

VOLVO EXCAVATOR

EC150

LONG CRAWLER



- **Engine power, gross:**
79.4 kW, 107 hp
- **Operating weights:**
16.0 ~ 16.5 t
35,270 ~ 36,290 lb
- **Buckets (SAE):**
725 ~ 1,025 l
0.95 ~ 1.34 yd³
- Low-emission, turbocharged Cummins diesel engine with direct injection
- Integrated mode selection system and electronically controlled system (ACS)
- 2 variable displacement axial piston pumps. Independent and simultaneous movements of the attachment are controlled by the "Automatic sensing work mode."
- Cab
 - Ergonomic environment
 - Low sound level
 - Filtered air
 - Hydraulic dampening mounts
- Strong attachment, produced by robotic welding
- High lifting, breakout and tearout forces for tough digging conditions
- Long undercarriage for good stability
- Hammer/Shear and Volvo Quick Coupler Piping as standard equipment
- Prepared for a number of optional items

VOLVO



ENGINE

The engine is a low-emission, turbocharged, 4-stroke diesel engine with water cooling, direct injection and aftercooler, especially developed for excavator use.

The machine can work at any job site, contributing to good fuel economy, low sound level, less wear and a longer life.

Air filter: 3-stage, includes pre-cleaner

Automatic idling system: Reduces the engine speed to an idling speed when levers and pedals are not activated.

Maker	CUMMINS	
Model	B3.9-C	
Power output at.....	35 r/s	2,100 rpm
Net (ISO 9249/DIN 6271)	75 kW	101 hp
Gross (SAE J1349).....	79.4 kW	107 hp
Max. torque.....	431 N·m at 1600 rpm	318 lb-ft at 1600 rpm
No. of cylinders.....	4	
Displacement	3.9 l	239 cu.in
Bore	102 mm	4.02"
Stroke	120 mm	4.72"



ELECTRICAL SYSTEM

Well-protected electrical system with high capacity.

Double lock harness plugs are waterproof to ensure secure connections and prevent corrosion.

The relays and solenoid valves are shielded to prevent accidental damage or terminal contact.

The master switch, for disconnecting the battery, is standard.

ACS system, providing integrated mode selection functions and self-diagnostic mode, is standard.

Voltage.....	24 V	
Batteries	2 x 12 V	
Battery capacity.....	150 Ah	
Alternator	24 V / 50 A	



SERVICE REFILL CAPACITIES

Fuel tank	260 l	69 gal
Hydraulic system, total	275 l	73 gal
Hydraulic tank.....	150 l	40 gal
Engine oil.....	17.5 l	4.6 gal
Engine coolant.....	24.5 l	6.5 gal
Swing reduction unit.....	3.8 l	1.0 gal
Travel reduction units.....	2 x 5.8 l	2 x 1.5 gal



SWING SYSTEM

The superstructure is swung by means of an axial piston motor and a planetary reduction unit. Automatic swing holding brake and anti-rebound valve are standard.

Max. swing speed..... 11.9 rpm



UNDERCARRIAGE

The undercarriage has an X-shaped frame.

The greased and sealed track chain is standard.

No. of track pads.....	2 x 44	
Link pitch.....	190 mm	7.5"
Shoe width, triple grouser	600 (Std.) / 700 / 800 mm	24"(Std.) / 28" / 32"
No. of lower track rollers	2 x 7	
No. of upper rollers.....	2 x 2	



DRIVE

Each track is powered by an automatic two-speed travel motor.

The track brakes are multi-disc, spring-applied and hydraulic-released.

The travel motors, brake and planetary gears are well-protected in the track frame.

Max. tractive effort.....	140 kN	31,475 lbf
Max. travel speed (1st/2nd).....	3.1 / 5.3 km/h	1.9 / 3.3 mph
Gradeability	35°	70%



HYDRAULIC SYSTEM

The hydraulic system, named "Automatic Sensing Work Mode," is designed for high productivity, high digging capacity, high maneuvering precision and good fuel economy.

The summation system, boom priority, arm priority, swing priority, and regeneration system of the boom and arm flows are provided for the best operation.

The following important functions are included in the system:

Summation system: providing full use of the pump oil flow.

Boom priority: gives priority to the boom operation for fast raising when loading or deep excavating.

Arm priority: gives priority to the arm operation for faster cycle times in leveling and for increased bucket filling when digging.

Swing priority: supplies priority to the swing operation for faster swing during simultaneous operations.

Regeneration system: enhances the cylinder life cycle to prevent cavitation and provides priority to other movements during simultaneous operations.

Power boost: All digging and lifting forces are increased.

Holding valves: Boom and arm holding valves are standard.

Power Max: All function speeds are increased.

Pumps

Main pump:

Type 2 x variable displacement axial piston pumps

Maximum flow 2 x 145 l/min **2 x 38 gpm**

Pilot pump:

Type Gear pump

Maximum flow 21 l/min **5.5 gpm**

Hydraulic motors

Travel 2 x variable displacement axial piston motors

Swing Fixed displacement piston motor with mechanical brake

Relief valve setting

Attachment 31.4/34.3 MPa **4,550/4,980 psi**

Travel circuit 34.3 MPa **4,980 psi**

Swing circuit 24.5 MPa **3,560 psi**

Pilot circuit 3.9 MPa **570 psi**

Hydraulic cylinders

Boom 2
bore x stroke Ø 115 mm x 1165 mm
Ø 4.5" x 45.9"

Arm 1
bore x stroke Ø 120 mm x 1345 mm
Ø 4.7" x 52.9"

Bucket 1
bore x stroke Ø 105 mm x 1000 mm
Ø 4.1" x 39.4"



CAB

Easily accessible cab with a wide door and lined with sound-absorbing material.

The cab, which is supported by hydraulic dampening mounts to reduce shock and vibration, has all-around visibility.

The front windshield can slide up into the ceiling and the lower front glass can be removed.

Integrated air-conditioning and heating system:

The pressurized and filtered cab air is supplied by a 4-speed fan. The air is distributed via 8 vents.

Ergonomic operator's seat: The adjustable seat and control consoles move independently to accommodate the operator well. The seat has eight different adjustments and a seat belt to meet any operator's requirement.

Sound level:

 According to the Directive 86/662/EEC.

Exterior noise (ISO 6395)

mean value of L_{WA} (sound power level) 101.9 dB(A)

Operator's position (ISO 6396)

with the door closed

mean value of L_{PA} (sound pressure level) 73 dB(A)



GROUND PRESSURE

• Machine with **Std. 5.2 m, 17' 1" boom, Std. 2.6 m, 8' 6" arm, 460 kg, 1,030 lb bucket and 2650 kg, 5,840 lb counterweight.**

Description	Shoe width	Operating weight	Ground pressure	Overall width
Triple grouser	Std. 600 mm	16 000 kg	38 kPa	2590 mm
	Std. 24"	35,270 lb	5.5 psi	8' 6"
	700 mm	16 220 kg	33 kPa	2690 mm
	28"	35,760 lb	4.7 psi	8' 10"
	800 mm	16 460 kg	29 kPa	2790 mm
	32"	36,290 lb	4.3 psi	9' 2"

BUCKET & ARM COMBINATION

Note: 1. Bucket size based on SAE-J296, heaped material with a 1:1 angle of repose.

2. "Max. permitted sizes" are for reference only and are not necessarily available from the factory.

• Max. permitted sizes for pin on buckets

Counterweight: 2650 kg, **5,840 lb**

Description	unit	2.3 m, 7' 7" Arm	Std. 2.6 m, 8' 6" Arm	3.0 m, 9' 10" Arm
GP bucket 1.5 t/m ³ , 2,530 lb/yd ³	l, yd ³	1025, 1.34	975, 1.28	875, 1.14
GP bucket 1.8 t/m ³ , 3,030 lb/yd ³	l, yd ³	900, 1.18	850, 1.11	775, 1.01

• Max. permitted sizes for hook on buckets - For (S1) size Volvo Quick Couplers

Counterweight: 2650 kg, **5,840 lb**

Description	unit	2.3 m, 7' 7" Arm	Std. 2.6 m, 8' 6" Arm	3.0 m, 9' 10" Arm
GP bucket 1.5 t/m ³ , 2,530 lb/yd ³	l, yd ³	950, 1.24	900, 1.18	850, 1.11
GP bucket 1.8 t/m ³ , 3,030 lb/yd ³	l, yd ³	825, 1.08	775, 1.01	725, 0.95

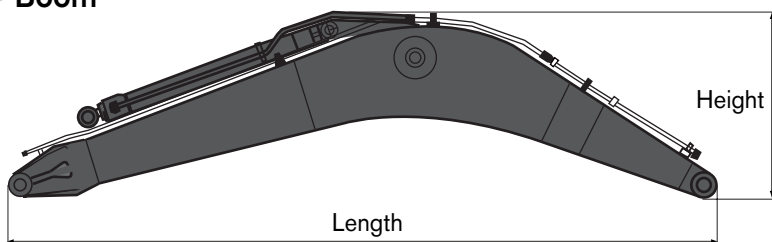
• Max. permitted sizes for hook on buckets - For (S6) size Volvo Quick Couplers

Counterweight: 2650 kg, **5,840 lb**

Description	unit	2.3 m, 7' 7" Arm	Std. 2.6 m, 8' 6" Arm	3.0 m, 9' 10" Arm
GP bucket 1.5 t/m ³ , 2,530 lb/yd ³	l, yd ³	975, 1.28	925, 1.21	850, 1.11
GP bucket 1.8 t/m ³ , 3,030 lb/yd ³	l, yd ³	850, 1.11	800, 1.05	750, 0.98

DIMENSIONS

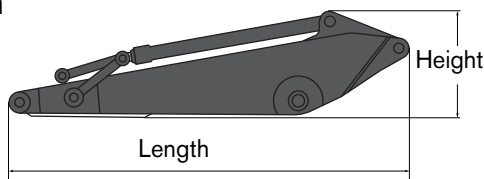
• Boom



Description	Std. 5.2 m, 17' 1"
Length	5400 mm, 17' 8"
Height	1630 mm, 5' 4"
Width	565 mm, 1' 10"
Weight *	1215 kg, 2,680 lb

* Includes cylinder, piping and pin

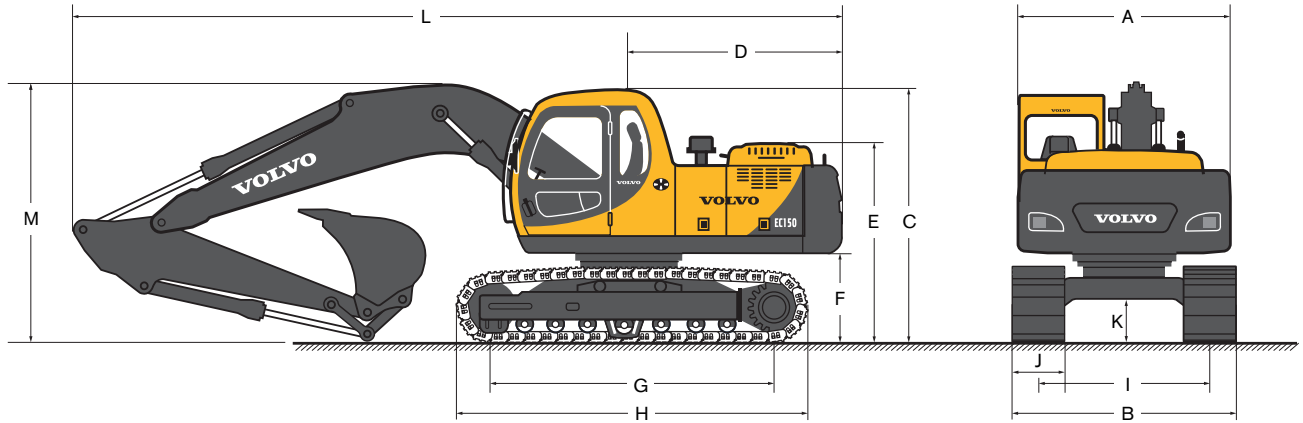
• Arm



Description	2.3 m, 7' 7"	Std. 2.6 m, 8' 6"	3.0 m, 9' 10"
Length	3240 mm, 10' 7"	3500 mm, 11' 6"	3900 mm, 12' 9"
Height	850 mm, 2' 9"	850 mm, 2' 9"	840 mm, 2' 9"
Width	400 mm, 1' 4"	400 mm, 1' 4"	400 mm, 1' 4"
Weight *	670 kg, 1,477 lb	705 kg, 1,554 lb	765 kg, 1,687 lb

* Includes cylinder, linkage and pins

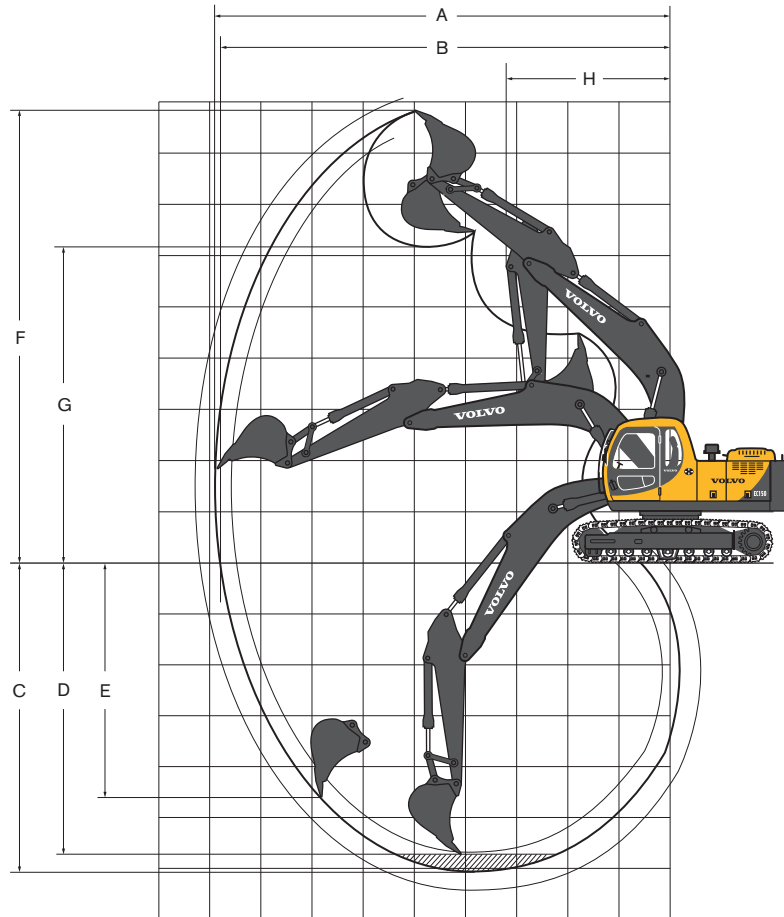
DIMENSIONS



Boom	unit	Std. 5.2 m, 17' 1"		
Arm		2.3 m, 7' 7"	Std. 2.6 m, 8' 6"	3.0 m, 9' 10"
A. Overall width of upper structure	mm, ft-in	2460, 8' 1"	2460, 8' 1"	2460, 8' 1"
B. Overall width	mm, ft-in	2590, 8' 6"	2590, 8' 6"	2590, 8' 6"
C. Overall height of cab	mm, ft-in	2900, 9' 6"	2900, 9' 6"	2900, 9' 6"
D. Tail swing radius	mm, ft-in	2450, 8' 0"	2450, 8' 0"	2450, 8' 0"
E. Overall height of engine hood	mm, ft-in	2265, 7' 5"	2265, 7' 5"	2265, 7' 5"
F. Counterweight clearance*	mm, ft-in	1010, 3' 4"	1010, 3' 4"	1010, 3' 4"
G. Tumbler length	mm, ft-in	3180, 10' 5"	3180, 10' 5"	3180, 10' 5"
H. Track length	mm, ft-in	3970, 13' 0"	3970, 13' 0"	3970, 13' 0"
I. Track gauge	mm, ft-in	1990, 6' 6"	1990, 6' 6"	1990, 6' 6"
J. Shoe width-Std.	mm, in	600, 24"	600, 24"	600, 24"
K. Min. ground clearance*	mm, ft-in	460, 1' 6"	460, 1' 6"	460, 1' 6"
L. Overall length	mm, ft-in	8800, 28' 10"	8690, 28' 6"	8730, 28' 8"
M. Overall height of boom	mm, ft-in	2980, 9' 9"	2900, 9' 6"	3020, 9' 11"

* Without shoe grouser

WORKING RANGES



• Std. 5.2 m, 17' 1" boom with pin on bucket











Arm	unit	2.3 m, 7' 7"	Std. 2.6 m, 8' 6"	3.0 m, 9' 10"
A. Max. digging reach	mm, ft-in	8650, 28' 5"	8970, 29' 5"	9340, 30' 8"
B. Max. digging reach on ground	mm, ft-in	8480, 27' 10"	8800, 28' 10"	9180, 30' 1"
C. Max. digging depth	mm, ft-in	5730, 18' 10"	6030, 19' 9"	6430, 21' 1"
D. Max. digging depth (8' level)	mm, ft-in	5430, 17' 10"	5770, 18' 11"	6200, 20' 4"
E. Max. vertical wall digging depth	mm, ft-in	4210, 13' 10"	4690, 15' 5"	5080, 16' 8"
F. Max. cutting height	mm, ft-in	8580, 28' 2"	8830, 29' 0"	9030, 29' 8"
G. Max. dumping height	mm, ft-in	6110, 20' 1"	6340, 20' 10"	6550, 21' 6"
H. Min. front swing radius	mm, ft-in	3070, 10' 1"	3070, 10' 1"	3070, 10' 1"

Digging forces with pin on bucket:		unit	2.3 m, 7' 7"	Std. 2.6 m, 8' 6"	3.0 m, 9' 10"
Bucket tip radius		mm, ft-in	1315, 52"	1315, 52"	1315, 52"
Breakout force-bucket (Normal / Power boost)	SAE	kN	93.1 / 101.8	93.1 / 101.8	93.1 / 101.8
		lb	20,930 / 22,890	20,930 / 22,890	20,930 / 22,890
Tearout force-arm (Normal / Power boost)	SAE	kN	82.5 / 90.3	73.4 / 80.2	66.4 / 72.6
		lb	18,550 / 20,300	16,500 / 18,030	14,930 / 16,320
Rotation angle, bucket		°	183°	183°	182°

LIFTING CAPACITY (At the arm end without bucket)

Note: For lift capacity including bucket, simply subtract actual weight of the pin on bucket or the bucket with quick coupler from the following values.

EC150 (Std. shoe 600 mm, 24", Counterweight 2650 kg, 5,840 lb)

 Across under-carriage  Along under-carriage	Lifting hook related to ground level m / ft	3 m, 10'		4.5 m, 15'				6 m, 20'				7.5 m, 25'				Max.reach		Max. m/ft				
																						
		t	lb	t	lb	t	lb	t	lb	t	lb	t	lb	t	lb	t	lb					
Monobloc boom 5.2 m 17' 1" + Arm 2.3 m 7' 7"	6 20'														3.1	7,030	*4.3	*9,410	5.9 / 19.0			
	4.5 15'					4.6	9,990	*4.7	*10,270	3.0	6,400	4.4	9,510			2.5	5,450	3.7	8,110	6.8 / 22.1		
	3 10'					4.3	9,320	*6.3	*13,500	2.9	6,140	4.3	9,220			2.2	4,760	3.2	7,140	7.2 / 23.6		
	1.5 5'					4.0	8,670	6.3	13,630	2.7	5,850	4.1	8,910			2.0	4,490	3.1	6,800	7.3 / 24.1		
	0 0'					3.9	8,310	6.1	13,220	2.6	5,640	4.0	8,680			2.1	4,560	3.2	6,960	7.1 / 23.4		
	-1.5 -5'	7.1	15,170	*9.9	*22,550	3.8	8,220	6.1	13,120	2.6	5,580	4.0	8,610			2.3	5,060	3.5	7,760	6.6 / 21.6		
-3 -10'	7.2	15,460	*12.3	*26,720	3.9	8,360	6.2	13,270							2.9	6,470	4.5	10,000	5.6 / 18.2			
Monobloc boom 5.2 m 17' 1" + Arm Std. 2.6 m 8' 6"	6 20'									3.1	6,540	*3.9	*8,810			2.8	6,350	*3.8	*8,510	6.3 / 20.3		
	4.5 15'					*4.4	*9,430	*4.4	*9,430	3.0	6,440	*4.2	*9,150			2.3	5,040	3.4	7,510	7.1 / 23.2		
	3 10'	8.0	17,190	*9.2	*19,550	4.4	9,410	*5.9	*12,680	2.9	6,160	4.3	9,250			2.0	4,440	3.0	6,670	7.5 / 24.7		
	1.5 5'					4.0	8,720	6.4	13,690	2.7	5,850	4.1	8,910	2.0	4,230	3.0	6,410	1.9	4,200	2.9	6,370	7.7 / 25.1
	0 0'	*5.1	*11,830	*5.1	*11,830	3.9	8,300	6.1	13,210	2.6	5,610	4.0	8,650			1.9	4,250	3.0	6,500	7.5 / 24.5		
	-1.5 -5'	7.0	15,030	*9.0	*20,570	3.8	8,160	6.1	13,060	2.6	5,520	4.0	8,550			2.1	4,670	3.2	7,170	6.9 / 22.7		
-3 -10'	7.1	15,290	12.6	26,910	3.8	8,250	6.1	13,160							2.6	5,790	4.0	8,940	6.0 / 19.5			
Monobloc boom 5.2 m 17' 1" + Arm 3.0 m 9' 10"	6 20'									3.1	6,620	*3.5	*7,770			2.5	5,680	*3.3	*7,190	6.7 / 21.8		
	4.5 15'									3.0	6,480	*3.8	*8,330			2.1	4,610	3.1	6,880	7.5 / 24.5		
	3 10'	*7.8	*16,560	*7.8	*16,560	4.4	9,520	*5.3	*11,510	2.9	6,180	4.3	9,280	2.0	4,340	3.0	6,550	1.8	4,080	2.8	6,170	7.9 / 25.9
	1.5 5'	*5.1	*12,380	*5.1	*12,380	4.1	8,770	6.4	13,760	2.7	5,840	4.1	8,910	1.9	4,190	3.0	6,380	1.8	3,870	2.7	5,900	8.0 / 26.3
	0 0'	*5.6	*12,830	*5.6	*12,830	3.8	8,270	6.1	13,190	2.6	5,560	4.0	8,610	1.9	4,060	2.9	6,250	1.8	3,900	2.7	6,000	7.8 / 25.7
	-1.5 -5'	6.9	14,820	*8.4	*19,240	3.7	8,060	6.0	12,950	2.5	5,420	3.9	8,450			1.9	4,230	3.0	6,530	7.3 / 24.1		
-3 -10'	7.0	15,020	12.5	26,600	3.8	8,090	6.0	12,990	2.5	5,460	3.9	8,490			2.3	5,100	3.6	7,910	6.5 / 21.1			

- Notes :
- Machine in "Fine Mode - F" (Power Boost), for lift capacities.
 - The above loads are in compliance with SAE and ISO Hydraulic Excavator Lift Capacity Standards.
 - Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping load.
 - Rated loads marked with an asterisk (*) are limited by hydraulic capacity rather than tipping load.
 - Contains metric and U.S. measurement charts.

STANDARD EQUIPMENT

Engine

Low-emission engine with air heater, complying with EPA (Environmental Protection Agency, USA) emission standards

2-stage air filter with indicator
Electric engine shut-off
Fuel filter and water separator
Air pre-cleaner
Alternator, 50 AMP

Electronic control system

Advanced control system (ACS)
Integrated mode selection system
Self-diagnostic system
Machine status indication
Engine speed sensing power control
"Power Max" mode system
Automatic idling system
One-touch power boost
Automatic engine warm-up
Safety stop/start function
Adjustable monitor
Master disconnect switch
Engine restart prevention circuit

Powerful halogen lights:

- Frame mounted (2)
 - Boom mounted (2)
- Batteries, 2 x 12V/150Ah
Starter motor, 24V/3.7kW
Travel alarm

Hydraulic system

Automatic sensing work mode

- Summation system
- Boom priority
- Arm priority
- Swing priority

Boom and arm flow regeneration
Swing anti-rebound valve
Boom and arm holding valves
Wrist control joysticks, with 3 switches ea.
Multi-stage filtering system
Cylinder cushions
Cylinder contamination seals
Auxiliary hydraulic valve
Straight travel circuit
Volvo quick coupler piping
Hammer/shear piping, w/ 1 pump flow
Automatic two-speed travel motors

Hydraulic oil, ISO VG 46
Pump flow control for hammer & shear

Superstructure

Access way with handrail
Full height counterweight
- 2650 kg, **5,840 lbs**
Tool storage area
Punched metal anti-slip plates

Cab and interior

Air-conditioner
Heater
Hydraulic dampening cab mounts
Adjustable operator seat and control console
Flexible antenna
Hydraulic safety lock lever
Cab, all-weather, sound suppressed, includes:

- Ashtray
- Fabric seat with heater
- Cigar lighter
- Clear tinted roof hatch
- Door locks
- Floor mat

- Horn
- Large storage area
- Pull-up type front window
- Removable lower windshield
- Seat belt
- Safety glass
- Sliding rear window
- Sun shield, front
- Windshield wiper with intermittent feature

Master ignition key
Stereo cassette/radio (AM/FM)
Vandal guard preparation

Undercarriage

Hydraulic track adjusters
Greased and sealed track chain
Track guards

Track shoes

Std. track shoes 600 mm, **24"** with triple grousers

Attachment

Std. boom: 5.2 m, **17' 1"**
Std. arm: 2.6 m, **8' 6"**

OPTIONAL EQUIPMENT

Engine

Alternator, 70 AMP
Block and oil pan heater, 110V
Fuel warmer
Tropical kit
Fuel filler pump: 50 lpm (**13.2 gpm**), with automatic shut-off

Electronic control system

Extra work lights (4):

- Cab-mounted 3, (front 2, rear 1)
- Counterweight-mounted 1

 Rotating warning beacon

Hydraulic system

Hydraulic piping

- For hammer & shear:
 - 2 pump flow
 - Additional return filter
 - Extra piping for slope & rotator

 Volvo hydraulic quick couplers- S1 or S6 sizes
Hydraulic oil, ISO VG 32
Hydraulic oil, ISO VG 68

Superstructure

Undercover (heavy duty), 4.5 mm, **0.2"**

Cab and interior

Fabric seat
Fabric seat, with heater and air suspension
Wrist control joysticks, with 5 switches ea.
Falling object guard (FOG)
Cab mounted falling object protective structures (FOPS)
Rain shield, front
Safety screen, for front window
Anti-vandalism kit

Undercarriage

Undercover (heavy duty), 10 mm, **0.4"**

Track shoes

700 mm, **28"** / 800 mm, **32"** track shoes with triple grousers

Attachment

Arms: 2.3 m, **7' 7"** / 3.0 m, **9' 10"**

Service

Tool kit

*Specifications may vary by region without notice.

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*Materials and specifications are subject to change without notice.

Under our policy of continuous improvement, we reserve the right to change specifications and designs without prior notice. The illustrations do not necessarily show the standard version of the machine.

VOLVO

Volvo Construction Equipment
North America Inc.

One Volvo Drive, Asheville, N.C. 28803-3447

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