

VOLVO L150F, L180F, L220F IN DETAIL

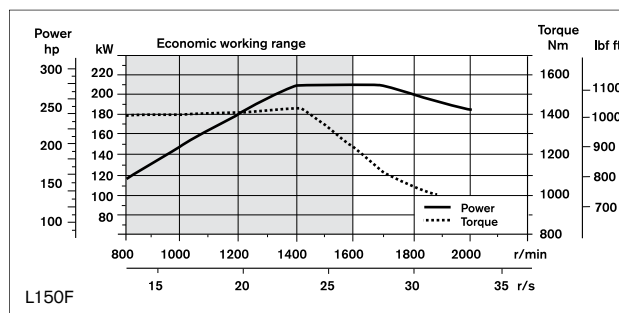


Engine

Engine: V-ACT Stage III A/Tier 3, 12 liter, 6-cylinder in-line turbo-charged, air-to-air intercooler diesel engine with double rockers and Internal Exhaust Gas Recirculation (I-EGR). One-piece cylinder head with four valves per cylinder and one overhead camshaft. The engine has wet replaceable cylinder liners and replaceable valve guides and valve seats. Mechanically actuated electronically controlled unit injectors. The throttle application is transmitted electrically from the throttle pedal. **Air cleaning:** Three stage cyclone pre-cleaner - primary filter - secondary filter. **Cooling system:** Hydrostatic, electronically controlled fan and intercooler of the air-to-air type.

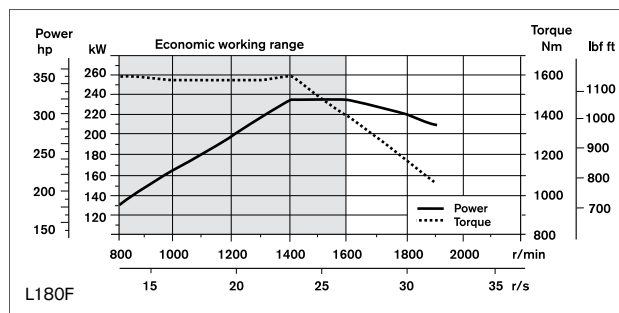
L150F

Engine	Volvo D12D LD E3
Max power at	23,3–28,3 r/s (1400–1700 r/min)
SAE J1995 gross	210 kW (286 metric hp)
ISO 9249, SAE J1349 net	209 kW (284 metric hp)
Max torque at	23,3 r/s (1400 r/min)
SAE J1995 gross	1432 Nm
ISO 9249, SAE J1349 net	1423 Nm
Economic working range	800–1600 r/min
Displacement	12,13 l



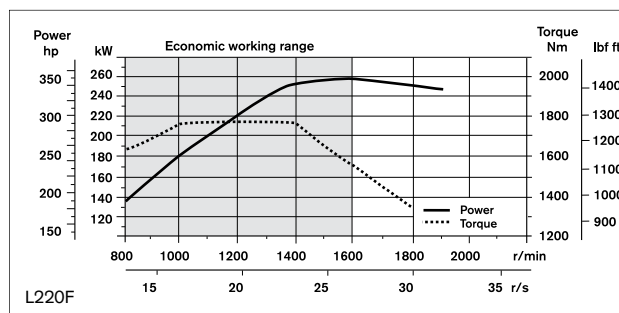
L180F

Engine	Volvo D12D LA E3
Max power at	23,3–26,7 r/s (1400–1600 r/min)
SAE J1995 gross	235 kW (320 metric hp)
ISO 9249, SAE J1349 net	234 kW (318 metric hp)
Max torque at	23,3 r/s (1400 r/min)
SAE J1995 gross	1603 Nm
ISO 9249, SAE J1349 net	1594 Nm
Economic working range	800–1600 r/min
Displacement	12,13 l



L220F

Engine	Volvo D12D LB E3
Max power at	26,7 r/s (1600 r/min)
SAE J1995 gross	261 kW (355 metric hp)
ISO 9249, SAE J1349 net	259 kW (352 metric hp)
Max torque at	23,3 r/s (1400 r/min)
SAE J1995 gross	1765 Nm
ISO 9249, SAE J1349 net	1756 Nm
Economic working range	800–1600 r/min
Displacement	12,13 l





Drivetrain

Torque converter: Single-stage. **Transmission:** Volvo countershaft transmission with single lever control. Fast and smooth shifting of gears with Pulse Width Modulation (PWM) valve. **Gearshifting system:** Volvo Automatic Power Shift (APS) with fully automatic shifting 1-4 and mode selector with 4 different gearshifting programs, including AUTO mode. **Axles:** Volvo fully floating axle shafts with planetary hub reductions and cast steel axle housing. Fixed front axle and oscillating rear axle. 100% differential lock on the front axle. **Optional:** OptiShift converter with Lock up function on 2, 3 and 4 gear.

L150F

Transmission	Volvo HTE 210
Torque multiplication	2,4:1
Maximum speed, forward/reverse	
1st gear	6,5 km/h
2nd gear	12,5 km/h
3rd gear	25,1 km/h
4th gear	36,1 km/h
Measured with tires	26.5 R25 L3
Front axle/rear axle	Volvo/AWB 40B/40C
Rear axle oscillation	±15°
Ground clearance at 15° osc.	610 mm

L180F

Transmission	Volvo HTE 220
Torque multiplication	2,1:1
Maximum speed, forward/reverse	
1st gear	6,5 km/h
2nd gear	12,5 km/h
3rd gear	25,1 km/h
4th gear (limited by ECU)	36,1 km/h
Measured with tires	26.5 R25 L3
Front axle/rear axle	Volvo/AWB 40B/40B
Rear axle oscillation	±15°
Ground clearance at 15° osc.	610 mm

L220F

Transmission	Volvo HTE 305
Torque multiplication	2,05:1
Maximum speed, forward/reverse	
1st gear	7,0 km/h
2nd gear	12,5 km/h
3rd gear	25,0 km/h
4th gear (limited by ECU)	36,0 km/h
Measured with tires	29.5 R25 L3
Front axle/rear axle	Volvo/AWB 50/41
Rear axle oscillation	±15°
Ground clearance at 15° osc.	600 mm

* local restrictions may apply

Electrical system

Central warning system: Contronic electrical system with central warning light and buzzer for following functions: - Serious engine fault - Low steering system pressure - Overspeed warning engine - Interruption in communication (computer failure) Central warning light and buzzer with the gear engaged for the following functions. - Low engine oil pressure - High engine oil temperature - High charge-air temperature - Low coolant level - High coolant temperature - High crankcase pressure - Low transmission oil pressure - High transmission oil temperature - Low brake pressure - Engaged parking brake - Brake charging failure - Low hydraulic oil level - High hydraulic oil temperature - Overspeeding in engaged gear - High brake cooling oil temperature front and rear axles.

L150F, L180F, L220F

Voltage	24 V
Batteries	2x12 V
Battery capacity	2x140 Ah
Cold cranking capacity, approx	1050 A
Reserve capacity, approx	285 min
Alternator rating	2280 W/80 A
Starter motor output	7,0 kW (9,5 hp)

Brake system

Service brake: Volvo dual-circuit system with nitrogen-charged accumulators. Outboard-mounted hydraulically operated, fully sealed oil circulation-cooled wet disc brakes. The operator can select automatic disengagement of the transmission when braking using Contronic. **Parking brake:** Fully sealed, wet multi-disc brake built into the transmission. Applied by spring force and electro-hydraulically released with a switch on the instrument panel. **Secondary brake:** Dual brake circuits with rechargeable accumulators. Either one circuit or the parking brake fulfills all safety requirements. **Standard:** The brake system complies with the requirements of ISO 3450.

L150F, L180F

Number of brake discs per wheel front/rear	1/1
Accumulators	2x1,0 l and 1x0,5 l
Accumulators for parking brake	1x0,5 l

L220F

Number of brake discs per wheel front/rear	2/1
Accumulators	2x1,0 l, 1x0,5 l
Accumulators for parking brake	1x0,5 l

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Cab

Instrumentation: All important information is centrally located in the operator's field of vision. Display for Contronic monitoring system. **Heater and defroster:** Heater coil with filtered fresh air and fan with auto and 11 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 and floor. The forces from the retractable seatbelt are absorbed by the seat rails. **Standard:** The cab is tested and approved according to ROPS (ISO 3471, SAE J1040), FOPS (ISO 3449). The cab meets with requirements according to ISO 6055 (Operator overhead protection - Industrial trucks) and SAE J386 ("Operator Restraint System").

L150F

Emergency exit:	Use emergency hammer to break window
Sound level in cab according to ISO 6396	LpA 69 dB (A)
External sound level according to ISO 6395	LwA 107 dB (A)
Ventilation	9 m³/min
Heating capacity	15 kW
Air conditioning (optional)	8 kW

L180F

Emergency exit:	Use emergency hammer to break window
Sound level in cab according to ISO 6396	LpA 70 dB (A)
External sound level according to ISO 6395	LwA 108 dB (A)
Ventilation	9 m³/min
Heating capacity	15 kW
Air conditioning (optional)	8 kW

L220F

Emergency exit:	Use emergency hammer to break window
Sound level in cab according to ISO 6396	LpA 72 dB (A)
External sound level according to ISO 6395	LwA 108 dB (A)
Ventilation	9 m³/min
Heating capacity	15 kW
Air conditioning (optional)	8 kW

Lift arm system

Torque Parallel linkage (TP-linkage) with high breakout torque and parallel action throughout the entire lifting range.

L150F

Lift cylinders	2
Cylinder bore	160 mm
Piston rod diameter	90 mm
Stroke	784 mm
Tilt cylinder	1
Cylinder bore	230 mm
Piston rod diameter	110 mm
Stroke	452 mm

L180F

Lift cylinders	2
Cylinder bore	180 mm
Piston rod diameter	90 mm
Stroke	788 mm
Tilt cylinder	1
Cylinder bore	250 mm
Piston rod diameter	120 mm
Stroke	480 mm

L220F

Lift cylinders	2
Cylinder bore	190 mm
Piston rod diameter	90 mm
Stroke	768 mm
Tilt cylinder	1
Cylinder bore	260 mm
Piston rod diameter	120 mm
Stroke	455 mm



Hydraulic system

System supply: Three load-sensing axial piston pumps with variable displacement. The steering function always has priority. **Valves:** Double-acting 2-spool valve. The main valve is controlled by a 2-spool pilot valve. **Lift function:** The valve has four positions; lift, hold, lower, and float position. Inductive/magnetic automatic boom kick-out can be switched on and off and is adjustable to any position between maximum reach and full lifting height. **Tilt function:** The valve has three functions: rollback, hold and dump. Inductive/magnetic automatic tilt can be adjusted to the desired bucket angle. **Cylinders:** Double-acting cylinders for all functions. **Filter:** Full-flow filtration through 20 micron (absolute) filter cartridge.

L150F

Working pressure maximum, pump 1	24,0 MPa
Flow at engine speed	171 l/min 10 MPa 32 r/s (1900 r/min)
Working pressure maximum, pump 2	26,0 MPa
Flow at engine speed	180 l/min 10 MPa 32 r/s (1900 r/min)
Working pressure maximum, pump 3	21,0 MPa
Flow at engine speed	83 l/min 10 MPa 32 r/s (1900 r/min)
Pilot system, working pressure	3,5 MPa
Cycle times	
Lift*	5,9 s
Tilt*	2,0 s
Lower, empty	3,7 s
Total cycle time	11,6 s

L180F

Working pressure maximum, pump 1	24,0 MPa
Flow at engine speed	247 l/min 10 MPa 32 r/s (1900 r/min)
Working pressure maximum, pump 2	26,0 MPa
Flow at engine speed	180 l/min 10 MPa 32 r/s (1900 r/min)
Working pressure maximum, pump 3	21,0 MPa
Flow at engine speed	83 l/min 10 MPa 32 r/s (1900 r/min)
Pilot system, working pressure	3,5 MPa
Cycle times	
Lift*	6,4 s
Tilt*	1,8 s
Lower, empty	3,3 s
Total cycle time	11,5 s

L220F

Working pressure maximum, pump 1	24,0 MPa
Flow at engine speed	199 l/min 10 MPa 32 r/s (1900 r/min)
Working pressure maximum, pump 2	26,0 MPa
Flow at engine speed	234 l/min 10 MPa 32 r/s (1900 r/min)
Working pressure maximum, pump 3	21,0 MPa
Flow at engine speed	83 l/min 10 MPa 32 r/s (1900 r/min)
Pilot system, working pressure	3,5 MPa
Cycle times	
Lift*	5,8 s
Tilt*	1,6 s
Lower, empty	3,2 s
Total cycle time	10,6 s

* with load as per ISO 14397 and SAE J818

Steering system

Steering system: Load-sensing hydrostatic articulated steering. **System supply:** The steering system has priority feed from a load-sensing axial piston pump with variable displacement. **Steering cylinders:** Two double-acting cylinders.

L150F

Steering cylinders	2
Cylinder bore	90 mm
Rod diameter	50 mm
Stroke	423 mm
Working pressure	21 MPa
Maximum flow	190 l/min
Maximum articulation	±37°

L180F

Steering cylinders	2
Cylinder bore	100 mm
Rod diameter	50 mm
Stroke	418 mm
Working pressure	21 MPa
Maximum flow	190 l/min
Maximum articulation	±37°

L220F

Steering cylinders	2
Cylinder bore	100 mm
Rod diameter	60 mm
Stroke	502 mm
Working pressure	21 MPa
Maximum flow	234 l/min
Maximum articulation	±37°

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Service

Service accessibility: Large, easy-to-open service doors with gas struts. Swing-out radiator grill. Fluid filters and component breather filters promote long service intervals. Possibility to log and analyze data to facilitate troubleshooting.

L150F refill capacities

Fuel tank	335 l
Engine coolant	45 l
Hydraulic oil tank	156 l
Transmission oil	45 l
Engine oil	42 l
Axle oil front/rear	45/55 l

L180F refill capacities

Fuel tank	335 l
Engine coolant	45 l
Hydraulic oil tank	156 l
Transmission oil	45 l
Engine oil	42 l
Axle oil front/rear	45/55 l

L220F refill capacities

Fuel tank	335 l
Engine coolant	45 l
Hydraulic oil tank	226 l
Transmission oil	45 l
Engine oil	42 l
Axle oil front/rear	77/71 l



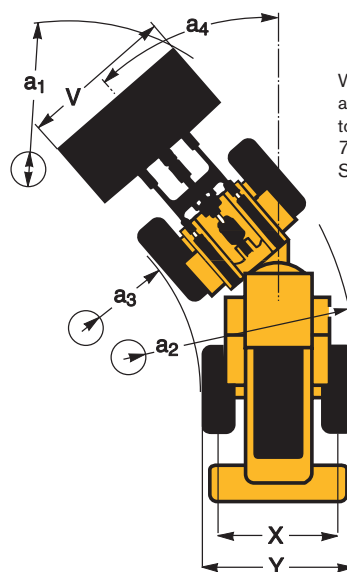


SPECIFICATIONS

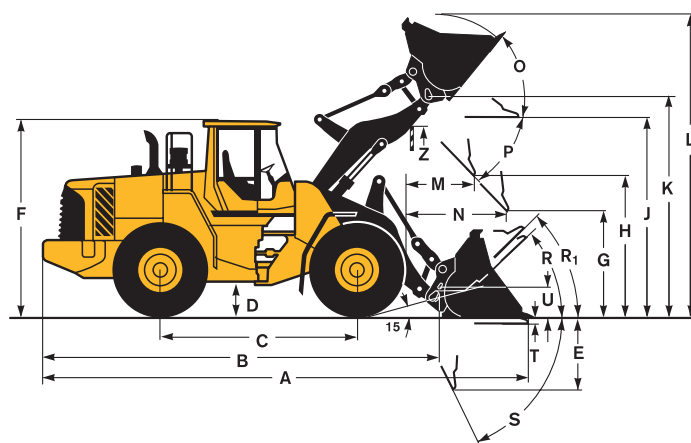
Tires L150F, L180F: 26.5 R25 L3. Tires L220F: 29.5 R25 L4

	Standard boom			Long boom		
	L150F	L180F	L220F	L150F	L180F	L220F
B	7070 mm	7170 mm	7470 mm	7570 mm	7600 mm	7790 mm
C	3550 mm	3550 mm	3700 mm	–	–	–
D	480 mm	480 mm	540 mm	–	–	–
F	3580 mm	3580 mm	3730 mm	–	–	–
G	2130 mm	2130 mm	2130 mm	–	–	–
J	3950 mm	4070 mm	4260 mm	4500 mm	4560 mm	4620 mm
K	4340 mm	4470 mm	4670 mm	4970 mm	4970 mm	5030 mm
O	58 °	57 °	56 °	–	–	–
P _{max}	50 °	49 °	49 °	–	–	–
R	44 °	44 °	43 °	47 °	48 °	44 °
R ₁ *	48 °	48 °	47 °	53 °	53 °	49 °
S	66 °	71 °	65 °	61 °	63 °	63 °
T	82 mm	123 mm	90 mm	136 mm	206 mm	100 mm
U	530 mm	570 mm	590 mm	640 mm	670 mm	670 mm
X	2280 mm	2280 mm	2400 mm	–	–	–
Y	2950 mm	2950 mm	3170 mm	–	–	–
Z	3510 mm	3810 mm	4060 mm	3970 mm	4170 mm	4390 mm
a ₂	6780 mm	6780 mm	7110 mm	–	–	–
a ₃	3830 mm	3830 mm	3940 mm	–	–	–
a ₄	±37 °	±37 °	±37 °	–	–	–

* Carry position SAE



Where applicable, specifications and dimensions are according to ISO 7131, SAE J732, ISO 7546, SAE J742, ISO 14397, SAE J818.



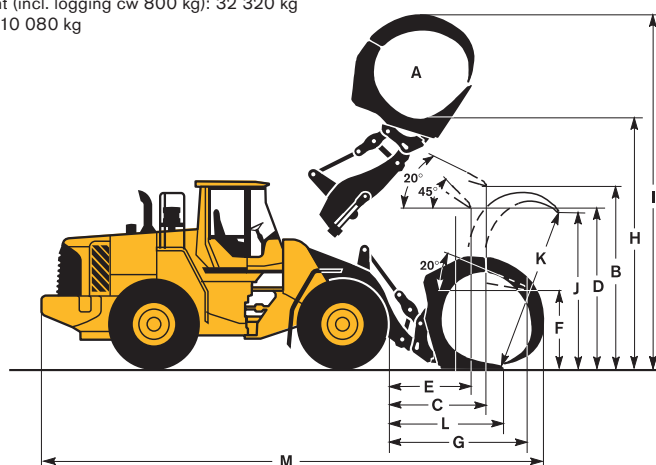
Tires L150F, L180F: 775/65 R29 L3
Tires L220F: 875/65 R29 L4

	L150F	L180F	L220F
A	3,1 m ²	3,5 m ²	4,0 m ²
B	3660 mm	3860 mm	3900 mm
C	2120 mm	1880 mm	2280 mm
D	2960 mm	3260 mm	3140 mm
E	1660 mm	1470 mm	1780 mm
F	1630 mm	1700 mm	1620 mm
G	2940 mm	2770 mm	3230 mm
H	5020 mm	5200 mm	5360 mm
I	7250 mm	7650 mm	7910 mm
J	3080 mm	3370 mm	3620 mm
K	3340 mm	3860 mm	3940 mm
L	2300 mm	2140 mm	2650 mm
M	9960 mm	10 240 mm	10 680 mm










L150F Sales code: WLA80927
Operating weight (incl. logging cw 1140 kg): 25 230 kg
Operating load: 7700 kg

L180F Sales code: WLA80693
Operating weight (incl. logging cw 1140 kg): 28 450 kg
Operating load: 8710 kg

L220F Sales code: WLA80851
Operating weight (incl. logging cw 800 kg): 32 320 kg
Operating load: 10 080 kg



L150F

		GENERAL PURPOSE					REHAND-LING*	ROCK**		LIGHT MATERIAL	LONG BOOM
Tires 26.5 R25 L3											
		Bolt-on edges	Bolt-on edges	Teeth	Teeth	Bolt-on edges	Bolt-on edges	Teeth	Teeth	Bolt-on edges	
Volume, heaped ISO/SAE	m³	3,7	4,0	4,0	4,2	4,4	4,8	3,5	3,8	6,8	-
Volume at 110% fill factor	m³	4,1	4,4	4,4	4,4	4,8	5,3	3,9	4,2	7,5	-
Static tipping load, straight	kg	16 780	17 380	17 380	17 240	17 010	16 970	18 090	17 760	16 470	-3360
at 35° turn	kg	14 930	15 500	15 490	15 360	15 120	15 070	16 100	15 810	14 620	-3070
at full turn	kg	14 720	15 280	15 280	15 150	14 910	14 850	15 870	15 580	14 410	-3040
Breakout force	kN	179,1	184,7	184,8	174,8	176,2	167,7	172,6	188,6	134,4	+9
A	mm	8620	8590	8790	8880	8670	8740	8890	8780	9140	+520
E	mm	1260	1230	1400	1480	1290	1350	1480	1380	1710	+19
H***)	mm	3010	3030	2900	2830	2970	2930	2840	2910	2620	+570
L	mm	5830	5880	5880	5960	5990	5890	5980	5940	6090	+570
M***)	mm	1250	1210	1360	1420	1260	1310	1410	1310	1560	-15
N***)	mm	1820	1800	1880	1910	1830	1850	1910	1840	1940	+440
V	mm	3200	3200	3230	3000	3200	3200	3230	3230	3200	-
a, clearance circle	mm	14 650	14 640	14 750	14 580	14 670	14 700	14 800	14 740	14 890	-
Operating weight	kg	23 560	23 320	23 330	23 370	23 660	23 720	24 810	24 790	23 820	+300






*) With L4 tires **) With L5 tires

***) Measured to the tip of the bucket teeth or bolt-on edge. Dump height to bucket edge. Measured at 45° dump angle. (Spade nose buckets at 42°)

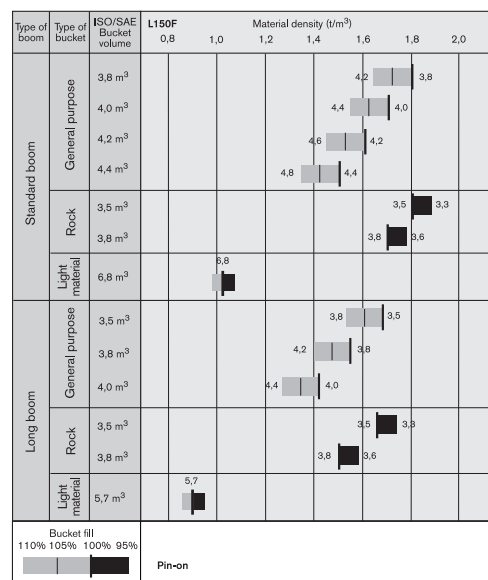
Note: This only applies to genuine Volvo attachments.

Bucket Selection Chart

The chosen 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 features of the TP linkage, including an open bucket design, good rollback angles in all positions and good bucket filling performance. The example represents a standard boom configuration.
Example: Sand and gravel. Fill factor ~ 105%. Density 1,6 t/m³. Result: The 4,0 m³ bucket carries 4,2 m³. For optimum stability always consult the bucket selection chart.

Material	Bucket fill, %		Material density, t/m³	ISO/SAE bucket volume, m³	Actual volume, m³
Earth/Clay	~ 110		~ 1,6	3,8	~ 4,2
			~ 1,6	4,0	~ 4,4
			~ 1,5	4,2	~ 4,6
Sand/Gravel	~ 105		~ 1,7	3,8	~ 4,0
			~ 1,6	4,0	~ 4,2
			~ 1,6	4,2	~ 4,4
Aggregate	~ 100		~ 1,8	3,8	~ 3,8
			~ 1,7	4,0	~ 4,0
			~ 1,6	4,2	~ 4,2
Rock	≤100		~ 1,7	3,5	~ 3,5

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












How to read bucket fill factor

Supplemental Operating Data

		Standard boom		Loong boom	
Tires 26.5 R25 L3		26.5 R25 L5	775/65 R29 L3	26.5 R25 L5	775/65 R29 L3
Width over tires	mm	+30	+180	+30	+180
Ground clearance	mm	+30	+10	+30	+10
Tipping load, full turn	kg	+760	+590	+640	+500
Operating weight	kg	+1060	+760	+1050	+750

L180F

		GENERAL PURPOSE					REHAND-LING*	ROCK**		LIGHT MATERIAL	LONG BOOM
											
Tires 26.5 R25 L3											
Volume, heaped ISO/SAE	m³	4,4	4,4	4,6	4,6	4,8	5,2	4,4	4,2	7,8	-
Volume at 110% fill factor	m³	4,8	4,8	5,1	5,1	5,3	5,7	4,8	4,6	8,6	-
Static tipping load, straight	kg	20 130	20 790	20 900	20 810	20 700	20 680	21 280	21 510	19 750	-3660
at 35° turn	kg	17 820	18 430	18 530	18 440	18 340	18 290	18 860	19 050	17 440	-3330
at full turn	kg	17 550	18 160	18 260	18 170	18 080	18 020	18 590	18 770	17 170	-3290
Breakout force	kN	202,5	215,3	214,7	215,3	206,0	204,2	215,6	194,3	157,9	+4,0
A	mm	8880	9030	8790	9030	8860	8880	9000	9160	9340	+470
E	mm	1440	1570	1360	1570	1420	1440	1530	1680	1860	+37
H***)	mm	3060	2950	3110	2950	3060	3050	2980	2870	2690	+490
L	mm	6170	6120	6170	6170	6170	6000	6210	6310	6300	+490
M***)	mm	1360	1430	1280	1430	1330	1330	1390	1520	1620	+20
N***)	mm	1970	2010	1930	2010	1960	1950	1980	2060	2050	+400
V	mm	3200	3230	3200	3230	3200	3400	3230	3230	3400	-
a ₁ clearance circle	mm	14 800	14 900	14 760	14 900	14 790	14 990	14 890	14 970	15 220	-
Operating weight	kg	26 810	26 560	26 540	26 600	26 600	26 680	27 910	28 000	26 970	+280






*) With L4 tires **) With L5 tires

***) Measured to the tip of the bucket teeth or bolt-on edge. Dump height to bucket edge. Measured at 45° dump angle. (Spade nose buckets at 42°)

Note: This only applies to genuine Volvo attachments.

Bucket Selection Chart

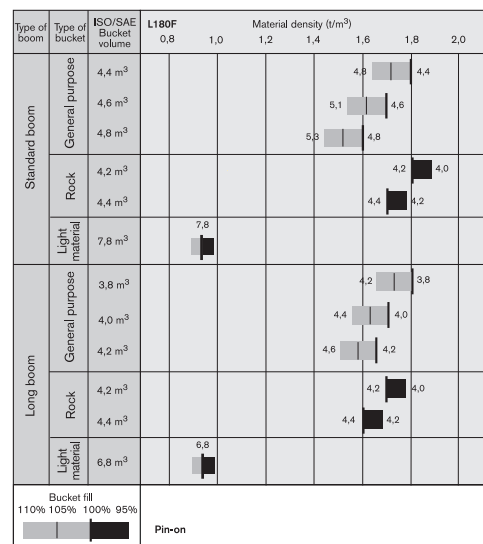
The chosen bucket is determined by the density of the material and the expected bucket fill factor. The actual bucket volume is often larger than the rated capacity, due to the features of the TP linkage, including an open bucket design, good rollback angles in all positions and good bucket filling performance. The example represents a standard boom configuration.
Example: Sand and gravel. Fill factor ~ 105%. Density 1,6 t/m³. Result: The 4,6 m³ bucket carries 4,8 m³. For optimum stability always consult the bucket selection chart.

Material	Bucket fill, %		Material density, t/m³	ISO/SAE bucket volume, m³	Actual volume, m³
Earth/Clay	~ 110		~ 1,6	4,4	~ 4,8
			~ 1,5	4,6	~ 5,1
			~ 1,4	4,8	~ 5,3
Sand/Gravel	~ 105		~ 1,7	4,4	~ 4,6
			~ 1,6	4,6	~ 4,8
			~ 1,5	4,8	~ 5,1
Aggregate	~ 100		~ 1,8	4,4	~ 4,4
			~ 1,7	4,6	~ 4,6
			~ 1,6	4,8	~ 4,8
Rock	≤100		~ 1,7	4,3	~ 4,3










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		Loong boom	
Tires 26.5 R25 L3		26.5 R25 L5	775/65 R29 L3	26.5 R25 L5	775/65 R29 L3
Width over tires	mm	+30	+130	+30	+130
Ground clearance	mm	+40	+10	+40	+10
Tipping load, full turn	kg	+770	+600	+760	+530
Operating weight	kg	+1050	+920	+1050	+1120



How to read bucket fill factor

		GENERAL PURPOSE				REHAND- LING*	ROCK**			LIGHT MATERIAL	LONG BOOM
Tires 29.5 R25 L4											
		Bolt-on edges	Teeth	Bolt-on edges	Teeth	Bolt-on edges	Teeth	Teeth	Teeth	Bolt-on edges	
Volume, heaped ISO/SAE	m³	4,9	5,2	5,4	5,6	5,6	4,5	4,5	5,0	8,2	–
Volume at 110% fill factor	m³	5,4	5,7	5,9	6,2	6,2	5,0	5,0	5,5	9,0	–
Static tipping load, straight	kg	23 770	23 580	23 680	23 450	23 360	23 840	23 390	22 570	22 530	-2860
at 35° turn	kg	21 140	20 960	21 050	20 810	20 730	21 180	20 750	19 990	19 950	-2630
at full turn	kg	20 840	20 660	20 750	20 520	20 430	20 880	20 450	19 700	19 660	-2650
Breakout force	kN	231,0	224,7	224,5	220,2	207,0	240,9	192,7	178,7	172,6	+3,0
A	mm	9050	9330	9090	9360	9240	9220	9590	9740	9550	+310
E	mm	1280	1520	1320	1560	1450	1440	1760	1890	1730	-20
H***)	mm	3310	3130	3280	3100	3190	3190	3000	2900	2940	+360
L	mm	6390	6450	6500	6540	6290	6450	6390	6480	6480	+360
M***)	mm	1260	1450	1290	1470	1380	1370	1710	1810	1580	-30
N***)	mm	2020	2140	2040	2150	2090	2080	2250	2290	2170	+270
V	mm	3400	3400	3400	3400	3400	3430	3430	3430	3700	–
a ₁ clearance circle	mm	15 470	15 610	15 500	15 630	15 560	15 580	15 770	15 850	16 010	–
Operating weight	kg	31 190	31 300	31 330	31 520	31 260	31 830	32 000	32 170	31 760	+380






*) With L4 tires **) With L5 tires

***) Measured to the tip of the bucket teeth or bolt-on edge. Dump height to bucket edge. Measured at 45° dump angle. (Spade nose buckets at 42°)

Note: This only applies to genuine Volvo attachments.

Bucket Selection Chart

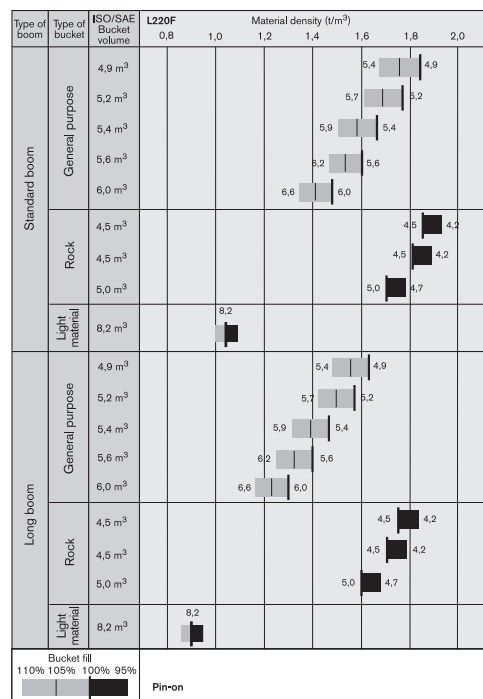
The chosen bucket is determined by the density of the material and the expected bucket fill factor. The actual bucket volume is often larger than the rated capacity, due to the features of the TP linkage, including an open bucket design, good rollback angles in all positions and good bucket filling performance. The example represents a standard boom configuration.
Example: Sand and gravel. Fill factor ~ 105%. Density 1,6 t/m³. Result: The 5,2 m³ bucket carries 5,5 m³. For optimum stability always consult the bucket selection chart.

Material	Bucket fill, %		Material density, t/m³	ISO/SAE bucket volume, m³	Actual volume, m³
Earth/Clay	~ 110		~ 1,6	4,9	~ 5,4
			~ 1,5	5,2	~ 5,7
			~ 1,4	5,4	~ 5,9
Sand/Gravel	~ 105		~ 1,7	4,9	~ 5,1
			~ 1,6	5,2	~ 5,5
			~ 1,5	5,4	~ 5,7
Aggregate	~ 100		~ 1,8	4,9	~ 4,9
			~ 1,7	5,2	~ 5,2
			~ 1,6	5,4	~ 5,4
Rock	≤100		~ 1,7	4,5	~ 4,5

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			Loong boom		
Tires 29.5 R25 L4		29.5 R25 L3	29.5 R25 L5	875/65 R29 L4	29.5 R25 L3	29.5 R25 L5	875/65 R29 L4
Width over tires	mm	-20	+35	+95	-20	+35	+95
Ground clearance	mm	±0	+40	-10	±0	+40	-20
Tipping load, full turn	kg	-100	+1010	+180	-90	+930	+180
Operating weight	kg	-80	+1490	+650	-80	+1500	+650



STANDARD EQUIPMENT

Service and maintenance	L150F	L180F	L220F
Engine oil remote drain and fill	•	•	•
Transmission oil remote drain and fill	•	•	•
Lubrication manifolds, ground accessible	•	•	•
Pressure check connections: transmission and hydraulic, quick-connects	•	•	•
Tool box, lockable	•	•	•

Engine	L150F	L180F	L220F
Three stage air cleaner, pre-cleaner, primary and secondary filter	•	•	•
Indicator glass for coolant level	•	•	•
Preheating of induction air	•	•	•
Fuel pre-filter with water trap	•	•	•
Fuel filter	•	•	•
Crankcase breather oil trap	•	•	•
Exhaust heat insulation	•	•	•

Electrical system	L150F	L180F	L220F
24 V, pre-wired for optional accessories	•	•	•
Alternator 24V/ 80A	•	•	•
Battery disconnect switch with removable key	•	•	•
Fuel gauge	•	•	•
Hour meter	•	•	•
Electric horn	•	•	•
Instrument cluster: • Fuel level • Transmission temperature • Coolant temperature • Instrument lighting	•	•	•
Lighting: • Twin halogen front headlights with high and low beams • Parking lights • Double brake and tail lights • Turn signals with flashing hazard light function • Halogen work lights (2 front and 2 rear)	•	•	•

Contronic monitoring system	L150F	L180F	L220F
Monitoring and logging of machine data	•	•	•
Contronic display	•	•	•
Fuel consumption	•	•	•
Ambient temperature	•	•	•
Clock	•	•	•
Test function for warning and indicator lights	•	•	•
Brake test	•	•	•
Test function, sound level at max fan speed	•	•	•
Warning and indicator lights: • Battery charging • Parking brake	•	•	•
Warning and display message: • Engine coolant temperature • Charge-air temperature • Engine oil temperature • Engine oil pressure • Transmission oil temperature • Transmission oil pressure • Hydraulic oil temperature • Brake pressure • Parking brake applied • Brake charging • Overspeed at direction change • Axle oil temperature • Steering pressure • Crankcase pressure • Attachment lock open	•	•	•
Level warnings: • Fuel level • Engine oil level • Engine coolant level • Transmission oil level • Hydraulic oil level • Washer fluid level	•	•	•
Engine torque reduction in case of malfunction indication: • High engine coolant temperature • High engine oil temperature • Low engine oil pressure • High crankcase pressure • High charge-air temperature	•	•	•
Engine shutdown to idle in case of malfunction indication: • High transmission oil temperature • Slip in transmission clutches	•	•	•

	L150F	L180F	L220F
Keypad, background lit	•	•	•
Start interlock when gear is engaged	•	•	•

Drivetrain	L150F	L180F	L220F
Automatic Power Shift	•	•	•
Fully automatic gearshifting, 1-4	•	•	•
PWM-controlled gearshifting	•	•	•
Forward and reverse switch by hydraulic lever console	•	•	•
Indicator glass for transmission oil level	•	•	•
Differentials: Front, 100% hydraulic diff lock. Rear, conventional.	•	•	•

Brake system	L150F	L180F	L220F
Dual brake circuits	•	•	•
Dual brake pedals	•	•	•
Secondary brake system	•	•	•
Parking brake, electrical-hydraulic	•	•	•
Brake wear indicators	•	•	•

Cab	L150F	L180F	L220F
ROPS (ISO 3471), FOPS (ISO 3449)	•	•	•
Single key kit door/start	•	•	•
Acoustic inner lining	•	•	•
Ashtray	•	•	•
Cigarette lighter, 24 V power outlet	•	•	•
Lockable door	•	•	•
Cab heating with fresh air inlet and defroster	•	•	•
Fresh air inlet with two filters	•	•	•
Automatic heat control	•	•	•
Floor mat	•	•	•
Dual interior lights	•	•	•
Dual interior rear-view mirrors	•	•	•
Dual exterior rear-view mirrors	•	•	•
Sliding window, right side	•	•	•
Tinted safety glass	•	•	•
Retractable seatbelt (SAE J386)	•	•	•
Adjustable steering wheel	•	•	•
Storage compartment	•	•	•
Document pocket	•	•	•
Sun visor	•	•	•
Beverage holder	•	•	•
Windshield washer front and rear	•	•	•
Windshield wipers front and rear	•	•	•
Interval function for front and rear wipers	•	•	•

Hydraulic system	L150F	L180F	L220F
Main valve, double acting 2-spool with hydraulic pilots	•	•	•
Variable displacement axial piston pumps (3) for: 1 Working hydraulic system	•	•	•
2 Working hydraulic system, Pilot hydraulic, Steering- and Brake system	•	•	•
3 Cooling fan and Brake system	•	•	•
Hydraulic control levers	•	•	•
Electric level lock	•	•	•
Boom kick-out, automatic	•	•	•
Bucket positioner, automatic	•	•	•
Double-acting hydraulic cylinders	•	•	•
Indicator glass for hydraulic oil level	•	•	•
Hydraulic oil cooler	•	•	•

External equipment	L150F	L180F	L220F
Fenders, front and rear	•	•	•
Viscous cab mounts	•	•	•
Rubber engine and transmission mounts	•	•	•
Easy-to-open side panels	•	•	•
Frame, joint lock	•	•	•
Vandalism lock prepared for • Batteries • Engine compartment • Radiator grille	•	•	•
Lifting eyes	•	•	•
Tie-down eyes	•	•	•
Tow hitch	•	•	•

OPTIONAL EQUIPMENT (Standard on certain markets)

Service and maintenance	L150F	L180F	L220F
Automatic lubrication system	•	•	•
Automatic lubrication system for long boom	•	•	•
Automatic lubrication system, stainless steel	•	•	•
Automatic lubrication system, stainless steel for Long boom	•	•	•
Automatic lubrication system for attachment bracket, welded	•	•	•
Automatic lubrication system, stainless steel for attachment bracket, welded	•	•	•

	L150F	L180F	L220F
Grease nipple guards	•	•	•
Oil sampling valve	•	•	•
Refill pump for grease to lube system	•	•	•
Tool kit	•	•	•
Wheel nut wrench kit	•	•	•

Engine	L150F	L180F	L220F
Air pre-cleaner, cyclone type	•	•	•
Air pre-cleaner, cyclone type, two-stage	•	•	•
Air pre-cleaner, oil-bath type	•	•	•
Air pre-cleaner, turbo type	•	•	•
Cooling package: Radiator and charge air cooler, corrosion protection	•	•	•
Engine auto shutdown	•	•	•
Engine block heater, 230 V	•	•	•
ESW, Disabled engine protection	•	•	•
ESW, Increased engine protection	•	•	•
Exterior radiator air intake protection	•	•	•
Fan air intake protection, extra close-meshed	•	•	•
Fuel fill strainer	•	•	•
Fuel heater	•	•	•
Hand throttle control	•	•	•
Max. fan speed, hot climate	•	•	•
Radiator, corrosion-protected	•	•	•
Reversible cooling fan	•	•	•
Reversible cooling fan and axle oil cooler	•	•	•

Electrical system	L150F	L180F	L220F
Alternator, 80 A with air filter	•	•	•
Anti-theft device	•	•	•
Headlights, assym. left	•	•	•
License plate holder, lighting	•	•	•
Rear view camera incl. monitor, colour	•	•	•
Rear-view mirrors, adjustable, el.heated	•	•	•
Reduced function working lights, reverse gear activated	•	•	•
Reverse alarm	•	•	•
Shortened headlight support brackets	•	•	•
Side marker lamps	•	•	•
Rotating beacon	•	•	•
Working lights, attachments	•	•	•
Working lights front, high intensity discharge (HID)	•	•	•
Working lights front, on cab, dual	•	•	•
Working lights front, extra	•	•	•
Working lights rear, on cab	•	•	•
Working lights rear, on cab, dual	•	•	•

Cab	L150F	L180F	L220F
Anchorage for Operator's manual	•	•	•
Automatic Climate Control, ACC	•	•	•
ACC control panel, with Fahrenheit scale	•	•	•
Asbestos dust protection filter	•	•	•
Cab air pre-cleaner, cyclone type	•	•	•
Carbon filter	•	•	•
Cover plate, under cab	•	•	•
Lunch box holder	•	•	•
Armrest, operator's seat, ISRI, left only	•	•	•
Armrest, operator's seat, KAB, left only	•	•	•
Operator's seat, KAB, air susp, heavy-duty, not for CDC	•	•	•
Operator's seat, KAB, air susp, heavy-duty, for CDC and "elservo"	•	•	•
Operator's seat, ISRI, air susp, heat, high back	•	•	•
Operator's seat, ISRI, heated, high back	•	•	•
Operator's seat, ISRI, low back	•	•	•
Radio installation kit incl. 11 amp 12 volt outlet, left side	•	•	•
Radio installation kit incl. 11 amp 12 volt outlet, right side	•	•	•
Radio installation kit incl. 20 amp 12 volt outlet	•	•	•
Radio with CD-player	•	•	•
Seatbelt, 3", (width 75 mm)	•	•	•
Steering wheel knob	•	•	•
Sun blinds, rear windows	•	•	•
Sun blinds, side windows	•	•	•
Timer cab heating	•	•	•
Window, sliding, door	•	•	•
Universal door/ignition key	•	•	•

Drivetrain	L150F	L180F	L220F
Diff lock front 100%, Limited Slip rear	•	•	•
Diff.lock, limited slip front and rear in comb. with axle oil cooler	•	•	•
Speed limiter, 20 km/h	•	•	•
Speed limiter, 30 km/h	•	•	•
Speed limiter, 40 km/h	•	•	•
Wheel/axle seal guards	•	•	•
OptiShift	•	•	•

Brake system	L150F	L180F	L220F
Oil cooler and filter front & rear axle	•	•	•
Stainless steel, brake lines	•	•	•

Hydraulic system	L150F	L180F	L220F
Attachment bracket, welded	•	•	•
Boom suspension system	•	•	•
Separate attachment locking, standard boom	•	•	•

Separate attachment locking, long boom	•	•	•
Arctic kit, attachment locking hoses and 3rd hydr. function	•	•	•
Arctic kit, pilot hoses and brake accum. incl. hydr. oil	•	•	•
Boom cylinder hose and tube guards	•	•	•
Boom cylinder hose and tube guards for long boom	•	•	•
Hydraulic fluid, biodegradable, Volvo	•	•	•
Hydraulic fluid, fire-resistant	•	•	•
Hydraulic fluid, for hot climate	•	•	•
Hydraulic function, 3rd	•	•	•
Hydraulic function, 3rd for long boom	•	•	•
Hydraulic function, 3rd-4th	•	•	•
Electro-hydraulic function, 3rd	•	•	•
Electro-hydraulic function, 3rd for long boom	•	•	•
Electro-hydraulic function, 3rd-4th	•	•	•
Electro-hydraulic function, 3rd-4th for long boom	•	•	•
Electro-hydraulic servo controls	•	•	•
Electro-hydraulic servo controls for long boom	•	•	•
Single lever control	•	•	•
Single lever control for 3rd hydraulic function	•	•	•
Hydraulic oil cooler, extra	•	•	•

External equipment	L150F	L180F	L220F
Cab ladder, rubber-suspended	•	•	•
Deleted front mudguards	•	•	•
Flexible rear step	•	•	•
Mudguard widener, front/rear for 80-series tires	•	•	•
Mudguard widener, front/rear for 65-series tires	•	•	•
Mudguards, fixed front and swing out rear, mudguard wideners incl.	•	•	•
Long boom	•	•	•
Long boom for electro-hydraulic	•	•	•

Protective equipment	L150F	L180F	L220F
Belly guard front	•	•	•
Belly guard rear	•	•	•
Belly guard rear, oil pan	•	•	•
Cover plate, heavy-duty, front frame	•	•	•
Guards for front headlights	•	•	•
Guards for radiator grill	•	•	•
Guards for tail lights	•	•	•
Guards for tail lights, heavy-duty	•	•	•
Windows, side and rear guards	•	•	•
Windshield guard	•	•	•
Corrosion protection, painting of machine	•	•	•
Corrosion protection, painting of attachment bracket	•	•	•
Steer cylinder guards	•	•	•
Bucket Teeth protection	•	•	•

Other equipment	L150F	L180F	L220F
CE-marking	•	•	•
Comfort Drive Control (CDC)	•	•	•
Comfort drive control, (CDC), electro-hydraulic	•	•	•
Counterweight, logging	•	•	•
Counter weight, block handling	•	•	•
Counterweight, re-handling	•	•	•
Counterweight, signal painted, chevrons	•	•	•
Log pusher	•	•	•
Secondary steering with automatic test function	•	•	•
Sound decal, EU	•	•	•
Noise reduction kit, exterior	•	•	•
Sign, slow moving vehicle	•	•	•
CareTrack, GSM	•	•	•
CareTrack, GSM/Satellite	•	•	•

Tires	L150F	L180F	L220F
26.5 R25	•	•	•
29.5 R25	•	•	•
775/65 R29	•	•	•
875/65 R29	•	•	•

Attachments	L150F	L180F	L220F
Buckets:	•	•	•
• Rock straight or spade nose	•	•	•
• General purpose	•	•	•
• Re-handling	•	•	•
• Side-dump	•	•	•
• Light material	•	•	•
Wear parts:	•	•	•
• Bolt-on and weld-on bucket teeth	•	•	•
• Segments	•	•	•
• Cutting edge in three sections, bolt-on	•	•	•
Fork equipment	•	•	•
Material handling arm	•	•	•
Log grapples	•	•	•



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