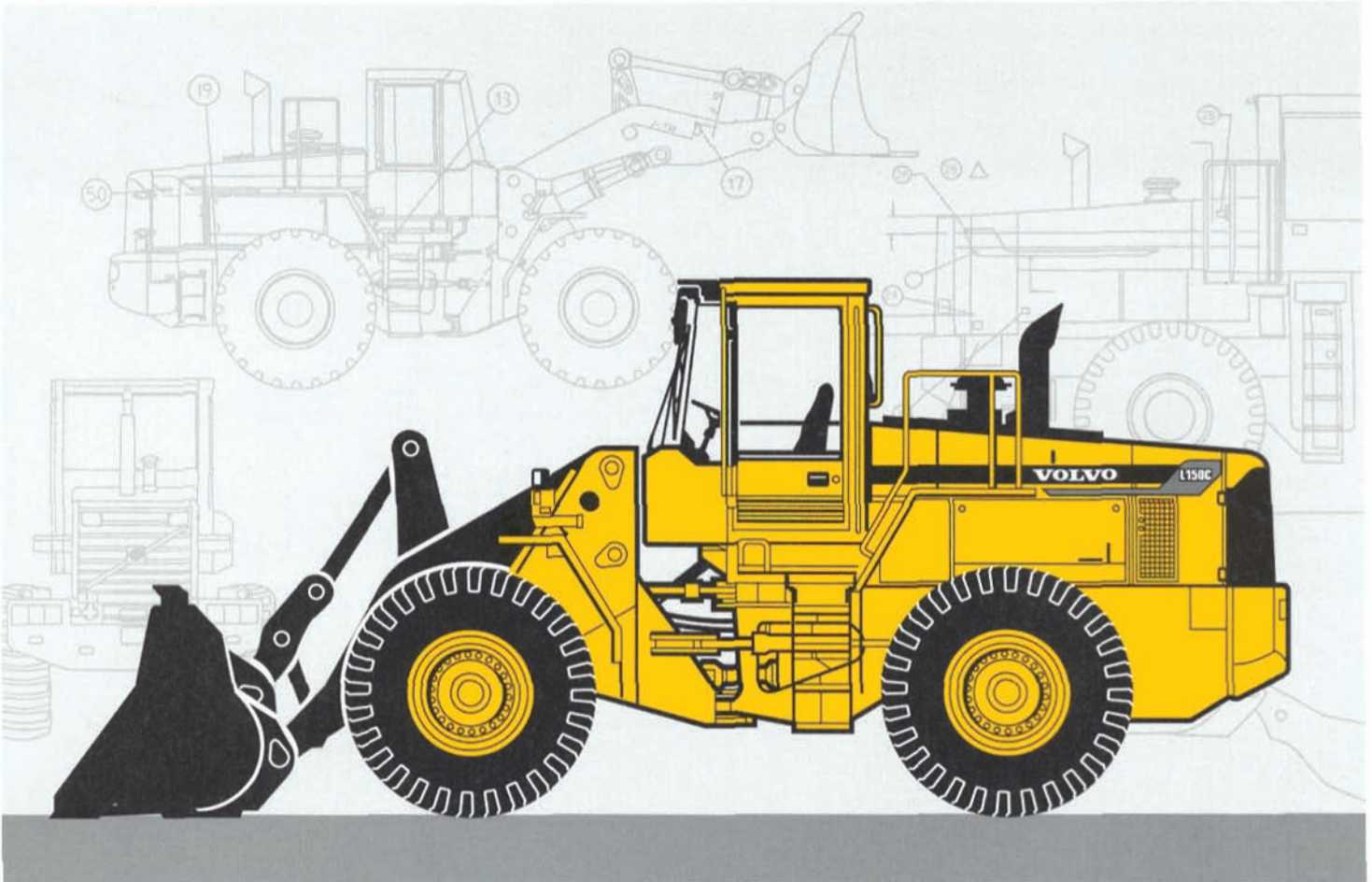


VOLVO WHEEL LOADER

L150C



- **Engine output SAE J1349:**
gross 189 kW 257 hp
net 183 kW 249 hp
- **Operating weight:** 21,9–25,8 t
48,300 – 56,880 lb
- **Buckets:** 3,5 – 12,0 m³
4.6 – 15.7 yd³
- **Volvo high-performance, low-emission engine**
 - with excellent low rpm performance
 - meets all known regulations regarding exhaust emissions for off-road machines until year 2001
 - hydraulically driven cooling fan

- **Volvo transmission with APS II**
 - 2nd generation Automatic Power Shift with mode (shift pattern) selector
 - 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

- Boom Suspension System
- Comfort Drive Control
- Long Boom
- Hydraulic attachment bracket

Other options, see back page

VOLVO



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 with swing-out radiator and swing-out fan.

Refill capacities	l	US gal
Fuel tank	318	84.0
Engine coolant	70	18.5
Hydraulic tank	165	43.6
Transmission	35	9.2
Engine oil	27	7.1
Axle front/rear	55/54	14.5/14.3



ENGINE

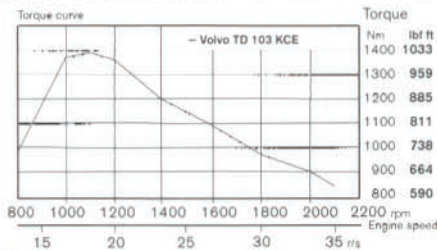
Engine delivers high torque and quick response at low rpm even under full load. The machine can work at low engine speeds, which contributes to good fuel economy, less noise, less wear and longer life.

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 – dry type.

Cooling system: Hydraulically driven fan. Twin pump system for the intercooler circuit.

Engine	Volvo TD 103 KCE
Power output at	35 r/s 2100 rpm
SAE J1349 gross	189 kW 257 hp
SAE J1349 net	183 kW 249 hp
Max. torque at	18,3 r/s 1100 rpm
SAE J1349 gross	1390 Nm 1025 lbf ft
SAE J1349 net	1390 Nm 1025 lbf ft
Displacement	9,6 l 586 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	2x140 Ah
Cold cranking capacity, ea	1050 A
Reserve capacity, ea	290 min
Alternator rating	1680 W / 60 A
Starter-motor output	5,4 kW 7.2 hp



DRIVETRAIN

Drivetrain and working hydraulics are 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.

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.

Transmission	Volvo HT 210
Torque multiplication	2,40:1
Speeds, max forward/reverse	km/h mph
1	6,3 3.9
2	11,7 7.3
3	23,0 14.3
4 (forward only)	33,6 20.9

Measured with tires	26.5 R25* L3
Front axle and rear axle	Volvo / AWB 40
Oscillation, rear axle	±15 °
Ground clearance at 15° oscillation	610 mm 24 in



BRAKE SYSTEM

Simple, reliable system with few parts ensures high availability and safety. Self-adjusting internal oil circulation-cooled wet 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 wet disc brakes. Transmission declutch during braking can be pre-selected by a switch on the instrument panel.

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

Secondary brake: Dual circuit system with rechargeable accumulators. One circuit or the parking brake fulfills the requirements.

Brake performance test provided by the Contronic system.

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

Number of discs/wheel	1
Accumulators, volume each	3x1,0 l 3x61.0 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 with power amplification.

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

Pump: Variable-flow axial piston pump.

Cylinders: Two double-acting cylinders.

Steering cylinder	2	
Bore	90 mm	3.5 in
Piston rod diameter	50 mm	2.0 in
Stroke	425 mm	16.7 in
Relief pressure	21 MPa	3046 psi
Max. flow	122 l/min	32.2 US gpm
Articulation	± 37°	



CAB

Care Cab has 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.

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 seat 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,		
SAE J2105 max	76 dB (A)	
Fan position 2	73 dB (A)	
Exterior sound level		
ISO 6395 SAE J2104	LwA 109 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 high capacity vane pumps allows precise control and quick movements even at low rpm.

Pump: A single vane pump mounted on a power take-off on the transmission.

Valve: Double-acting 3-spool valve actuated by a 3-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. 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	21,0 MPa	3046 psi
Flow	313 l/min	82.7 US gpm
at	10 MPa	1450 psi
and engine speed	35 r/s	2100 rpm
Pilot system		
Relief pressure	3,0-4,5 MPa	435-653 psi
Cycle times	s	
Raise*	6,7	
Dump*	1,9	
Lower, empty	3,2	
Total cycle time	11,8	

* 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 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	170 mm	6.7 in
Piston rod diameter	80 mm	3.15 in
Stroke	784 mm	31.0 in
Tilt cylinder	1	
Bore	250 mm	9.8 in
Piston rod diameter	120 mm	4.7 in
Stroke	452 mm	17.8 in

OPERATIONAL DATA VOLVO L150C

		STANDARD BOOM						LONG BOOM		
		GENERAL PURPOSE				ROCK*		LIGHT MTL.	GEN. PUR.	LIGHT MTL.
Tires 26.5 R25*L3		Bolt-on edges	Bolt-on edges	Bolt-on edges	Bolt-on edges	Teeth & Segments	Teeth & Segments	Bolt-on edges	Bolt-on edges	Bolt-on edges
Volume, heaped,	m ³	4,0	4,0	4,0	4,0	3,8	3,5	6,8	3,7	5,7
ISO/SAE	yd ³	5,2	5,2	5,2	5,2	5,0	4,6	8,9	4,8	7,5
Volume at 110%	m ³	4,4	4,4	4,4	4,4	-	-	7,5	4,1	6,3
fill factor	yd ³	5,8	5,8	5,8	5,8	-	-	9,8	5,4	8,2
Static tipping load,	kg	16620	15950	16630	15970	16960	17080	15900	14640	14160
straight	lb	36,640	35,160	36,660	35,210	37,390	37,650	35,050	32,280	31,220
at 35° turn	kg	14750	14110	14770	14130	15050	15140	14040	12920	12460
	lb	32,520	31,110	32,560	31,150	33,180	33,380	30,950	28,480	27,470
at full turn	kg	14540	13900	14550	13920	14820	14910	13820	12720	12270
	lb	32,060	30,640	32,080	30,690	32,670	32,870	30,470	28,040	27,050
Breakout force	kN	176,3	165,8	170,9	160,9	179,7	152,5	128,1	172,9	133,4
	lbf	39,630	37,270	38,420	36,170	40,400	34,280	28,800	32,870	29,990
A	mm	8240	8320	8290	8370	8430	8680	8780	8700	9110
	ft in	27'0"	27'4"	27'2"	27'6"	27'8"	28'6"	28'10"	28'7"	29'11"
E	mm	1220	1290	1260	1330	1180	1400	1690	1190	1530
	ft in	4'0"	4'3"	4'2"	4'4"	3'10"	4'7"	5'7"	3'11"	5'0"
H**)	mm	3040	2990	3010	2950	2920	2760	2640	3650	3340
	ft in	10'0"	9'10"	9'11"	9'8"	9'7"	9'1"	8'8"	12'	10'11"
L	mm	5890	5940	5940	5990	5940	6020	6100	6400	6510
	ft in	19'4"	19'6"	19'6"	19'8"	19'6"	19'9"	20'0"	21'0"	21'4"
M**)	mm	1220	1280	1250	1320	1350	1540	1570	1170	1430
	ft in	4'0"	4'2"	4'1"	4'4"	5'	5'1"	5'2"	3'10"	4'8"
N**)	mm	1810	1850	1830	1870	1880	1990	1960	2220	2360
	ft in	5'11"	6'1"	6'0"	6'2"	6'2"	6'6"	6'5"	7'3"	7'9"
V	mm	3200	3200	3000	3000	3230	3030	3200	3200	3200
	ft in	10'6"	10'6"	9'10"	9'10"	10'7"	9'11"	10'6"	10'6"	10'6"
a ₁ clearance circle	mm	14790	14830	14630	14680	14960	14920	15090	15180	15400
	ft in	48'6"	48'8"	48'0"	48'2"	49'1"	48'11"	49'6"	49'10"	50'6"
Operating weight	kg	22820	23140	22810	23120	24250	24350	23070	23590	23810
	lb	50,310	51,010	50,290	50,970	53,460	53,680	50,860	52,230	52,490

*) with L5 tires

including counterweight 1

including counterweight 1+2

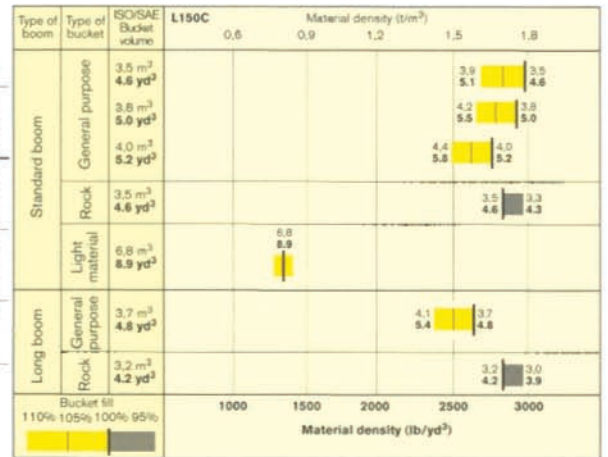
**) at dump angle 45°

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 more 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 factor in different materials and how they affect the actual bucket volume are shown below. **Example: Sand and gravel. Fill factor ~105%. Density 1,70 ton/m³. Result: The 3,5 m³ /4.6 yd³ bucket carries 3,7 m³/4.8 yd³. For optimum stability always consult the bucket selection chart.**

Material	Bucket fill, %	Material density, ton/m ³ lb/yd ³	ISO/SAE bucket volume, m ³ yd ³		Actual volume, m ³ yd ³		
			3.5	4.6	3.5	4.6	
Earth/Clay		1,65	2780	3,5	4,6	3,9	5,1
		1,60	2695	3,8	5,0	4,2	5,5
		1,50	2530	4,0	5,2	4,4	5,8
Sand/Gravel		1,70	2870	3,5	4,6	3,7	4,8
		1,65	2780	3,8	5,0	4,0	5,2
		1,60	2695	4,0	5,2	4,2	5,5
Aggregate		1,80	3035	3,5	4,6	3,5	4,6
		1,75	2950	3,8	5,0	3,8	5,0
		1,65	2780	4,0	5,2	4,0	5,2
Rock		≤100	2865	3,5	4,6	3,5	4,6

Rock buckets are sized for optimal penetration and filling capability rather than the density of the material.



Supplemental operating data

		Standard Boom										Long Boom					
		23.5 R25* L3		23.5 R25* L5		26.5 R25* L5		705/70 R25 L3		Cw 1		Cw2		26.5 R25* L5		705/70 R25 L3	
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
Width over tires	mm in	-150	-5.9	-130	-5.1	+30	+1.2	+30	+1.2	-	-	-	-	+30	+1.2	+30	+1.2
Ground clearance	mm in	-70	-2.8	-40	-1.6	+20	+0.8	-80	-3.1	-	-	-	-	+20	+0.8	-80	-3.1
Tipping load, full turn	kg lb	-310	-680	+190	+420	+830	+1830	-95	-210	-690	-1520	+1160	+2560	+710	+1570	-85	-190
Operating weight	kg lb	-600	-1320	+120	+260	+990	+2180	-220	-490	-350	-770	+590	+1300	+980	+2160	-220	-490

Counterweight 1 may be used in rehandling and material handling.

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

Counterweight 2 replaces hydroinflation of rear tires.

Counterweight 2 must never be combined with tire chains.

Combinations of L4 and L5 tires and chains are strictly forbidden.

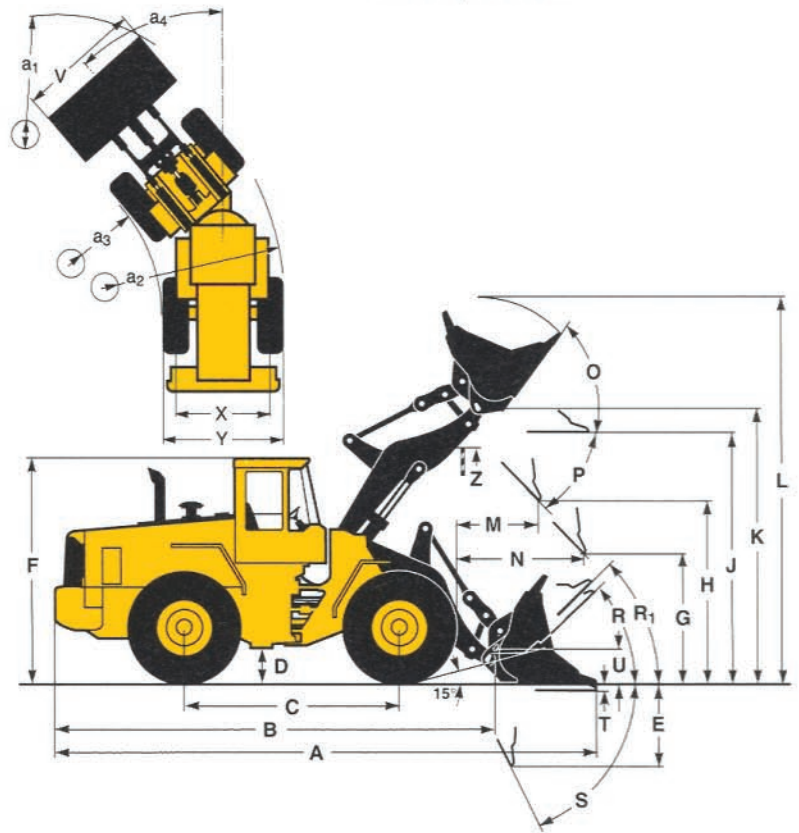
OPERATIONAL DATA & DIMENSIONS

Tires: 26.5 R25* L3

	Standard Boom	Long Boom
B	6730 mm 22'1"	7220 mm 23'8"
C	3550 mm 11'8"	3550 mm 11'8"
D	480 mm 1'7"	480 mm 1'7"
F	3560 mm 11'8"	3560 mm 11'8"
G	2135 mm 7'0"	2135 mm 7'0"
J	3980 mm 13'1"	4550 mm 14'11"
K	4350 mm 14'3"	4920 mm 16'2"
O	58 °	59 °
P**	45 °	45 °
R	44 °	47 °
R ₁ *	47 °	52 °
S	66 °	61 °
T	40 mm 1.6"	90 mm 3.5"
U	490 mm 1'7"	620 mm 2'0"
X	2280 mm 7'6"	2280 mm 7'6"
Y	2950 mm 9'8"	2950 mm 9'8"
Z	3690 mm 12'1"	4160 mm 13'8"
a ₂	6780 mm 22'3"	6780 mm 22'3"
a ₃	3830 mm 12'7"	3830 mm 12'7"
a ₄	±37 °	±37 °

* Carry position SAE
** P max 49°

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



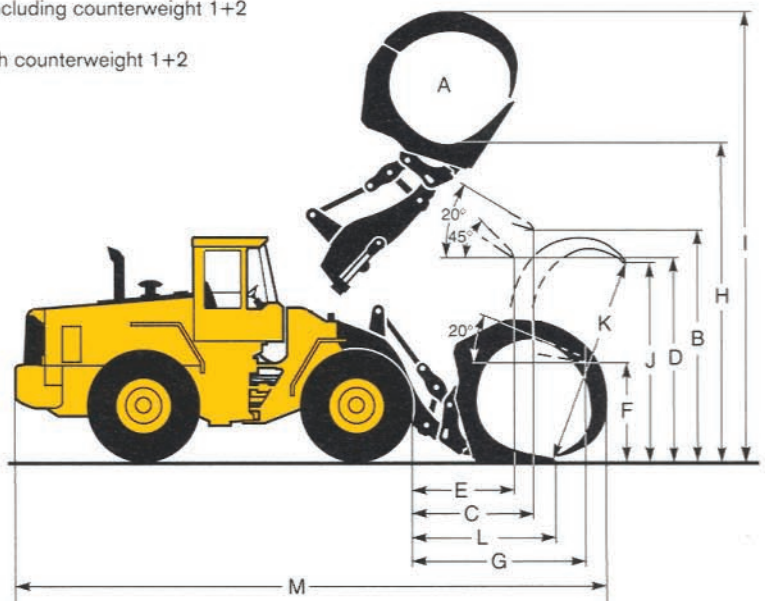
LOG GRAPPLE (hook on)

Tires: 26.5 R25* L3

A	3,1 m ² 33.4 ft ²
B	3660 mm 12'0"
C	2120 mm 6'11"
D	2950 mm 9'8"
E	1660 mm 5'5"
F	1620 mm 5'4"
G	2940 mm 9'8"
H	5000mm 16'5"
I	7250 mm 23'9"
J	3000 mm 9'10"
K	3280 mm 10'9"
L	2290 mm 7'6"
M	9440 mm 31'0"

Operating weight: 23530 kg including counterweight 1+2
51,875 lb

Operating load: 7700 kg with counterweight 1+2
16,980 lb



STANDARD EQUIPMENT

Engine

High-performance, low-emission
Air cleaner, dry type, dual element,
exhaust-aspirated precleaner
Coolant level, sight gauge
Coolant filter
Engine intake manifold preheater
Dual fuel filter
Water trap
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
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
Reverse alarm

Contronic Monitoring System, ECU

Engine shut down to idle
Brake test
Neutral start feature
Test function for warning &
monitoring lights
Information panel (Contronic):
start configuration, setting
language and units, operating
hours, general operating
information, stop watch/trip meter,
cycle counter, service interval
engine
electrical system
transmission
axles/brakes
Warning & monitoring lights:
• air cleaner restriction
• alternator malfunction
• working lights
• high beam driving lights
• direction indicator, hazard
Central warning:
• engine oil pressure
• engine coolant temperature
(buzzer)
• transmission oil pressure
• transmission oil temperature
• brake system pressure
• parking brake applied
• steering pressure
• axle oil temperature
• transmission oil filter
• high speed/gear

Drivetrain

Transmission: modulated with single
lever control, automatic power
shift generation II, and operator-
controlled declutch
Forward and reverse switch
Differentials:
front 100%, hydraulic
differential lock
rear, conventional
Tires 23.5 R25* L3

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 J 231) (ISO 3449).
Acoustical lining
Ashtray
Cigarette lighter
Door lockable (left side access)
Dual service brake pedals
Heater/defroster/pressurizer 11 kW
37,500 Btu/h with four-speed
blower fan
Filtered air
Floor mat
Interior light
Mirror rearview, interior
Mirrors rearview (2), exterior
Openable window, right side
Safety glass, tinted
Retractable seat belt (SAE J386)

Seat, heated, ergonomically
designed, suspension adjustable
Sliding window in door
Storage compartment
Sun visor
Windshield wiper, front & rear
Intermittent wiper, front
Washer, front and rear
Cab access steps and handrails
Fenders, front & rear with anti-skid-
tape
Tiltable and telescoping steering
wheel

Hydraulic System

Main valve, 3-spool
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
Hydraulic oil cooler
Boom lowering, stopped engine
Power-down/float, detent

External Equipment

Isolation mounts: cab, engine,
transmission, radiator
Lifting lugs
Side panels, engine hood
Steering frame lock
Fuel Strainer
Drawbar hitch
Vandalism Lock

OPTIONAL EQUIPMENT

Service and maintenance equipment

Tool box
Auto lube system

Engine

Coolant preheater (110 V/1500 W)
Pre-cleaner, oil bath type
Radiator, corrosion-protected
Pre-cleaner, Turbo type

Electrical System

Attachment lights(halogen)
Working lights front, extra
Working lights rear, extra
Rotating beacon, amber with
collapsible mount
Alternator, 100 A
Loud horn, electrical

Drivetrain

Limited slip differential, rear axle

Cab

Air-conditioning
Cab filter for harsh environment,
i.e., asbestos
Hand throttle
Installation kit for radio
Left-hand arm rest
Seat, air suspended, heated
Seat belt, 3 in.
Sliding window, right side

Hydraulic System

Hydraulic control, 3rd function
Hydraulic control, 4th function,
electrical
Boom Suspension System
Hydraulic function 3rd, hydraulic
pilot hoses preinstalled
Return line 3rd hydraulic control
Attachment bracket with separate
locking system
Biodegradable hydraulic fluid

External Equipment

Counterweight 1: 350 kg **770 lb**
Counterweight 2: 590 kg **1300 lb**
Fenders, axle-mounted
Fenders, rubber extension

Other Equipment

Comfort Drive Control (CDC)
Secondary steering
External brake oil cooling system
Long Boom
Arctic kit

Protective Equipment

Guards for headlights
Guards for rear working lights
Guards for side and rear window
Guards for rear lights
Bellyguard front and rear
Protection plate under cab
Windshield guard
Protection plate, valve front frame

Tires

23.5 R25* / 23.5–25
26.5 R25* / 26.5–25
705/70 R25
30/65 R25

Attachments

Buckets
• straight edge, rock
• spade nose, rock
• general purpose
• light material
• hi-dump
Bucket teeth, bolt-on
Cutting edge, 3 pc. reversible,
bolt-on
Rock bucket spillguard
Fork equipment
Material-handling arm
Timber grapples
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

One Volvo Drive, Asheville, NC 28803

Ref. No. 22 4 669 2264
Printed in USA 4/99 - 10.0
Biltmore Press, Asheville

WLO