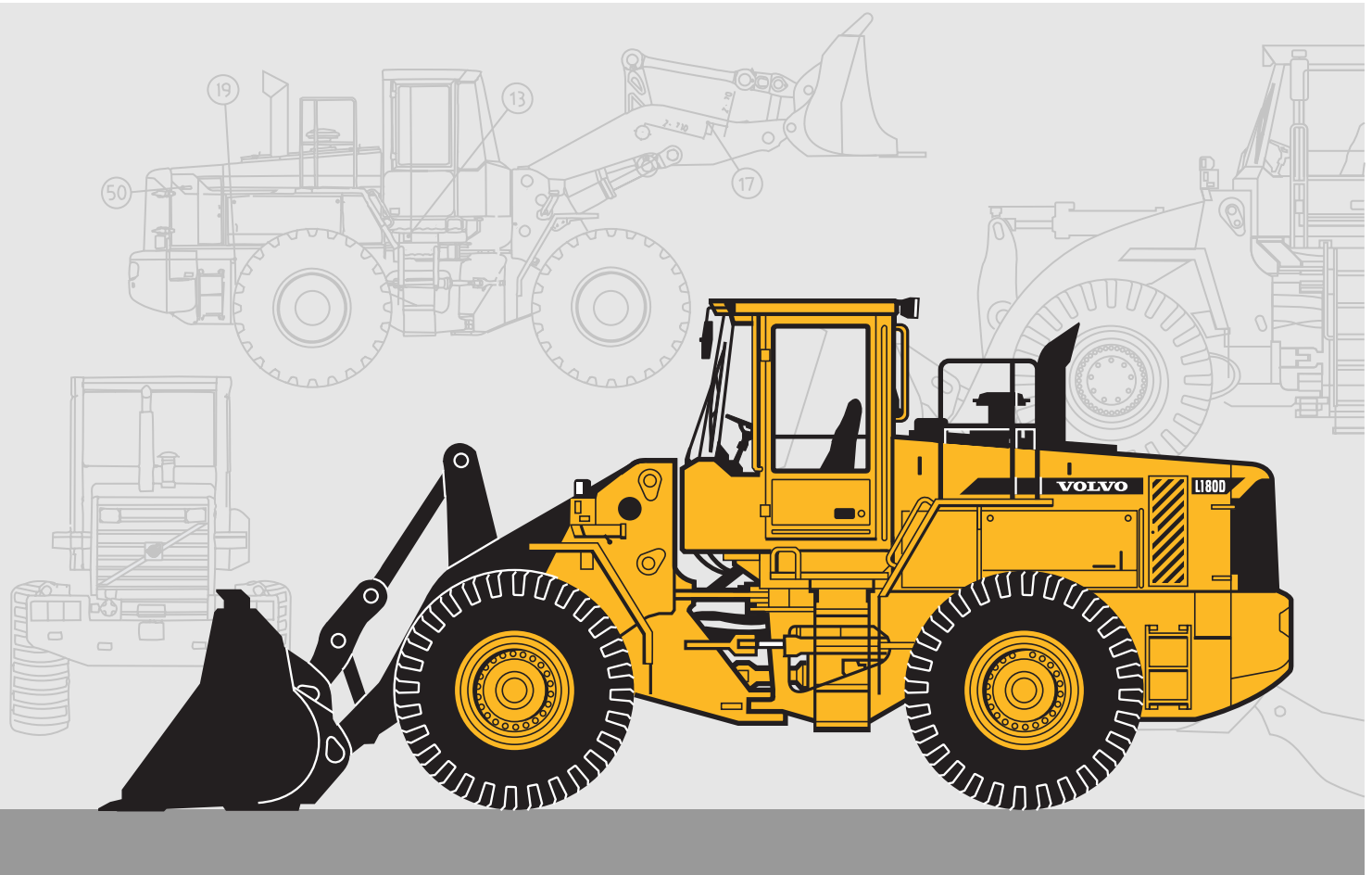


VOLVO WHEEL LOADER

L180D



- **Engine output**
SAE J1995: gross 209 kW (284 hp)
ISO J9249, SAE J1349: net 206 kW (280 hp)
 - **Operating weight:** 26,0-29,0 t
 - **Buckets volume:** 4,2–14,0 m³
 - **Volvo high performance low emission engine**
 - with excellent low rpm performance
 - meets all known exhaust emission regulations for off road machines until 2002
 - hydrostatically driven, cooling fan
 - **Volvo transmission with APS II**
 - 2nd generation Automatic Power Shift with mode selector
 - optimizes performance
 - **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** – pressurized cab with high comfort and safety
 - **Contronic II** monitoring system
 - **Load-sensing** steering system
 - **Pilot-operated** working hydraulics
- Optional Equipment**
- Boom Suspension
 - Comfort Drive Control
 - Long Boom
 - Hydraulic attachment bracket

VOLVO



SERVICE

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

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

Refill capacities

Fuel tank	318 l	Transmission	38 l
Engine coolant	80 l	Engine oil	34 l
Hydraulic tank	165 l	Axle front/rear	55/54 l



ENGINE

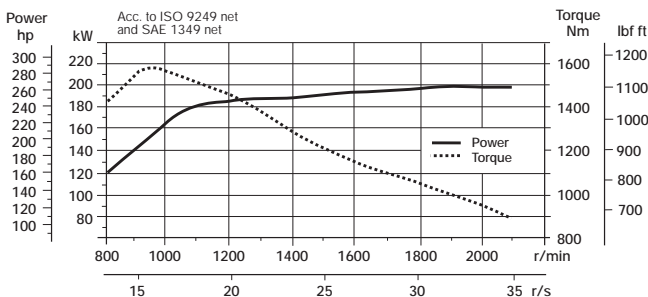
Engine delivers high torque and quick response at low rpm even under full load. The machine can work at low engine speeds, which contributes to good fuel economy, less noise, less wear and longer life.

Engine: 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.

Cooling system: Hydrostatically driven fan with separate cooling for the intercooler circuit.

Engine	Volvo TD 122 KHE
Max power at	35 r/s (2100 r/min)
SAE J1995 gross	209 kW (284 hp)
ISO 9249, SAE J1349 net	206 kW (280 hp)
Max. torque at	15,0 r/s (900 r/min)
SAE J1995 gross	1580 Nm
ISO 9249, SAE J1349 net	1580 Nm
Displacement	12,0 l



ELECTRICAL SYSTEM

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

Central warning lamp for the following functions: Engine oil pressure, transmission oil pressure, transmission oil temperature, transmission oil filter, brake system pressure, steering pressure.

Central warning lamp with buzzer for the following functions: engine coolant temperature, overspeeding of engine/transmission, axle temperature, parking brake (if applied when operating), low brake pressure (when gear is engaged).

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	6,6 kW (9,0 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 generation II with mode selector (APS II).

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 220
Torque multiplication	2,27:1
Speeds, max forward/reverse	
1	6,5 km/h
2	12,1 km/h
3	24,0 km/h
4	35,1 km/h

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



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 Contronic II are included in the brake system.

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.










Parking brake: Enclosed wet multi-disc brake built into the transmission. Spring applied, electro-hydraulic 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.

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

Number of discs/wheel	1
Accumulators, volume each	3x1,0 l

OPERATIONAL DATA VOLVO L180D





Tires 26.5 R25*L3		STANDARD BOOM									LONG BOOM
		GENERAL PURPOSE						ROCK*		LIGHT MTRL	
											
Volume, heaped, ISO/SAE	m ³	4,2	4,4	4,4	4,6	4,8	4,8	3,9	4,3	7,8	–
Volume at 110% fill factor	m ³	4,6	4,8	4,8	5,1	5,3	5,3	–	–	–	–
Static tipping load, straight	kg	21010	20650	21100	20680	20490	19750	21480	21230	19990	-3350
at 35° turn	kg	18680	18330	18760	18360	18180	17480	19060	18820	17720	-3420
at full turn	kg	18410	18070	18490	18100	17920	17220	18790	18540	17460	-3380
Breakout force	kN	210,3	199,6	210,0	199,5	191,4	180,9	187,9	179,6	146,5	-11,9
A	mm	8830	8840	8810	8660	8730	8820	8910	8990	9210	+470
E	mm	1500	1500	1480	1340	1400	1480	1560	1630	1840	+40
H**)	mm	3200	3010	3040	3130	3080	3040	2980	2920	2710	+500
L	mm	6140	6140	6190	6190	6190	6240	6190	6330	6310	+500
M**)	mm	1380	1370	1370	1240	1280	1380	1430	1480	1580	+30
N**)	mm	2010	1990	2010	1910	1940	1980	2040	2070	2030	+410
V	mm	3200	3230	3230	3200	3200	3200	3230	3230	3400	±0
a ₁ clearance circle	mm	14840	14860	14860	14750	14780	14820	14890	14950	15200	+300
Operating weight	kg	26370	26510	26360	26540	26590	26900	27780	27950	26570	+240

*) with L5 tires

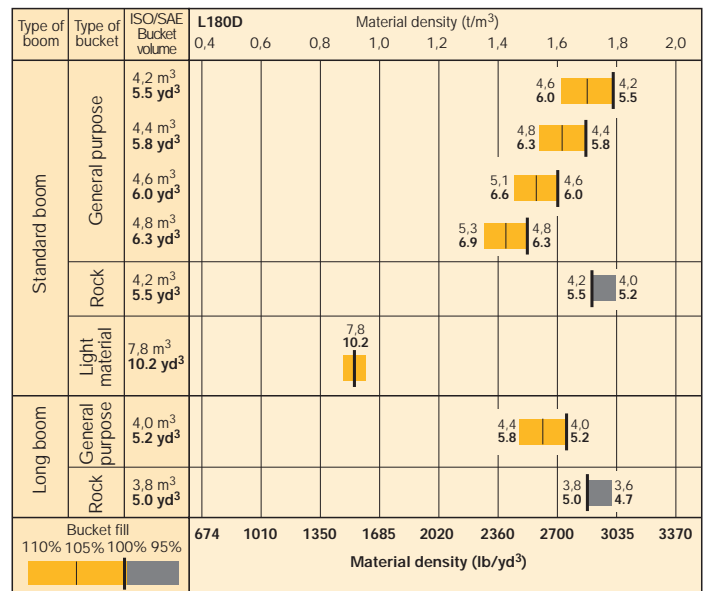
**) Measured to the tip of the bucket teeth or bolt-on edge. Dump height to bucket edge (acc. SAE) + approx. 170 mm compared to teeth. Measured at 45° dump angle.

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 1,70 ton/m³. Result: The 4,2 m³ bucket carries 4,4 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	~1,60	4,2	~4,6
		~1,55	4,4	~4,8
		~1,45	4,6	~5,1
Sand/Gravel 	~105	~1,70	4,2	~4,4
		~1,65	4,4	~4,6
		~1,50	4,6	~4,8
Aggregate 	~100	~1,80	4,2	~4,2
		~1,70	4,4	~4,4
		~1,60	4,6	~4,6
Rock 	≤100	~1,70	4,2	~4,2

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



Supplemental operating data

		Standard Boom			Long Boom		
		26.5 R25 L5	30/65 R29 L3	800/65 R29 L3	26.5 R25 L5	30/65 R29 L3	800/65 R29 L3
		Width over tires	mm	+30	+175	+170	+30
Ground clearance	mm	+60	+15	+60	+60	+15	+60
Tipping load, full turn	kg	+660	+180	+430	+640	+160	+410
Operating weight	kg	+1050	+240	+610	+1050	+240	+610

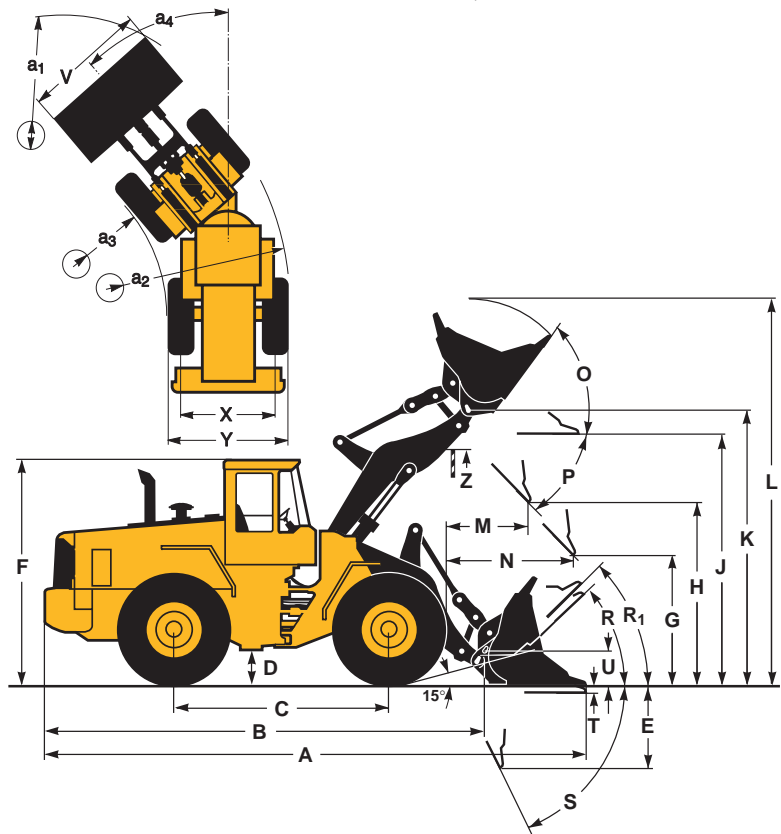
OPERATIONAL DATA & DIMENSIONS

Tires: 26.5 R25* L3

Standard Boom	Long Boom	Standard Boom	Long Boom
B	7020 mm	7500 mm	7500 mm
C	3550 mm	3550 mm	3550 mm
D	480 mm	480 mm	480 mm
F	3560 mm	3560 mm	3560 mm
G	2135 mm	2134 mm	2134 mm
J	4110 mm	4600 mm	4600 mm
K	4490 mm	4980 mm	4980 mm
O	57,4 °	55,5 °	55,5 °
P**	48,6 °	48,7 °	48,7 °
R	44,0 °	47,7 °	47,7 °
R ₁ *	48,4 °	53,4 °	53,4 °
S	65,9 °	62,7 °	62,7 °
T	80 mm	160 mm	160 mm
U	560 mm	660 mm	660 mm
X	2280 mm	2280 mm	2280 mm
Y	2950 mm	2950 mm	2950 mm
Z	3810 mm	4180 mm	4180 mm
a ₂	6780 mm	6780 mm	6780 mm
a ₃	3830 mm	3830 mm	3830 mm
a ₄	37,0 °	37,0 °	37,0 °

* 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.

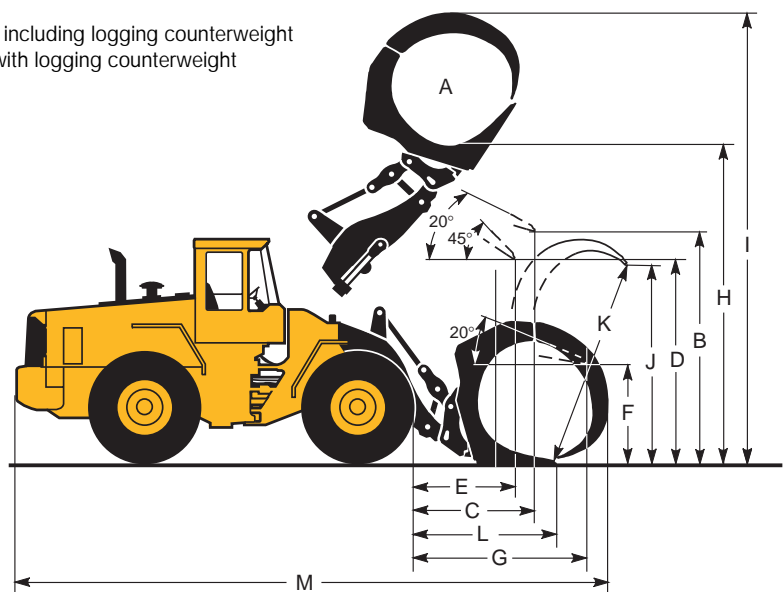


LOG GRAPPLE (hook on)

Tires: 26.5 R25* L3

A	3,5	m ²
B	3790	mm
C	2080	mm
D	3100	mm
E	1620	mm
F	1600	mm
G	3000	mm
H	5130	mm
I	7820	mm
J	3400	mm
K	3650	mm
L	2410	mm
M	9720	mm

Operating weight: 27860 kg including logging counterweight
 Operating load: 8000 kg with logging counterweight





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	100 mm
Piston rod diameter	50 mm
Stroke	425 mm
Relief pressure	21 MPa
Max. flow	116 l/min.
Articulation	± 37°



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.

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 (3449, SAE J231), Overhead Guards (ISO 6055) and Operator Restraint System (SAE J386)

Emergency exits	2
Sound level in cab according to ISO 6396, SAE J2105	LpA 77 dB (A)
With sound reduction kit	LpA 74 dB (A)
External sound level according to ISO 6395, SAE J2104	LwA 110 dB (A)
External sound level with sound reduction kit	LwA 107 dB (A)
Ventilation	9 m ³ /min
Heating capacity	11 kW
Air conditioning (optional)	8 kW



HYDRAULIC SYSTEM

Open center hydraulics with highly efficient vane pumps allows precision control and quick movements even at low rpm's thanks to the high capacity pumps.

Pump: A double vane pump mounted on a power take-off on the transmission. Pump 1 works with all tilt and lift movements. Pump 2 works with tilt out and lift up to 20 MPa (2900 psi).

A pilot-controlled selector valve cuts-in flow to the system.

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, that can be switched on and off.

Cylinders: Double-acting

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

Vane pump	
Relief pressure, pump 1	22,5 MPa
Flow	313 l/min
at	10 MPa
and engine speed	35 r/s (2100 r/min)
Relief pressure, pump 2	20 MPa
Flow	91,5 l/min
at	10 MPa
and engine speed	35 r/s (2100 r/min)
Pilot system	
Relief pressure	3,0-4,5 MPa
Cycle times in sec.	
Raise*	6,6
Dump*	2,5
Lower, empty	3,5
Total cycle time	12,6

* 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	190 mm
Piston rod diameter	90 mm
Stroke	788 mm
Tilt cylinder	1
Bore	260 mm
Piston rod diameter	120 mm
Stroke	480 mm

STANDARD EQUIPMENT

Engine

Air cleaner, dry type, dual element, exhaust aspirated precleaner
Coolant level, sight gauge
Engine intake manifold preheater
Muffler, spark arresting
Dual fuel filter
Watertrap

Electrical System

24 V – prewired for optional accessories
Alternator, 24 V / 60 A
Battery disconnect switch
Fuel gauge
Engine coolant temperature
Transmission oil temperature
Hourmeter
Horn, electric
Speedometer
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

Contronic II Monitoring System, ECU

Engine

Contronic "display"
Shut down to idle function
• 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
Central warning:
• transmission oil pressure
• transmission oil temperature
• brake system pressure (buzzer)
• steering pressure
• axle oil temperature (buzzer)
• transmission oil filter
• overspeeding of engine/transmission (buzzer)
• engine oil pressure
• engine coolant temperature (buzzer)
• Parking brake applied and transmission in forward or reverse (buzzer)
• Brake test by contronic

Drivetrain

Transmission: modulated with single lever control, automatic power shift, and operator controlled declutch
Forward and reverse switch
Differentials:
front 100%, hydraulic differential lock
rear, conventional
Tires 26.5 R25*

Brake System

Wet, internal oil circulation cooled disc brakes, 4-wheel, dual circuit
Brake system, secondary
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
Mirror rear view interior
Mirrors rear view (2), exterior
Openable window, right-hand side
Windshield washer, front & rear

Safety glass, tinted
Retractable seat belt (SAE J386)
Seat, heated, ergonomically designed, suspension adjustable
Storage compartment
Sun visor
Windshield wiper, front & rear
Intermittent wiper, front
Cab access steps and handrails
Fenders, front & rear with anti-skid-tape

Hydraulic System

Main valve, 3-spool
Pilot valve, 3-spool
Vane pump
Bucket lever detent
Bucket leveler, automatic with position indicator, adjustable
Boom lever detent
Boom kickout, automatic, adjustable
Hydraulic control lever safety latch
Hydraulic oil cooler
Boom lowering

External Equipment

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

OPTIONAL EQUIPMENT *(Standard on certain markets)*

Service and maintenance equipment

Tool box
Tool kit
Auto lube system
Refill pump
Wheel nut wrench kit

Engine

Coolant filter
Cold starting aid, engine coolant preheater (220 V/1500 W)
Pre-cleaner, oil bath type
Radiator, corrosion protected

Electrical System

Reverse alarm (SAE J994)
Attachment lights (halogen)
Light registration plate
Working lights front, extra
Working lights rear, extra
Rotating beacon, amber with collapsible mount
Head lights assym. left
Side marking lamp

Drivetrain

Speed limiter, 3-speed version
Limited slip diff. rear and front axle

Cab

Installation kit for radio and power outlet 12V
Hand throttle
Sliding ventilation window
Air conditioner
Dual service brake pedals
Instructor seat
Noise reduction kit, cab
Adjustable steering wheel

Hydraulic System

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

External Equipment

Counterweight for logging: 1020 kg
Fenders, extended
Fenders, axle mounted

Other Equipment

Comfort Drive Control (CDC)
Secondary steering
Fuel fill strainer
External brake oil cooling system
Long Boom
Exterior sound reduction kit

Protective Equipment

Protective grids for front running light
Protective grids for rear working lights
Window guards for side and rear window
Windshield guard
Protective grids for rear lights
Bellyguard front and rear
Screen for suction fan
Protection plate under cab

Tires

26.5 R25*
30/65R29
800/65 R29

Attachments

Buckets
• straight edge
• spade nose
• general purpose
• lightmaterial
• high-dump
Bucket teeth, bolt-on/weld-on
Cutting edge, 3 pc reversible, bolt-on
Bucket spillguard
Fork equipment
Material handling arm
Timber grapples

For further information see attachment catalogue

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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