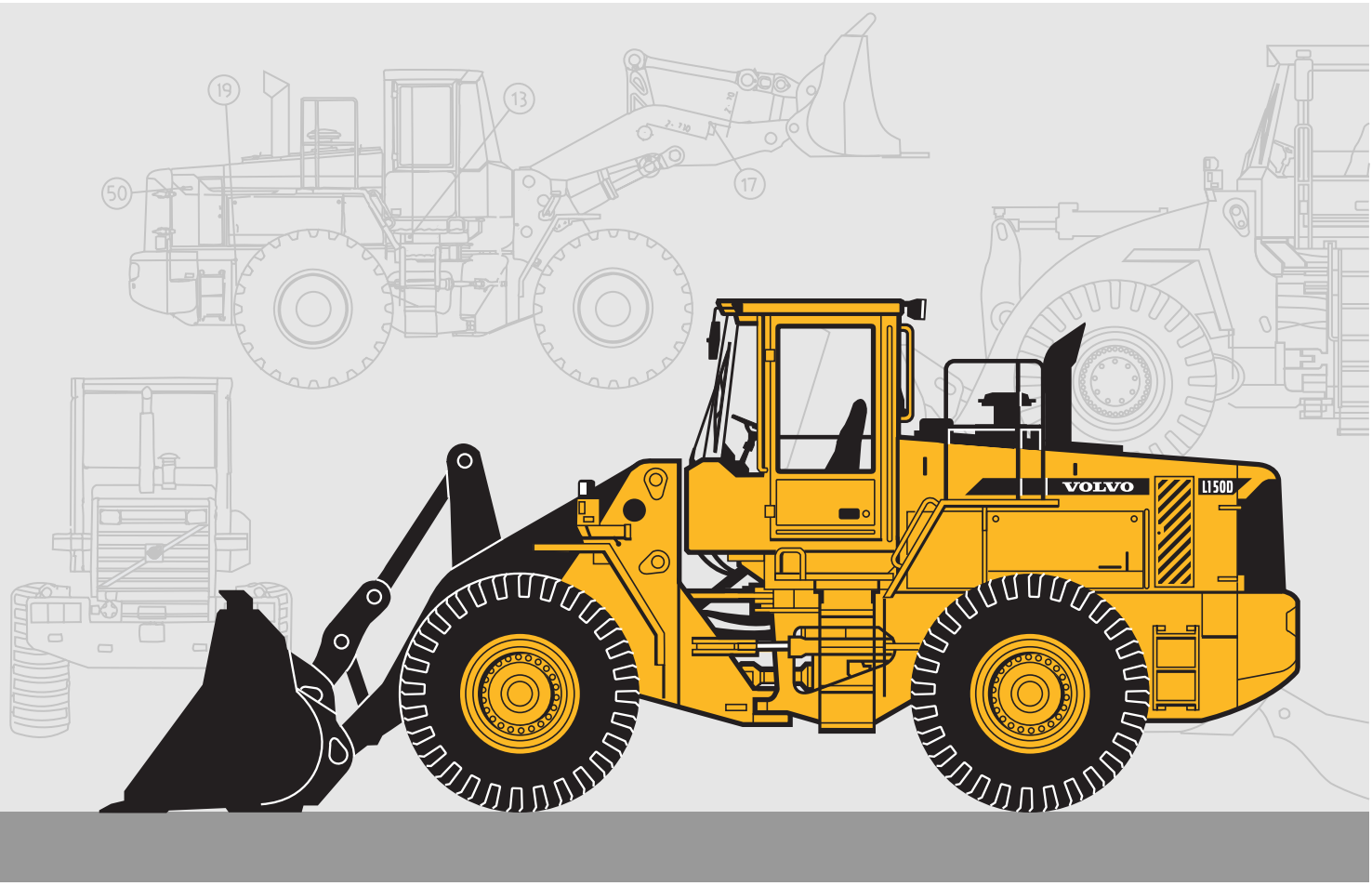
VOLVO WHEEL LOADER

L150D



- **Engine output**
  SAE J1995: gross 189 kW (257 hp)
  ISO J9249, SAE J1349: net 186 kW (253 hp)
- **Operating weight:** 23,2-25,5 t
- **Buckets volume:** 3,5–12,0 m^3
- **Volvo high performance low emission engine**
  – with excellent low rpm performance
  – meets all known exhaust emission regulations for off road machines until year 2002
  – hydrostatically driven, cooling fan
- **Volvo transmission with APS II**
  – the 2nd generation of Automatic Power Shift with mode selector
  – optimizes performance
- **Wet disc brakes**
  – fully sealed oil-circulation cooled wet disc brakes
- **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 schedule 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

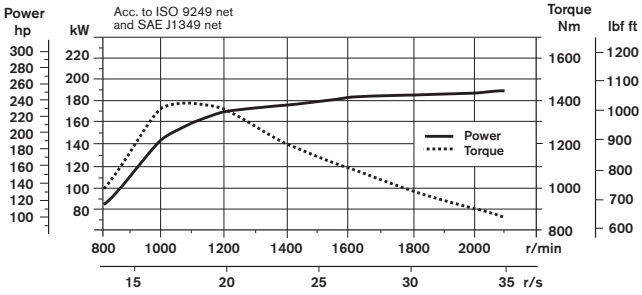
Fuel tank	318 l	Transmission	35 l
Engine coolant	70 l	Engine oil	27 l
Hydraulic tank	165 l	Axle front/rear	55/54 l

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 103 KCE
Max power at	35,0 r/s (2100 r/min)
SAE J1995 gross	189 kW (257 hp)
ISO 9249, SAE J1349 net	186 kW (253 hp)
Max. torque at	18,3 r/s (1100 r/min)
SAE J1995 gross	1390 Nm
ISO 9249, SAE J1349 net	1390 Nm
Displacement	9,6 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	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 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 210
Torque multiplication	2,40:1
Speeds, max forward/reverse	
1	6,3 km/h
2	11,8 km/h
3	23,3 km/h
4	33,9 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
	1x0,5 l

OPERATIONAL DATA VOLVO L150D

Tires 26.5 R25*L3		STANDARD BOOM									LONG BOOM
		GENERAL PURPOSE						ROCK*		LIGHT MTRL	
		Teeth & Segments	Teeth	Teeth & Segments	Teeth & Segments	Bolt-on edges	Bolt-on edges	Teeth & Segments	Teeth & Segments	Bolt-on edges	
Volume, heaped, ISO/SAE	m^3	3,7	3,8	4,0	4,2	3,7	4,0	3,8	3,5	6,8	–
Volume at 110% fill factor	m^3	4,1	4,2	4,4	4,6	4,1	4,4	4,2	3,9	7,5	–
Static tipping load, straight	kg	17390	17810	17300	17250	16810	16730	17800	18080	16440	-3430
at 35° turn	kg	15460	15870	15370	15330	14920	14840	15800	16050	14540	-3130
at full turn	kg	15240	15650	15150	15110	14710	14620	15580	15820	14320	-3100
Breakout force	kN	180,4	184,4	174,5	164,9	169,5	164,2	177,8	163,0	127,1	-20,3
A	mm	8540	8570	8590	8700	8460	8510	8590	8710	8970	+520
E	mm	1330	1350	1380	1460	1260	1300	1360	1460	1700	+10
H**)	mm	2960	2940	2920	2850	3020	2980	2940	2860	2620	+570
L	mm	5820	5890	5880	5960	5830	5930	5950	5990	6090	+570
M**)	mm	1310	1340	1340	1390	1240	1280	1310	1410	1550	-10
N**)	mm	1870	1890	1890	1900	1810	1830	1860	1930	1930	+440
V	mm	3200	3230	3200	3000	3200	3200	3230	3230	3200	–
a_1 clearance circle	mm	14690	14740	14710	14570	14650	14670	14740	14800	14890	+340
Operating weight	kg	23350	23180	23440	23430	23600	23680	24780	24830	23830	+170

*) with L5 tires

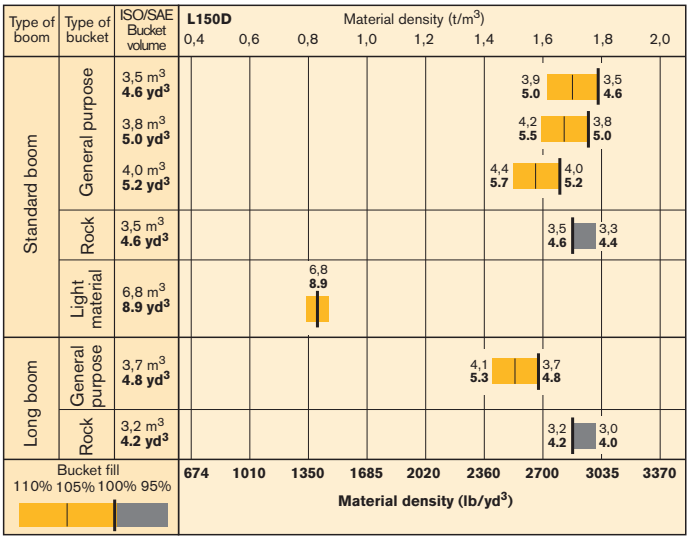
**) Measured to the tip of the bucket teeth or bolt-on edge. Dump height to bucket edge (acc. SAE) + approx. 170 mm compared to teeth. Measured at 45° dump angle.

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/m^3. Result: The 3,5 m^3 bucket carries 3,7 m^3. 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	~1,65	3,5	~3,9
		~1,60	3,8	~4,2
		~1,50	4,0	~4,4
Sand/Gravel	~105	~1,70	3,5	~3,7
		~1,65	3,8	~4,0
		~1,60	4,0	~4,2
Aggregate	~100	~1,80	3,5	~3,5
		~1,75	3,8	~3,8
		~1,65	4,0	~4,0
Rock	≤100	~1,70	3,5	~3,5

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	705/70 R25 L3	26.5 R25* L5	705/70 R25 L3
Width over tires	mm	+30	+30	+30	+30
Ground clearance	mm	+60	-80	+60	-80
Tipping load, full turn	kg	+830	-180	+690	-150
Operating weight	kg	+1050	-230	+1050	-230

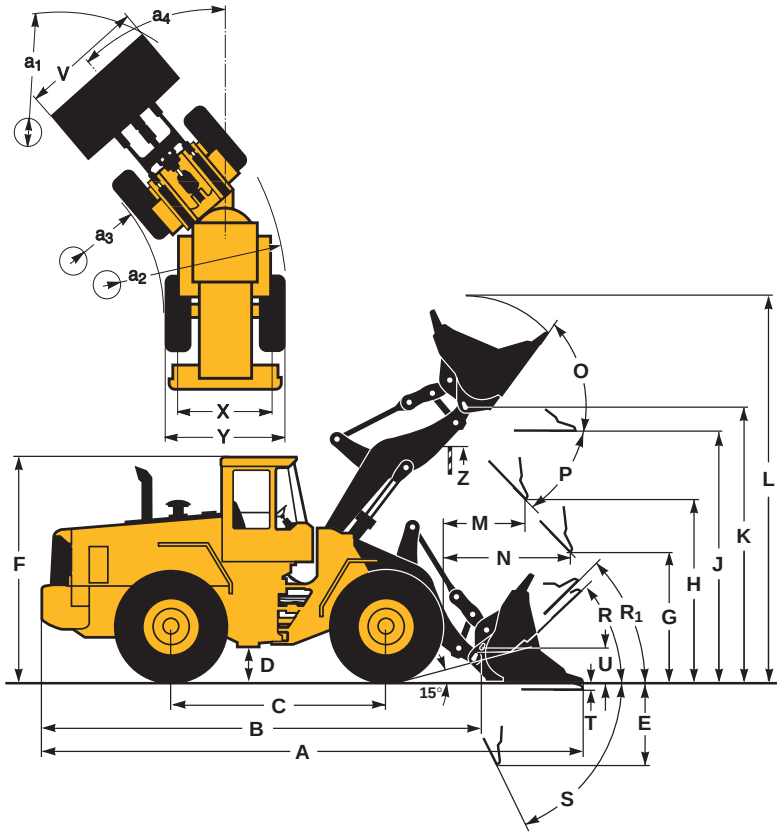
OPERATIONAL DATA & DIMENSIONS

Tires: 26.5 R25* L3

Standard Boom			Long Boom	
B	6680	mm	7380	mm
C	3550	mm	3550	mm
D	500	mm	500	mm
F	3560	mm	3560	mm
G	2134	mm	2134	mm
J	3940	mm	4530	mm
K	4340	mm	4910	mm
O	58,4	°	59,0	°
P**	49,1	°	49,1	°
R	44,6	°	47,2	°
R_1*	47,8	°	52,7	°
S	65,7	°	61,0	°
T	80	mm	110	mm
U	520	mm	640	mm
X	2280	mm	2280	mm
Y	2950	mm	2950	mm
Z	3570	mm	4050	mm
a_2	6780	mm	6780	mm
a_3	3830	mm	3830	mm
a_4	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.

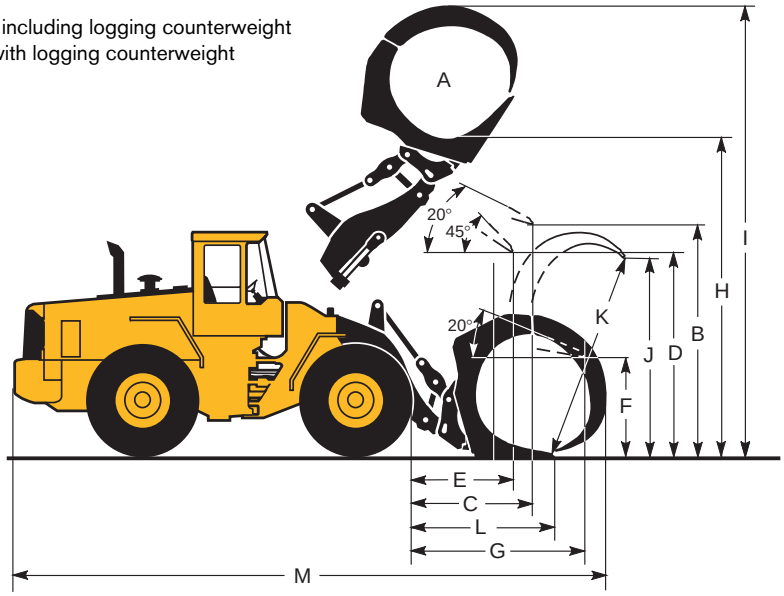


LOG GRAPPLE (hook on)

Tires: 26.5 R25* L3

A	3,1	m^2
B	3650	mm
C	2100	mm
D	2950	mm
E	1630	mm
F	1600	mm
G	2930	mm
H	4990	mm
I	7250	mm
J	3000	mm
K	3280	mm
L	2300	mm
M	8950	mm

Operating weight: 24450 kg including logging counterweight
Operating load: 7700 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	90 mm
Piston rod diameter	50 mm
Stroke	418 mm
Relief pressure	21 MPa
Max. flow	91 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 73 dB (A)
External sound level according to ISO 6395, SAE J2104	LwA 110 dB (A)
External sound level with sound reduction kit according to EU 2006 requirements	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 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, that can be switched on and off.

Cylinders: Double-acting

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

Vane pump	
Relief pressure	21,0 MPa
Flow	313 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	
Raise*	6,7 s
Dump*	1,9 s
Lower, empty	3,2 s
Total cycle time	11,8 s

** 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
Piston rod diameter	80 mm
Stroke	788 mm
Tilt cylinder	1
Bore	250 mm
Piston rod diameter	120 mm
Stroke	452 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 lightning

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/h with four speed blower fan
Filtered air
Floor mat
Interior light
Interior rearview mirror
Mirrors rearview (2), exterior
Openable window, right-hand side
Safety glass, tinted
Windshield washer, front & rear
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 detents
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, provison 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 incl. power outlet 12V
Hand throttle
Sliding ventilation window
Seat belt retractable
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
Artic 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, EU 2006 requirements

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 plates under cab

Tires
26.5 R25*
705/70 R25

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
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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