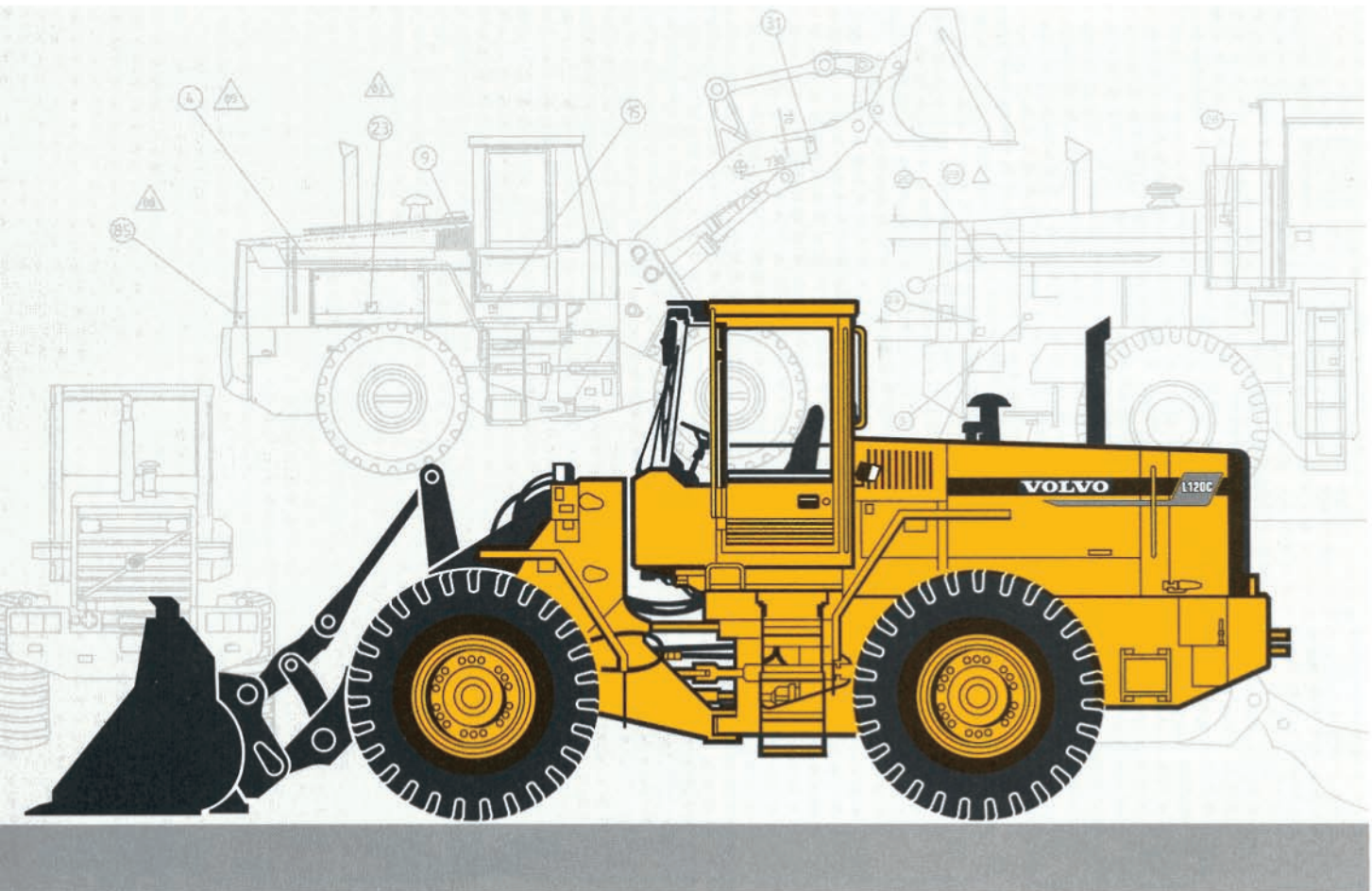


VOLVO WHEEL LOADER

L120C



- **Engine output SAE J1349:**
gross 153 kW 208 hp
net 148 kW 201 hp
 - **Operating weight:** 18,0–20,2 t
39,680–44,530 lb
 - **Buckets:** 3,0–9,5 m³
3.9–12.4 yd³
 - **Volvo high-performance, low-emission engine** with excellent low rpm performance. The engine meets all known regulations regarding exhaust emissions for off-road machines until year 2001.
 - **Volvo transmission with APS II**, 2nd generation of Automatic Power Shift with mode (shift pattern) selector for optimum performance and fuel consumption.
 - **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
 - **Care Cab** – pressurized cab with high comfort and safety
 - **Contronic** monitoring system
 - **Load-sensing steering system**
 - **Pilot-operated working hydraulics**
- Optional Equipment**
- Hydraulic attachment bracket
 - Long Boom
 - Boom Suspension System
 - Comfort Drive Control
- Other options, see back page**

VOLVO



STEERING SYSTEM

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

Steering system: Load-sensing hydrostatic articulated steering with power amplification.

System supply: The steering system is supplied from a separate steering pump.

Pump: Double variable-flow axial piston pump.

Cylinders: Two double-acting cylinders.

Steering cylinders	2			
Bore	80 mm	3.15	in	
Piston rod diameter	50 mm	1.97	in	
Stroke	476 mm	18.74	in	
Relief pressure	21 MPa	3046	psi	
Max. flow	91 l / min	24.0	US gpm	
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 is standard.

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

Operator's seat: Heated, 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 6394,				
max fan position	72 dB (A)			
fan position 2	69 dB (A)			
Exterior sound level ISO 6393 LwA	106 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

Open center hydraulics with efficient high capacity vane pump allows precision control and quick movements even at low engine speed.

Pump: Vane pump fitted to a power takeoff on the transmission. The pilot system is supplied from a combined pilot/brake pump which is mounted in series with the steering pump.

Valve: Double-acting 3-spool valve. Actuated by a 3-spool pilot valve. 3rd spool for optional 3rd hydraulic function.

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 can be switched on and off.

Cylinders: Double-acting

Filter: Full-flow filtration through 20 micron (absolute) filter cartridge.

Vane pump				
Relief pressure	22,5 MPa	3263	psi	
Flow	280 l/min	74	US gpm	
at	10 MPa	1450	psi	
and engine speed	35 r/s	2100	rpm	
Pilot system				
Relief pressure	3,0 MPa	435	psi	
Cycle times	s			
Raise*	5,8			
Dump*	1,8			
Lower, empty	2,8			
Total cycle time	10,4			

* with load as per ISO 5998 and SAE J818



LIFT-ARM SYSTEM

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

Lift cylinder	2			
Bore	160 mm	6.3	in	
Piston rod diameter	80 mm	3.1	in	
Stroke	676 mm	26.6	in	
Tilt cylinder	1			
Bore	230 mm	9.1	in	
Piston rod diameter	110 mm	4.3	in	
Stroke	412 mm	16.2	in	



SERVICE

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

Service accessibility: Large, easy-to-open engine access doors with gas struts. Hinged radiator grill and swing-out radiator.

Refill capacities	l	US gal
Fuel tank	255	67.4
Engine coolant	65	17.2
Hydraulic tank	155	40.9
Transmission	33	8.7
Engine oil	22	5.8
Axle front / rear	36/41	9.5/10.8



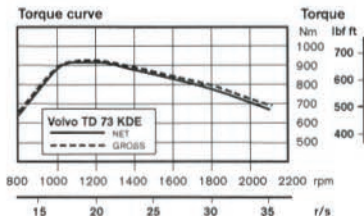
ENGINE

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, 6-cylinder, in-line, direct-injected, turbocharged intercooled 4-stroke diesel engine with wet replaceable cylinder liners.

Air cleaning: three-stage.

Engine	Volvo TD 73 KDE		
Flywheel output at	35 r/s	2100	rpm
SAE J1349 gross	153 kW	208	hp
SAE J1349 net	148 kW	201	hp
Max. torque at	18,3 r/s	1100	rpm
SAE J1349 gross	925 Nm	682	lbf ft
SAE J1349 net	920 Nm	679	lbf ft
Displacement	6,7 l	409	in ³



ELECTRICAL SYSTEM

Contronic monitoring system with complete information on the status of the machine's various systems is standard. Electrical system with circuit board is well-protected by fuses. Prewired for optional equipment.

Central warning: Central warning lamp for the following functions: engine oil pressure, engine coolant temperature (with buzzer), transmission oil pressure, transmission oil temperature, brake pressure, parking brake (buzzer), high speed/gear, transmission oil filter and axle oil temperature. Shut down to idle is standard.

Voltage	24	V
Batteries	2x12	V
Battery capacity	2x105	Ah
Cold cranking capacity	1050	A
Reserve capacity	290	min
Alternator rating	1 680	W / 60 A
Starter-motor output	5,4	kW 7.3 hp



DRIVETRAIN

Drivetrain and working hydraulics well-matched to each other. Dependable design. Quick acceleration boosts productivity. Volvo system-compatible design facilitates servicing.

Torque converter: Single-stage

Transmission: Volvo Automatic Power Shift transmission of countershaft type with single-lever control. Fast and smooth forward/reverse shifting.

Shifting system: Volvo Automatic Power Shift (APS II) with mode selector.

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.

Transmission	Volvo HT 205
Torque multiplication	2,85:1
Speeds,	
max. forward/reverse	km/h mph
1	7,3 4.5
2	13,3 8.3
3	25,2 15.7
4 (forward only)	35,5 22.0
Measured with tires	23.5 R25* L2
Front axle	Volvo / AWB 31
Rear axle	Volvo / AWB 30
Oscillation, rear axle	±13°
Ground clearance at	
13° oscillation	463 mm 18.2 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. Transmission declutch during braking can be preselected by a switch on the instrument panel. Brake performance test included in the Contronic system.











Parking brake: Enclosed, wet multi-disc brake built into the transmission. Spring applied, electro-hydraulic release via a switch on the instrument panel. Automatically applied when the key is turned off.

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

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

Number of discs/wheel	1
Number of accumulators	2
Volume, each	1,0 l 61 in ³

OPERATIONAL DATA VOLVO L120C











		STANDARD BOOM						LONG BOOM			
		GENERAL PURPOSE				LIGHT MATERIAL		GENERAL PURPOSE			
Tires 23.5 R25* L2											
		Bolt-on edge	Bolt-on edge	Bolt-on edge	Teeth & Segment	Bolt-on edge	Bolt-on edge	Bolt-on edge	Bolt-on edge	Bolt-on edge	Bolt-on edge
Volume, heaped	m ³	3,6	3,6	3,4	3,4	3,1	3,1	5,5	9,5	2,6	2,6
ISO/SAE	yd ³	4,7	4,7	4,4	4,4	4,1	4,1	7,2	12,4	3,4	3,4
Actual volume, 110%	m ³	4,0	4,0	3,7	3,7	3,4	3,4	6,1	5,5	2,9	2,9
	yd ³	5,2	5,2	4,8	4,9	4,5	4,5	7,9	7,2	3,7	3,7
Static tipping load, straight	kg	13 410	12 780	12 870	13 350	13 640	13 010	12 370	12 480	11 300	10 770
	lb	29,550	28,170	28,370	29,440	30,080	28,680	27,280	27,520	24,920	23,750
at 35° turn	kg	11 780	11 200	11 280	11 730	12 010	11 420	10 800	10 870	9 900	9 400
	lb	25,980	24,690	24,870	25,860	26,480	25,180	23,810	23,970	21,830	20,730
at full turn	kg	11 290	10 700	10 800	11 240	11 520	10 940	10 320	10 380	9 480	8 990
	lb	24,890	23,590	23,810	24,780	25,400	24,120	22,760	22,890	20,900	19,820
Breakout force	kN	140,7	140,7	134,2	145,2	152,3	140,4	106,7	92,5	172,4	158,0
	lbf	31,630	31,590	30,130	32,630	34,190	31,560	23,950	20,780	38,700	35,740
A	mm	8 090	8 200	8 150	8 210	7 970	8 080	8 530	8 830	8 340	8 450
	ft in	26' 6"	26' 11"	26' 9"	26' 11"	26' 2"	26' 6"	28'	29'	27' 4"	27' 9"
E	mm	1 320	1 420	1 380	1 280	1 220	1 320	1 730	1 990	1 130	1 220
	ft in	4' 4"	4' 8"	4' 6"	4' 2"	4'	4' 4"	5' 8"	6' 6"	3' 8"	4'
H*)	mm	2 830	2 760	2 790	2 750	2 910	2 840	2 500	2 280	3 520	3 450
	ft in	9' 3"	9' 1"	9' 2"	9'	9' 7"	9' 4"	8' 2"	7' 6"	11' 6"	11' 4"
L	mm	5 730	5 790	5 740	5 750	5 620	5 680	5 900	6 070	6 020	6 080
	ft in	18' 10"	19'	18' 10"	18' 10"	18' 5"	18' 8"	19' 4"	20'	19' 9"	19' 11"
M*)	mm	1 270	1 350	1 320	1 360	1 190	1 270	1 570	1 770	1 070	1 150
	ft in	4' 2"	4' 5"	4' 4"	4' 6"	3' 11"	4' 2"	5' 2"	5' 10"	3' 6"	3' 9"
N*)	mm	1 830	1 870	1 860	1 880	1 800	1 840	1 910	1 920	2 180	2 230
	ft in	6'	6' 2"	6' 1"	6' 2"	5' 11"	6' 0"	6' 3"	6' 4"	7' 2"	7' 4"
V	mm	2 880	2 880	2 880	2 880	2 880	2 880	3 000	3 400	2 880	2 880
	ft in	9' 5"	9' 5"	9' 5"	9' 5"	9' 5"	9' 5"	9' 10"	11' 2"	9' 5"	9' 5"
a, clearance circle	mm	12 900	12 970	12 940	13 010	12 830	12 900	13 290	13 850	13 230	13 310
	ft in	42' 4"	42' 6"	42' 5"	42' 8"	42' 1"	42' 4"	43' 7"	45' 5"	43' 5"	43' 8"
Operating weight	kg	18 830	19 020	18 980	18 860	18 700	18 910	19 190	19 390	18 810	19 030
	lb	41,520	41,930	41,840	41,580	41,230	41,690	42,310	42,750	41,470	41,960

*) at dump angle 45°

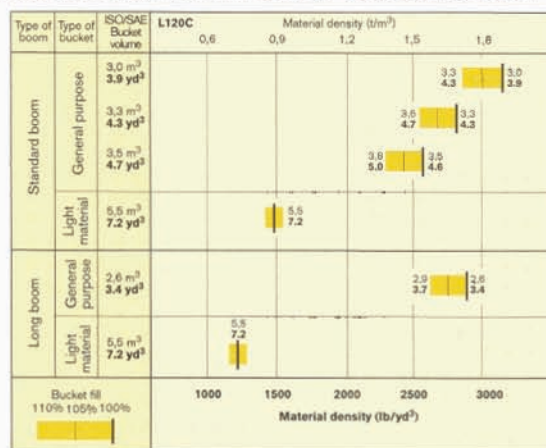
Including counterweight 1

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 rollback 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 for different materials and how they affect the actual bucket volume are shown in the table. **Example: Sand and gravel. Fill factor ~105%. Density 2950 lb/yd³. Result: The 3,9 yd³ bucket carries 4,1 yd³.** For optimum stability always consult the bucket selection chart.

Material	Bucket fill %		Material density lb/yd ³	ISO/SAE bucket volume, yd ³	Actual volume, yd ³
Earth/Clay	~ 110		2865	3.9	4.3
			2530	4.3	4.7
			2950	4.7	5.2
Sand/Gravel	~ 105		2950	3.9	4.1
			2780	4.3	4.5
			2530	4.7	4.9
Aggregate	~ 100		3200	3.9	3.9
			2865	4.3	4.3
			2700	4.7	4.7
Rock	≤ 100		3030	3.9	3.9

The volume handled varies with the bucket fill factor and is often greater than indicated by the bucket's ISO/SAE volume. The table shows optimum bucket choice with regard to the material density.



Supplemental operating data

		Long Boom			
		Excl counterweight 1		Add counterweight 2	
Operating weight	kg lb	-320 -705	+680 +1499	-320 -705	+680 +1499
Buckets					
Tipping load full turn	kg lb	-550 -1212	+1 100 +2425	-480 -1058	+940 +2072

Counterweight 1 may be used in rehandling and material handling.

Counterweight 2 replaces hydroinflation of rear tires and must never be combined with tire chains.

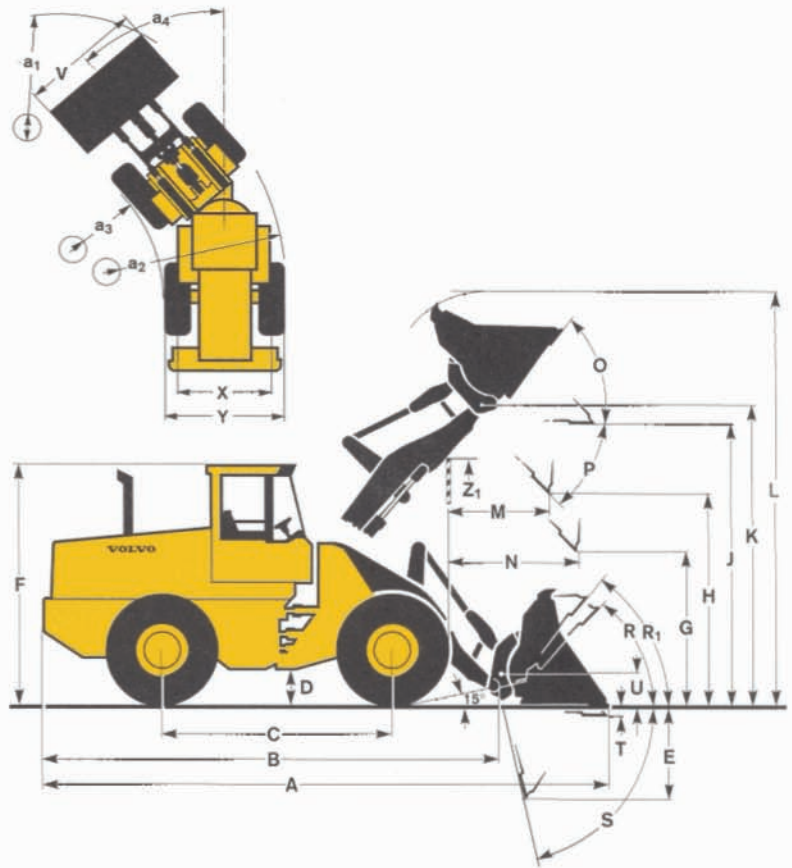
Counterweight 2, and combinations of counterweight 1 and 2, may be used in pallet fork and material arm handling for stabilizing purposes on firm and level ground.

OPERATIONAL DATA & DIMENSIONS

TIRES: 23.5 R25* L2				
	STANDARD BOOM		LONG BOOM	
B	6 510 mm	21'4"	7 000 mm	22'11"
C	3 200 mm	10'6"	3 200 mm	10'6"
D	440 mm	1'5"	440 mm	1'5"
F	3 400 mm	11'2"	3 400 mm	11'2"
G	2 135 mm	7'0"	2 135 mm	7'0"
J	3 800 mm	12'5"	4 310 mm	14'2"
K	4 100 mm	13'5"	4 620 mm	15'2"
O	54°		55°	
P**	45°		45°	
R	42°		42°	
R ₁ *	46°		46°	
S	68°		64°	
T	70 mm	2.9"	130 mm	5.2"
U	480 mm	1'7"	610 mm	2'0"
X	2 060 mm	6'9"	2 060 mm	6'9"
Y	2 680 mm	8'9"	2 680 mm	8'9"
Z	3 380 mm	11'1"	3 800 mm	12'6"
a ₂	5 730 mm	18'10"	5 740 mm	18'10"
a ₃	3 060 mm	10'0"	3 060 mm	10'0"
a ₄	±40°		±40°	

* Carry position SAE
** P max 48°

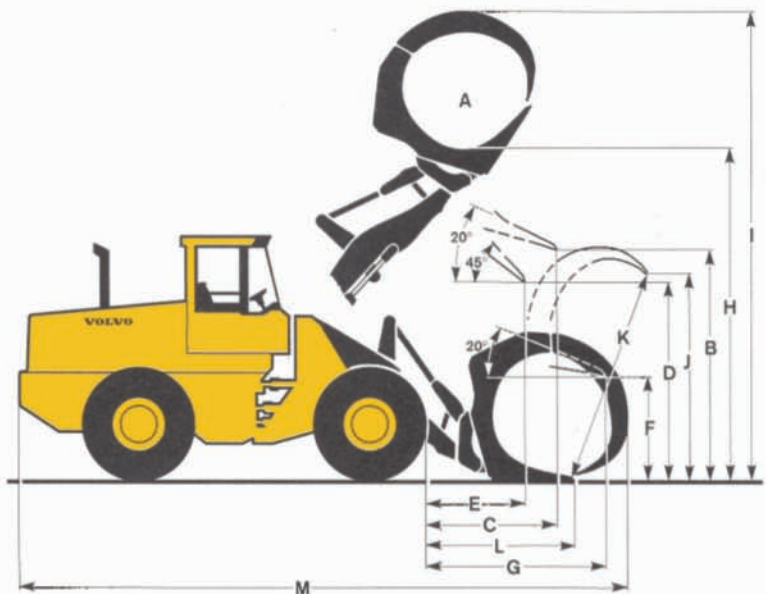
Where applicable, specifications and dimensions are in accordance with ISO 7131, SAE J732, ISO 7546, SAE J742, ISO 5998, SAE J818, ISO 8313.



SORTING-GRAPPLE (Hook on)

A	2,4 m ²	25.8 ft ²
B	3 560 mm	11'9"
C	1 920 mm	6'4"
D	2 920 mm	9'7"
E	1 540 mm	5'1"
F	1 550 mm	5'1"
G	2 830 mm	9'3"
H	4 730 mm	15'6"
I	6 700 mm	22'0"
J	2 750 mm	9'0"
K	2 960 mm	9'8"
L	2 110 mm	6'11"
M	8 860 mm	29'1"

Tires: 23.5 R25* L2
 Operating weight: 19 650 kg **43,320 lb** incl. counterweight 1 & 2
 Operating load: 6 400 kg **14,110 lb** incl. counterweight 1 & 2



STANDARD EQUIPMENT

Engine

High-performance, low-emission
Dual fuel filters
Water trap fuel
Air cleaner, dry type, dual element,
exhaust-aspirated pre-cleaner
Coolant level, sight gauge
Coolant filter
Engine intake manifold preheater
Muffler, spark arresting
Fan guard

Electrical System

24 V – prewired for optional
accessories
Alternator, 24 V, 60 A
Battery disconnect switch
Fuel gauge
Engine coolant temperature gauge
Transmission oil temperature gauge
Hour meter
Horn, electric
Reverse alarm (SAE J994)
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, 2 rear)
• instrument lighting

Conronic Monitoring System,

ECU with:
Conronic Display
Brake test
Shut down to idle at
• high engine coolant temp
• low engine oil pressure
• high transm. oil temp
Neutral start feature
Test function for warning &
monitoring lights
Warning & monitoring lights:
• engine oil pressure
• engine coolant temperature
• air cleaner restriction
• alternator malfunction
• working lights
• high beam driving lights
• direction indicator, hazard
• diff. lock
• transmission oil pressure
• transmission oil temperature
• axle oil temperature
• brake system pressure
• parking brake applied
• primary steering system
Central warning (with buzzer):
• engine oil pressure
• engine coolant temperature
(buzzer)
• transmission oil pressure
• transmission oil temperature
• brake system pressure (buzzer)
• parking brake applied and
transmission in forward or
reverse (buzzer)
• overspeeding engine
• transmission oil filter
• axle oil temperature

Drivetrain

Transmission: modulated with single
lever control, Automatic Power
Shift (APS II), with mode selector
and operator-controlled declutch
Forward and reverse switch on
hydraulic control console
Differentials:
• front 100%, hydraulic
differential lock
• rear, conventional
Tires 23.5R25* L2

Brake System

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

Cab

ROPS (SAE J1040) (ISO 3471),
FOPS (SAE J231) (ISO 3449).
Steering wheel, adjustable tilt,
telescopic
Acoustical lining
Ashtray
Cigarette lighter
Dual service brake pedals
Door lockable (left side access)
Heater/defroster/pressurizer 11 kW,
37,500 Btu/h with four-speed
blower fan
Filtered air
Floor mat
Interior light
Interior rearview mirror
Exterior rearview mirrors (2)
Openable window, right-hand side
Safety glass, tinted

Retractable seat belt (SAE J386)
Seat, heated, ergonomically
designed, adjustable suspension
Sliding ventilation window in door
Storage compartment
Sun visor
Windshield wiper, front & rear
Windshield washer, front & rear
Intermittent wiper, front

Hydraulic System

Main valve, 3-spool, pilot-operated
Pilot valve, 3-spool
Vane pump
Bucket lever detent
Bucket leveler, automatic with
position indicator, adjustable
Boom lever detents
Boom kickout, automatic, adjustable
Hydraulic control lever safety latch
Boom lowering stopped engine
Hydraulic pressure test ports, quick
connect
Hydraulic fluid level, sight gauge
Hydraulic oil cooler

External Equipment

Isolation mounts: cab, engine,
radiator, transmission
Lifting lugs
Side panels, engine hood
Steering frame lock
Vandalism lock, provision for:
batteries, engine compartment
Fuel fill strainer
Drawbar hitch
Cab access steps and handrails
Fenders, front & rear with anti-skid-
tape
Tie-down points

OPTIONAL EQUIPMENT

Service and maintenance equipment

Toolbox
Automatic lube system

Engine

Coolant preheater (120 V/1500 W)
Pre-cleaner, oil bath type
Pre-cleaner, turbo type
Radiator, corrosion protected

Electrical System

Attachment lights
Working lights front, extra
Working lights rear, extra
Rotating beacon, amber with
collapsible mount
Alternator, brushless
Alternator, 100A

Drivetrain

Limited-slip differential, rear

Cab

Installation kit for radio
Hand throttle
Speedometer
Air-suspended operator's seat
Sliding window, right side
Operator seat without heat
Seat belt, 3 in.
Air-conditioner 8 kW, 27,300 Btu/h
Armrest, left side
Parking brake alarm

Hydraulic System

Hydraulic control, 3rd function
Hydraulic control, 4th function
Hydraulic single-acting lifting
function
Biodegradable hydraulic fluid
Boom suspension system
Attachment bracket with separate
locking system
Lever detent 3rd function
Arctic kit

External Equipment

Counterweight 1 320 kg/705 lb
Counterweight 2 680 kg/1499 lb
Fenders, full coverage axle-mounted,
rear

Other Equipment

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

Tires

23.5–25 L2, L3, L4
23.5 R25*

Protective Equipment

Guards for:
headlights
radiator grill
rear working lights
side and rear window
windshield
rear lights
Bellyguard front / rear
Cover plate under cab
Heavy-duty main valve guard

Attachments

Buckets
Fork equipment
Material handling arm
Log grapples
Snowplows
Broom
Cutting edge, 3 pc. reversible, bolt-
on
Bucket teeth, bolt-on
Attachment rib kits

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

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