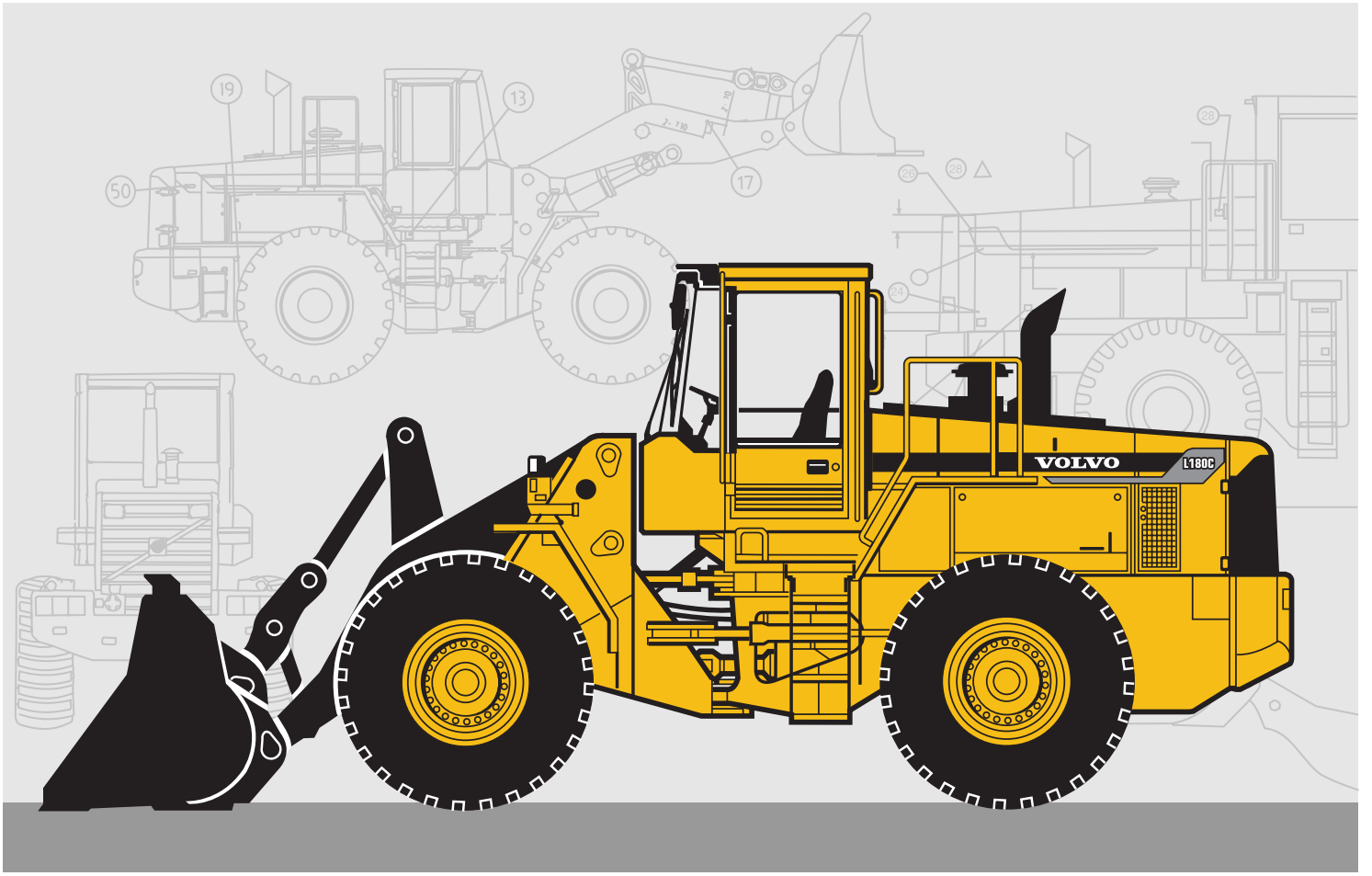
VOLVO WHEEL LOADER

L180C



- **Engine output SAE J1349:**
  gross 209 kW (284 hp)
  net 203 kW (276 hp)
- **Operating weight:** 24,9-28,2 t
- **Buckets:** 4,2 – 14,0 m³
- **Volvo high performance low emission engine**
  – with excellent low rpm performance
  – meets all known exhaust emission regulations for off rood machines until 2001
  – 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** – pressurized cab with high comfort and safety
- **Contronic** monitoring system
- **Load-sensing** steering system
- **Pilot-operated** working hydraulics

Optional Equipment

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

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 and swing-out radiator.

Refill capacities

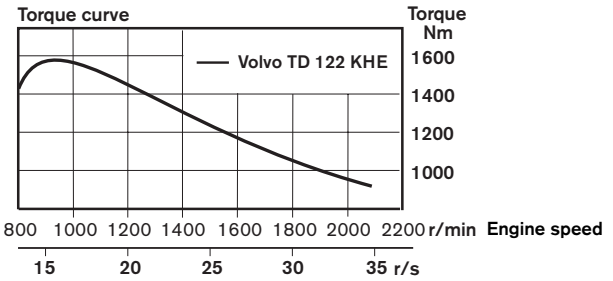
Fuel tank	318 l
Engine coolant	80 l
Hydraulic tank	165 l
Transmission	38 l
Engine oil	34 l
Axle front/rear	55/54 l

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	
Flywheel output at	35 r/s	(2100 r/min)
SAE J1349 gross	209 kW	(284 hp)
SAE J1349 net	203 kW	(276 hp)
Max. torque at	15,0 r/s	(900 r/min)
SAE J1349 gross	1580 Nm	
SAE J1349 net	1580 Nm	
Displacement	12,0 l	



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. Prepared for retrofitting 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 serviceing.

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 (forward only)	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

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.

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.
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

OPERATIONAL DATA VOLVO L180C

		STANDARD BOOM								LONG BOOM	
		GENERAL PURPOSE						ROCK*	LIGHT MTRL.	ROCK*	GENR. PURP.
Tires 26.5 R25* L3		Teeth	Teeth & Segm.	Teeth	Bolt-on edges	Bolt-on edges	Bolt-on edges	Teeth & Segm.	Bolt-on edges	Teeth & Segm.	Bolt-on edges
Volume, heaped, ISO/SAE	m^3	4,2	4,4	4,4	4,6	4,8	4,8	4,2	7,8	3,8	4,0
Volume at 110% fill factor	m^3	4,6	4,8	4,8	5,1	5,3	5,3	–	8,6	–	4,4
Static tipping load, straight	kg	20350	19860	20330	20040	19820	19100	20720	19420	16480	16960
at 35° turn	kg	17970	17480	17930	17560	17430	16750	18290	17080	14410	14930
at full turn	kg	17690	17200	17650	17370	17150	16470	18010	16810	14170	14690
Breakout force	kN	211,5	201,2	211,5	201,1	192,9	182,3	181,6	145,7	178,7	198,3
A	mm	8690	8720	8690	8480	8550	8640	8850	9030	9260	8880
E	mm	1270	1360	1270	1360	1420	1500	1470	1860	1450	1320
H**)	mm	2990	2960	2990	3120	3070	3010	2890	2700	3420	3660
L	mm	6130	6130	6170	6170	6180	6230	6230	6300	6640	6510
M**)	mm	1480	1460	1480	1280	1330	1390	1560	1620	1560	1250
N**)	mm	2080	2040	2080	1930	1960	2000	2110	2060	2520	2310
V	mm	3230	3230	3230	3200	3200	3200	3230	3400	3230	3200
a_1 clearance circle	mm	15150	15150	15150	14940	14980	15030	15230	15430	15590	15270
Operating weight	kg	25860	26080	25910	25970	26020	26330	27390	26020	26600	25960
		Including counterweight 1									

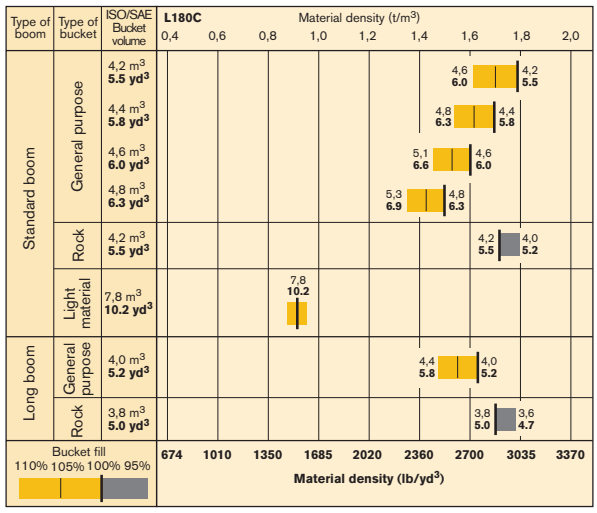
*) with L5 tires
**) at dump angle 45°

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 very open bucket design, has very good roll back in all positions plus 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 4,2 m³ bucket carries 4,4 m³. For optimum stability always consult the bucket selection chart.**

Material	Bucket fill, %	Material density, ton/m³	ISO/SAE bucket volume, m³	Actual volume, m³
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	Cw 1	Cw 2	26.5 R25* L5	30/65 R29* L3	Cw 2
Width over tires	mm	+30	+175	–	–	+30	+175	–
Ground clearance	mm	+30	+5	–	–	+30	+5	–
Tipping load, full turn	kg	+900	+510	–900	+1375	+750	+430	+1180
Operating weight	kg	+980	+600	–470	+720	+980	+600	+720

Combinations of counterweight 1 and 2, may be used within pallet and material arms handling for stabilizing purposes on firm and level ground. Counterweight 2 replaces hydroinflation of rear tires.

Counterweight 2 or hyhydroinflation must never be combined with tire protection chains.
Combinations of L4 and L5 tires and chaines are strickly forbidden.

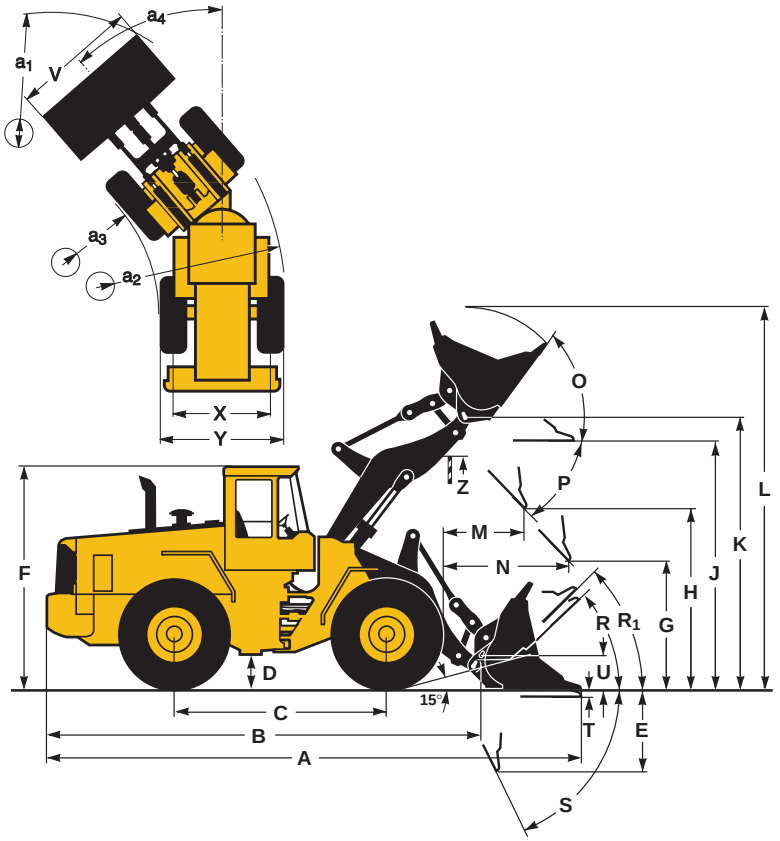
OPERATIONAL DATA & DIMENSIONS

Tires: 26.5 R25* L3

	Standard Boom		Long Boom	
B	6860	mm	7390	mm
C	3550	mm	3550	mm
D	480	mm	480	mm
F	3560	mm	3560	mm
G	2135	mm	2135	mm
J	4090	mm	4600	mm
K	4480	mm	4970	mm
O	57	°	55	°
P**	45	°	45	°
R	44	°	48	°
R_1*	48	°	53	°
S	71	°	63	°
T	100	mm	170	mm
U	520	mm	630	mm
X	2280	mm	2280	mm
Y	2950	mm	2950	mm
Z	4030	mm	4180	mm
a_2	6780	mm	6780	mm
a_3	3830	mm	3830	mm
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.

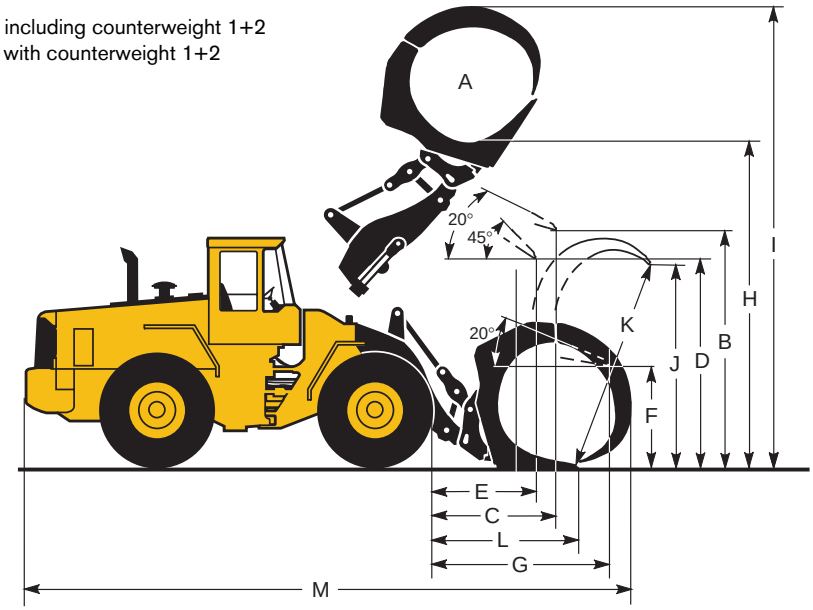


LOG GRAPPLE (hook on)

Tires: 26.5 R25* L3

A	3,5	m^2
B	3780	mm
C	2130	mm
D	3090	mm
E	1670	mm
F	1620	mm
G	3020	mm
H	5120	mm
I	7800	mm
J	3400	mm
K	3650	mm
L	2410	mm
M	9880	mm

Operating weight: 27160 kg including counterweight 1+2
Operating load: 8800 kg with counterweight 1+2



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 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 (option).

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 seatbelt. 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/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	LpA 77 dB (A)
Exterior sound level ISO 6395, J2104	LwA 110 dB (A)
Ventilation	10 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 1works 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 break-out 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
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 Monitoring System, ECU
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

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
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
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 detents
Boom kickout, automatic, adjustable
Hydraulic control lever safety latch
Hydraulic oil cooler
Boom lowering

External Equipment
Isolation mounts: cab, engine, gearbox
Lifting lugs
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
Loud torn horn electrically
Head lights assym. left
Side marking lamp

Drivetrain
Forward and reverse switch
Speed limiter, 3-speed version

Cab
Installation kit for radio
Hand throttle
Sliding ventilation window
Speedometer
Air conditioner
Dual service brake pedals
Contronic display
Instructor seat
Noise reduction kit, cab
Windshield washer, front & rear
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 preinstalled
Return line 3rd hydraulic control
Attachment bracket with separate locking system
Arctic kit

External Equipment
Counterweight 1: 350 kg
Counterweight 2: 590 kg
Fenders, extended
Fenders, axle mounted
Drawbar with pin

Other Equipment
Comfort Drive Control (CDC)
Secondary steering
Fuel fill strainer
External brake oil cooling system
Long Boom

Protective Equipment
Guards for headlight
Guards 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

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

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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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