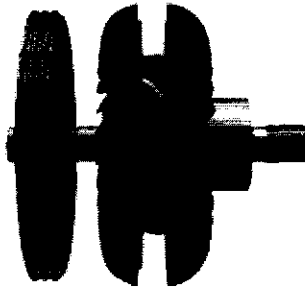
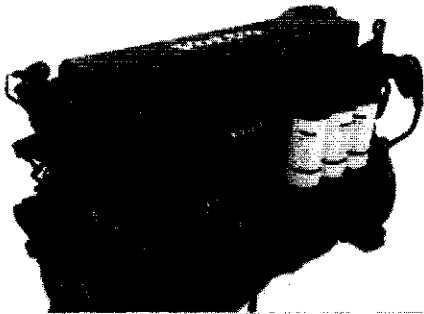


# VOLVO L150G, L180G, L220G IN DETAIL.



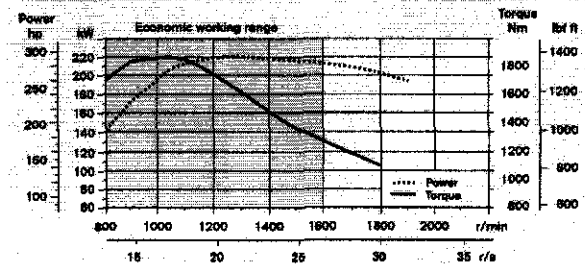
## Engine

13 liter, 6-cylinder straight turbocharged diesel engine with 4 valves per cylinder, overhead camshaft and electronically controlled unit injectors. The engine has wet replaceable cylinder liners and replaceable valve guides and valve seats. The throttle applications is transmitted electrically from the throttle pedal or the optional hand throttle. **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.

### L150G

Engine		D13H-E (Tier 4i)
Max power at	r/s (r/min)	21,7 (1300)
SAE J1995 gross	kW / hp	220 / 295
ISO 9249, SAE J1349 net	kW / hp	220 / 295
Max torque at	r/s (r/min)	17,5 (1050)
SAE J1995 gross	Nm / lbf-ft	1871 / 1380
ISO 9249, SAE J1349	Nm / lbf-ft	1869 / 1379
Economic working range	r/s (r/min)	13,3-26,6 (800-1600)
Displacement	l / in <sup>3</sup>	12,8 / 781

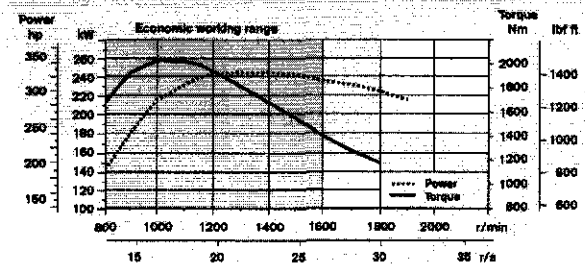
### L150G



### L180G

Engine		D13H-E (Tier 4i)
Max power at	r/s (r/min)	21,7-23,3 (1300-1400)
SAE J1995 gross	kW / hp	246 / 330
ISO 9249, SAE J1349 net	kW / hp	245 / 328
Max torque at	r/s (r/min)	16,7 (1000)
SAE J1995 gross	Nm / lbf-ft	2030 / 1497
ISO 9249, SAE J1349 net	Nm / lbf-ft	2024 / 1493
Economic working range	r/s (r/min)	13,3-26,6 (800-1600)
Displacement	l / in <sup>3</sup>	12,8 / 781

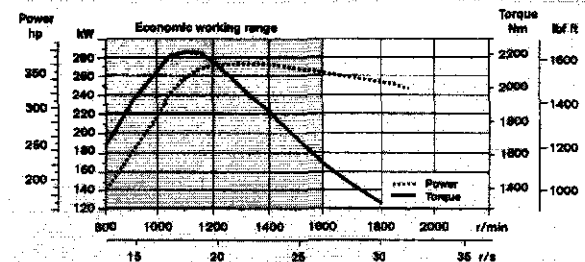
### L180G

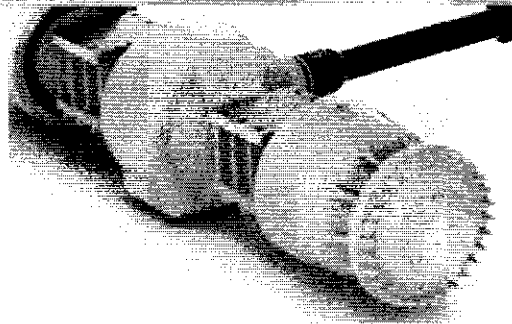
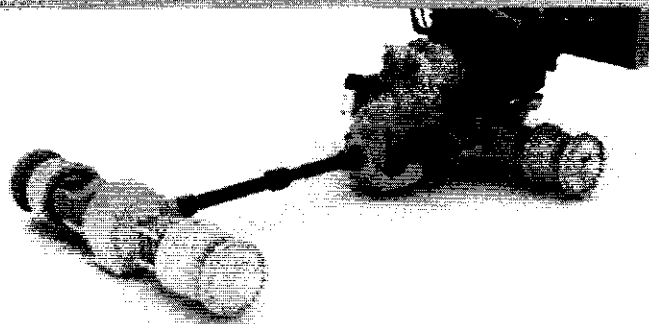


### L220G

Engine		D13H-E (Tier 4i)
Max power at	r/s (r/min)	21,7-23,3 (1300-1400)
SAE J1995 gross	kW / hp	274 / 367
ISO 9249, SAE J1349 net	kW / hp	273 / 366
Max torque at	r/s (r/min)	18,3 (1100)
SAE J1995 gross	Nm / lbf-ft	2231 / 1646
ISO 9249, SAE J1349 net	Nm / lbf-ft	2220 / 1637
Economic working range	r/s (r/min)	13,3-26,6 (800-1600)
Displacement	l / in <sup>3</sup>	12,8 / 781

### L220G





### Drivetrain

**Torque converter:** Lock-up clutch converter and free wheel stator.

**Transmission:** Volvo countershaft transmission with single lever control. Fast and smooth shifting of gears with Pulse Width Modulation (PWM) valve. Torque converter with lockup.

**Transmission:** Volvo Automatic Power Shift (APS) with fully automatic shifting 1-4 and mode selector with 4 different gear shifting programs, including AUTO.

**Axles:** Volvo fully floating axle shafts with planetary hub reductions and nodular iron axle housing. Fixed front axle and oscillating rear axle. 100% differential lock on the front axle. Optional: Limslip rear

#### L180G

<b>Transmission</b>		Volvo HTL 221
<b>Torque multiplication</b>		1,856:1
	1st gear	km/h (mph) 6,5 (4.0)
	2nd gear	km/h (mph) 12,5 (7.8)
<b>Maximum speed, forward/reverse</b>	3rd gear	km/h (mph) 26,0 (16.2)
	4th gear*	km/h (mph) 38,0 (23.6)
<b>Measured with tires</b>		26.5 R25 L3
<b>Front axle/rear axle</b>		Volvo/AWB 40B/40C/40B (limslip)
<b>Rear axle oscillation ±</b>		15
<b>Ground clearance at 15° osc.</b>	mm (in)	610 (24)

#### L180G

<b>Transmission</b>		Volvo HTL 221
<b>Torque multiplication</b>		1,856:1
	1st gear	km/h (mph) 6,5 (4.0)
	2nd gear	km/h (mph) 12,5 (7.8)
<b>Maximum speed, forward/reverse</b>	3rd gear	km/h (mph) 26,0 (16.2)
	4th gear*	km/h (mph) 38,0 (23.6)
<b>Measured with tires</b>		26.5 R25 L3
<b>Front axle/rear axle</b>		Volvo/AWB 40B/40B
<b>Rear axle oscillation ±</b>		15
<b>Ground clearance at 15° osc.</b>	mm (in)	610 (24)

#### L220G

<b>Transmission</b>		Volvo HTL 306
<b>Torque multiplication</b>		2,094:1
	1st gear	km/h (mph) 7,0 (4.3)
	2nd gear	km/h (mph) 12,5 (7.8)
<b>Maximum speed, forward/reverse</b>	3rd gear	km/h (mph) 25 (15.5)
	4th gear*	km/h (mph) 38,0 (23.6)
<b>Measured with tires</b>		29.5 R25 L4
<b>Front axle/rear axle</b>		Volvo/AWB 50/41
<b>Rear axle oscillation ±</b>		15
<b>Ground clearance at 15° osc.</b>	mm (in)	600 (23.6)

\*) limited by ECU

### Electrical system

**Central warning system:** Contronic electrical system with central warning light and buzzer. Best in class on-board diagnostics with fault codes.

#### L150G, L180G, L220G

<b>Voltage</b>	V	24
<b>Batteries</b>	V	2 x 12
<b>Battery capacity</b>	Ah	2 x 170
<b>Cold cranking capacity, approx.</b>	A	1000
<b>Batteries</b>		connected to positiv terminal
<b>Alternator rating</b>	W/A	2280/80
<b>Starter motor output</b>	kW (hp)	7,0 (9.4)

### Brake system

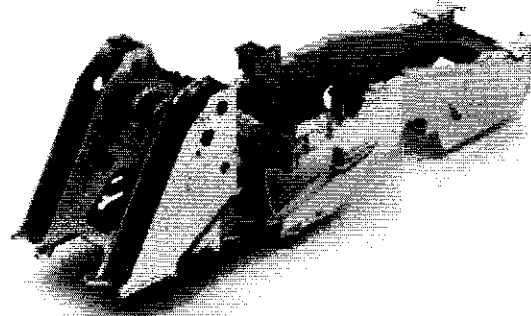
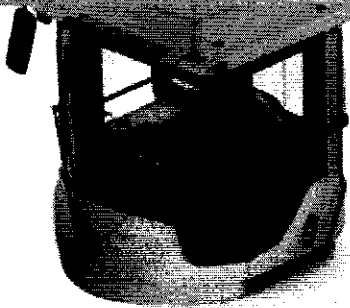
**Service brake:** Volvo dual-circuit system with nitrogen charged accumulators. Outboard mounted hydraulically operated, fully sealed oil circulation-cooled wet disc brakes. The operator can select automatic disengagement of the transmission when braking using Contronic.

**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. One circuit or the parking brake fulfills all safety requirements.

**Standard:** The brake system complies with the requirements of ISO 3450.

# VOLVO L150G, L180G, L220G IN DETAIL.



## 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), FOPS (ISO 3449). The cab meets with requirements according to ISO 6055 (Operator overhead protection - Industrial trucks) and SAE J386 ("Operator Restraint System").

## L150G

**Emergency exit: Use emergency hammer to break window**

**Sound level in cab according to ISO 6396/SAE J2105**

LpA dB(A) 69

**External sound level according to ISO 6395/SAE J2104**

LwA dB(A) 108

Ventilation m<sup>3</sup> (ft<sup>3</sup>/min) 9 (318)

Heating capacity kW (hp) 16 (214)

Air conditioning (optional) kW (hp) 7.5 (10.1)

## L180G

**Emergency exit: Use emergency hammer to break window**

**Sound level in cab according to ISO 6396/SAE J2105**

LpA dB(A) 70

**External sound level according to ISO 6395/SAE J2104**

LwA dB(A) 108

Ventilation m<sup>3</sup> (ft<sup>3</sup>/min) 9 (318)

Heating capacity kW (hp) 16 (214)

Air conditioning (optional) kW (hp) 7.5 (10.1)

## L220G

**Emergency exit: Use emergency hammer to break window**

**Sound level in cab according to ISO 6396/SAE J2105**

LpA dB(A) 70

**External sound level according to ISO 6395/SAE J2104**

LwA dB(A) 109

Ventilation m<sup>3</sup> (ft<sup>3</sup>/min) 9 (318)

Heating capacity kW (hp) 16 (214)

Air conditioning (optional) kW (hp) 7.5 (10.1)

## Lift arm system

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

## L150G

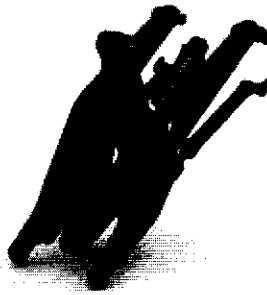
Lift cylinders		2
Cylinder bore	mm (in)	160 (6.3)
Piston rod diameter	mm (in)	90 (3.5)
Stroke	mm (in)	784 (30.9)
Tilt cylinder		1
Cylinder bore	mm (in)	220 (8.7)
Piston rod diameter	mm (in)	110 (4.3)
Stroke	mm (in)	452 (17.8)

## L180G

Lift cylinders		2
Cylinder bore	mm (in)	180 (7.1)
Piston rod diameter	mm (in)	90 (3.5)
Stroke	mm (in)	788 (31.0)
Tilt cylinder		1
Cylinder bore	mm (in)	240 (9.4)
Piston rod diameter	mm (in)	120 (4.7)
Stroke	mm (in)	480 (18.9)

## L220G

Lift cylinders		2
Cylinder bore	mm (in)	190 (7.5)
Piston rod diameter	mm (in)	90 (3.5)
Stroke	mm (in)	788 (30.2)
Tilt cylinder		1
Cylinder bore	mm (in)	250 (9.8)
Piston rod diameter	mm (in)	120 (4.7)
Stroke	mm (in)	455 (17.9)



### Hydraulic system

**System supply:** Two 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 pilot pressure and electric servo (L150G) i.e. by a 2-spool pilot valve (L180G/L220G).

**Lift function:** The valve has three positions: raise, hold and lower position. Inductive/magnetic automatic boom kickout 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 including 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 10 micron (absolute) filter cartridge.

		L150G	L180G	L220G
<b>Working pressure maximum, pump 1</b>	MPa (bar)	29 (290)	29 (290)	29 (290)
<b>Flow at engine speed</b>	l (gal)/min	180 (47.5)	217 (57.3)	253 (66.8)
	MPa (bar)	10 (100)	10 (100)	10 (100)
<b>Working pressure maximum, pump 2</b>	MPa (bar)	31 (310)	31 (310)	31 (310)
<b>Flow at engine speed</b>	l (gal)/min	202 (53.4)	202 (53.4)	202 (53.4)
	MPa (bar)	10 (100)	10 (100)	10 (100)
<b>Working pressure maximum, pump 3</b>	MPa (bar)	25 (250)	25 (250)	25 (250)
<b>Flow at engine speed</b>	l (gal)/min	77 (20.3)	77 (20.3)	77 (20.3)
	MPa (bar)	10 (100)	10 (100)	10 (100)
<b>Pilot system, working pressure</b>	MPa (bar)	3,5 (35)	3,5 (35)	3,5 (35)
<b>Cycle times</b>				
<b>Tilt</b>	s	2,0	1,8	1,6
<b>Lower, empty</b>	s	3,7	3,3	3,2
<b>Total cycle time</b>	s	11,6	11,5	10,6

### 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.

		L150G	L180G	L220G
<b>Steering cylinders</b>		2	2	2
<b>Cylinder bore</b>	mm (in)	100 (3.9)	100 (3.9)	100 (3.9)
<b>Rod diameter</b>	mm (in)	60 (2.4)	60 (2.4)	60 (2.4)
<b>Stroke</b>	mm (in)	390 (15.4)	525 (20.7)	525 (20.7)
<b>Working pressure</b>	MPa (bar)	21 (210)	21 (210)	21 (210)
<b>Maximum flow</b>	l (gal)/min	188 (49.7)	188 (49.7)	191 (50.5)
<b>Maximum articulation</b>	±°	37	37	37

### Service

**Service accessibility:** Large, easy-to-open hood covering whole engine compartment, electrically operated. Fluid filters and component breather air filters promote long service intervals. Possibility to monitor, log and analyze data to facilitate troubleshooting.

		L150G	L180G	L220G
<b>Fuel Tank</b>	l (gal)	335 (88.5)	335 (88.5)	335 (88.5)
<b>Engine coolant</b>	l (gal)	46 (12.2)	46 (12.2)	46 (12.2)
<b>Hydraulic oil tank</b>	l (gal)	156 (41.2)	156 (41.2)	226 (41.2)
<b>Transmission oil</b>	l (gal)	48 (12.7)	48 (12.7)	48 (12.7)
<b>Engine oil</b>	l (gal)	50 (13.2)	50 (13.2)	50 (13.2)
<b>Axle oil front/rear</b>	l (gal)	45/55 (11.8/14.5)	45/55 (11.8/14.5)	77/71 (20.3/18.8)

# SPECIFICATIONS.

Tires L150G, L180G: 26.5 R25 L3. Tires L220G: 29.5 R25 L4

	Standard boom			Long boom		
	L150G	L180G	L220G	L150G	L180G	L220G
B	mm (in)	7070 (278.3)	7190 (283.1)	7480 (294.5)	7570 (298.0)	7800 (307.1)
C	mm (in)	3550 (139.8)	3550 (139.8)	3700 (145.7)	3550 (139.8)	3700 (145.7)
D	mm (in)	470 (18.6)	480 (18.9)	540 (21.3)	460 (18.1)	480 (21.3)
F	mm (in)	3570 (140.6)	3580 (140.9)	3740 (147.2)	3560 (140.2)	3580 (140.9)
G	mm (in)	2134 (84.0)	2134 (84.0)	2131 (83.9)	2134 (84.0)	2133 (84.0)
J	mm (in)	3910 (153.9)	4050 (159.4)	4240 (166.9)	4480 (176.4)	4540 (178.7)
K	mm (in)	4320 (170.1)	4470 (176.0)	4670 (183.9)	4890 (192.5)	4960 (195.3)
O	°	58	57	56	59	55
P	°	50	49	48	49	48
R	°	45	45	43	48	44
R*	°	48	48	47	53	49
S	°	66	71	65	61	63
T	mm (in)	106 (4.2)	140 (5.5)	111 (4.4)	161 (6.3)	223 (8.8)
U	mm (in)	510 (20.1)	550 (21.7)	590 (23.2)	630 (24.8)	650 (25.6)
X	mm (in)	2280 (89.8)	2280 (89.8)	2400 (94.5)	2280 (89.8)	2400 (94.5)
Y	mm (in)	2960 (116.5)	2960 (116.5)	3170 (124.8)	2960 (116.5)	3170 (124.8)
Z	mm (in)	3490 (137.4)	3810 (150.0)	4060 (159.8)	3950 (155.5)	4170 (164.2)
a <sub>1</sub>	mm (in)	6780 (266.9)	6780 (266.9)	7110 (279.9)	6780 (266.9)	6780 (266.9)
a <sub>2</sub>	mm (in)	3830 (150.8)	3630 (142.9)	3940 (155.1)	3830 (150.8)	3940 (155.1)
a <sub>3</sub>	mm (in)	3830 (150.8)	3630 (142.9)	3940 (155.1)	3830 (150.8)	3940 (155.1)
a <sub>4</sub>	±°	37	37	37	37	37

\* Carry position SAE

**L150G** Sales code: WLA80713

Operating weight (incl. logging cw 1 140 kg (2,513 lb)): 25 680 kg (56,571 lb)  
Operating load: 7 700 kg (16,976 lb)

**L180G** Sales code: WLA80027

Operating weight (incl. logging cw 1 140 kg (2 513 lb)): 28 470 kg (62,766 lb)  
Operating load: 8 710 kg (19,202 lb)

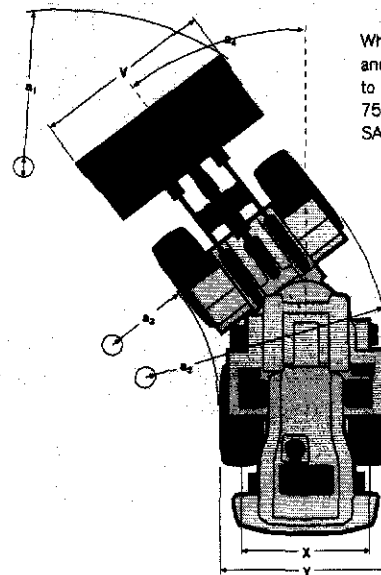
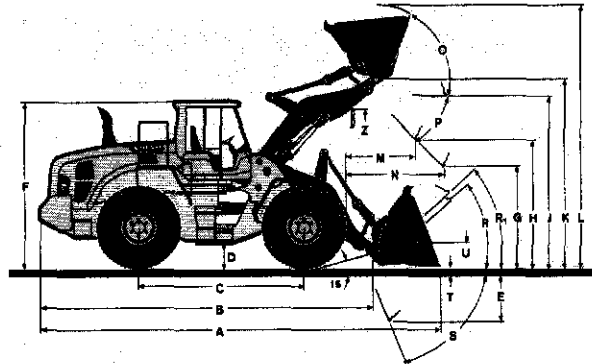
**L220G** Sales code: WLA80852

Operating weight (incl. logging cw 800 kg (1 764 lb)): 32 810 kg (72 334 lb)  
Operating load: 10 080 kg (22 223 lb)

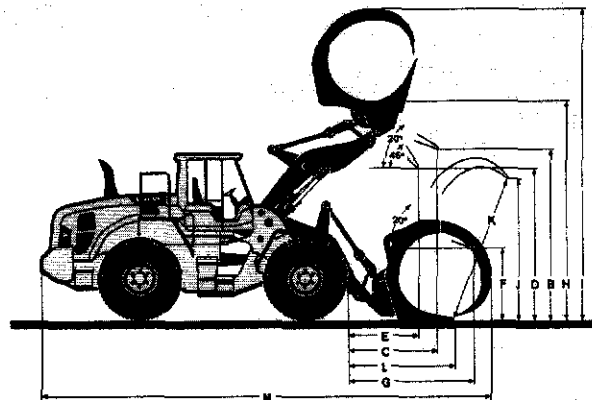
Tires L150G, L180G: 775/65 R29 L3

Tires L220G: 875/65 R29 L4

	L150G	L180G	L220G	
A	m <sup>2</sup> (yd <sup>2</sup> )	3.1 (3.7)	3.5 (4.2)	4.0 (4.8)
B	mm (in)	3 660 (144.1)	3 870 (152.4)	3 920 (154.3)
C	mm (in)	2 110 (83.1)	2 150 (84.6)	2 270 (89.4)
D	mm (in)	2 960 (116.5)	3 150 (124.0)	3 160 (124.4)
E	mm (in)	1 650 (65.0)	1 720 (67.7)	1 780 (70.1)
F	mm (in)	1 630 (64.2)	1 700 (66.9)	1 640 (64.6)
G	mm (in)	2 930 (115.4)	3 040 (119.7)	3 230 (127.2)
H	mm (in)	4 990 (196.5)	5 170 (203.5)	5 350 (210.6)
I	mm (in)	7 270 (286.2)	7 610 (299.6)	7 730 (304.3)
J	mm (in)	3 080 (121.3)	3 370 (132.7)	3 620 (142.5)
K	mm (in)	3 340 (131.5)	3 710 (146.1)	3 940 (155.1)
L	mm (in)	2 290 (90.2)	2 410 (94.9)	2 630 (103.5)
M	mm (in)	9 680 (381.1)	9 980 (392.9)	10 380 (408.7)



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



**L150G**

Tires 26.5 R25 L3	REHANDLING				GENERAL PURPOSE			ROCK*	LIGHT MATERIAL	LONG BOOM
Volume, heaped ISO/SAE	m³ (yd³)	4.0 (5.2)	4.4 (5.8)	4.8 (6.3)	5.2 (6.8)	4.0 (5.2)	4.4 (5.8)	4.5 (5.9)	3.5 (4.6)	6.8 (8.9)
Volume at 110% fill factor	m³ (yd³)	4.4 (5.8)	4.8 (6.3)	5.3 (6.9)	5.7 (7.5)	4.4 (5.8)	4.8 (6.3)	5.0 (6.5)	3.9 (5.1)	7.5 (9.8)
Static tipping load, straight	kg (lb)	19850 (43762)	19590 (43189)	19310 (42571)	19160 (42241)	17610 (38823)	17230 (37998)	17620 (38845)	18200 (40345)	16550 (36487)
at 35° turn	kg (lb)	17700 (38922)	17440 (38449)	17170 (37853)	17020 (37523)	15710 (34635)	15330 (33797)	15710 (34635)	16320 (35979)	14710 (32430)
at full turn	kg (lb)	17460 (38493)	17200 (37920)	16920 (37302)	16780 (36984)	15500 (34172)	15110 (33312)	15490 (34160)	16090 (35472)	14500 (31967)
Breakout force	kN (lbf)	201.1 (45208)	191.5 (43051)	183.2 (41186)	182.6 (41065)	202.0 (45411)	192.7 (43321)	190.5 (42826)	187.9 (42242)	146.6 (32957)
A	mm (in)	8690 (338.2)	8670 (341.3)	8740 (344.1)	8750 (344.5)	8900 (326.5)	8880 (348.5)	8830 (350.0)	8850 (348.4)	9140 (359.8)
E	mm (in)	1290 (48.4)	1300 (51.2)	1360 (53.5)	1370 (53.9)	1410 (55.5)	1490 (58.3)	1500 (59.1)	1450 (57.1)	1710 (67.3)
H**	mm (in)	3030 (119.3)	2970 (116.9)	2920 (115.0)	2920 (115.0)	2860 (113.4)	2830 (111.4)	2820 (111.0)	2870 (113.0)	2820 (103.1)
L	mm (in)	5730 (225.6)	5780 (227.5)	5880 (231.5)	5870 (231.1)	5870 (231.1)	5980 (235.4)	5890 (231.9)	5980 (235.4)	6090 (239.8)
M**	mm (in)	1220 (48.0)	1270 (50.0)	1320 (52.0)	1320 (52.0)	1350 (53.1)	1400 (55.1)	1410 (55.5)	1420 (55.9)	1560 (61.4)
N**	mm (in)	1800 (70.9)	1830 (72.0)	1860 (73.2)	1860 (73.2)	1870 (73.6)	1890 (74.4)	1900 (74.8)	1930 (76.0)	1940 (76.4)
V	mm (in)	3200 (126.0)	3200 (126.0)	3200 (126.0)	3400 (133.9)	3230 (127.2)	3230 (127.2)	3000 (118.1)	3230 (127.2)	3200 (126.0)
at clearance circle	mm (in)	14640 (576.4)	14670 (577.5)	14700 (578.7)	14890 (586.2)	14750 (580.7)	14790 (582.5)	14580 (572.0)	14800 (582.7)	14900 (588.6)
Operating weight	kg (lb)	24490 (53991)	24730 (54454)	24890 (54873)	25020 (55160)	23680 (52205)	24020 (52965)	23780 (52426)	24830 (54661)	23990 (52869)

\*) 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 (2,700 lb/yd³). Result: The 4.0 m³ (5.2 yd³) bucket carries 4.2 m³ (5.5 yd³). For optimum stability always consult the bucket selection chart.

Material	Bucket fill, %	Material density, t/m³ (lb/yd³)	ISO/SAE bucket volume, m³ (yd³)	Actual volume, m³ (yd³)
Earth/Clay	~ 110	~ 1.6 (2698)	4.0 (5.2)	~ 4.4 (5.8)
		~ 1.5 (2530)	4.4 (5.8)	~ 4.8 (6.3)
Sand/Gravel	~ 105	~ 1.6 (2698)	4.0 (5.2)	~ 4.2 (5.5)
		~ 1.5 (2530)	4.4 (5.8)	~ 4.6 (6.0)
Aggregate	~ 100	~ 1.8 (3035)	4.4 (5.8)	~ 4.4 (5.8)
		~ 1.7 (2867)	4.8 (6.3)	~ 4.8 (6.3)
		~ 1.5 (2530)	5.2 (6.8)	~ 5.2 (6.8)
Rock	≤ 100	~ 1.7 (2867)	3.5 (4.6)	~ 3.5 (4.6)

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

**Supplemental Operating Data**

Tires 26.5 R25 L3	Standard boom		Long boom	
	26.5 R25 L5	775/65 R29 L3	26.5 R25 L5	775/65 R29 L3
Width over tires	mm (in)	+30 (+1.2)	+180 (+7.1)	+180 (+7.1)
Ground clearance	mm (in)	+30 (+1.2)	+10 (+0.4)	+30 (+1.2)
Tipping load, full turn	kg (lb)	+760 (+1676)	+590 (+1300)	+640 (+1411)
Operating weight	kg (lb)	+1050 (+2337)	+760 (+1676)	+1050 (+2315)

Type of boom	Type of bucket	ISO/SAE bucket volume	Material density, t/m³ (lb/yd³)					
			0.8 (1346)	1.0 (1680)	1.2 (2024)	1.4 (2369)	1.6 (2713)	1.8 (3058)
Standard boom	Reversing	4.4 m³ (5.8 yd³)					3.5 (4.6)	4.4 (5.8)
		5.2 m³ (6.8 yd³)				3.0 (3.9)	4.4 (5.8)	
	General purpose	4.0 m³ (5.2 yd³)				4.4 (5.8)	4.0 (5.2)	
		4.4 m³ (5.8 yd³)			4.8 (6.3)	4.4 (5.8)		
Long boom	Light material	3.5 m³ (4.6 yd³)					3.5 (4.6)	3.3 (4.3)
		4.0 m³ (5.2 yd³)						
	Reversing	4.0 m³ (5.2 yd³)				4.2 (5.5)	4.0 (5.2)	
		4.4 m³ (5.8 yd³)			4.0 (5.2)	4.4 (5.8)		
General purpose	3.7 m³ (4.8 yd³)				4.1 (5.4)	3.7 (4.8)		
	3.5 m³ (4.6 yd³)				3.5 (4.6)	3.3 (4.3)		
Light material	4.0 m³ (5.2 yd³)							
	4.4 m³ (5.8 yd³)							

How to read bucket fill factor

\* Including counterweight

# SPECIFICATIONS.

## L180G

Tires 26.5 R28 L3		REHANDLING				GENERAL PURPOSE			ROCK*	LIGHT MATERIAL	LONG BOOM
		6.5 yd <sup>3</sup> STE P BOE	5.7 yd <sup>3</sup> STE P BOE	7.2 yd <sup>3</sup> STE P BOE	7.8 yd <sup>3</sup> STE P BOE	5.8 yd <sup>3</sup> STE P T SER	5.0 yd <sup>3</sup> STE P T SER	6.3 yd <sup>3</sup> STE P T SER	5.5 yd <sup>3</sup> SPN P T SER	10.0 yd <sup>3</sup> LM P	
Volume, heaped ISO/SAE	m <sup>3</sup> (yd <sup>3</sup> )	4.8 (6.3)	5.2 (6.8)	5.5 (7.2)	5.8 (7.6)	4.4 (5.8)	4.6 (6.0)	4.8 (6.3)	4.2 (5.5)	7.8 (10.0)	-
Volume at 110% fill factor	m <sup>3</sup> (yd <sup>3</sup> )	5.3 (6.9)	5.7 (7.5)	6.1 (8.0)	6.4 (8.4)	4.8 (6.3)	5.1 (6.7)	5.3 (6.9)	4.8 (6.3)	8.6 (11.0)	-
Static tipping load, straight at 35° turn	kg (lb)	22930 (50652)	22780 (50221)	22610 (49847)	22480 (49560)	21080 (46473)	21100 (46518)	20900 (46077)	21650 (47730)	19710 (43453)	-3760 (-8289)
at full turn	kg (lb)	20310 (44776)	20160 (44445)	20000 (44092)	19870 (43806)	18700 (41226)	18710 (41248)	18520 (40830)	19190 (42307)	17390 (38338)	-3430 (-7562)
Breakout force	kg (lb)	20010 (44114)	19870 (43806)	19700 (43431)	19580 (43167)	18420 (40609)	18440 (40653)	18250 (40234)	18910 (41689)	17130 (37768)	-3390 (-7474)
Breakout force	kN (lbf)	224.8 (50637)	224.2 (50402)	216.2 (48604)	209.9 (47187)	206.3 (53122)	206.3 (53122)	226.7 (50954)	212.6 (47794)	173.4 (38961)	4 (889)
A	mm (in)	8890 (350.0)	8890 (350.0)	8960 (352.8)	9010 (354.7)	9010 (354.7)	9010 (354.7)	9080 (357.5)	9140 (359.8)	9360 (368.5)	470 (18.5)
E	mm (in)	1420 (55.9)	1430 (56.3)	1490 (58.7)	1540 (60.6)	1540 (60.6)	1540 (60.6)	1600 (63.0)	1650 (65.0)	1860 (73.2)	20 (0.8)
H**)	mm (in)	3060 (120.5)	3080 (120.5)	3010 (118.5)	2980 (117.3)	2970 (116.9)	2970 (116.9)	2930 (115.4)	2910 (114.6)	2700 (106.3)	500 (19.7)
L	mm (in)	6020 (237.0)	6010 (236.6)	6040 (237.8)	6110 (240.6)	6120 (240.9)	6170 (242.9)	6170 (242.9)	6320 (248.8)	6300 (248.0)	490 (19.3)
M**)	mm (in)	1330 (52.4)	1340 (52.8)	1380 (53.3)	1410 (55.5)	1410 (55.5)	1410 (55.5)	1460 (57.5)	1520 (59.9)	1610 (63.4)	20 (0.8)
N**)	mm (in)	1860 (73.2)	1870 (73.8)	1890 (74.4)	2010 (79.1)	2000 (78.7)	2000 (78.7)	2030 (79.9)	2080 (81.9)	2060 (81.1)	420 (16.5)
V	mm (in)	3209 (126.3)	3400 (133.9)	3400 (133.9)	3400 (133.9)	3230 (127.2)	3230 (127.2)	3230 (127.2)	3230 (127.2)	3400 (133.9)	-
a1 clearance circle	mm (in)	1480 (58.2)	1490 (59.0)	16010 (59.9)	15040 (59.2)	14880 (58.6)	14880 (58.6)	14910 (58.7)	14980 (59.0)	15220 (59.9)	-
Operating weight	kg (lb)	27340 (60274)	27490 (60539)	27560 (60759)	27630 (60914)	26460 (58334)	26500 (58422)	26560 (58555)	27720 (61112)	26740 (59052)	310 (683)

\*) 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/m<sup>3</sup> (2,700 lb/yd<sup>3</sup>). Result: The 4.6 m<sup>3</sup> (6.0 yd<sup>3</sup>) bucket carries 4.8 m<sup>3</sup> (6.3 yd<sup>3</sup>). For optimum stability always consult the bucket selection chart.

Material	Bucket Fill, %	Material density, t/m <sup>3</sup> (lb/yd <sup>3</sup> )	ISO/SAE bucket volume, m <sup>3</sup> (yd <sup>3</sup> )	Actual volume, m <sup>3</sup> (yd <sup>3</sup> )
Earth/Clay ~ 110	-	1.7 (2867)	4.4 (5.8)	~ 4.8 (6.3)
	-	1.8 (2698)	4.6 (6.0)	~ 5.1 (6.7)
	-	1.5 (2530)	4.8 (6.3)	~ 5.3 (6.9)
Sand/Gravel ~ 105	-	1.7 (2867)	4.4 (5.8)	~ 4.6 (6.0)
	-	1.6 (2698)	4.6 (6.0)	~ 4.8 (6.3)
	-	1.5 (2530)	4.8 (6.3)	~ 5.1 (6.7)
Aggregate ~ 100	-	1.8 (3035)	5.2 (6.8)	~ 5.2 (6.8)
	-	1.7 (2867)	5.5 (7.2)	~ 5.5 (7.2)
	-	1.6 (2698)	5.8 (7.6)	~ 5.8 (7.6)
Rock ≤ 100	-	1.7 (2867)	4.3 (5.6)	~ 4.3 (5.6)

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

### Supplemental Operating Data

Tires 26.5 R28 L3		Standard boom		Long boom	
		26.5 R28 L5	775/65 R29 L3	26.5 R28 L5	775/65 R29 L3
Width over tires	mm (in)	+30 (+1.2)	+130 (+5.1)	+30 (+1.2)	+130 (+5.1)
Ground clearance	mm (in)	+40 (+1.6)	+10 (+0.4)	+40 (+1.6)	+10 (+0.4)
Tipping load, full turn	kg (lb)	+770 (+30.3)	+600 (+23.6)	+760 (+29.9)	+530 (+20.9)
Operating weight	kg (lb)	+1050 (+2315)	+920 (+36.2)	+1050 (+2315)	+1120 (+44.1)

Type of boom	Type of bucket	ISO/SAE Bucket volume	Material density: U/m <sup>3</sup> (lb/yd <sup>3</sup> )					
			0.8 (1340)	1.0 (1600)	1.3 (2094)	1.4 (2351)	1.6 (2698)	2.0 (3373)
Standard boom	Rehanding	5.2 m <sup>3</sup> (6.8 yd <sup>3</sup> )				5.9 (7.2)	5.2 (6.6)	
	General Purpose	5.8 m <sup>3</sup> (7.5 yd <sup>3</sup> )				5.8 (7.2)	5.8 (7.2)	
	Light Material	5.8 m <sup>3</sup> (7.5 yd <sup>3</sup> )				5.1 (6.0)	5.8 (7.6)	
Long boom	Rehanding	4.8 m <sup>3</sup> (6.3 yd <sup>3</sup> )				4.8 (6.3)	4.4 (5.6)	
	General Purpose	4.8 m <sup>3</sup> (6.3 yd <sup>3</sup> )				5.1 (6.7)	4.8 (6.0)	
	Light Material	4.8 m <sup>3</sup> (6.3 yd <sup>3</sup> )				5.3 (6.9)	4.8 (6.3)	
Long boom	Rehanding	4.8 m <sup>3</sup> (6.3 yd <sup>3</sup> )	7.8 (10.0)				4.2 (5.6)	5.0 (6.6)
	General Purpose	4.8 m <sup>3</sup> (6.3 yd <sup>3</sup> )				5.0 (6.6)	4.8 (6.3)	
	Light Material	4.8 m <sup>3</sup> (6.3 yd <sup>3</sup> )				5.9 (7.2)	5.2 (6.6)	
Long boom	Rehanding	4.8 m <sup>3</sup> (6.3 yd <sup>3</sup> )				4.8 (6.3)	4.4 (5.6)	
	General Purpose	4.8 m <sup>3</sup> (6.3 yd <sup>3</sup> )				4.8 (6.3)	4.4 (5.6)	
	Light Material	4.8 m <sup>3</sup> (6.3 yd <sup>3</sup> )				4.2 (5.6)	4.2 (5.2)	
Bucket fill		110% 105% 100% 90%	Pin-on					

How to read bucket fill factor

\* Including on-board weight

**L220G**

Tires 29.5 R25 L4	REHANDLING			GENERAL PURPOSE			ROCK		LIGHT MATERIAL	LONG BOOM
	7.9 yd <sup>3</sup> STE P BOE	7.7 yd <sup>3</sup> STE P BOE	6.2 yd <sup>3</sup> STE P BOE	6.8 yd <sup>3</sup> STE P T SEG	6.5 yd <sup>3</sup> STE P T SEG	7.2 yd <sup>3</sup> STE P T SEG	5.8 yd <sup>3</sup> SPN P T SEG	5.5 yd <sup>3</sup> SPN P T SEG	10.7 yd <sup>3</sup> LMP	
Additional machine specification										
Volume, heaped ISO/SAE	m <sup>3</sup> (yd <sup>3</sup> )	5.6 (7.3)	5.9 (7.7)	6.3 (8.2)	4.9 (6.4)	5.2 (6.8)	5.6 (7.3)	4.5 (5.9)	5.0 (6.5)	6.2 (10.7)
Volume at 110% fill factor	m <sup>3</sup> (yd <sup>3</sup> )	6.2 (8.1)	6.5 (8.5)	6.9 (9.0)	5.4 (7.1)	5.7 (7.5)	6.2 (8.1)	5.0 (6.5)	5.5 (7.2)	9.0 (11.7)
Static tipping load, straight at 35° turn	kg (lb)	24850 (54785)	24720 (54498)	24540 (54101)	23660 (52161)	23520 (51863)	23260 (51267)	24000 (52911)	23170 (51081)	22520 (49648)
at full turn	kg (lb)	22690 (49768)	21860 (48391)	21780 (48017)	21040 (46385)	20900 (46077)	20650 (45626)	21340 (47047)	20580 (45371)	19950 (43962)
Breakout force	kN (lbf)	228.2 (51391)	222.5 (50020)	214.4 (48199)	255.2 (57371)	248.1 (55775)	281.9 (63135)	212.0 (47658)	195.6 (44197)	190.3 (42781)
A	mm (in)	9240 (363.8)	9290 (365.7)	9360 (368.5)	9290 (365.7)	9340 (367.7)	9440 (371.7)	9580 (377.2)	9730 (383.1)	9560 (376.4)
E	mm (in)	1440 (56.7)	1480 (58.3)	1550 (61.0)	1480 (58.3)	1520 (59.8)	1620 (63.8)	1730 (68.1)	1860 (73.2)	1730 (68.1)
H**)	mm (in)	3190 (125.6)	3160 (124.4)	3110 (122.4)	3160 (124.4)	3120 (122.8)	3090 (120.9)	3030 (119.3)	2930 (115.4)	2940 (115.7)
L	mm (in)	6290 (247.6)	6310 (248.4)	6400 (252.0)	6390 (251.6)	6450 (253.9)	6460 (254.3)	6420 (252.8)	6500 (255.9)	6480 (255.1)
M**)	mm (in)	1380 (54.3)	1410 (55.5)	1460 (57.5)	1410 (55.5)	1440 (56.7)	1520 (59.8)	1580 (62.5)	1600 (63.0)	1580 (62.2)
N**)	mm (in)	2090 (82.3)	2110 (83.1)	2140 (84.3)	2100 (82.7)	2120 (83.5)	2180 (85.8)	2250 (88.6)	2300 (90.6)	2170 (85.4)
V	mm (in)	3400 (133.9)	3400 (133.9)	3400 (133.9)	3430 (135.0)	3430 (135.0)	3430 (135.0)	3430 (135.0)	3430 (135.0)	3700 (145.7)
a clearance circle	mm (in)	15560 (612.6)	15680 (613.4)	15620 (615.0)	15610 (614.8)	15630 (615.4)	15690 (617.7)	15770 (620.9)	15850 (624.0)	15610 (613.0)
Operating weight	kg (lb)	32290 (71165)	32360 (71242)	32470 (71584)	31550 (69556)	31640 (69754)	31680 (69842)	32890 (72731)	33160 (73105)	32040 (70636)

**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/m<sup>3</sup> (2,700 lb/yd<sup>3</sup>). Result: The 5.2 m<sup>3</sup> (6.8 yd<sup>3</sup>) bucket carries 5.5 m<sup>3</sup> (7.2 yd<sup>3</sup>). For optimum stability always consult the bucket selection chart.

Material	Bucket fill, %	Material density, t/m <sup>3</sup> (lb/yd <sup>3</sup> )	ISO/SAE bucket volume, m <sup>3</sup> (yd <sup>3</sup> )	Actual volume, m <sup>3</sup> (yd <sup>3</sup> )
Earth/Clay ~ 110		1.6 (2698)	4.9 (6.4)	5.4 (7.1)
		1.5 (2530)	5.2 (6.8)	5.7 (7.5)
		1.4 (2361)	5.4 (7.1)	5.9 (7.7)
Sand/Gravel ~ 105		1.7 (2867)	4.9 (6.4)	5.1 (6.7)
		1.6 (2698)	5.2 (6.8)	5.5 (7.2)
		1.5 (2530)	5.4 (7.1)	5.7 (7.5)
Aggregate ~ 100		1.8 (3035)	5.6 (7.3)	5.6 (7.3)
		1.7 (2867)	5.9 (7.7)	5.9 (7.7)
		1.6 (2698)	6.3 (8.2)	6.3 (8.2)
Rock ≤100		1.7 (2867)	4.5 (5.9)	4.5 (5.9)

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

**Supplemental Operating Data**

Tires 29.5 R25 L4	Standard boom				Long boom		
	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 (in)	-20 (-0.8)	+35 (+1.4)	+95 (+3.7)	-20 (-0.8)	+35 (+1.4)	+95 (+3.7)
Ground clearance	mm (in)	±0	+40 (+1.6)	-10 (-0.4)	±0	+40 (+1.6)	-20 (-0.8)
Tipping load, full turn	kg (lb)	-100 (-3.9)	+1010 (+39.8)	+180 (+7.1)	-90 (-3.5)	+930 (+36.6)	+180 (+7.1)
Operating weight	kg (lb)	-80 (-3.2)	+1490 (+66.7)	+650 (+25.6)	-80 (3.2)	+1500 (+69.1)	+650 (+25.6)

Type of boom	Type of bucket	ISO/SAE bucket volume	Material density (t/m <sup>3</sup> ) (lb/yd <sup>3</sup> )					
			0.8 (1343)	1.0 (1499)	1.2 (1654)	1.4 (1809)	1.6 (1964)	2.0 (2549)
Standard boom	Rehandling	3.6 m <sup>3</sup> (4.6 yd <sup>3</sup> )					5.9 (7.7)	5.6 (7.3)
		4.9 m <sup>3</sup> (6.4 yd <sup>3</sup> )				6.2 (8.1)	5.9 (7.7)	
		6.2 m <sup>3</sup> (8.2 yd <sup>3</sup> )				6.4 (8.4)	6.3 (8.2)	
	General purpose	4.9 m <sup>3</sup> (6.4 yd <sup>3</sup> )					6.4 (7.1)	4.9 (6.4)
		5.2 m <sup>3</sup> (6.8 yd <sup>3</sup> )					5.7 (7.5)	5.2 (6.8)
		5.6 m <sup>3</sup> (7.3 yd <sup>3</sup> )					6.2 (8.1)	5.6 (7.3)
Rock	4.5 m <sup>3</sup> (5.9 yd <sup>3</sup> )						4.5 (5.9)	
	6.0 m <sup>3</sup> (8.0 yd <sup>3</sup> )						5.0 (6.5)	
	8.2 m <sup>3</sup> (10.7 yd <sup>3</sup> )	6.2 (8.1)						
Long boom	Rehandling	5.9 m <sup>3</sup> (7.7 yd <sup>3</sup> )					5.9 (7.7)	
		6.2 m <sup>3</sup> (8.1 yd <sup>3</sup> )					6.2 (8.1)	
		6.4 m <sup>3</sup> (8.4 yd <sup>3</sup> )						6.4 (8.4)
	General purpose	4.9 m <sup>3</sup> (6.4 yd <sup>3</sup> )					6.4 (7.1)	
		5.2 m <sup>3</sup> (6.8 yd <sup>3</sup> )					5.7 (7.5)	
		5.6 m <sup>3</sup> (7.3 yd <sup>3</sup> )					6.2 (8.1)	
Rock	4.5 m <sup>3</sup> (5.9 yd <sup>3</sup> )							
	6.0 m <sup>3</sup> (8.0 yd <sup>3</sup> )							
	8.2 m <sup>3</sup> (10.7 yd <sup>3</sup> )	6.2 (8.1)						

How to read bucket fill factor: <sup>1</sup> Including counterweight

# EQUIPMENT.

## STANDARD EQUIPMENT

	L1600	L1800	L2200
<b>Service and maintenance</b>			
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	*	*	*
CareTrack	*	*	*
Telematics, 3-Year Subscription	*	*	*
<b>Engine</b>			
Exhaust after-treatment system	*	*	*
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	*	*	*
Exterior radiator air intake protection	*	*	*
Reversible cooling fan	*	*	*
<b>Electrical system</b>			
24 V, pre-wired for optional accessories	*	*	*
Alternator 24V/ 80A	*	*	*
Battery disconnect switch with removable key	*	*	*
Fuel gauge	*	*	*
Hour meter	*	*	*
Electric horn	*	*	*
<b>Instrument cluster:</b>			
• Fuel level	*	*	*
• Transmission temperature	*	*	*
• Coolant temperature	*	*	*
• Instrument lighting	*	*	*
<b>Lighting:</b>			
• 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)	*	*	*
Rear view camera incl. monitor color	*	*	*
Reverse alarm	*	*	*
<b>Contronic monitoring system</b>			
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	*	*	*
<b>Warning and indicator lights:</b>			
• Battery charging	*	*	*
• Parking brake	*	*	*
<b>Warning and display message:</b>			
• Regeneration	*	*	*
• 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	*	*	*
<b>Level warnings:</b>			
• Fuel level	*	*	*
• Engine oil level	*	*	*
• Engine coolant level	*	*	*
• Transmission oil level	*	*	*
• Hydraulic oil level	*	*	*
• Washer fluid level	*	*	*
<b>Engine torque reduction in case of malfunction indication:</b>			
• High engine coolant temperature	*	*	*
• High engine oil temperature	*	*	*

• Low engine oil pressure	*	*	*
• High crankcase pressure	*	*	*
• High charge-air temperature	*	*	*
<b>Engine shutdown to idle in case of malfunction indication:</b>			
• High transmission oil temperature	*	*	*
• Slip in transmission clutches	*	*	*
Keypad, background lit	*	*	*
Start interlock when gear is engaged	*	*	*
<b>Drivetrain</b>			
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	*	*	*
<b>Differentials:</b>			
Front, 100% hydraulic diff. lock, Rear, conventional	*	*	*
OptiShift	*	*	*
<b>Brake system</b>			
Dual brake circuits	*	*	*
Dual brake pedals	*	*	*
Secondary brake system	*	*	*
Parking brake, electrical-hydraulic	*	*	*
Brake wear indicators	*	*	*
<b>Cab</b>			
ROPS (ISO 3471), FOPS (ISO 3449)	*	*	*
Single key klt 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	*	*	*
<b>Hydraulic system</b>			
Main valve, double acting 2-spool with hydraulic pilots	*	*	*
<b>Variable displacement axial piston pumps (3) for:</b>			
1 Working hydraulic system	*	*	*
2 Working hydraulic system, Steering and Brake system	*	*	*
3 Cooling fan and Brake system	*	*	*
Electro-hydraulic servo controls	*	*	*
Electric level lock	*	*	*
Boom kick-out, automatic	*	*	*
Bucket positioner, automatic	*	*	*
Double-acting hydraulic cylinders	*	*	*
Indicator glass for hydraulic oil level	*	*	*
Hydraulic oil cooler	*	*	*
<b>External equipment</b>			
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	*	*	*
Counterweight, pre-drilled for optional guards	*	*	*