

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
17,200–19,850 lb
- **Bucket volume:** 1.2–3.9 m³
1.6–5.1 yd³
- **Direct injection turbocharged diesel engine**
- **Hydrostatic transmission with kick-down function**

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

- **Load-sensing hydraulic system**
– working and steering hydraulics

- **Pilot-operated working hydraulics**

Optional equipment

- Power take-off for hydraulically powered attachments
- Boom Suspension System
- Comfort Drive Control

Other Options, see back page

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.

Refill capacities	l	US gal.
Fuel tank	170	44.9
Engine coolant	22	5.8
Hydraulic tank.....	65	17.2
Gearbox	7	1.8
Engine oil	11	2.9
Axle front/rear	22/22	5.8/5.8



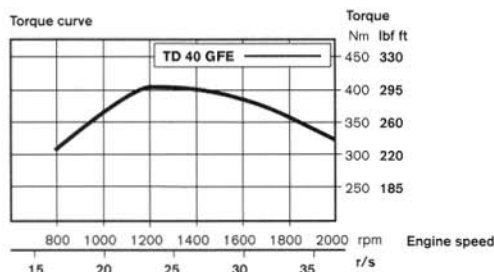
ENGINE

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

Air cleaning: three-stage.

Engine TD 40 GFE		
Power output at	36,7 r/s	2 200 rpm
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 rpm
SAE J1349 gross	403 Nm	297 lbf ft
SAE J1349 net	396 Nm	292 lbf ft
Displacement.....	4,0 l	244 in ³



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 is optional.

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 are well-matched to each other. Dependable 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 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
	km/h	mph
max forward/reverse	0-18	0-11
locked max. displacement	0-5	0-3
Measured with tires	0-39	0-24
Front and rear axle	15.5 R25	0-11
Oscillation, rear axle	Volvo/AWB10	0-7
Ground clearance at	±12°	
12° oscillation	365 mm	14.4 in



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 outboard mounted 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 30.5 in ³



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 type.

Cylinders: Two double-acting cylinders.

Steering cylinders	2	
Bore	63 mm	2.48 in
Piston rod diameter	40 mm	1.57 in
Stroke	320 mm	12.60 in
Relief pressure	21 MPa	3046 psi
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 important information is readily visible to the operator. 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 retractable 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)	
Exterior sound level		
ISO 6393 LwA	105 dB (A)	
Ventilation	10 m ³ /min	353 ft 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 by means of 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 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. Adjustable inductive/magnetic automatic bucket positioner, that can be switched on and off.

Cylinders: Double-acting

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

Axial piston pump		
Relief pressure	26,0 MPa	3771 psi
Flow	120 l/min	31.7 US gpm
at	10 MPa	1450 psi
and engine speed	36,7 r/s	2200 rpm
Pilot system		
Relief pressure	3,0 MPa	435 psi
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 precise parallel lift-arm action. These features together with good visibility, 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	3.9 in
Piston rod diameter	70 mm	2.8 in
Stroke	669 mm	26.3 in
Tilt cylinder	1	
Bore	125 mm	4.9 in
Piston rod diameter	70 mm	2.8 in
Stroke	434 mm	17.1 in

OPERATIONAL DATA VOLVO L50C

	GENERAL PURPOSE						GRADING	LIGHT MATERIAL		
Tires 15.5 R25 L2	Bolt-on edges	Bolt-on edges	Bolt-on edges	Bolt-on edges	Teeth	Teeth		Bolt-on edges	Bolt-on edges	Bolt-on edges
Volume, heaped ISO/SAE	m ³ 2.0	m ³ 2.0	m ³ 1.7	m ³ 1.7	m ³ 1.8	m ³ 1.8	m ³ 2.1	m ³ 2.9	m ³ 2.9	m ³ 5.1
Volume at 110% fill factor	m ³ 2.2	m ³ 2.2	m ³ 1.8	m ³ 1.8	m ³ 2.0	m ³ 2.0	-	m ³ 3.1	m ³ 3.1	m ³ 5.6
Static tipping load, straight	kg 5470	kg 5220	kg 5570	kg 5310	kg 5580	kg 5320	kg 4520	kg 5280	kg 4970	kg 4660
	lb 12060	lb 11510	lb 12280	lb 11710	lb 12300	lb 11730	lb 9960	lb 11640	lb 10960	lb 10270
at 35° turn	kg 4890	kg 4640	kg 4980	kg 4720	kg 4990	kg 4740	kg 4010	kg 4700	kg 4410	kg 4110
	lb 10780	lb 10230	lb 10980	lb 10410	lb 11000	lb 10450	lb 8840	lb 10360	lb 9720	lb 9060
at full turn	kg 4710	kg 4460	kg 4800	kg 4550	kg 4810	kg 4560	kg 3860	kg 4530	kg 4240	kg 3940
	lb 10380	lb 9830	lb 10580	lb 10030	lb 10600	lb 10050	lb 8510	lb 9990	lb 9350	lb 8690
Breakout force	kN 61,8	kN 57,7	kN 67,0	kN 62,2	kN 65,3	kN 60,7	kN 41,8	kN 50,7	kN 47,2	kN 36,7
	lbf 13,890	lbf 12,970	lbf 15,060	lbf 13,980	lbf 14,680	lbf 13,650	lbf 9,400	lbf 11,400	lbf 10,610	lbf 8,250
A	mm 6360	mm 6430	mm 6280	mm 6340	mm 6460	mm 6520	mm 6780	mm 6570	mm 6650	mm 7040
	ft in 20'10"	ft in 21'1"	ft in 20'7"	ft in 20'10"	ft in 21'2"	ft in 21'5"	ft in 22'3"	ft in 21'7"	ft in 21'10"	ft in 23'1"
E	mm 970	mm 1030	mm 890	mm 950	mm 910	mm 970	mm 1270	mm 1190	mm 1260	mm 1640
	ft in 3'2"	ft in 3'5"	ft in 2'11"	ft in 3'1"	ft in 3'0"	ft in 3'2"	ft in 4'2"	ft in 3'11"	ft in 4'2"	ft in 5'5"
H*)	mm 2780	mm 2740	mm 2840	mm 2800	mm 2720	mm 2680	mm 2430	mm 2650	mm 2580	mm 2310
	ft in 9'1"	ft in 9'0"	ft in 9'4"	ft in 9'2"	ft in 8'11"	ft in 8'10"	ft in 8'0"	ft in 8'8"	ft in 8'6"	ft in 7'7"
L	mm 4790	mm 4830	mm 4720	mm 4760	mm 4790	mm 4830	mm 3900	mm 4870	mm 4910	mm 5370
	ft in 15'9"	ft in 15'10"	ft in 15'6"	ft in 15'7"	ft in 15'9"	ft in 15'10"	ft in 12'10"	ft in 16'0"	ft in 16'1"	ft in 17'7"
M*)	mm 1020	mm 1070	mm 970	mm 1020	mm 1120	mm 1170	mm 1190	mm 1200	mm 1230	mm 1500
	ft in 3'4"	ft in 3'6"	ft in 3'2"	ft in 3'4"	ft in 3'8"	ft in 3'10"	ft in 3'11"	ft in 3'11"	ft in 4'0"	ft in 4'11"
N*)	mm 1550	mm 1580	mm 1530	mm 1560	mm 1620	mm 1640	mm 1480	mm 1570	mm 1590	mm 1640
	ft in 5'1"	ft in 5'2"	ft in 5'0"	ft in 5'1"	ft in 5'4"	ft in 5'5"	ft in 4'10"	ft in 5'2"	ft in 5'3"	ft in 5'5"
V	mm 2300	mm 2300	mm 2300	mm 2300	mm 2300	mm 2300	mm 2500	mm 2380	mm 2380	mm 2500
	ft in 7'7"	ft in 7'7"	ft in 7'7"	ft in 7'7"	ft in 7'7"	ft in 7'7"	ft in 8'2"	ft in 7'10"	ft in 7'10"	ft in 8'2"
a, clearance circle	mm 10790	mm 10830	mm 10750	mm 10780	mm 10890	mm 10930	mm 11370	mm 10980	mm 11050	mm 11400
	ft in 35'5"	ft in 35'6"	ft in 35'3"	ft in 35'4"	ft in 35'9"	ft in 35'10"	ft in 37'4"	ft in 36'0"	ft in 36'3"	ft in 37'5"
Operating weight	kg 8210	kg 8370	kg 8170	kg 8330	kg 8170	kg 8320	kg 8410	kg 8270	kg 8430	kg 8590
	lb 18,100	lb 18,450	lb 18,010	lb 18,360	lb 18,010	lb 18,340	lb 18,540	lb 18,230	lb 18,580	lb 18,940

*) at 45° dump angle

Including counterweight 1

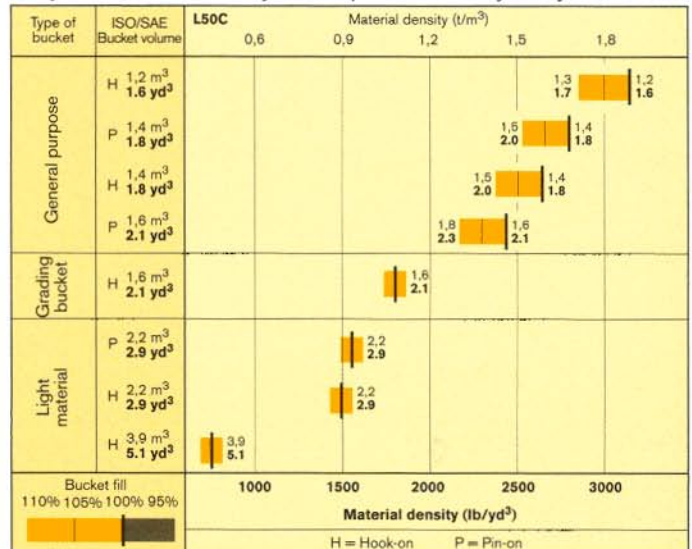
BUCKET SELECTION CHART

The choice of bucket is determined by the density of the material and the expected bucket fill factor. The actual bucket volume is often larger than the rated capacity, due to the TP Linkage features: • Open bucket design. • Very good roll back in all positions. • Good bucket fill performance.

Example: Sand and gravel. Fill factor ~ 105%. Density 2695 lb/yd³. Result: The 1.8 yd³ bucket carries 2.0 yd³. For optimum stability always consult the bucket selection chart.

Material	Bucket fill, %	Material density t/m ³ lb/yd ³	ISO/SAE bucket volume		Actual volume	
			m ³	yd ³	m ³	yd ³
Earth/Clay ~ 110		~ 1,8 ~ 3030	1,2	1,6	~ 1,3	~ 1,7
		~ 1,5 ~ 2530	1,4	1,8	~ 1,55	~ 2,0
		~ 1,3 ~ 2190	1,6	2,1	~ 1,8	~ 2,3
Sand/Gravel ~ 105		~ 1,9 ~ 3200	1,2	1,6	~ 1,3	~ 1,7
		~ 1,6 ~ 2695	1,4	1,8	~ 1,5	~ 2,0
		~ 1,3 ~ 2190	1,6	2,1	~ 1,7	~ 2,2
Aggregate ~ 100		~ 1,9 ~ 3200	1,2	1,6	~ 1,2	~ 1,6
		~ 1,8 ~ 3030	1,4	1,8	~ 1,4	~ 1,8
		~ 1,5 ~ 2530	1,6	2,1	~ 1,6	~ 2,1
Rock ≤ 100		~ 1,7 ~ 2865	1,2	1,6	~ 1,2	~ 1,6

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



SUPPLEMENTAL OPERATING DATA

	Tires		Add counterweight 2		Delete counterweight 1		Add extended fenders	
	17.5 R25* L2	17.5-25 L3						
Width over tires	mm in	+55 2.2	+60 2.4	-	-	-	-	-
Ground clearance	mm in	+35 1.4	+25 1.0	-	-	-	-	-
Operating weight	kg lb	+165 365	+160 350	+300 660	-150 330	+150 330		
Tipping load, full turn	kg lb	+90 200	+80 175	+460 1015	-235 520	+173 380		

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.

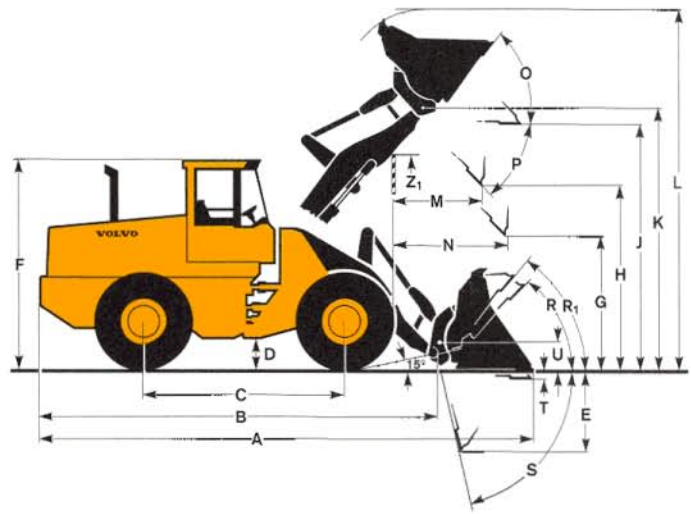
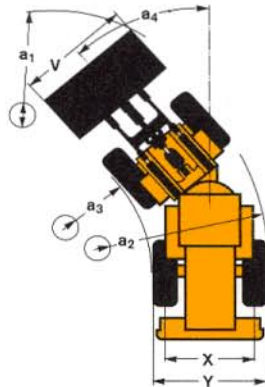
Counterweight 2 replaces hydroinflation of rear tires and must never be combined with tire chains. Counterweight 2 is not allowed in combination with 17.5-25 tires.

OPERATIONAL DATA & DIMENSIONS

Tires: 15.5 R25* L2

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

B	5 220 mm	17'2"
C	2 750 mm	9'0"
D	380 mm	1'3"
F	3 020 mm	9'11"
G	2 135 mm	7'0"
J	3 470 mm	11'5"
K	3 710 mm	12'2"
O	52°	
P	45°	
R	44°	
R ₁ *	49°	
S	90°	
T	80 mm	3.11"
U	390 mm	1'3"
X	1 750 mm	5'9"
Y	2 140 mm	7'0"
Z	2 990 mm	9'10"
a ₂	4 850 mm	15'11"
a ₃	2 710 mm	8'11"
a ₄	±40°	

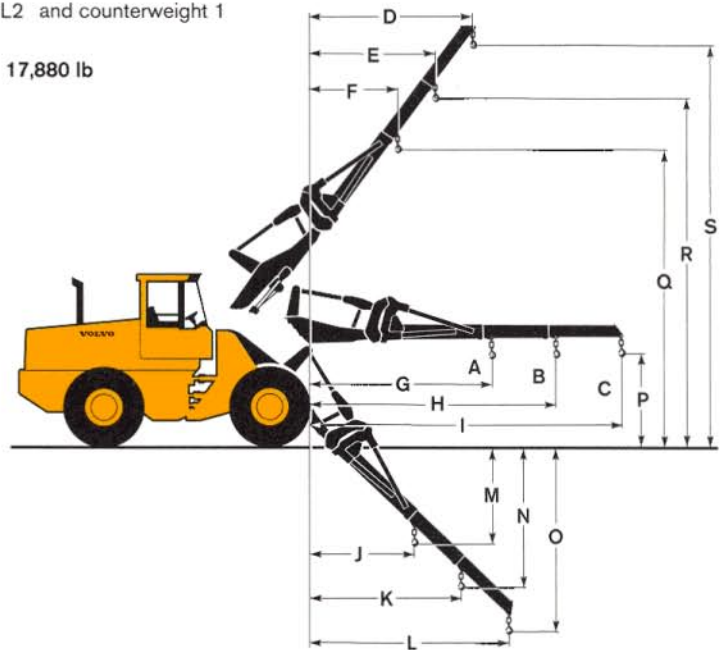


* Carry position SAE

MATERIAL HANDLING ARM (Hook on)

A*	1 120 kg	2470 lb
B*	890 kg	1960 lb
C*	720 kg	1590 lb
D	2 910 mm	9'7"
E	2 260 mm	7'5"
F	1 670 mm	5'6"
G	3 320 mm	10'11"
H	4 360 mm	14'4"
I	5 490 mm	18'0"
J	1 850 mm	6'1"
K	2 580 mm	8'6"
L	3 380 mm	11'1"
M	1 780 mm	5'10"
N	2 510 mm	8'3"
O	3 310 mm	10'10"
P	1 440 mm	4'9"
Q	5 040 mm	16'6"
R	5 890 mm	19'4"
S	6 820 mm	22'5"

Tires: 15.5 R25* L2 and counterweight 1
 Order No: 92 007
 Operating weight: 8 110 kg 17,880 lb



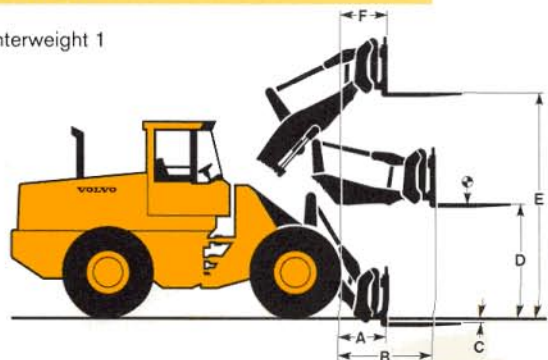
* Operating load at full turn

PALLET FORK (Hook on)

A	820 mm	2'8"
B	1 590 mm	5'3"
C	0 mm	0"
D	1 750 mm	5'9"
E	3 550 mm	11'8"
F	750 mm	2'6"

Tires: 15.5 R25* L2 and counterweight 1
 Fork tine order no. (per tine): 97 789
 Length: 1 225 mm 4'0"
 Fork frame order no: 91 177
 Width: 1 500 mm 4'11"
 Rated operating load*: 2 725 kg 6 010
 at load center distance: 600 mm 2'0"
 Operating weight: 8 100 kg 17,860 lb

* acc. std EN 474-3, firm and level ground, 80% of full turn tipping load



STANDARD EQUIPMENT

Engine

High performance, low-emission
Volvo TD40 GFE
Dual fuel filters
Cold-starting aid
Air cleaner, dry type, dual element, exhaust-aspirated precleaner
Coolant level, sight gauge
Muffler, spark arresting

Electrical System

24V – prewired for optional accessories
Alternator, 24V, 60 A
Battery disconnect switch
Fuel gauge
Hour meter
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 lighting
Neutral start feature
Warning & monitoring lights:
• engine oil pressure
• preheating element, on
• engine coolant temperature
• air cleaner restriction

- alternator malfunction
 - working lights
 - high beam driving lights
 - direction indicator, hazard
 - primary steering system
 - 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
 - overspeed, forward/reverse
 - Reverse alarm (SAE J994)

Drivetrain

Hydrostatic transmission
Forward and reverse switch on hydraulic control console
Tires 15.5 R25* L2

Brake System

Wet, internal oil circulation-cooled, outboard mounted disc brakes, 4-wheel, dual circuit brake system

Secondary brake system, accumulator supplied

Cab

ROPS (SAE J1040), (ISO 3471), FOPS (SAE J231), (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
Exterior rear view mirrors, 2
Windshield wiper, front and rear
Windshield washer, front and rear
Openable window, right-hand side
Safety glass, tinted
Adjustable steering wheel, telescopic and tiltable
Retractable seat belt (SAE J386)
Seat, ergonomically designed, suspension adjustable
Storage compartment
Sun visor
Cab access steps and handrails
Dual service brake pedals
Sliding ventilation window, door

Hydraulic System

Main valve, 2-spool
Pilot operated

Pilot valve, 2-spool
Axial piston pump
Bucket leveler detent
Bucket leveler, automatic with position indicator, adjustable
Boom lever detents
Boom kickout, automatic, adjustable
Attachment bracket with separate locking system
Hydraulic control lever safety latch
Boom-lowering, stopped engage
Hydraulic pressure test ports, quick-connect
Hydraulic fluid level, sight gauge
Hydraulic oil cooler

External Equipment

Attachment bracket, hydraulic, with separate locking system
Fenders, front/rear
Isolation mounts: cab, engine, gearbox, radiator
Lifting lugs
Side panels, engine hood
Steering frame lock
Vandalism lock, provision for: batteries, engine oil
Drawbar hitch
Fuel fill strainer
Tie-down points

OPTIONAL EQUIPMENT *(Standard in certain markets)*

Service and maintenance

Tool box, lockable
Automatic Lube System

Engine

Coolant pre-heater (120V/1500 W) or (240V/ 1500 W)
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
Electronic electrical system, ECU
– console kickdown button
– engine overspeed protection
– engine coolant temp. gauge
– transmission temp. gauge
Contronic display
– intermittent wiper, front

Drivetrain

100% differential lock, front axle
Speed control, inching pedal
Limited slip differential, rear

Cab

Installation kit for radio
Hand throttle
Speedometer
Air-suspended operator seat
Air-conditioner 8 kW, 27 300 Btu/h
Heated operator seat
Parking brake alarm
Armrest, left side
Seat belt, 3 in
Sliding window, right side
Open ROPS version

Hydraulic system

Hydraulic control, 3rd function
Hydraulic control, 4th function
Hydraulic control, 5th/6th function

Hydraulic power take-off
Hydraulic single-acting lifting function
Lever detent, 3rd function
Boom Suspension System
Biodegradable hydraulic fluid
Single lever control

External equipment

Fenders, axle-mounted, rear
Counterweight 1, 150 kg (330 lb)
Counterweight 2, 300 kg (660 lb)

Other Equipment

Comfort Drive Control (CDC)
Slow moving vehicle emblem
Secondary steering

Tires

15.5 R25* 17.5–25
17.5 R25*

Protective equipment

Guards for:
headlights
rear working lights
rear lights
windshield
Cover plate under cab

Attachments

Buckets
Cutting edge, 3 pc reversible, bolt-on
Fork equipment
Material handling arm
Log grapples
Diagonal snow blade
Broom
Attachment rib kit

Under our policy of continuous product development and 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. 22 3 669 2260
Printed in USA 3/99 – 10.0
Biltmore Press, Asheville

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