

VOLVO WHEEL LOADER

L500



- **Engine output SAE J1995:**
gross 74,6 kW (101,5 hp)
ISO 9249, SAE J1349:
net 74,0 kW (101 hp)
- **Operating weight:** 8,2–9,4 t
- **Bucket volume:** 1,2–3,9 m³
- High performance – low emission, direct injected turbocharged diesel engine
- Hydraulically driven cooling fan
- 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 II**
 - 2nd generation Care Cab pressurized cab with high comfort and safety
- **Contronic II**
 - 2nd generation monitoring system
- **Load-sensing** working hydraulics and steering system
- Pilot-operated working hydraulics
- **Optional equipment**
 - Hydraulic attachment bracket
 - Boom Suspension System
 - Comfort Drive Control

VOLVO



SERVICE

The Contrinsic II monitoring system provides information on scheduled service intervals and machine condition. Minimizes time required for troubleshooting.

Service accessibility: Large, easy-to-open service doors with gas springs. Swing out radiator grille.

Fuel tank	150 l	Gearbox	7 l
Engine coolant	27 l	Engine oil	11 l
Hydraulic tank	65 l	Axle front / rear	22/22 l



ENGINE

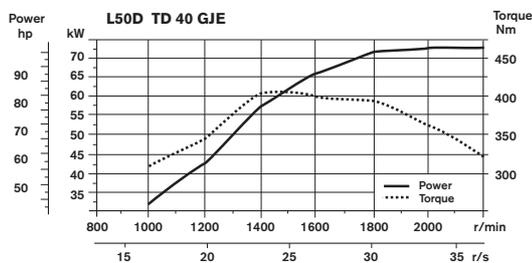
The engine offers high torque and quick response at low rpm. The machine operates efficiently at low engine speeds which contributes to good fuel economy, less noise, reduced wear and longer life.

Engine: High performance – low emission, 4-stroke, 4-cylinder in-line diesel engine with direct injection and turbo-charger. Dry replaceable cylinder liners.

Air cleaning: three-stage.

Cooling system: Hydraulically driven fan

Engine TD 40 GJE	
Max. power at	36,7 r/s (2 200 r/min)
SAE J1995 gross	74,6 kW (101,5 hp)
ISO 9249, SAE J1349 net	74,0 kW (101 hp)
Max. torque at	23,3 r/s (1 400 r/min)
SAE J1995 gross	403 Nm
ISO 9249, SAE J1349 net	397 Nm
Displacement	4,0 l



ELECTRICAL SYSTEM

Contrinsic II monitoring system with increased function control. Electrical system with circuit boards, well protected by fuses. The system is pre-wired for easier installation of optional equipment.

Central warning system: Central warning light for the following functions (buzzer with gear engaged): Engine oil pressure, hydrostatic charge pressure, gear box oil pressure, brake pressure, parking brake, hydraulic oil level, steering pressure, coolant temperature, gear box temperature, engine overspeeding, transmission overspeeding, computer malfunction, hydraulic oil temperature.

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	4 kW (5,4 hp)



DRIVETRAIN

The drivetrain and working hydraulics are well-matched to each other and of reliable design. Quick acceleration increases 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 temporarily via a kick down function.

Axles: 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	0–19 km/h	0–41 km/h
locked max displacement	0–4.6 km/h	0–10,8 km/h
Measured with tires	17.5 R25	
Front and rear axle	Volvo / AWB 10	
Oscillation, rear axle	±12°	
Ground clearance at 12° oscillation	365 mm	



BRAKE SYSTEM

A simple and reliable brake system with few moving parts. Self-adjusting oil circulation cooled wet disc brakes give long service intervals. Brake wear indicator and brake test in Contrinsic II are included in the brake system.

Service brakes: Volvo dual-circuit system with nitrogen-charged accumulators. Outboard mounted fully hydraulic operated, fully sealed oil circulation cooled disc brakes.

Parking brake: Mechanically operated drum brake on front axle input shaft. Electrically operated (option).

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

OPERATIONAL DATA VOLVO L50D

	GENERAL PURPOSE								LIGHT MATERIAL		
											
Tires 17.5 R25* L2	Teeth	Teeth	Bolt-on edges	Bolt-on edges	Teeth	Teeth	Bolt-on edges	Bolt-on edges	Bolt-on edges	Bolt-on edges	
Volume, heaped ISO/SAE	m ³	1,2	1,2	1,3	1,3	1,4	1,4	1,5	1,5	2,2	3,9
Volume at 110% fill factor	m ³	1,3	1,3	1,4	1,4	1,5	1,5	1,7	1,7	2,4	4,3
Static tipping load, straight	kg	6000	5760	5910	5640	5940	5670	5820	5550	5280	4980
at 35° turn	kg	5400	5170	5320	5060	5340	5080	5220	4970	4720	4430
at full turn	kg	5220	4990	5140	4880	5160	4910	5050	4800	4550	4270
Breakout force	kN	69,8	64,5	65,8	61,0	64,1	59,7	60,7	56,7	46,5	36,1
A	mm	6540	6600	6440	6510	6620	6690	6530	6590	6820	7210
E	mm	950	1020	840	910	1030	1100	930	990	1220	1600
H*)	mm	2840	2790	2890	2850	2780	2740	2840	2790	2630	2370
L	mm	4760	4800	4760	4800	4840	4870	4840	4870	4950	5400
M*)	mm	1010	1070	920	970	1070	1130	980	1030	1190	1470
N*)	mm	1560	1590	1500	1530	1580	1610	1530	1550	1570	1620
V	mm	2300	2300	2300	2300	2300	2300	2300	2300	2380	2500
a ₁ clearance circle	mm	10660	10680	10610	10630	10700	10720	10650	10670	10870	11210
Operating weight	kg	8580	8710	8590	8760	8590	8750	8640	8800	8850	9020

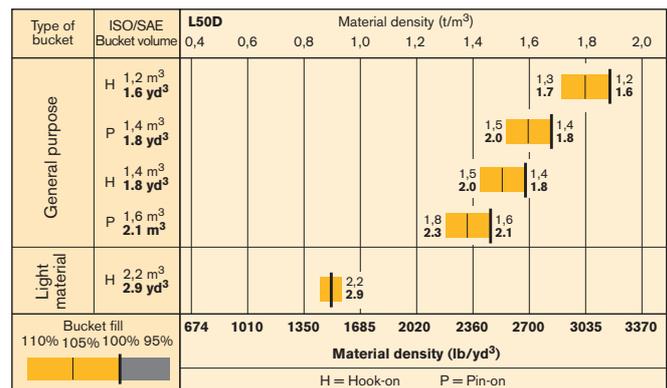
*) at 45° tipping angle

BUCKET SELECTION CHART

The choice of bucket is determined by the density of the material and the expected bucket fill factor. The TP Linkage uses a very open bucket design, has very good roll back in all positions and fills the bucket very well. This means that the actual volume carried is often larger than the rated capacity of the bucket. Bucket fill factors 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 ton/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	~ 1,25
			~ 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

Rock bucket size is optimized for penetration and filling capability rather than the density of the material.



SUPPLEMENTAL OPERATING DATA

	Tires		Axle-mounted Fenders
	15.5 R25* L2		
Width over tires	mm	-60	-
Ground clearance	mm	-30	-
Tipping Load, full turn	kg	-190	+170
Operating weight	kg	-320	+150

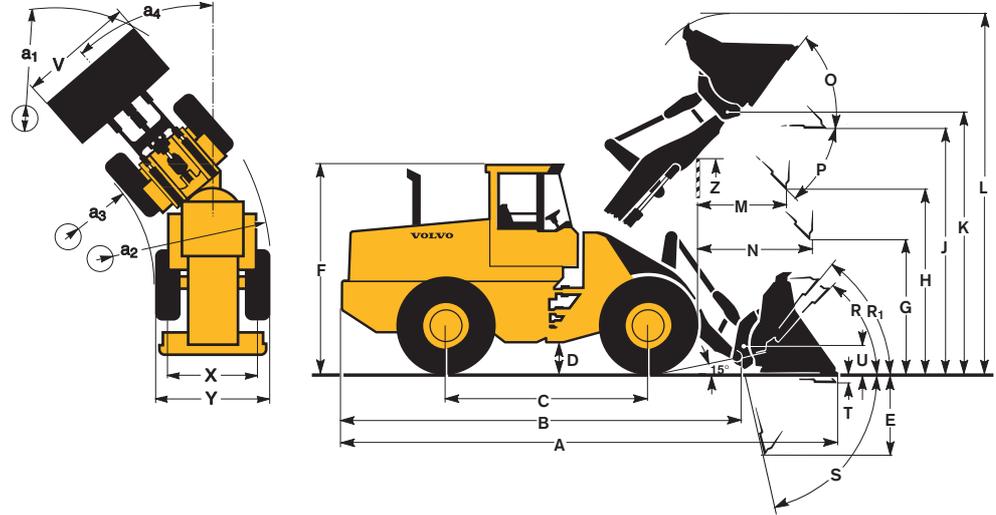
OPERATIONAL DATA & DIMENSIONS

Tires: 17.5 R25* L2

B	5 390 mm
C	2 750 mm
D	380 mm
F	3 030 mm
G	2 135 mm
J	3 510 mm
K	3 760 mm
O	52°
P	45°
R	42°
R ₁ *	48°
S	90°
T	40 mm
U	430 mm
X	1 750 mm
Y	2 200 mm
Z	3 060 mm
a ₂	4 880 mm
a ₃	2 680 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.

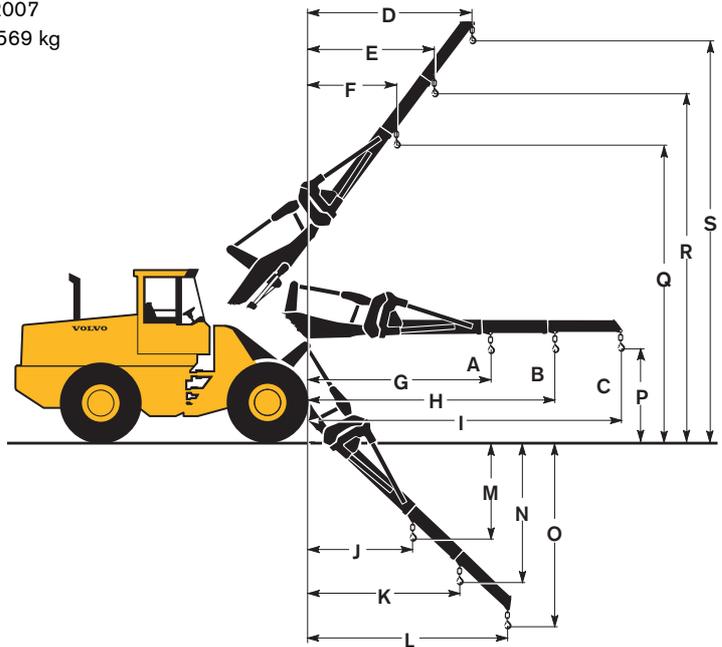


MATERIAL HANDLING ARM (Hook on)

Tires: 17.5 R25 L2

A	1 120 kg
B	890 kg
C	720 kg
D	2 830 mm
E	2 180 mm
F	1 590 mm
G	3 280 mm
H	4 310 mm
I	5 450 mm
J	570 mm
K	710 mm
L	860 mm
M	2 290 mm
N	3 320 mm
O	4 440 mm
P	1 470 mm
Q	5 080 mm
R	5 930 mm
S	6 870 mm

Order No: 92007
Operating weight: 8 569 kg



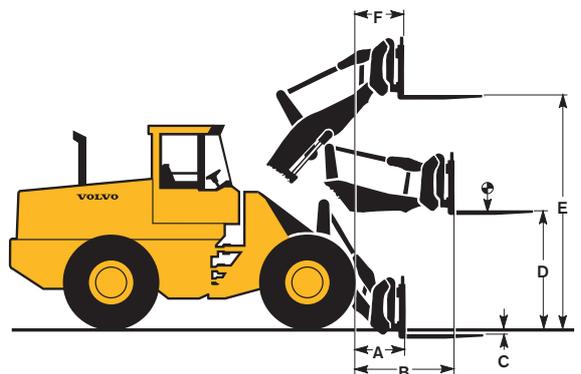
PALLET FORK (Hook on)

Tires: 17.5 R25 L2

A	820 mm
B	1 570 mm
C	20 mm
D	1 710 mm
E	3 530 mm
F	720 mm

Fork tine order no. (per tine): 93527
Length: 1200 mm
Fork frame order no: 80041
Width: 1 500 mm
Rated operating load*: 2 990 kg
at load center distance: 600 mm
Operating weight: 8 630

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





STEERING SYSTEM

Easily operated steering results in fast work cycles. The power-efficient system results in good fuel economy, good directional stability and a smooth ride.

Steering system: Load-sensing hydrostatic articulated steering.

System supply: The steering system has priority feed from a load-sensing axial piston pump.

Pump: Axial piston pump with variable displacement.

Steering cylinders: Two double-acting cylinders.

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



CAB

Care Cab II with wide door opening and comfortable instep. Inside of cab lined with noise-absorbent materials. Noise and vibration suppressing suspension. Good all-round visibility through large glass areas. Curved front windshield of green-tinted glass. Ergonomically positioned controls and instruments permit a comfortable operating position.

Instrumentation: All important information is centrally located in the operator's field of vision. Display for Contronic II monitoring system in center console on dashboard.

Heater and defroster: Heater coil with filtered fresh air and fan with four speeds. 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. The forces from the retractable seatbelt are absorbed by the seat rails. Meets ISO/DIS 7096-1997.

Standard: The cab is tested and approved according to ROPS (ISO/CD 3471, SAE J1040), FOPS (ISO 3449, SAE J231). The cab meets with requirements according to ISO 6055 ("protective roof for high-lift vehicles") and SAE J386, ("Operator Restraint System").

Emergency exits	2
Sound level in cab	
According to ISO 6396	LpA 71 dB (A)
External sound level	
According to ISO 6395	LwA 103 dB (A)
According to ISO 6395 ("BlauerEngel")	LwA 100 dB (A)
Ventilation	9 m ³ /min
Heating capacity	11 kW
Air conditioning (optional)	8 kW



HYDRAULIC SYSTEM

The Load-sensing hydraulics deliver the exact amount of oil required for function used. At the same time, complete control of the hydraulics is achieved throughout the entire lifting range. The high capacity of the pump results in quick and smooth movements.

System supply: One load-sensing axial piston pump with variable displacement. The steering function 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 functions: raise, hold, lower and float 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: 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.

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

The TP Linkage combines high breakout torque throughout the working range with nearly exact parallel lift-arm action. These features, together with high lifting 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

STANDARD EQUIPMENT

Engine

Air cleaner, dry type, dual element, exhaust aspirated precleaner
Water separator
Coolant level, sight gauge
Muffler, spark arresting
Pre-heater, thermostatic
Fan guard

Electrical System

24V – prewired for optional accessories
Alternator, 24V, 60 A
Battery disconnect switch
Fuel gauge
Temperature gauge, engine coolant
Temperature gauge, hydrostatic system
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-front and 2 rear)
• instrument lightning

Contronic II monitoring system

Contronic II ECU
Contronic II display
Engine shut down to idle
• High engine coolant temperature
• Low engine oil pressure
• High oil temperature hydrostatic transmission
Neutral start interlock
Test function for warning and monitoring lights
Warning and indicator lights:
• Alternator malfunction
• Oil pressure, engine
• Oil pressure, hydrostatic transmission
• Brake pressure
• Parking brake applied
• Hydraulic oil level
• Primary steering
• Secondary steering
• High beams
• Turn signals
• Rotating beacon
• Preheating engine
• Coolant temperature, engine
• Oil temperature hydrostatic transmission
• Low fuel level

Drivetrain

Hydrostatic transmission
Tires 15.5 R25* L2
Forward/Reverse switch on hydraulic console

Brake System

Wet, internal oil circulation cooled disc brakes, 4-wheel, dual circuit brake system
Secondary brake system, accumulator supplied
Parking brake alarm, brake applied and machine in gear (buzzer)

Cab

ROPS (SAE J1040CC) (ISO 3471), FOPS (SAE J 231) (ISO 3449).
Acoustical lining
Speedometer (in Contronic II display)
Ashtray
Cigarette lighter
Door lockable (left side access)
Single key door/start
Heater/defroster/pressurizer with four speed blower fan
Filtered air
Floor mat
Interior light
Exterior rearview mirrors (2)
Interior rearview mirrors (2)
Openable window, right-hand side
Safety glass, tinted
Retractable seat belt (SAE J386)
Seat, ergonomically designed, adjustable suspension
Adjustable console for hydraulic controls
Storage compartment

Beverage holder
Sun visor
Windshield wipers, front and rear
Windshield washers front and rear
Intermittent wiper, front
Cab access steps and handrails

Hydraulic System

Main valve, 2-Spool,
Pilot valve, 2-spool
Axial piston pump
Hydraulic control lever lock
Bucket lever detent
Bucket leveler, automatic with position indicator, adjustable
Boom lever detent
Boom kickout, automatic, adjustable
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, fuel tank
Towing hitch with pin

OPTIONAL EQUIPMENT *(Standard in certain markets)*

Service and maintenance

Tool box, lockable
Tool kit
Wheelnut wrench kit
Automatic Lubrication System
Refill pump for Automatic Lubrication System
Automatic Lubrication System for attachment bracket

Engine

Cold starting aid, engine coolant pre-heater (120V/750 W) or (220V/ 750 W)
Coolant filter
Pre-cleaner, oil bath
Radiator, corrosion protected
Oiltrap for crankcase ventilation
Extra fuel filter
Fuel fill strainer

Electrical system

Assymetrical lights for left-hand traffic
Side marker lights
Working lights front, extra
Working lights rear, extra
Rotating beacon, amber with collapsible mount
Light, license plate
Reverse alarm (SAE J994)

Drivetrain

100 % differential lock, front axle
100 % differential lock, front axle with limited slip rear axle
Speed control, inching pedal
Speed limiter, 20 km/h or 30 km/h

Cab

Installation kit for radio
AM/FM radio with tape deck
Hand throttle control
Sliding ventilation window, right
Sliding ventilation window, door
Sun blinds, front and rear windows
Sun blinds, side windows
Air suspended operator's seat
Heated operator's seat
Armrest (left) for ISRI operator seat
3 inch seat belt
Cab filter for asbestos contaminated environment
Instructor's seat
Air conditioner 8 kW, 27 300 Btu/h
Adjustable steering wheel, telescopic & tiltable
Spinner knob on steering wheel
Noise reduction kit
Dual service brake pedals

Hydraulic system

Hydraulic control, 3rd function
Hydraulic control, 3rd function, adjustable flow

Detent 3rd function
Hydraulic control, 3rd and 4th function
Hydraulic control, 5th and 6th function
Hydraulic single acting lifting function
Boom Suspension System(BSS)
Biodegradable hydraulic fluid
Single lever control
Hydraulic PTO, general purpose

External equipment

Mudguards
Mudguards, axle mounted
Logging counterweight

Other Equipment

Comfort Drive Control (CDC)
Sign, slow moving vehicle
Sign, 50 km/h
Hydraulic attachment bracket
Separate attachment locking system
Blauer Engel noise reduction kit
Secondary steering
Electro-hydraulically operated park brake
Parking brake alarm, audible buzzer if brake not applied when operator leaves seat

Tires

15.5-25 17.5-25
15.5 R25* 17.5 R25*

Protective equipment

Protective guards for front running lights, indicators and front working lights
Protective guards for rear working lights
Protective guards for rear lights
Windshield guard
Guards for side and rear windows
Cover plate under cab

Attachments

Buckets
Fork equipment
Material handling arm
Timber grapples
Snow blades
Broom
Cutting edge, 3 pc reversible, bolt-on
Bucket teeth, bolt-on
Bucket teeth, weld-on
Bale clamp
Drum rotator

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

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