nm
SAE J1349 net	396 Nm
Displacement	4,0 l



ELECTRICAL SYSTEM

The electrical system is built up around a distribution box and includes the following functions: Kick-down, downshift protection and central warning.

Central warning: Central warning lamp for the following functions: engine oil pressure, engine coolant temperature, hydrostatic charge pressure, hydrostatic oil temperature, gearbox oil pressure, brake pressure, parking brake (buzzer), hydraulic oil level. The Contronic monitoring system can be selected as optional equipment.

Voltage	24 V
Batteries	2x12 V
Battery capacity	2x105 Ah
Cold cranking capacity, ea	690 A
Reserve capacity, ea	185 min
Alternator rating	1 680 W / 60 A
Starter-motor output	6 kW (8 hp)



DRIVETRAIN

Drivetrain and working hydraulics well-matched to each other. Reliable design. Quick acceleration boosts productivity.

Hydrostatic transmission: The transmission consists of a hydraulic pump, hydraulic motor (both with variable displacement) and a two-stage Volvo Power Shift gearbox which is controlled by the gear selector or temporary via a kick down function.

Axes: Volvo, fully floating axle shafts with planetary-type hub reductions. Cast-steel axle housing. Fixed front axle and oscillating rear axle. 100% differential lock on front axle (option).

Speeds	Low range	High range
max forward / reverse	0–18 km/h	0–39 km/h
locked max displacement	0–5 km/h	0–11 km/h
Measured with tires	15.5 R25	
Front and rear axle	Volvo / AWB 10	
Oscillation, rear axle	±12°	
Ground clearance at		
12° oscillation	365 mm	



BRAKE SYSTEM

Simple, reliable system with few parts ensures high availability and safety. Self-adjusting internal oil circulation-cooled disc brakes give long service intervals.

Service brakes: Volvo, dual-circuit system with nitrogen-charged accumulators. Fully hydraulically operated enclosed internal oil circulation-cooled disc brakes.

Parking brake: Mechanically operated drum brake on front axle input shaft.

Secondary brake: Either of the service brake circuits or the parking brake fulfills the safety requirements.

Standards: The brake system complies with the requirements of ISO 3450, SAE J1473

Number of discs/wheel	1
Number of accumulators	3
Volume, each	0,5 l



STEERING SYSTEM

Low-effort steering gives short work cycle times. Power-efficient system provides good fuel economy, good directional stability and smooth ride.

Steering system: Load-sensing hydrostatic articulated steering.

System supply: The steering system has prioritized feed from the machine's load-sensing axial piston pump.

Pump: Variable-flow axial piston pump.

Cylinders: Two double-acting cylinders.

Steering cylinders	2
Bore	63 mm
Piston rod diameter	40 mm
Stroke	320 mm
Relief pressure	21 MPa
Articulation	±40°



CAB

Care Cab with easy entry and wide door opening. Lined with sound-absorbent material. Sound- and vibration-suppressing suspension. Good all-round visibility, large glass areas. Curved windshield of laminated, green-tinted glass. Ergonomically located controls and instruments permit a comfortable operating position.

Instrumentation: All information important to the operator is readily visible in front of him. Cab display for Contronic monitoring system (option).

Heater and defroster: Heating element with filtered fresh air and four-speed fan. Defroster outlets for all windows.

Operator's seat: Spring suspended, adjustable operator's seat with belt. The seat is mounted on a bracket on the rear wall. The force from the belt is absorbed by the seat rails.

Standards: Tested and approved according to the following standards: ROPS (ISO/CD 3471, SAE J1040), FOPS (ISO 3449, SAE J231). Complies with "Overhead guards for rider lift trucks" (ISO 6055) and "Operator Restraint System" (SAE J386).

Emergency exits	2
Sound level in cab as per ISO 6396,	
max fan position	72 dB (A)
fan position 2	70 dB (A)
Ventilation	10 m ³ /min
Heating capacity	11 kW (37 500 Btu/h)
Air conditioning (optional)	8 kW (27 300 Btu/h)



HYDRAULIC SYSTEM

Load-sensing hydraulics distribute exactly the quantity of oil required for the function used. Load-sensing gives precise control of the hydraulics throughout the lifting range. High pump capacity provides quick movements.

Pump: The load-sensing axial piston pump adjusts the oil requirements of the function used via indication through a load-sensing line. The flow is directed to the function used via a central valve block. Steering function always has priority.

Valve: Double-acting 2-spool valve. The control valve is actuated by a 2-spool pilot valve.

Lift function: The valve has four functions: raise, hold, lower and float. Inductive/magnetic automatic boom kickout (option) can be switched on and off and is adjustable to any position between maximum reach and full lift height.

Tilt function: The valve has three functions: rollback, hold and dump. Inductive/magnetic automatic bucket positioner, that can be switched on and off (option).

Cylinders: Double-acting

Filter: Full-flow filtration through 10 µm (absolute) filter cartridge.

Axial piston pump	
Relief pressure	26,0 MPa
Flow	120 l/min
at	10 MPa
and engine speed	36,7 r/s (2 200 r/min)
Pilot system	
Relief pressure	3,0 MPa
Cycle times	
Raise*	5,4 s
Dump*	1,1 s
Lower, empty	3,0 s
Total cycle time	9,5 s

* with load as per ISO 5998 and SAE J818



LIFT ARM SYSTEM

TP Linkage combines high breakout torque throughout the working range with nearly exact parallel lift-arm action. These features together with high lift height and long reach make the lift-arm system equally as good in bucket loading as in work with fork attachments and material handling arms.

Lift cylinder	2
Bore	100 mm
Piston rod diameter	70 mm
Stroke	669 mm
Tilt cylinder	1
Bore	125 mm
Piston rod diameter	70 mm
Stroke	434 mm

OPERATIONAL DATA VOLVO L50C

	GENERAL PURPOSE								LIGHT MATERIAL		
											
Tires 15.5 R25* L2	Bolt-on edges	Bolt-on edges	Bolt-on edges	Bolt-on edges	Teeth	Teeth	Teeth	Teeth	Bolt-on edges	Bolt-on edges	
Volume, heaped ISO/SAE	m ³	1,5	1,5	1,3	1,3	1,4	1,4	1,2	1,2	2,2	3,9
Volume at 110% fill factor	m ³	1,7	1,7	1,4	1,4	1,5	1,5	1,3	1,3	2,4	4,3
Static tipping load, straight	kg	5470	5220	5570	5310	5580	5320	5670	5410	4970	4660
at 35° turn	kg	4890	4640	4980	4720	4990	4740	5080	4820	4410	4110
at full turn	kg	4710	4460	4800	4550	4810	4560	4900	4650	4240	3940
Breakout force	kN	61,8	57,7	67,0	62,2	65,3	60,7	71,1	65,7	47,2	36,7
A	mm	6360	6430	6280	6340	6460	6520	6370	6430	6650	7040
E	mm	970	1030	890	950	910	970	830	890	1260	1640
H*)	mm	2780	2740	2840	2800	2720	2680	2780	2740	2580	2310
L	mm	4790	4830	4720	4760	4790	4830	4720	4760	4910	5370
M*)	mm	1020	1070	970	1020	1120	1170	1060	1120	1230	1500
N*)	mm	1550	1580	1530	1560	1620	1640	1590	1620	1590	1640
V	mm	2300	2300	2300	2300	2300	2300	2300	2300	2380	2500
a, clearance circle	mm	10790	10830	10750	10780	10890	10930	10840	10880	11050	11400
Operating weight	kg	8210	8370	8170	8330	8170	8320	8120	8280	8430	8590

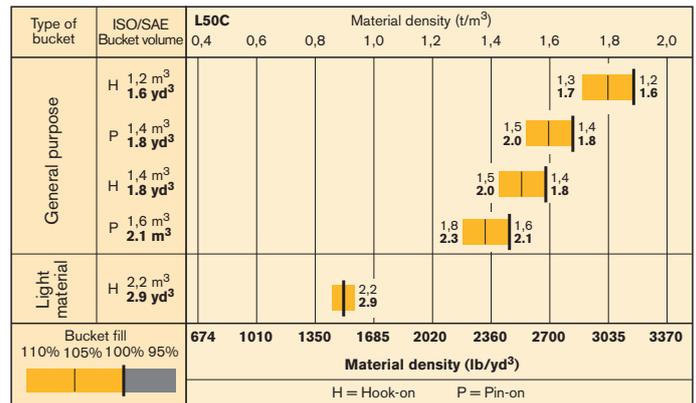
*) at 45° tipping angle

Including counterweight 1

BUCKET SELECTION CHART

The choice of bucket is determined by the density of the material and the bucket fill factor. The TP Linkage uses a very open bucket design, has very good roll back in all positions plus fills the bucket very well. This means that the actual volume carried is often larger than the rated capacity of the bucket. Bucket fill factor in different materials and how they affect the actual bucket volume are shown below. **Example: Sand and gravel. Fill factor ~ 105%. Density 1,6 t/m³. Result: The 1,4 m³ bucket carries 1,5 m³. For optimum stability always consult the bucket selection chart.**

Material	Bucket fill, %	Material density, t/m ³	ISO/SAE bucket volume, m ³	Actual volume, m ³
Earth/Clay	~ 110	~ 1,8	1,2	~ 1,3
		~ 1,5	1,4	~ 1,55
		~ 1,3	1,6	~ 1,8
Sand/Gravel	~ 105	~ 1,9	1,2	~ 1,3
		~ 1,6	1,4	~ 1,5
		~ 1,3	1,6	~ 1,7
Aggregate	~ 100	~ 1,9	1,2	~ 1,2
		~ 1,8	1,4	~ 1,4
		~ 1,5	1,6	~ 1,6
Rock	≤ 100	~ 1,7	1,2	~ 1,2



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

SUPPLEMENTAL OPERATIONAL DATA

	Tires		Counterweight 2	Excl. Counterweight 1	Extended fenders
	17.5 R25* L2	600-26.5			
Width over tires	mm	+55	+280	-	-
Ground clearance	mm	+35	+20	-	-
Operating weight	kg	+165	+120	+300	-150
Tipping Load, full turn	kg	+90	-20	+460	-235

Counterweight 1 may be used in rehandling, pallet and material arms operations.

Counterweight 2, and combinations of counterweight 1 and 2, may be used within pallet and material handling arms operations for stabilizing purposes on firm and level ground.

Counterweight 2 replaces hydroinflation of rear tires and must never be combined with tire chains. Counterweight 2 is not allowed in combination with 17.5-25 tires.

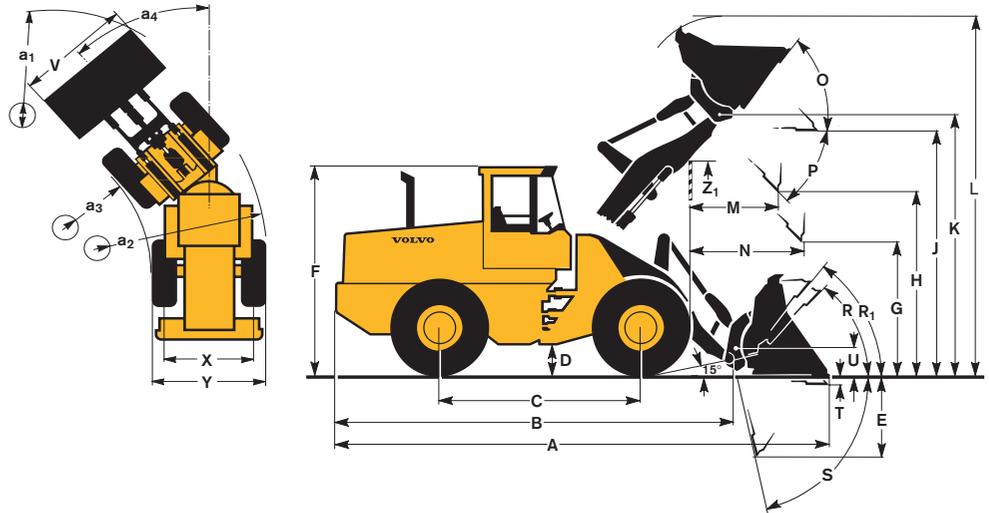
OPERATIONAL DATA & DIMENSIONS

Tires: 15.5 R25* L2**

B	5 220 mm
C	2 750 mm
D	380 mm
F	3 020 mm
G	2 135 mm
J	3 470 mm
K	3 710 mm
O	52°
P	45°
R	44°
R ₁ *	49°
S	90°
T	80 mm
U	390 mm
X	1 750 mm
Y	2 140 mm
Z	2 990 mm
a ₂	4 850 mm
a ₃	2 710 mm
a ₄	±40°

* Carry position SAE

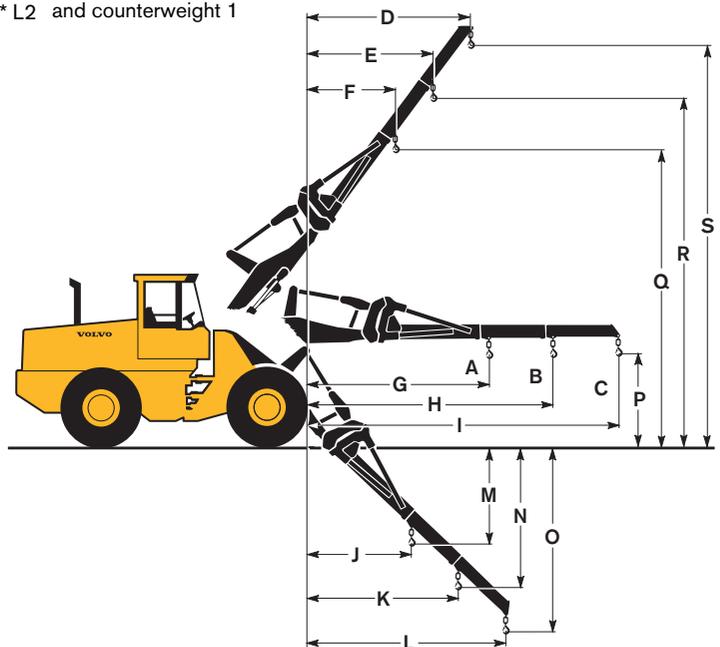
Where applicable, specifications and dimensions are in accordance with ISO 7131, SAE J732, ISO 7546, SAE J742, ISO 5998, SAE J818, ISO 8313.



MATERIAL HANDLING ARM (Hook on)

A	1 120 kg
B	890 kg
C	720 kg
D	2 910 mm
E	2 260 mm
F	1 670 mm
G	3 320 mm
H	4 360 mm
I	5 490 mm
J	1 850 mm
K	2 580 mm
L	3 380 mm
M	1 780 mm
N	2 510 mm
O	3 310 mm
P	1 440 mm
Q	5 040 mm
R	5 890 mm
S	6 820 mm

Tires: 15.5 R25* L2 and counterweight 1
 Order No: 92 007
 Operating weight: 8 110 kg

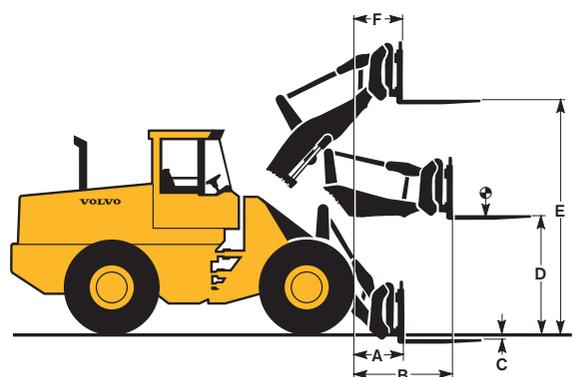


PALLET FORK (Hook on)

A	820 mm
B	1 590 mm
C	0 mm
D	1 750 mm
E	3 550 mm
F	750 mm

Tires: 15.5 R25* L2 and counterweight 1
 Fork tine order no. (per tine): 97 789
 Length: 1 225 mm
 Fork frame order no: 91 177
 Width: 1 500 mm
 Rated operating load*: 2 725 kg
 at load center distance: 600 mm
 Operating weight: 8 100 kg

* acc. std EN 474-3, firm and level ground



STANDARD EQUIPMENT

Engine

Air cleaner, dry type,
dual element, exhaust aspirated
precleaner
Coolant level, sight gauge
Muffler, spark arresting
Pre-heater, thermostat

Electrical System

24V – prewired for optional
accessories
Alternator, 24V, 60 A
Battery disconnect switch
Fuel gauge
Hourmeter
Horn, electric
Instrument panel with symbols
Lights:
• driving (2-Front), halogen
with high/low beam
• parking lights
• stop/tail combination
(2 rear)
• turn signals with hazard
warning switch
• working lights, halogen
(2 rear)
• instrument lightning
Neutral start feature
Warning & monitoring lights:
• engine oil pressure
• engine coolant temperature
• air cleaner restriction

- alternator malfunction
- working lights
- high beam driving lights
- direction indicator, hazard
- hydrostatic charge pressure
- hydrostatic oil temperature
- gearbox oil pressure
- brake system pressure
- parking brake applied
- hydraulic oil level

Central warning (with buzzer):

- engine oil pressure
- engine coolant temperature (buzzer)
- hydrostatic charge pressure
- hydrostatic oil temperature
- gearbox oil pressure
- brake system pressure
- parking brake applied and transmission in forward or reverse (buzzer)
- hydraulic oil level

Drivetrain

Hydrostatic transmission
Tires 15.5 R25* L2
Brake System
Wet, internal oil circulation cooled
disc brakes, 4-wheel, dual circuit
brake system
Secondary brake system,
accumulator supplied
Parking brake alarm

Cab

ROPS (SAE J1040CC) (ISO 3471),
FOPS (SAE J 231) (ISO 3449).
Acoustical lining
Ashtray
Cigarette lighter
Door lockable (left side access)
Heater/defroster/pressurizer
11 kW 37500 Btu/h with four
speed blower fan
Filtered air
Floor mat
Interior light
Interior rearview mirror
Openable window, right-hand side
Safety glass, tinted
Seat belt (SAE J386)
Seat, ergonomically designed, sus-
pension adjustable
Storage compartment
Sun visor
Windshield wiper, front
Cab access steps and handrails
Exterior rearview mirrors, 2

Hydraulic System

Main valve, 2-Spool,
Pilot operated
Pilot valve, 2-spool
Axial piston pump
Hydraulic control lever safety latch
Boom lowering system

Hydraulic pressure test ports, Quick
connect
Hydraulic fluid level, sight gauge
Hydraulic oil cooler

External Equipment

Isolation mounts: cab, engine,
gearbox
Lifting lugs
Side panels, engine hood
Steering frame lock
Vandalism lock, provision for:
batteries, engine oil

OPTIONAL EQUIPMENT *(Standard in certain markets)*

Service and maintenance

Tool box, lockable
Tool kit
Wheelnut wrench kit

Engine

Cold starting aid, engine
coolant pre-heater (120V/1500 W)
or (240V/ 1500 W)
Coolant filter
Pre-cleaner, oil bath

Electrical system

Working lights front, on cab
Working lights front, extra
Working lights rear, extra
Rotating beacon, amber with
collapsible mount
Reverse alarm (SAE J994)
Contronic electrical system
Contronic display

Drivetrain

Forward and reverse switch
100 % differential lock, front axle
Speed control, inch
Speed limiter, 20 km/h or 30 km/h

Cab

Installation kit for radio
Hand throttle
Sliding ventilation window
Speedometer
Air suspended operator's seat
Retractable seat belt
Air conditioner 8 kW, 27 300 Btu/h
Heated operators seat
Windshield wiper, rear
Windshield washer, front & rear
Intermittent wiper, front
Adjustable steering wheel,
telescopic & tiltable
Noise reduction kit
Dual service brake pedals

Hydraulic system

Hydraulic control, 3rd function
Hydraulic control, 4th function
Bucket lever detent
Bucket leveler, automatic with posi-
tion indicator, adjustable boom
lever detents
Boom kickout, automatic, adjustable
Hydraulic single acting lifting
function
Boom Suspension System(BSS)
Biodegradable hydraulic fluid
Single lever control

External equipment

Mudguards
Mudguards extended
Counterweight 1, 150 kg
Counterweight 2, 300 kg
Drawbar with pin

Other Equipment

Comfort Drive Control (CDC)
Slow moving vehicle emblem
Attachment bracket with separate
locking system
External noise reduction kit
Secondary steering
Fuel fill strainer
Electro-hydraulic operated park
brake

Tires

15.5–25 17.5–25
15.5 R25* 17.5 R25*
600–26.5 Twin

Protective equipment

Protective guards for front running
light
Protective guards for rear working
lights
Protective guards for rear lights

Anti-vandalism equipment
Cover plate under cab

Attachments

Buckets
Fork equipment
Material handling arm
Timber grapples
Diagonal snow blade
Broom
Cutting edge, 3 pc reversible, bolt-on
Bucket teeth, bolt-on
Bucket spillguard
Bale clamp
Drum rotator
Attachment rib kit

Under our policy of continuous product 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

Volvo Construction Equipment Group

Ref. No. 21 5 669 2260
Printed in Sweden 98.10 – 8,0

English
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