

FSA

Volvo Construction Equipment  
Building Tomorrow



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# L150H, L180H, L220H <sup>2.0</sup>

Volvo Wheel Loaders 24.1-33.1 t / 53,130-72,970 lb 295-367 hp



# Volvo L150H, L180H, L220H in detail

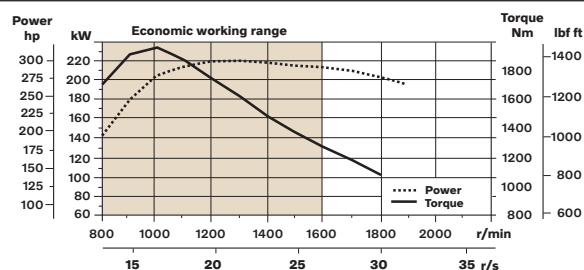
## Engine

V-ACT Stage IV/Tier 4F 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: 2 stages. Cooling system: Hydrostatic, electronically controlled fan and intercooler of the air-to-air type.

## L150H

Engine	Volvo	D13J
Max. power at	r/min (r/s)	1,300 (21.7)
SAE J1995 gross	kW (hp)	220 (295)
ISO 9249, SAE J1349 net	kW (hp)	220 (295)
Max. torque at	r/min (r/s)	1,000 (16.7)
SAE J1995 gross	Nm (ft lbf)	1,960 (1,446)
ISO 9249, SAE J1349 net	Nm (ft lbf)	1,957 (1,443)
Economic working range	r/min (r/s)	800 - 1,600 (13.3 - 26.7)
Displacement	l (in <sup>3</sup> )	12.8 (781)

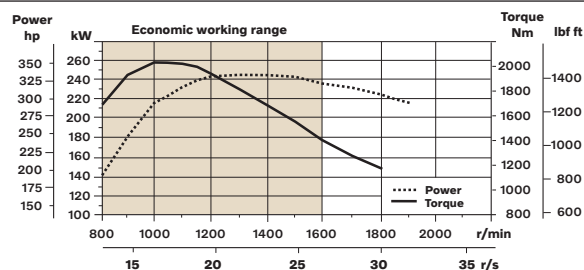
## L150H



## L180H

Engine	Volvo	D13J
Max. power at	r/min (r/s)	1,300 - 1,400 (21.7 - 23.3)
SAE J1995 gross	kW (hp)	246 (330)
ISO 9249, SAE J1349 net	kW (hp)	245 (329)
Max. torque at	r/min (r/s)	1,000 (16.7)
SAE J1995 gross	Nm (ft lbf)	2,030 (1,497)
ISO 9249, SAE J1349 net	Nm (ft lbf)	2,024 (1,493)
Economic working range	r/min (r/s)	800 - 1,600 (13.3 - 26.7)
Displacement	l (in <sup>3</sup> )	12.8 (781)

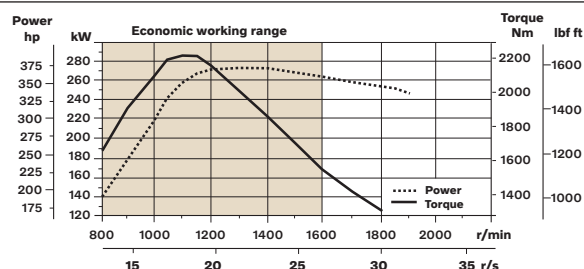
## L180H



## L220H

Engine	Volvo	D13J
Max. power at	r/min (r/s)	1,300 - 1,400 (21.7 - 23.3)
SAE J1995 gross	kW (hp)	274 (367)
ISO 9249, SAE J1349 net	kW (hp)	273 (366)
Max. torque at	r/min (r/s)	1,100 (18.3)
SAE J1995 gross	Nm (ft lbf)	2,231 (1,645)
ISO 9249, SAE J1349 net	Nm (ft lbf)	2,220 (1,637)
Economic working range	r/min (r/s)	800 - 1,600 (13.3 - 26.7)
Displacement	l (in <sup>3</sup> )	12.8 (781)

## L220H



## 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. 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. Also equipped with Rimpull control to avoid wheel spin and optimize bucket filling.

**Axles:** Volvo fully floating drive 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.

		L150H	L180H	L220H
Transmission	Volvo	HTL 223	HTL 223	HTL 310
Torque multiplication, stall ratio		2.09:1	2.09:1	2.02:1
Maximum speed, forward/reverse				
1st gear	km/h (mi/h)	6.1 (3.8)	6.1 (3.8)	6.7 / 6.6 (4.2 / 4.1)
2nd gear	km/h (mi/h)	12.6 (7.8)	12.6 (7.8)	11.6 / 11.4 (7.2 / 7.1)
3rd gear	km/h (mi/h)	23.5 (14.6)	23.5 (14.6)	21.7 / 21.4 (13.5 / 13.3)
4th gear	km/h (mi/h)	38 (23.6)	38 (23.6)	36.5 / 36.1 (22.7 / 22.4)
Measured with tires		26.5 R25 L3	26.5 R25 L3	29.5 R25 L4
Front axle/rear axle		Volvo/AWB 40B/40C	Volvo/AWB 40B/40B	Volvo/AWB 50/41
Rear axle oscillation	± °	15	15	15
Ground clearance	mm (in)	610 (24)	610 (24)	600 (23.6)
at oscillation	°	15	15	15

## Electrical system

Central warning system: Contronic electrical system with central warning light and buzzer for following functions: - Serious engine fault - Low steering system pressure - Over speed warning engine - Interruption in communication (computer fault) 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 crank case pressure - Low transmission oil pressure - High transmission oil temperature - Low brake pressure - Engaged parking brake - Fault on brake charging - Low hydraulic oil level - High hydraulic oil temperature - Overspeeding in engaged gear - High brake cooling oil temperature front and rear axles.

		L150H	L180H	L220H
Voltage	V	24	24	24
Batteries	V	2 x 12	2 x 12	2 x 12
Battery capacity	Ah	2 x 170	2 x 170	2 x 170
Cold cranking capacity, approx	A	1,000	1,000	1,000
Alternator rating	W/A	2,280/80	2,280/80	2,280/80
Starter motor output	kW	7	7	7

## 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:** Dry disc brake. Applied by spring force, electro-hydraulic release 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.

		L150H	L180H	L220H
Number of brake discs per wheel front/rear		1/1	1/1	2/1
Accumulators	l (gal)	2 x 1.0 + 3 x 0.5 (2 x 0.26 + 3 x 0.13)	2 x 1.0 + 1 x 0.5 (2 x 0.26 + 1 x 0.13)	2 x 1.0 + 1 x 0.5 (2 x 0.26 + 1 x 0.13)

## 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").

Refrigerant of the type R134a is used when this machine is equipped with air conditioning. Contains fluorinated greenhouse gas R134a, Global Warming Potential 1.430 t CO<sub>2</sub>-eq

		L150H	L180H	L220H
Emergency exit: Use emergency hammer to break window				
Ventilation	m <sup>3</sup> /min (yd <sup>3</sup> /min)	9 (11.8)	9 (11.8)	9 (11.8)
Heating capacity	kW	16	16	16
Air conditioning (optional)	kW	7.5	7.5	7.5

## Lift Arm System

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

		L150H	L180H	L220H
Lift cylinders		2	2	2
Cylinder bore	mm (in)	160 (6.3)	180 (7.1)	190 (7.5)
Piston rod diameter	mm (in)	90 (3.5)	90 (3.5)	90 (3.5)
Stroke	mm (in)	784 (30.9)	788 (31)	768 (30.2)
Tilt cylinder		1	1	1
Cylinder bore	mm (in)	220 (8.7)	240 (9.4)	250 (9.8)
Piston rod diameter	mm (in)	110 (4.3)	120 (4.7)	120 (4.7)
Stroke	mm (in)	452 (17.8)	480 (18.9)	455 (17.9)



# Volvo L150H, L180H, L220H in detail

## 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 electro operated.  
**Lift function:** The valve has four positions; raise, hold, lower and floating 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.

		L150H	L180H	L220H
Working pressure maximum, pump 1 for working hydraulic system	MPa (bar)	29 (290)	29 (290)	29 (290)
Flow	l/min (gal/min)	180 (47.6)	217 (57.3)	252 (66.6)
at	MPa (bar)	10 (100)	10 (100)	10 (100)
engine speed	r/min (r/s)	1,900 (31.7)	1,900 (31.7)	1,900 (31.7)
Working pressure maximum, pump 2 for steering-, brake-, pilot- and working hydraulic system	MPa (bar)	31 (310)	31 (310)	31 (310)
Flow	l/min (gal/min)	202 (53.4)	202 (53.4)	202 (53.4)
at	MPa (bar)	10 (100)	10 (100)	10 (100)
engine speed	r/min (r/s)	1,900 (31.7)	1,900 (31.7)	1,900 (31.7)
Working pressure maximum, pump 3 for brake- and cooling fan system	MPa (bar)	25 (250)	25 (250)	25 (250)
Flow	l/min (gal/min)	83 (21.9)	83 (21.9)	83 (21.9)
at	MPa (bar)	10 (100)	10 (100)	10 (100)
engine speed	r/min (r/s)	1,900 (31.7)	1,900 (31.7)	1,900 (31.7)
Pilot system, working pressure	MPa (bar)	3.5 (35)	3.5 (35)	3.5 (35)
Cycle times				
Lift	s	5.9	6.4	6.8
Tilt	s	2	1.8	1.6
Lower, empty	s	3.7	3.3	3.2
Total cycle time	s	11.6	11.5	11.6

## 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.

		L150H	L180H	L220H
Steering cylinders		2	2	2
Cylinder bore	mm (in)	100 (3.9)	100 (3.9)	100 (3.9)
Rod diameter	mm (in)	60 (2.4)	60 (2.4)	60 (2.4)
Stroke	mm (in)	390 (15.4)	525 (20.7)	525 (20.7)
Working pressure	MPa (bar)	21 (210)	21 (210)	21 (210)
Maximum flow	l/min (gal/min)	202 (53.4)	202 (53.4)	202 (53.4)
Maximum articulation	± °	37	37	37

## Service Refill

**Service accessibility:** Large, easy-to-open hood covering whole engine department, electrically operated. Fluid filters and component breather air filters promote long service intervals. A quick-fit adapter on the hydraulic tank provides faster hydraulic oil fill. Possibility to monitor, log and analyze data to facilitate troubleshooting.

		L150H	L180H	L220H
Fuel tank	l (gal)	366 (96.7)	366 (96.7)	366 (96.7)
DEF/AdBlue® tank	l (gal)	31 (8.2)	31 (8.2)	31 (8.2)
Engine coolant	l (gal)	55 (14.5)	55 (14.5)	55 (14.5)
Hydraulic oil tank	l (gal)	156 (41.2)	156 (41.2)	226 (59.7)
Transmission oil	l (gal)	48 (12.7)	48 (12.7)	48 (12.7)
Engine oil	l (gal)	50 (13.2)	50 (13.2)	50 (13.2)
Axle oil front	l (gal)	46 (12.2)	46 (12.2)	77 (20.3)
Axle oil rear	l (gal)	55 (14.5)	55 (14.5)	71 (18.8)

## Sound Level

		L150H	L180H	L220H
Sound pressure level in cab according to ISO 6396				
L <sub>pA</sub>	dB	69	70	70
External sound level according to ISO 6395 and EU Noise Directive 2000/14/EC				
L <sub>WA</sub>	dB	108	108	109

# Specifications

## Tires L150H, L180H: 26.5 R25 L3. Tires L220H: 29.5 R25 L4

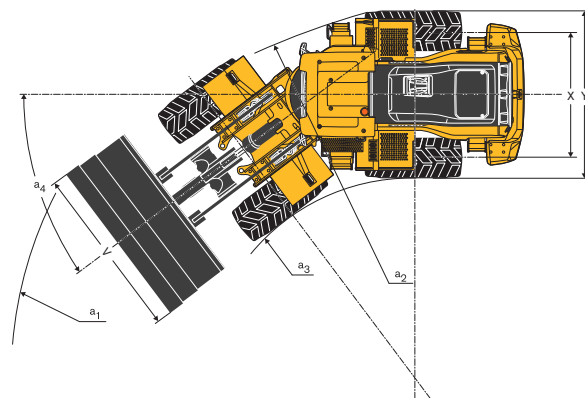
		Standard boom						Long boom					
		L150H		L180H		L220H		L150H		L180H		L220H	
B	mm ft in	7,070	23'3"	7,190	23'7"	7,480	24'6"	7,570	24'10"	7,620	25'0"	7,800	25'7"
C	mm ft in	3,550	11'8"	3,550	11'8"	3,700	12'2"	3,550	11'8"	3,550	11'8"	3,700	12'2"
D	mm ft in	480	1'7"	480	1'7"	530	1'9"	470	1'7"	490	1'7"	530	1'9"
F	mm ft in	3,580	11'9"	3,580	11'9"	3,730	12'3"	3,570	11'9"	3,590	11'9"	3,730	12'3"
G	mm ft in	2,134	7'0"	2,134	7'0"	2,135	7'0"	2,157	7'1"	2,133	7'0"	2,133	7'0"
J	mm ft in	3,920	12'10"	4,060	13'4"	4,230	13'11"	4,490	14'9"	4,560	14'11"	4,600	15'1"
K	mm ft in	4,340	14'3"	4,470	14'8"	4,660	15'3"	4,900	16'1"	4,970	16'4"	5,020	16'6"
O	°	58		57		56		59		55		56	
Pmax	°	50		49		48		49		49		48	
R	°	45		45		43		48		48		44	
R*	°	48		48		47		53		53		49	
S	°	66		71		65		61		63		63	
T	mm ft in	93	0'3.7"	131	0'5.1"	119	0'4.7"	149	0'5.9"	207	0'8.2"	121	0'4.8"
U	mm ft in	520	1'9"	570	1'10"	600	2'0"	640	2'1"	660	2'2"	680	2'3"
X	mm ft in	2,280	7'6"	2,280	7'6"	2,400	7'10"	2,280	7'6"	2,280	7'6"	2,400	7'10"
Y	mm ft in	2,960	9'9"	2,960	9'9"	3,150	10'4"	2,960	9'9"	2,960	9'9"	3,150	10'4"
Z	mm ft in	3,510	11'6"	3,810	12'6"	4,050	13'3"	3,960	13'0"	4,180	13'8"	4,380	14'5"
a <sub>2</sub>	mm ft in	6,790	22'3"	6,790	22'3"	7,100	23'4"	6,790	22'3"	6,790	22'3"	7,100	23'4"
a <sub>3</sub>	mm ft in	3,820	12'7"	3,820	12'7"	3,960	13'0"	3,820	12'7"	3,820	12'7"	3,960	13'0"
a <sub>4</sub>	±°	37		37		37		37		37		37	

\* Carry position SAE

Bucket: L150H: 4.0 m<sup>3</sup> (5.2 yd<sup>3</sup>) GP STE P T SEG

L180H: 4.6 m<sup>3</sup> (6.0 yd<sup>3</sup>) GP STE P T SEG

L220H: 5.2 m<sup>3</sup> (6.8 yd<sup>3</sup>) GP STE P T SEG



## Tires L150H, L180H: 775/65 R29 L3 | Tires L220H: 875/65 R29 L4

		L150H		L180H		L220H	
A	m <sup>2</sup> yd <sup>2</sup>	3.1	3.7	3.5	4.2	4	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

**L150H** Sales code: WLA80713

Operating weight (incl. logging cw 1,140 kg (2,513 lb)):

25,660 kg (56,571 lb)

Operating load: 7,700 kg (16,976 lb)

**L180H** 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)

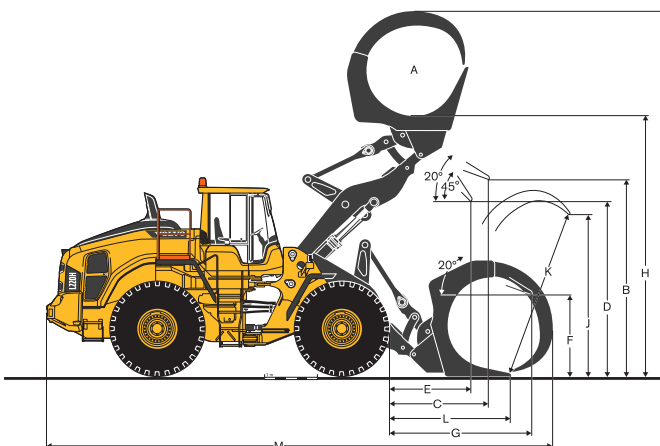
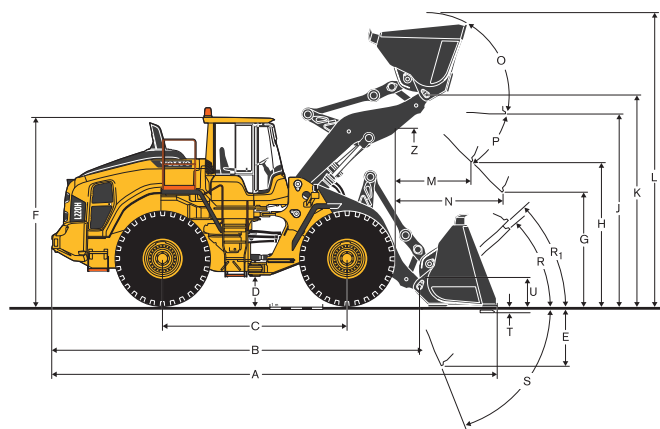
**L220H** Sales code: WLA80852

Operating weight (incl. logging cw 870 kg (1,918 lb)):

32,810 kg (7,334 lb)









Operating load: 10,080 kg (22,223 lb)

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



# Specifications

## L150H

Tires 26.5 R25 L3			REHANDLING								GENERAL PURPOSE						ROCK***		LIGHT MATERIAL		WLA86749 LONG BOOM*	
			WLA86748		WLA86749		WLA86752		WLA86754		WLA93705		WLA93724		WLA93714		WLA93724					
																						
			4.0 m³ (5.2 yd³) STE P BOE		4.4 m³ (5.8 yd³) STE P BOE		4.8 m³ (6.3 yd³) STE P BOE		5.2 m³ (6.8 yd³) STE P BOE		4.0 m³ (5.2 yd³) STE P T SEG		4.4 m³ (5.8 yd³) STE P T SEG		4.0 m³ (5.2 yd³) STE H T SEG		3.5 m³ (4.6 yd³) SPN P T SEG		6.8 m³ (8.9 yd³) LM P			
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	4.0	5.2	3.5	4.6	6.8	8.9	4.4-	5.8-
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	4.4	5.8	3.9	5	7.5	9.8	4.8-	6.3-
Static tipping load, straight	kg	lb	20,190	44,530	20,000	44,100	19,770	43,600	19,660	43,360	20,310	44,790	19,930	43,940	19,560	43,130	18,820	41,500	19,410	42,800	-3,880	-7,826
at 35° turn	kg	lb	18,020	49,720	17,830	39,310	17,610	38,830	17,500	38,580	18,150	40,020	17,770	39,180	17,440	38,460	16,810	37,070	17,290	32,120	-3,560	-7,209
at full turn	kg	lb	17,770	39,180	17,580	38,760	17,360	38,220	17,250	38,040	17,900	39,480	17,520	38,630	17,200	37,920	16,580	36,570	17,040	37,580	-3,520	-7,121
Breakout force	kN	lbf	201.2	45,240	191.5	43,050	183.2	41,190	182.6	41,060	202	45,350	192.4	43,260	189.5	42,640	188.4	42,370	146.6	32,960	9	2,023
A	mm	ft in	8,600	28'2"	8,660	28'5"	8,730	28'8"	8,740	28'8"	8,810	28'11"	8,890	29'2"	8,930	29'3"	8,880	29'2"	9,120	29'11"	520	1'8"
E	mm	ft in	1,230	4'0"	1,300	4'3"	1,360	4'6"	1,370	4'6"	1,430	4'8"	1,500	4'11"	1,520	5'0"	1,480	4'10"	1,710	5'7"	10	-0,4"
H**)	mm	ft in	3,030	9'11"	2,970	9'9"	2,920	9'7"	2,920	9'7"	2,870	9'5"	2,820	9'3"	2,800	9'2"	2,840	9'4"	2,620	8'7"	570	1'10"
L	mm	ft in	5,810	18'1"	5,890	19'04"	5,960	19'7"	5,960	19'7"	5,880	19'4"	5,990	19'8"	6,040	19'10"	5,980	19'8"	6,090	20'0"	570	1'10"
M**)	mm	ft in	1,220	4'0"	1,270	4'2"	1,320	4'4"	1,320	4'4"	1,380	4'6"	1,430	4'8"	1,450	4'9"	1,420	4'8"	1,560	5'2"	-25	-0,1"
N**)	mm	ft in	1,800	5'11"	1,830	6'0"	1,860	6'1"	1,860	6'1"	1,900	6'3"	1,920	6'4"	1,930	6'4"	1,910	6'3"	1,940	6'4"	450	1'6"
V	mm	in	3,200	125"	3,200	125"	3,200	125"	3,400	133"	3,200	125"	3,200	125"	3,000	118"	3,230	127"	3,200	125"	0	-
a, clearance circle	mm	ft in	14,640	48'0"	14,670	48'2"	14,700	48'3"	14,890	48'10"	14,740	48'4"	14,770	48'6"	14,600	47'11"	14,810	48'7"	14,900	48'10"	340	1'1"
Operating weight	kg	lb	25,210	55,590	25,340	55,870	25,490	56,200	25,590	56,420	25,200	55,570	25,540	56,320	25,530	56,280	25,570	56,390	25,660	56,580	410	904

\*) Measured with 4.0 m<sup>3</sup> (5.2 yd<sup>3</sup>) GP bucket Note: This only applies to genuine Volvo attachments.

\*\*) 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°.)

\*\*\*\*) Measured with L5 tires

### 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>. Result: The 4.0 m<sup>3</sup> bucket carries 4.2 m<sup>3</sup>. For optimum stability always consult the bucket selection chart.

Material	Bucket fill, %		Material density		ISO/SAE bucket volume		Actual volume	
			t/m <sup>3</sup>	lb/yd <sup>3</sup>	m <sup>3</sup>	yd <sup>3</sup>	m <sup>3</sup>	yd <sup>3</sup>
Earth/Clay	~ 110		~ 1.6	~ 2,698	4.0	5.2	~ 4.4	~ 5.8
			~ 1.5	~ 2,530	4.4	5.8	~ 4.8	~ 6.3
Sand/Gravel	~ 105		~ 1.6	~ 2,698	4.0	5.2	~ 4.2	~ 5.5
			~ 1.5	~ 2,530	4.4	5.8	~ 4.6	~ 6.0
Aggregate	~ 100		~ 1.8	~ 3,035	4.4	5.8	~ 4.4	~ 5.8
			~ 1.7	~ 2,867	4.8	6.3	~ 4.8	~ 6.3
			~ 1.5	~ 2,530	5.2	6.8	~ 5.2	~ 6.8
Rock	≤100		~ 1.7	~ 2,867	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.

Type of boom	Type of bucket	ISO/SAE Bucket volume	Material density: t/m <sup>3</sup> (lb/yd <sup>3</sup> )						L150H	Pin-on
			0.8 (1349)	1.0 (1686)	1.2 (2024)	1.4 (2361)	1.6 (2698)	1.8 (3035)		
Standard boom	Rehandling*	4.4 m <sup>3</sup> (5.8 yd <sup>3</sup> )						4.6 (6.0)		4.4 (5.8)
		4.8 m <sup>3</sup> (6.3 yd <sup>3</sup> )					5.0 (6.5)			4.8 (6.3)
		5.2 m <sup>3</sup> (6.8 yd <sup>3</sup> )					5.5 (7.2)			5.2 (6.8)
	General purpose	4.0 m <sup>3</sup> (5.2 yd <sup>3</sup> )						4.4 (5.8)		4.0 (5.2)
Long boom	Rehandling*	4.4 m <sup>3</sup> (5.8 yd <sup>3</sup> )						4.6 (6.0)		4.4 (5.8)
		4.8 m <sup>3</sup> (6.3 yd <sup>3</sup> )								
		5.2 m <sup>3</sup> (6.8 yd <sup>3</sup> )								
	General purpose	3.7 m <sup>3</sup> (4.8 yd <sup>3</sup> )						4.1 (5.4)		3.7 (4.8)
Rock material	Rock	3.5 m <sup>3</sup> (4.6 yd <sup>3</sup> )								3.5 (4.6)
		3.8 m <sup>3</sup> (5.0 yd <sup>3</sup> )								
		4.1 m <sup>3</sup> (5.3 yd <sup>3</sup> )								
	Light material	6.8 m <sup>3</sup> (8.9 yd <sup>3</sup> )	6.8 (8.9)							

How to read bucket fill factor

\* Including counterweight

### Supplemental Operating Data

			Standard boom						Long boom					
Tires 26.5 R25 L3			26.5 R25 L4		26.5 R25 L5		775/65 R29 L3		26.5 R25 L4		26.5 R25 L5		775/65 R29 L3	
Width over tires	mm	in	+5	+0.2	+30	+1.2	+180	+7.1	+5	+0.2	+30	+1.2	+180	+7.1
Ground clearance	mm	in	+18	+0.7	+30	+1.2	+10	+0.4	+18	+0.7	+30	+1.2	+10	+0.4
Tipping load, full turn	kg	lb	+250	+551	+760	+1676	+590	+1,300	+220	+485	+640	+1,411	+500	+1,102
Operating weight	kg	lb	+400	+882	+1,060	+2,337	+760	+1,676	+400	+882	+1,050	+2,315	+750	+1,653

# Equipment

STANDARD EQUIPMENT				
	L150H	L180H	L220H	
Engine				
Exhaust after-treatment system	•	•	•	
Two stage air cleaner, pre-cleaner, primary and secondary filter	•	•	•	
Preheating of induction air	•	•	•	
Fuel pre-filter with water trap	•	•	•	
Fuel filter	•	•	•	
Crankcase breather oil trap	•	•	•	
Exterior radiator air intake protection	•	•	•	
Drivetrain				
Automatic Power Shift	•	•	•	
Fully automatic gearshifting, 1-4	•	•	•	
PWM-controlled gearshifting	•	•	•	
Forward and reverse switch by hydraulic lever console	•	•	•	
Rimpull control	•	•	•	
Indicator glass for transmission oil level	•	•	•	
Differentials: Front, 100% hydraulic diff lock. Rear, conventional.	•	•	•	
Optishift with Lock-up, RBB	•	•	•	
Lock-up first gear	•	•	•	
Electrical system				
24 V, pre-wired for optional accessories	•	•	•	
Alternator 24V/80A/2280W	•	•	•	
Battery disconnect switch	•	•	•	
Fuel gauge	•	•	•	
Hour meter	•	•	•	
Electric horn	•	•	•	
Instrument cluster:				
Fuel level				
Diesel Exhaust Fluid/AdBlue 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)				

STANDARD EQUIPMENT			
	L150H	L180H	L220H
Contronic monitoring system			
Monitoring and logging of machine data	•	•	•
Contronic display	•	•	•
Fuel consumption	•	•	•
Diesel Exhaust Fluid/AdBlue 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:			
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			
Safety Belt Warning			
Level warnings:			
Fuel level			
Diesel Exhaust Fluid/AdBlue 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			
Keypad, background lit	•	•	•
Start interlock when gear is engaged	•	•	•

# Equipment

STANDARD EQUIPMENT			
	L150H	L180H	L220H
Hydraulic system			
Main valve, double acting 2-spool with hydraulic pilots	•	•	•
Variable displacement axial piston pumps (3) for:			
1 Working hydraulics, Pilot hydraulics and Brake system	•	•	•
2 Working hydraulics, Pilot hydraulics, Steering and Brake system			
3 Cooling fan and Brake system			
Electro-hydraulic servo controls	•	•	•
Electronic hydraulic lever lock	•	•	•
Automatic boom kick-out	•	•	•
Automatic bucket positioner	•	•	•
Double-acting hydraulic cylinders	•	•	•
Indicator glass for hydraulic oil level	•	•	•
Hydraulic oil cooler	•	•	•
Brake system			
Dual brake circuits	•	•	•
Dual brake pedals	•	•	•
Secondary brake system	•	•	•
Parking brake, electro-hydraulic	•	•	•
Brake wear indicators	•	•	•
Cab			
ROPS (ISO 3471), FOPS (ISO 3449)	•	•	•
Single key kit door/start	•	•	•
Acoustic inner lining	•	•	•
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	•	•	•
Interior rear-view mirrors	•	•	•
Dual exterior rear-view mirrors	•	•	•
Sliding window, right side	•	•	•
Tinted windshield 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	•	•	•

STANDARD EQUIPMENT				
	L150H	L180H	L220H	
Service and maintenance				
Engine oil remote drain and fill	•	•	•	
Transmission oil remote drain and fill	•	•	•	
Lubrication manifolds, ground accessible	•	•	•	
Pressure check connections: transmission and hydraulic, quick-connects	•	•	•	
Quick-fit hydraulic oil fill	•	•	•	
Tool box, lockable	•	•	•	
External equipment				
Orange hand rails	•	•	•	
Fenders, front and rear	•	•	•	
Viscous cab mounts	•	•	•	
Rubber engine and transmission mounts	•	•	•	
Frame, joint lock	•	•	•	
Vandalism lock prepared for				
Engine compartment	•	•	•	
Radiator grille				
Lifting eyes	•	•	•	
Tie-down eyes	•	•	•	
Fabricated counterweight	•	•	•	
Counterweight, pre-drilled for optional guards	•	•	•	



OPTIONAL EQUIPMENT				
	L150H	L180H	L220H	
Engine				
Air pre-cleaner, cyclone type	•	•	•	
Air pre-cleaner, oil-bath type	•	•	•	
Air pre-cleaner, turbo type	•	•	•	
Engine auto shutdown	•	•	•	
Engine delayed shutdown	•	•	•	
Engine block heater 230V/110V	•	•	•	
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	•	•	•	
Tires				
26,5 R25	•	•	—	
775/65 R29	•	•	—	
29,5 R25	—	—	•	
875/65 R29	—	—	•	
Drivetrain				
Diff lock front 100%, Limited Slip rear	•	•	•	
Speed limiter	•	•	•	
Wheel/axle seal guards	•	•	•	
Electrical system				
Anti-theft device	•	•	•	
Emergency stop	•	•	•	
Locking device, Tag out Lock out	•	•	•	
Headlights, assym. left	•	•	•	
License plate holder, lighting	•	•	•	
Rear vision system, colour LCD monitor in the cab	•	•	•	
Rear view mirrors, Long arm	•	•	•	
Rear view mirrors, adjustable, el.heated, Long arm	•	•	•	
Reduced function working lights, reverse gear activated	•	•	•	
Reverse alarm, audible	•	•	•	
Reverse alarm, white noise	•	•	•	
Reverse warning light, strobe lighting	•	•	•	
Seatbelt indicator, external	•	•	•	
Shortened headlight support brackets	•	•	•	
Side marker lamps	•	•	—	
Warning beacon LED	•	•	•	
Warning beacon LED automatic	•	•	•	
LED Head Light	•	•	•	
LED tail light	•	•	•	
LED working lights, attachments	•	•	•	
LED working lights on cab, front and rear	•	•	•	
LED working lights on cab, front, 2 alt. 4 LED lamps	•	•	•	
LED working lights on cab, rear, 2 alt. 4 LED lamps	•	•	•	
LED working lights, rear in grille, 2 LED lamps	•	•	•	
LED working lights, front above head lamps, 2 LED lamps	•	•	•	
LED work lights, side on cab, 4 LED lamps	•	•	•	
LED light packages	•	•	•	
Working lights halogen, attachments	•	•	•	
Working lights on cab halogen, front and rear	•	•	•	
Working lights on cab halogen, rear	•	•	•	
Electrical distribution unit 24 volt	•	•	•	
Alternator 120 amp, heavy-duty	•	•	•	
Radar detect system	•	•	•	
Forward camera, colour	•	•	•	
Parking brake alarm, audible for air susp seats	•	•	•	
Jump start connector, NATO-Type	•	•	•	
Max Boom height	•	•	•	
Can Bus Interface	•	•	•	
Delayed Engine Shutdown	•	•	•	
Co Pilot available	•	•	•	
Rearview camera in Co pilot	•	•	•	
OnBoard Weighing	•	•	•	
Tire pressure monitoring	•	•	•	
MAP	•	•	•	

OPTIONAL EQUIPMENT			
	L150H	L180H	L220H
Hydraulic system			
Boom suspension system	•	•	•
Separate attachment locking	•	•	•
Arctic kit, for 3rd function	•	•	•
Boom cylinder hose and tube guards	•	•	•
Hydraulic fluid, biodegradable, Volvo	•	•	•
Hydraulic fluid, fire-resistant	•	•	•
Hydraulic fluid, for hot climate	•	•	•
Hydraulic 3rd function	•	•	•
hydraulic 3rd-4th function	•	•	•
Single lever control, hydraulics 2 functions	•	•	•
Single lever control, hydraulics 3 functions	•	•	•
Single lever control, hydraulics 4 functions	•	•	•
Brake system			
Oil cooler and filter front & rear axle	•	•	•
Stainless steel, brake lines	•	•	—
Cab			
Anchorage for Operator's manual	•	•	•
Automatic Climate Control, ACC	•	•	•
ACC control panel, with Fahrenheit scale	•	•	•
Asbestos dust protection filter	•	•	•
Ashtray	•	•	•
Cab air pre-cleaner, cyclone type	•	•	•
Carbon filter	•	•	•
Cover plate, under cab	•	•	•
Lunch box holder	•	•	•
Volvo Armrest, operator's seat, left	•	•	•
Operator's seat, Volvo air susp, heavy-duty, high back, heated	•	•	•
Operator's seat, (air seat std) 2-point seat belt	•	•	•
Operator's seat, (air seat std) 3-point seat belt	•	•	•
Operator's seat, Premium Comfort ISRI	•	•	•
Operator's seat, Premium Comfort ISRI 3-point seat belt	•	•	•
Radio installation kit incl. 12 volt outlet, left side	•	•	•
Radio installation kit incl. 12 volt outlet, right side	•	•	•
Radio (with AUX, Bluetooth and USB connection)	•	•	•
DAB Radio	•	•	•
Subwoofer	•	•	•
Steering wheel knob	•	•	•
Sun blinds, rear windows	•	•	•
Sun blinds, side windows	•	•	•
Timer cab heating	•	•	•
Window, sliding, door	•	•	•
Universal door/ignition key	•	•	•
Remote door opener	•	•	•
Forward view mirror	•	•	•
Cab heater power outlet 240V	•	•	•
Cab, Hot applications. Roof, steel	•	•	•
Fire extinguisher cab	•	•	•
Outside steel protection cab	•	•	•
Rear view mirrors long arm, cab	•	•	•
Reinforced windshield, flat	•	•	•

# Equipment

OPTIONAL EQUIPMENT			
	L150H	L180H	L220H
Service and maintenance			
Automatic lubrication system	•	•	•
Automatic lubrication system for long boom	•	•	•
Grease nipple guards	•	•	•
Oil sampling valve	•	•	•
Quick engine oil change	•	•	•
Refill pump for grease to lube system	•	•	•
Tool kit	•	•	•
Wheel nut wrench kit	•	•	•
CareTrack, GSM, GSM/Satellite	•	•	•
Telematics, Subscription	•	•	•
Belly guard front	•	•	•
Belly guard rear	•	•	•
Cover plate, heavy-duty, front frame	•	•	•
Cover plate, rear frame	•	•	•
Cab roof, heavy-duty	•	•	•
Guards for front headlights	•	•	•
Guards for radiator grill	•	•	•
Guards for tail lights	•	•	•
Windows, side and rear guards	•	•	•
Windshield guard	•	•	•
Corrosion protection, painting of machine	•	•	•
Corrosion protection, painting of attachment bracket	•	•	—
Option for machines without dinitrol	•	•	•
Bucket Teeth protection	•	•	—
Other Equipment			
CE-marking	•	•	•
Comfort Drive Control (CDC)	•	•	•
Counterweight, logging	•	•	•
Counterweight, signal painted, chevrons	•	•	•
Secondary steering with automatic test function	•	•	•
Sound decal, EU	•	•	•
Sound decal, USA	•	•	•
Reflecting stickers (decals), machine contour	•	•	•
Reflecting stickers (stripes), machine contour Cab	•	•	•
Noise reduction kit, exterior	•	•	•
Sign, 50 km/h	•	—	—

OPTIONAL EQUIPMENT			
	L150H	L180H	L220H
External equipment			
Cab ladder, rubber-suspended	•	•	•
Escape Ladder, left fender	•	•	•
Handles on counterweight	•	•	•
Deleted front mudguards	•	•	•
Fire suppression system	•	•	•
Mudguards, full cover, front and rear for 80-series tires	•	•	•
Mudguards, full cover, front and rear for 65-series tires	•	•	•
Long boom	•	•	•
Tow hitch	•	•	•
Attachments			
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	•	•	•



**Volvo Construction Equipment**  
[volvoce.com](http://volvoce.com)

<b>Description</b>	<b>Article</b>
Volvo L150H Wheel Loader	L150H
26.5R25* L3 VJT Bridgestone (4)	WL20048
4 - Rims (3pc) for 26.5-25 Tires	WL21016
Full coverage fenders, front/rear for standard tires	WL22010
Engine D13 Tier 4f US	WL32013
Fuel fill strainer	WL30007
Delayed Engine Shutdown	WL30024
Axle cooling including reversible fan	WL37002
Premium Comfort ISRI	WL41017
Air conditioning w/ corrosion prot. condenser & ACC (auto climate	WL42002
Steering knob	WL45001
Sliding window in door	WL45003
ACC Fahrenheit decal only	WL45004
Universal key	WL45005
Lunch box holder	WL45023
Anchorage manual	WL45027
CoPilot with rear view camera	WL45052
Operator Coaching	WL88201
LOTO, Lock out tag out	WL53009
Back up alarm	WL54001
Wheel nut wrench kit	WL71003
Decals, English/Spanish	WL83004
Cover plates, rear frame	WL86013
Frame, life time warranty	WL86041
Handrail on counterweight	WL86044
CareTrack Connectivity 4 yr Subscription	WL88010
CareTrack, GSM/Satellite	WL88018
De-activate SAT	WL88020
118" 5.2 yd yd pin-on GP bucket, straight edge (available with weld-	WLA87105
118" steel bolt-on edge for straight-edge buckets	WLA93746
Boom Suspension System (" Ride Control" . Includes single acting lift	WL80001





**Volvo Construction Equipment North America**  
**Warranty – Disclaimers – Limitations**  
**Limited Warranty for Governmental / Municipalities**

Volvo Construction Equipment North America (“Volvo CE”) hereby extends to its authorized dealers (“Dealer”) and the Dealer’s Governmental / Municipalities customers (“Customer”, and both Dealer and Customer are referred to herein as a “Buyer”), who purchase a new Volvo construction equipment machine (“Machine”) or new Volvo part (“Part”, both of which are referred to herein as a “Product”) from Volvo, the following limited warranty:

Subject to the exceptions and limitations set forth below, Volvo CE or Dealer will repair or replace any part of a new Machine or new Part which proves to be defective in material or workmanship during the following periods (the “Warranty Period”):

- Volvo wheel loaders: 12 months/2500 hours, whichever first occurs
- Volvo articulated haulers: 12 months/2500 hours, whichever first occurs
- Volvo hydraulic excavators: 12 months/2500 hours, whichever first occurs
- Volvo motor graders: 12 months/2500 hours, whichever first occurs
- Volvo compactors: 12 months/1500 hours, whichever first occurs  
24 months unlimited hours on DD90 and larger compactors
- Volvo pavers: 12 months/1500 hours, whichever first occurs  
24 months unlimited hours on 6000 / 7000 series pavers
- Volvo milling: 12 months/1500 hours, whichever first occurs
- Volvo compact wheel loaders (up to 100 net hp.): 12 months/unlimited hours
- Volvo skid steer loaders: 12 months/unlimited hours; Lifetime arm for one-sided
- Volvo compact hydraulic excavators (less than 11 metric tons): 12 months/unlimited hours
- Volvo backhoe loaders: 12 months/unlimited hours
- Volvo engines: 12 months/2500 hours, whichever first occurs
- Volvo parts: 6 months/1500 hours, whichever first occurs
- Volvo remanufactured components: 12 months/2500 hours, whichever first occurs
- Volvo Attachments: 12 months

The Warranty Period commences immediately following the delivery of said Product to the Buyer who first puts said Product into use. The foregoing limited warranty shall include the labor cost to accomplish the repair or replacement of the defective part provided that the repair or replacement was performed by a Dealer.

The foregoing warranty does not cover: (i) any Product found to have been damaged by abuse, accident, other casualty or a failure to maintain or use the warranted Product in accordance with the applicable manuals or instructions (Buyer is required to use only original equipment manufacturer filters during the Warranty Period); (ii) the labor costs to repair or replace defective Parts after the expiration of the Warranty Period of the Machine in which such Part is located; (iii) overtime labor premiums; (iv) costs and expenses associated with the transportation of Dealer’s service personnel to and from the location of the warranted Product; (v) any parts, components, attachments or accessories for which Buyer receives a separate warranty by the manufacturer or producer thereof (in specified cases said warranty may be administered by Volvo CE); (vi) maintenance items or ground engaging parts that have achieved their normal service life.

**DISCLAIMER OF IMPLIED WARRANTIES AND LIMITATION OF REMEDIES**

THE FOREGOING WARRANTY TO BUYER IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, AND THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

REMEDIES AVAILABLE TO BUYER ARE LIMITED TO MAKING A CLAIM UNDER THE FOREGOING WARRANTY AND ARE EXCLUSIVE AND EXPRESSLY LIMITED TO OBTAINING THE PARTS AND LABOR IN ACCORDANCE WITH THE TERMS OF SAID WARRANTY.

# **Warranty – Disclaimers – Limitations**

## **LIMITATIONS OF LIABILITY AND DAMAGES**

Regardless of whether a claim against Volvo CE or Dealer is based on the foregoing warranty or is an action in contract, tort (negligence or strict liability) or otherwise, their respective liability for losses, damages or expenses of any kind arising from the design, manufacture, repair or sale of the Products is limited, unless otherwise prohibited by law, to an amount not exceeding the cost performing the obligations contained in the foregoing warranty, and in no event shall their respective or joint liability exceed the value of the Product or part thereof giving rise to such liability.

## **CONSEQUENTIAL AND SIMILAR DAMAGES NOT RECOVERABLE**

Except for performing the obligations of the foregoing warranty in accordance with its terms, Volvo CE and Dealer shall have no liability for loss, damage, or expense, directly or indirectly, attributable to a loss of use of a Product, loss or damage to property other than the Product, loss or damage to the Product or any part thereof or any other economic or commercial loss, including, without limitation, lost profits or special or consequential damages (except liability for any type of consequential damages which by law may not be disclaimed). The parties intend that this prohibition against consequential and similar damages will survive and be effective even if the limitation of remedies in the foregoing sections is found to fail of its essential purpose under section 2-719 of the Uniform Commercial Code.

## **ALLOCATION OF RISK**

The foregoing warranty disclaimers, limitations of liability and limitation of remedies are bargained allocations of risks among (i) the Customer who purchased the Product; (ii) the Dealer who sold the Product, and (iii) Volvo CE, which is a third party beneficiary of the contract of sale between the Customer and the Dealer. The Buyer of the Product accepts the foregoing warranty and the other bargained for allocations of risk as part of the agreed price for the purchase of the Product to which the foregoing warranty applies. Volvo CE is prepared to offer different warranties and other allocations of risk for other prices. However, any such change in the warranty or the allocation of risks must be confirmed in writing by Volvo CE.

## **STATUTE OF LIMITATIONS**

Any action by a Buyer of a Product for breach of contract, for breach of warranty arising under, or for a cause of action arising out of the sale of a Product, whether based on contract, tort (negligence or strict liability) or otherwise, shall be commenced within one (1) year after the cause of action has accrued. Any such cause of action shall be deemed to have accrued at the earlier of (i) the discovery of the defect or breach, or (ii) the expiration of the applicable Warranty Period.