

VOLVO WHEEL LOADER

L180D



- **Engine output**
SAE J1995: gross 209 kW
284 hp
ISO J9249, SAE J1349:
net 203 kW 276 hp
 - **Operating weight:** 26,0-29,0 t
57,320-63,930 lb
 - **Buckets volume:** 4,2-14,0 m³
5.5-18.3 yd³
 - **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
- Other options, see back page**

VOLVO



SERVICE

The 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 radiator.

Refill capacities	l	USgal
Fuel tank	318	84.0
Engine coolant	80	21.1
Hydraulic tank	165	43.6
Transmission	35	9.2
Engine oil	34	9.0
Axle front/rear	55/54	14.5/14.3



ENGINE

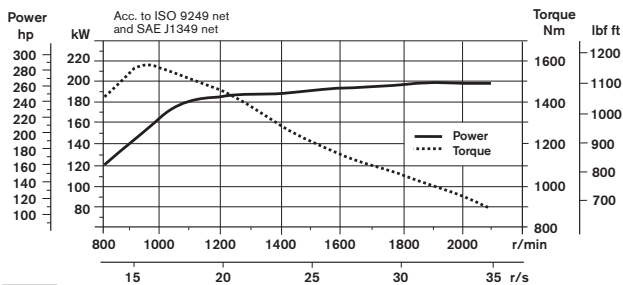
The engine delivers high torque and quick response at low rpm even under full load. The machine can work at low engine speeds, which contributes to good fuel economy, less noise, less wear and longer life.

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

Engine	Volvo TD 122 KHE
Max power at	35 r/s 2100 rpm
SAE J1995 gross	209 kW 284 hp
ISO 9249, SAE J1349 net ..	203 kW 276 hp
Max. torque at	15,0 r/s 900 rpm
SAE J1995 gross	1580 Nm 1165 lbf ft
ISO 9249, SAE J1349 net ..	1580 Nm 1165 lbf ft
Displacement	12,0 l 733 in



ELECTRICAL SYSTEM

The Contronic II monitoring system with increased function control and capability to store data for analysis. Electrical system with circuit boards, well protected by fuses. The system is prewired for installation of optional equipment.

Central warning system: Central warning light for the following functions (buzzer with gear engaged): Engine oil pressure, transmission oil pressure, brake pressure, parking brake applied, hydraulic oil level, axle oil temperature, steering system pressure, coolant temperature, transmission oil temperature, hydraulic oil temperature, overspeeding transmission, low brake pressure. Shutdown to idle 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	6,6 kW / 9.0 hp



DRIVETRAIN

The 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 generation II with mode selector (APS II).

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 220
Torque multiplication	2,27:1
Speeds, max forward/reverse	km/h mph
1	6,5 4.0
2	12,1 7.5
3	24,0 14.9
4	35,1 21.8
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

A simple and reliable brake system ensures high availability and safety. 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 3x61.0 in³

OPERATIONAL DATA VOLVO L180D

		STANDARD BOOM						LONG BOOM			
		GENERAL PURPOSE						ROCK*	LIGHT MTRL	GEN. PUR.	LIGHT MTRL
Tires 26.5 R25*L3		Bolt-on edges	Bolt-on edges	Bolt-on edges	Bolt-on edges	Bolt-on edges	Teeth & Segments	Bolt-on edges	Bolt-on edges	Bolt-on edges	Bolt-on edges
Volume, heaped, ISO/SAE	m ³ yd ³	4,8 6.3	4,8 6.3	4,8 6.3	4,8 6.3	4,6 6.0	4,8 6.3	4,2 5.5	7,8 10.2	4,0 5.2	6,8 8.9
Volume at 110% fill factor	m ³ yd ³	5,3 6.9	5,3 6.9	5,3 6.9	5,3 6.9	5,1 6.6	5,3 6.9	– –	8,6 11.2	4,4 5.8	7,5 9.8
Static tipping load, straight	kg lb	20 900 46,081	20 490 45,189	20 490 45,184	19 750 43,546	20 680 45,608	20 470 45,140	21 600 47,638	19 530 43,067	17 460 38,494	16 470 36,320
at 35° turn	kg lb	18 550 40,904	18 180 40,093	18 180 40,091	17 480 38,548	18 360 40,489	18 160 40,047	19 190 42,316	17 260 38,059	15 470 34,111	14 500 31,974
at full turn	kg lb	18 280 40,314	17 920 39,513	17 920 39,511	17 220 37,979	18 100 39,907	17 900 39,466	18 920 41,710	17 000 37,489	15 240 33,612	14 280 31,479
Breakout force	kN lbf	211,9 47,655	197,0 44,290	191,4 43,044	180,9 40,679	199,5 44,863	191,5 43,055	179,6 40,372	146,7 32,977	147,0 44,303	143,3 32,228
A	mm ft in	8 570 28'1"	8 680 28'6"	8 730 28'8"	8 820 28'11"	8 660 28'5"	8 910 29'3"	8 790 28'10"	9 210 30'2"	9 050 29'8"	9 600 31'6"
E	mm ft in	1 250 4'1"	1 360 4'6"	1 400 4'7"	1 480 4'10"	1 340 4'5"	1 560 5'2"	1 450 4'9"	1 840 6'1"	1 310 4'3"	1 780 5'10"
H**)	mm ft in	3 190 10'6"	3 110 10'2"	3 080 10'1"	3 040 10'0"	3 130 10'3"	2 960 9'9"	3 060 10'0"	2 710 8'11"	3 670 12'1"	3 260 10'8"
L	mm ft in	6 240 20'6"	6 130 20'1"	6 190 20'4"	6 240 20'6"	6 190 20'4"	6 190 20'4"	6 330 20'9"	6 310 20'9"	6 520 21'5"	6 730 22'1"
M**)	mm ft in	1 170 3'10"	1 250 4'1"	1 280 4'2"	1 380 4'6"	1 240 4'1"	1 420 4'8"	1 330 4'4"	1 580 5'2"	1 200 3'11"	1 560 5'1"
N**)	mm ft in	1 870 6'2"	1 920 6'4"	1 940 6'4"	1 980 6'6"	1 910 6'3"	2 020 6'7"	1 980 6'6"	2 030 6'8"	2 290 7'6"	2 470 8'1"
V	mm ft in	3 400 11'2"	3 400 11'2"	3 200 10'6"	3 200 10'6"	3 200 10'6"	3 230 10'7"	3 230 10'7"	3 400 11'2"	3 200 10'6"	3 200 10'6"
a ₁ clearance circle	mm ft in	14 900 48'11"	14 950 49'1"	14 780 48'8"	14 820 48'8"	14 750 48'5"	14 900 48'11"	14 850 48'9"	15 210 49'11"	15 020 49'3"	15 290 50'2"
Operating weight	kg lb	26 600 58,660	26 600 58,660	26 590 58,630	26 900 59,320	26 540 58,520	26 610 58,670	27 800 61,300	26 950 59,420	26 390 58,180	26 860 59,220

*) with L5 tires

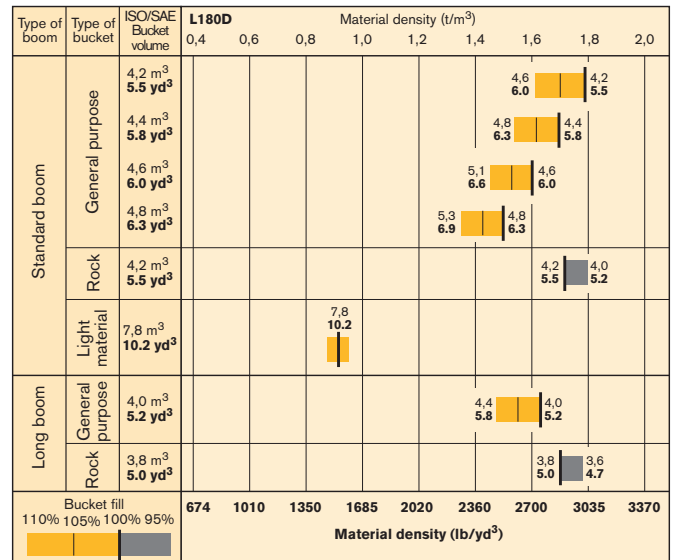
** Measured to the tip of the bucket teeth or bolt-on edge. Dump height to bucket edge (acc. SAE) + approx. 170 mm/6.7" compared to teeth. Measured at 45° dump angle.

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 rollback in all positions. • Good bucket fill performance. **Example: Sand and gravel. Fill factor ~105%. Density 1,70 ton/m³. Result: The 4,2 m³/5.5 yd³ bucket carries 4,4 m³/5.8 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
Earth/Clay	~110	~1,60 ~2,700	4,2 5,5	~4,6 6,0
		~1,55 ~2,615	4,4 5,8	~4,8 6,3
		~1,45 ~2,450	4,6 6,0	~5,1 6,6
Sand/Gravel	~105	~1,70 ~2,870	4,2 5,5	~4,4 5,8
		~1,65 ~2,780	4,4 5,8	~4,6 6,0
		~1,50 ~2,530	4,6 6,0	~4,8 6,3
Aggregate	~100	~1,80 ~3,035	4,2 5,5	~4,2 5,5
		~1,70 ~2,870	4,4 5,8	~4,4 5,8
		~1,60 ~2,700	4,6 6,0	~4,6 6,0
Rock	≤100	~1,70 ~2,870	4,2 5,5	~4,2 5,6

The size of rock buckets is optimized for optimal penetration and filling capability, rather than for 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 in	+30 1.2"	+175 6.9"	+170 6.7"	+30 1.2"
Ground clearance	mm in	+60 2.4"	+15 0.6"	+60 2.4"	+60 2.4"	+15 0.6"
Tipping load, full turn	kg lb	+660 1,455	+180 397	+430 947	+640 1,411	+160 353
Operating weight	kg lb	+1 050	+240	+610	+1 050	+240

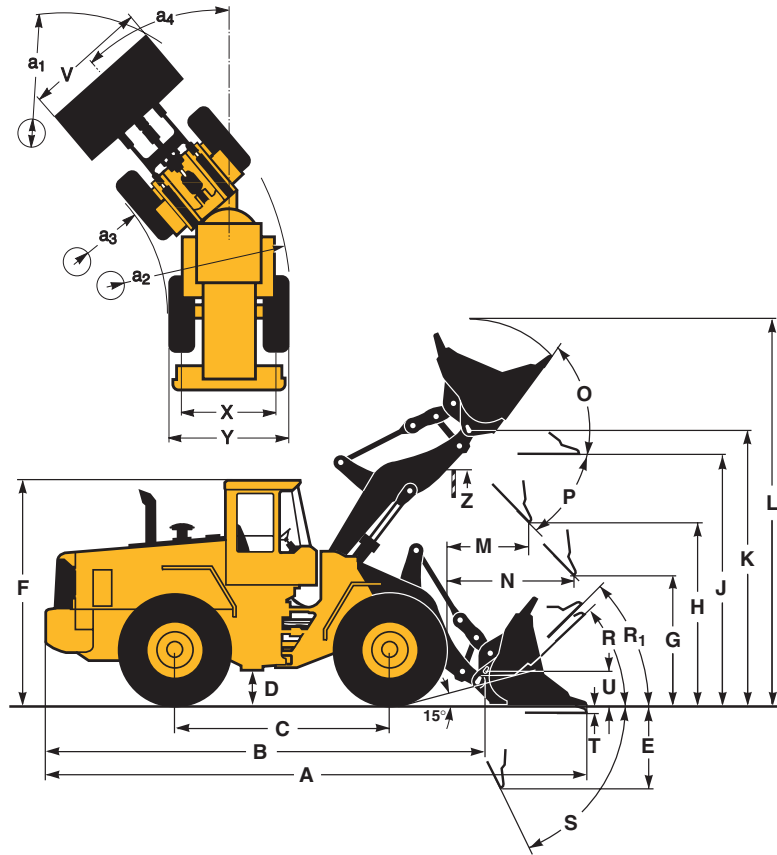
OPERATIONAL DATA & DIMENSIONS

Tires: 26.5 R25* L3

Standard Boom		Long Boom	
B	7 050 mm 23'2"	7 500 mm	24'7"
C	3 550 mm 11'8"	3 550 mm	11'8"
D	480 mm 1'7"	480 mm	1'7"
F	3 560 mm 11'8"	3 560 mm	11'8"
G	2 134 mm 7'0"	2 134 mm	7'0"
J	4 090 mm 13'5"	4 600 mm	15'1"
K	4 490 mm 14'9"	4 980 mm	16'4"
O	57 °	55 °	
P**	45 °	45 °	
R	44 °	48 °	
R ₁ *	48 °	53 °	
S	70 °	63 °	
T	110 mm 4.3"	170 mm	6.7"
U	560 mm 1'10"	660 mm	2'2"
X	2 280 mm 7'6"	2 280 mm	7'6"
Y	2 950 mm 9'8"	2 950 mm	9'8"
Z	3 610 mm 12'6"	4 180 mm	13'9"
a ₂	6 780 mm 22'3"	6 780 mm	22'3"
a ₃	3 830 mm 12'7"	3 830 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, and ISO 8313.

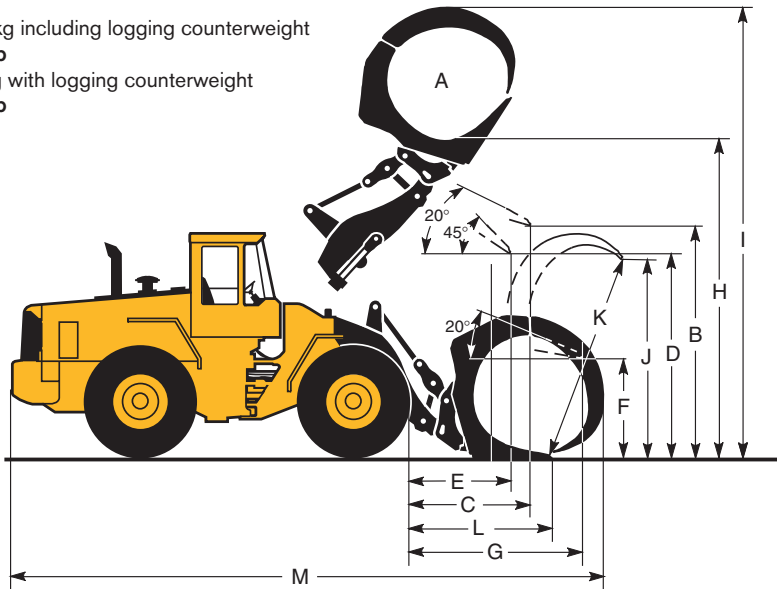


LOG GRAPPLE (hook on)

Tires: 26.5 R25* L3

A	3,5 m ²	37.7 ft ²
B	3 790 mm	12'5"
C	2 080 mm	6'10"
D	3 100 mm	10'2"
E	1 620 mm	5'4"
F	1 600 mm	5'3"
G	3 000 mm	9'10"
H	5 130 mm	16'10"
I	7 820 mm	25'8"
J	3 400 mm	11'2"
K	3 650 mm	12'0"
L	2 410 mm	7'11"
M	9 720 mm	31'11"

Operating weight: 27 860 kg including logging counterweight
61,420 lb
Operating load: 8 800 kg with logging counterweight
19,400 lb





STEERING SYSTEM

Low effort steering provides a fast work cycle. The power-efficient system results in good fuel economy, good directional stability and a 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	3.9 in
Piston rod diameter	50 mm	2.0 in
Stroke	425 mm	16.5 in
Relief pressure	21 MPa	3046 psi
Max. flow	116 l/min	30.6 USgpm
Articulation	± 37°	



CAB

Care Cab II has easy entry and a wide door opening. Inside of cab lined with noise-absorbent materials. Sound 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 has filtered fresh air and fan with four speeds. Defroster vents for all window areas.

Operator's seat: Operator's seat has adjustable suspension and a 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)	
with sound reduction kit, EU 2006		
requirements	LwA 107 dB(A)	
Ventilation	9 m ³ /min	318 ft³/min
Heating capacity	11 kW	37,500 Btu/h
Air conditioning (optional)	8 kW	27,300 Btu/h



HYDRAULIC SYSTEM

Open center hydraulics with highly efficient vane pumps allow precision control and quick movements even at low rpm, 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 controls roll-out and lift up to 20 MPa (2900 psi).

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	3,363 psi
Flow	313 l/min	82.9 USgpm
at	10 MPa	1,450 psi
and engine speed	35 r/s	2,100 rpm
Relief pressure, pump 2	20 MPa	2,900 psi
Flow	91,5 l/min	24.2 USgpm
at	10 MPa	1,450 psi
and engine speed	35 r/s	2,100 rpm
Pilot system		
Relief pressure	3,0-4,5 MPa	435-653 psi
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	7.5 in
Piston rod diameter	90 mm	3.5 in
Stroke	788 mm	31.0 in
Tilt cylinder	1	
Bore	260 mm	10.2 in
Piston rod diameter	120 mm	4.7 in
Stroke	480 mm	18.9 in

STANDARD EQUIPMENT

Engine

High Performance Low Emission
Air cleaner, dry type, dual element,
exhaust aspirated precleaner
Coolant level, sight gauge
Coolant filter water drop
Engine intake manifold preheater
Muffler, spark arresting
Dual fuel filter
Watertrap
Fanguard

Electrical System

24 V – prewired for optional
accessories
Alternator, 24 V / 60 A
Battery disconnect switch
Gauges:
• Fuel gauge
• Engine coolant temperature
gauge
• Transmission oil temperature
gauge
• Hourmeter
Horn, electric
Reverse alarm
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
Shutdown 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
outboard mounted
• 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/trans-
mission (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,
outboard-mounted 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)
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 rear view interior
Mirrors rear view (2), exterior
Openable window, right-hand side
Speedometer
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
Tiltable and telescoping steering
wheel
Sliding window door

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

External Equipment

Isolation mounts: cab, engine,
transmission, radiator
Lifting lugs
Drawbar hitch
Side panels, engine hood
Steering frame lock
Vandalism lock, provision for:
batteries, engine oil
Fuel strainer

OPTIONAL EQUIPMENT *(Standard in certain markets)*

Service and maintenance equipment

Tool box
Auto lube system

Engine

Coolant filter
Coolant preheater (110 V/1500 W)
Pre-cleaner, turbo type
Radiator, corrosion protected

Electrical System

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

Drivetrain

Limited slip diff. rear axle

Cab

Installation kit for radio and
power outlet 12V
Hand throttle
Sliding window right side
Air conditioner
Noise reduction kit, cab
Adjustable steering wheel
Ventilation filter for asbestos
environment
Speedometer

Hydraulic System

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

External Equipment

Logging counterweight: 1 020 kg /
2,248 lb
Fenders, rubber extension
Fenders, axle mounted

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 windows
Windshield guard
Guards for rear lights
Bellyguard front and rear
Protection plate under cab
Protection plate, valve front frame

Tires

26.5 R25*
30/65R29
800/65 R29

Attachments

Buckets
• Straight edge
• Spade nose
• General purpose
• Light material
• High-dump
Bucket teeth, bolt-on/weld-on
Cutting edge, 3 pc reversible,
bolt-on
Rock bucket
Rock 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

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