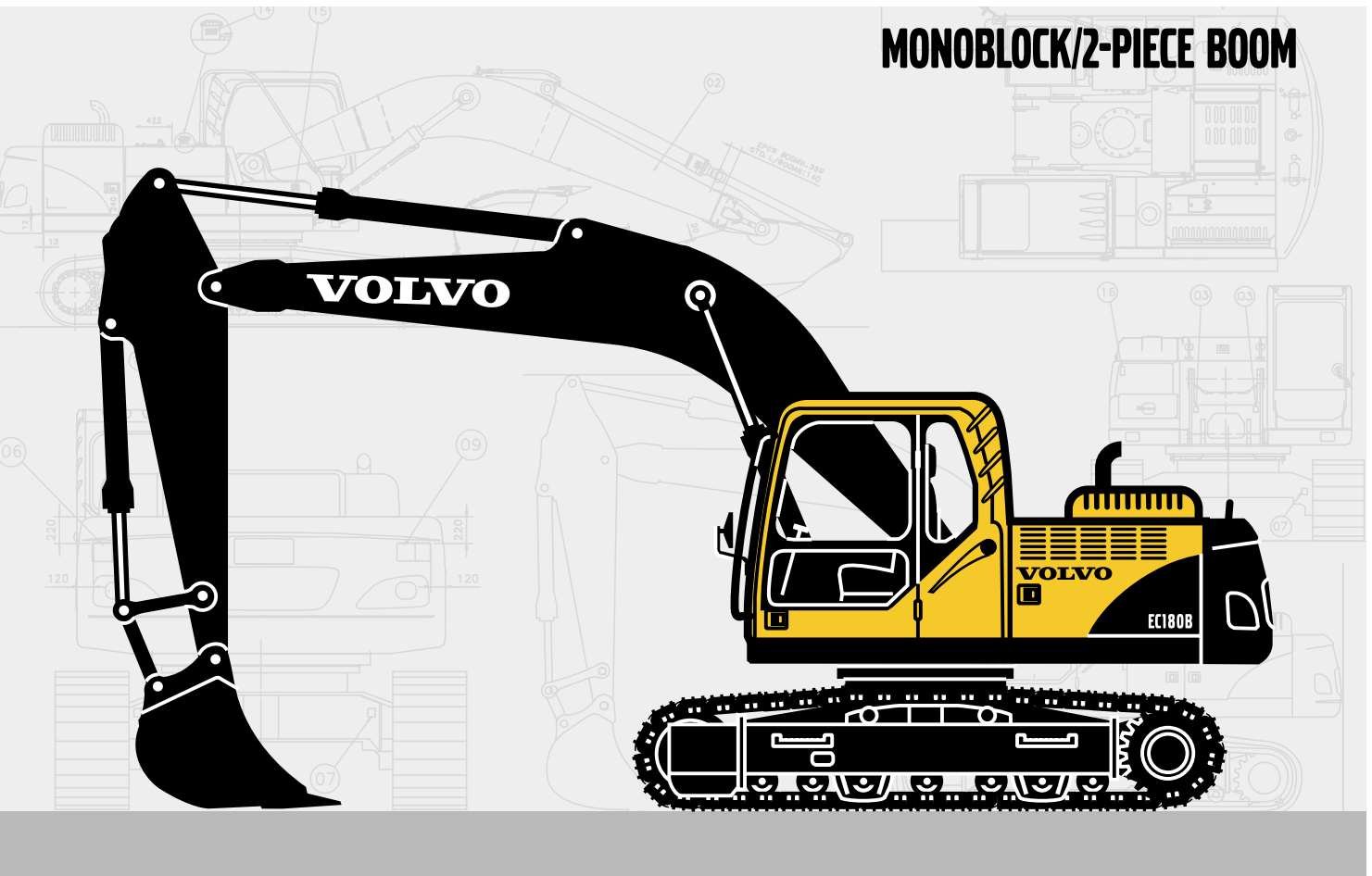


VOLVO EXCAVATOR

EC180B LC

MONOBLOCK/2-PIECE BOOM



- **Engine power, gross:**
90 kW (121 hp)
- **Operating weight:**
18,1 ~ 19,0 t
- **Buckets (SAE):**
1 025 ~ 1 425 l
- Turbocharged VOLVO diesel engine with direct injection and charged air cooler meets EU Step 2 requirements
- Contronics, Volvo's advanced mode selection system and electronically controlled system
- 2 variable displacement axial piston pumps. Independent and simultaneous movements of the digging equipment are controlled by "Automatic Sensing Work Mode".
- Cab
 - Ergonomic environment for easier operator use
 - Low sound level
 - Filtered air
 - Hydraulic dampening mounts
- Strong digging equipment, produced by robotic welding
- High lifting, breakout and tearout forces for tough digging conditions
- Long undercarriage for excellent stability
- Auxiliary hydraulic valve is standard
- Prepared for a number of optional items

VOLVO



ENGINE

The engine is a turbocharged, 4-stroke diesel engine with water cooling, direct injection and charged air cooler that meets EU Step 2 requirements. The engine has been developed especially for excavator use, providing good fuel economy, low noise levels and a long service life.

Air Filter: 3-stage

Automatic Idling System: Reduces engine speed to idle when the levers and pedals are not activated resulting in less fuel consumption and low cab noise levels.

Low-Emission Engine:

Make	VOLVO
Model	D6D EHE2
Power output at	32 r/s (1 900 rpm)
Net (ISO 9249/ DIN 6271)	81 kW (110 ps / 109 hp)
Gross (SAE J1995)	90 kW (122 ps / 121 hp)
Max. torque	542 N·m at 1 450 rpm
No. of cylinders	6
Displacement	5,7 l
Bore	98 mm
Stroke	126 mm



SLEW SYSTEM

The superstructure is slewed by the means of an axial piston motor and a planetary reduction gear. Automatic slew holding brake and anti-rebound valve are standard.

Max. slew speed 11,9 rpm



DRIVE

Each track is powered by an automatic two-speed shift travel motor. The track brakes are multi-disc, spring-applied and hydraulic released. The travel motor, brake and planetary gears are well protected within the track frame.

Max. tractive effort 158,9 kN
 Max. travel speed 2,7 / 5,3 km/h
 Gradeability 35° (70%)



ELECTRICAL SYSTEM

High capacity electrical system that is well-protected. Waterproof double-lock harness plugs are used to secure corrosion free connections. The main relays and solenoid valves are shielded to prevent damage. The master switch is standard.

Contronics, provides advanced monitoring of machine functions and important diagnostic information.

Voltage	24 V
Batteries	2 x 12 V
Battery capacity	150 Ah
Alternator	28 V / 80 A



UNDERCARRIAGE

The undercarriage has a robust X-shaped frame, greased and sealed track chains are standard.

No. of track shoes 2 x 46
 Link pitch 190 mm
 Shoe width, triple grouser 600 / 700 / 800 / 900 mm
 No. of bottom rollers 2 x 7
 No. of top rollers 2 x 2



SERVICE REFILL CAPACITIES

Fuel tank	260 l
Hydraulic system, total	245 l
Hydraulic tank	120 l
Engine oil	25 l
Engine coolant	22 l
Slew reduction unit	2,6 l
Travel reduction unit	2 x 5,8 l



HYDRAULIC SYSTEM

The hydraulic system, also known as the “Automatic Sensing Work Mode”, is designed for high-productivity, high-digging capacity, high-maneuvering precision and good fuel economy. The summation system, boom, arm and slew priority along with boom and arm regeneration provide optimum performance.

The following important functions are included in the system:

Summation system: Combines the flow of both hydraulic pumps to ensure quick cycle times and high productivity.

Boom priority: Gives priority to the boom operation for faster raising when loading or performing deep excavations.

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

Slew priority: Gives priority to slew functions for faster simultaneous operations.

Regeneration system: Prevents cavitation and provides flow to other movements during simultaneous operations for maximum productivity.

Power boost: All digging and lifting forces are increased.

Holding valves: Boom and arm holding valves prevent the digging equipment from creeping.

Power Max: All function speeds are increased.

Main pump:

Type 2 x variable displacement axial piston pumps
Maximum flow . . . 2 x 145 l/min

Pilot pump:

Type Gear pump
Maximum flow . . . 1 x 19 l/min

Hydraulic motors:

Travel Variable displacement axial piston motor with mechanical brake
Slew Fixed displacement axial piston motor with mechanical brake

Relief valve setting:

Implement 32,4 / 34,3 Mpa
Travel circuit 34,3 Mpa
Slew circuit 26,5 Mpa
Pilot circuit 3,9 Mpa

Hydraulic cylinders:

Monoblock boom 2
Bore x Stroke $\varnothing 115 \times 1\ 165$ mm
1st boom of 2-piece boom 2
Bore x Stroke $\varnothing 115 \times 1\ 165$ mm
2nd boom of 2-piece boom 1
Bore x Stroke $\varnothing 160 \times 950$ mm
Arm 1
Bore x Stroke $\varnothing 120 \times 1\ 345$ mm
Bucket 1
Bore x Stroke $\varnothing 105 \times 1\ 000$ mm



CAB

The operator's cab has easy access via a wide door opening. The cab is supported on hydraulic dampening mounts to reduce shock and vibration levels. These along with sound absorbing lining provide low noise levels. The cab has excellent all-round visibility. The front windshield can easily slide up into the ceiling and the lower front glass can be removed and stored in the side door.

Integrated air conditioning and heating system:

The pressurized and filtered cab air is supplied by an automatically controlled fan. The air is distributed throughout the cab from 13 vents.

Ergonomic operator's seat: The adjustable seat and joystick console move independently to accommodate the operator. The seat has nine different adjustments plus a seat belt to for the operator's comfort and safety.

Sound Level:

Sound level in cab
according to ISO 6396 LpA 72 dB(A)
External sound level
according to ISO 6395
and EU Directive 2000/14/EC LwA 101 dB(A)



GROUND PRESSURE

- Long crawler machine with 5,2 m monoblock boom, 2,6 m arm, 570 l (470 kg) bucket and 3 350 kg counterweight.

Description	Shoe width	Operating weight	Ground pressure	Overall width
Triple grouser	600 mm	18 070 kg	40,4 kPa	2 800 mm
	700 mm	18 490 kg	35,5 kPa	2 900 mm
	800 mm	18 750 kg	31,5 kPa	3 000 mm
	900 mm	19 020 kg	28,4 kPa	3 100 mm

MAX. PERMITTED BUCKETS

Note: 1. Bucket size based on ISO 7451, 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 direct fit buckets:

Long crawler machine with counterweight 3 350 kg

Description	Unit	5,2 m Boom		
		2,3 m Arm	2,6 m Arm	3,0 m Arm
GP bucket 1,5 t/m ³	l	1 425	1 350	1 250
GP bucket 1,8 t/m ³	l	1 250	1 175	1 075

- Max. permitted sizes for S6 quick fit buckets:

Long crawler machine with counterweight 3 350 kg

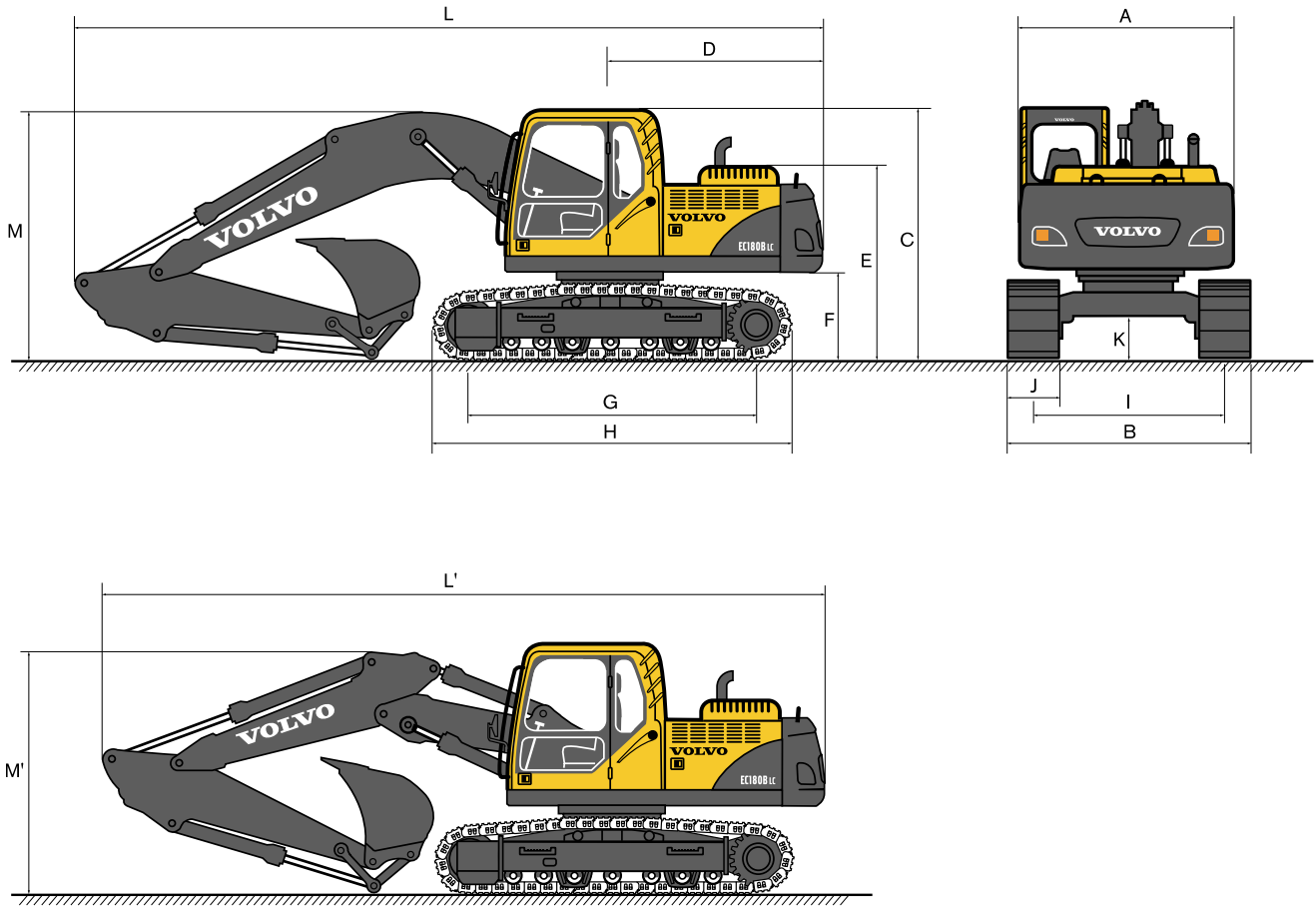
Description	Unit	5,2 m Boom		
		2,3 m Arm	2,6 m Arm	3,0 m Arm
GP bucket 1,5 t/m ³	l	1 375	1 300	1 200
GP bucket 1,8 t/m ³	l	1 200	1 125	1 050

- Max. permitted sizes for S1 quick fit buckets:

Long crawler machine with counterweight 3 350 kg

Description	Unit	5,2 m Boom		
		2,3 m Arm	2,6 m Arm	3,0 m Arm
GP bucket 1,5 t/m ³	l	1 350	1 275	1 175
GP bucket 1,8 t/m ³	l	1 175	1 125	1 025

DIMENSIONS



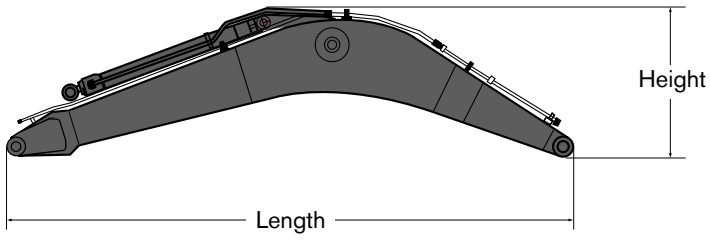
• Long crawler machine

Description	Unit	5,2 m Boom		
		2,3 m Arm	2,6 m Arm	3,0 m Arm
A. Overall width of superstructure	mm	2 450	2 450	2 450
B. Overall width	mm	2 800	2 800	2 800
C. Overall height of cab	mm	2 932	2 932	2 932
D. Tail slew radius	mm	2 450	2 450	2 450
E. Overall height of engine hood	mm	2 222	2 222	2 222
F. Counterweight clearance *	mm	1 042	1 042	1 042
G. Tumbler length	mm	3 370	3 370	3 370
H. Track length	mm	4 166	4 166	4 166
I. Track gauge	mm	2 200	2 200	2 200
J. Shoe width	mm	600	600	600
K. Min. ground clearance *	mm	460	460	460
L. Overall length	mm	8 780	8 670	8 710
L'. Overall length	mm	8 600	8 520	8 520
M. Overall height of boom	mm	2 990	2 900	3 030
M'. Overall height of boom	mm	2 800	2 800	2 960

* Without shoe grouser

DIMENSIONS

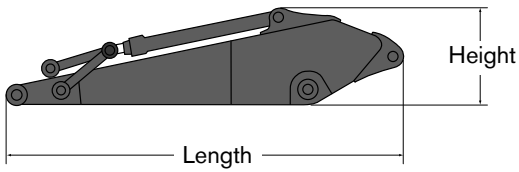
• Boom



Description	5,2 m	5,0 m 2-piece
Length	5 400 mm	5 200 mm
Height	1 640 mm	1 270 mm
Width	565 mm	565 mm
Weight	1 350 kg	1 600 kg

* Includes cylinder, pin and piping

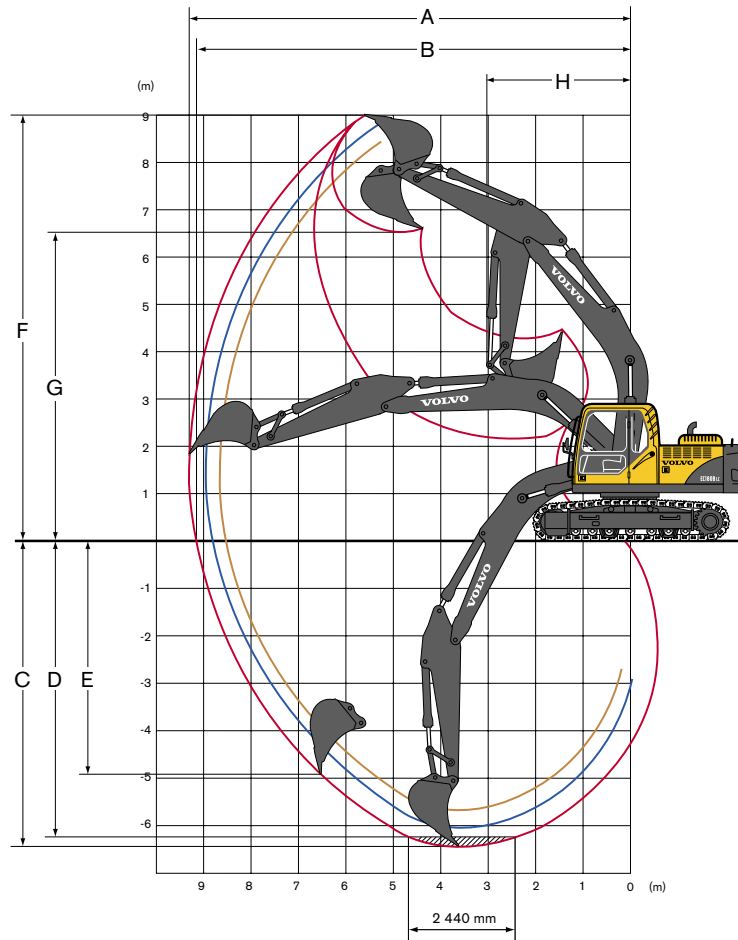
• Arm



Description	2,3 m	2,6 m	3,0 m
Length	3 240 mm	3 500 mm	3 900 mm
Height	855 mm	855 mm	845 mm
Width	395 mm	395 mm	395 mm
Weight	760 kg	775 kg	840 kg

* Includes cylinder, piping and linkage

WORKING RANGES & DIGGING FORCES



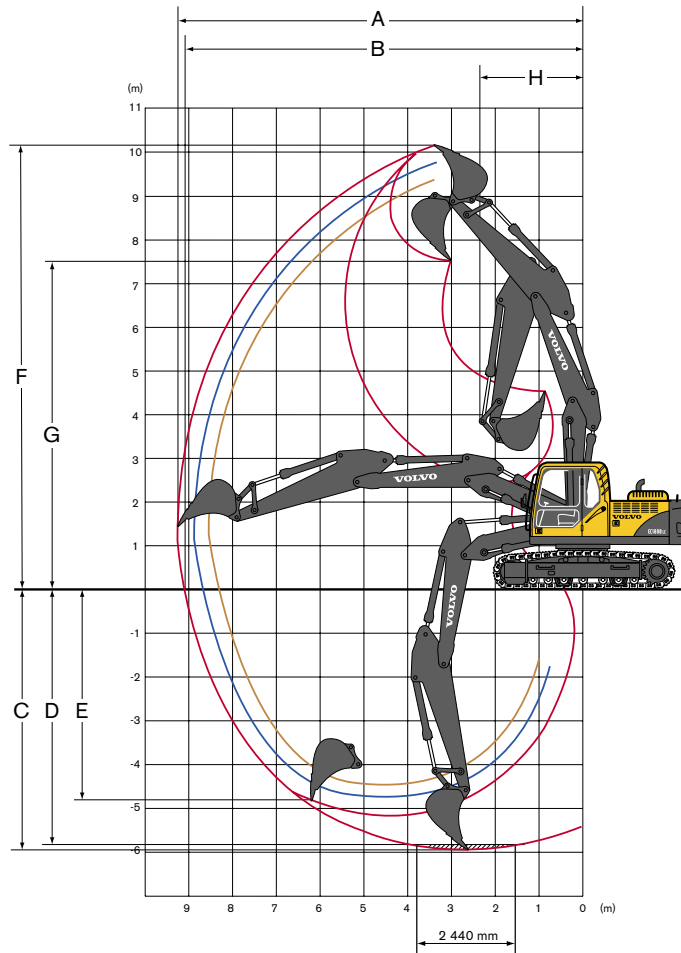
• 5,2 m monoblock boom with direct fit bucket

Description	Unit	5,2 m Boom		
		2,3 m Arm	2,6 m Arm	3,0 m Arm
A. Max. digging reach	mm	8 650	8 970	9 340
B. Max. digging reach on ground	mm	8 480	8 800	9 180
C. Max. digging depth	mm	5 710	6 010	6 410
D. Max. digging depth (2,44 m level)	mm	5 400	5 740	6 170
E. Max. vertical wall digging depth	mm	4 040	4 510	4 930
F. Max. cutting height	mm	8 560	8 820	9 030
G. Max. dumping height	mm	6 140	6 370	6 570
H. Min. front slew radius	mm	3 070	3 070	3 070

• Digging forces with direct fit bucket

Description	Unit	5,2 m Boom		
		2,3 m Arm	2,6 m Arm	3,0 m Arm
Bucket radius	mm	1 315	1 315	1 315
Breakout force – bucket (Normal / Power boost)	SAE kN	99,2 / 105,2	99,2 / 105,2	99,2 / 105,2
Breakout force – bucket (Normal / Power boost)	ISO kN	111,3 / 118,1	111,3 / 118,1	111,3 / 118,1
Tearout force – arm (Normal / Power boost)	SAE kN	84,9 / 90,1	75,5 / 80,0	68,4 / 72,6
Tearout force – arm (Normal / Power boost)	ISO kN	87,3 / 92,6	77,4 / 82,1	69,9 / 74,1
Rotation angle, bucket	deg	174	174	174

WORKING RANGES & DIGGING FORCES



● **5,0 m 2-piece boom with direct fit bucket**

Description	Unit	5,0 m 2-piece boom		
		2,3 m Arm	2,6 m Arm	3,0 m Arm
A. Max. digging reach	mm	8 550	8 870	9 240
B. Max. digging reach on ground	mm	8 370	8 690	9 080
C. Max. digging depth	mm	5 180	5 500	5 890
D. Max. digging depth (2,44 m level)	mm	5 060	5 380	5 780
E. Max. vertical wall digging depth	mm	4 040	4 400	4 800
F. Max. cutting height	mm	9 540	9 850	10 160
G. Max. dumping height	mm	6 950	7 240	7 550
H. Min. front slew radius	mm	2 290	2 250	2 350
















● **Digging forces with direct fit bucket**

Description	Unit	5,0 m 2-piece boom			
		2,3 m Arm	2,6 m Arm	3,0 m Arm	
Bucket radius	mm	1 315	1 315	1 315	
Breakout force – bucket (Normal / Power boost)	SAE	kN	99,2 / 105,2	99,2 / 105,2	99,2 / 105,2
Breakout force – bucket (Normal / Power boost)	ISO	kN	111,3 / 118,1	111,3 / 118,1	111,3 / 118,1
Tearout force – arm (Normal / Power boost)	SAE	kN	84,9 / 90,1	75,5 / 80,0	68,4 / 72,6
Tearout force – arm (Normal / Power boost)	ISO	kN	87,3 / 92,6	77,4 / 82,1	69,9 / 74,1
Rotation angle, bucket	deg		174	174	174

LIFTING CAPACITY (At the arm and without bucket)

Note: For lifting capacity including bucket, simply subtract actual weight of the direct fit bucket or the bucket with quick fit from the following values.

EC180B LC















 Across undercarriage  Along undercarriage	Lifting hook related to ground level	1,5 m		3,0 m		4,5 m		6,0 m		7,5 m		Max. reach			
															Max. mm
with 600 mm shoe 3 350 kg CWT monoblock boom 5,2 m + arm 2,3 m	6,0 m kg												*4 210	4 210	5 880
	4,5 m kg					*4 670	*4 670	*4 380	4 020				*4 410	3 340	6 760
	3,0 m kg					*6 170	5 890	*4 990	3 880				4 210	2 950	7 220
	1,5 m kg					*7 730	5 550	5 410	3 730				4 040	2 810	7 340
	0 m kg					8 140	5 370	5 290	3 620				4 140	2 870	7 140
	-1,5 m kg			*9 840	*9 840	8 090	5 320	5 250	3 590				4 610	3 180	6 590
	-3,0 m kg			*12 170	10 190	8 160	5 390						5 890	4 010	5 590
	-4,5 m kg														
with 600 mm shoe 3 350 kg CWT monoblock boom 5,2 m + arm 2,6 m	6,0 m kg							*3 900	*3 900				*3 830	3 830	6 270
	4,5 m kg					*4 300	*4 300	*4 120	4 060				*3 760	3 110	7 100
	3,0 m kg			*9 120	*9 120	*5 810	*5 810	*4 770	3 910	3 990	2 800		*3 880	2 780	7 540
	1,5 m kg					*7 430	5 590	5 430	3 750	3 910	2 730		3 800	2 650	7 650
	0 m kg			*5 100	*5 100	8 150	5 380	5 290	3 620				3 890	2 700	7 460
	-1,5 m kg	*5 250	*5 250	*9 000	*9 000	8 070	5 310	5 240	3 570				4 280	2 950	6 940
	-3,0 m kg	*9 380	*9 380	*12 590	10 110	8 120	5 350						5 290	3 620	6 000
	-4,5 m kg			*10 100	*10 100								*6 960	5 830	4 350
with 600 mm shoe 3 350 kg CWT monoblock boom 5,2 m + arm 3,0 m	6,0 m kg							*3 450	*3 450				*3 240	*3 240	6 720
	4,5 m kg							*3 750	*3 750				*3 180	2 860	7 500
	3,0 m kg			*7 710	*7 710	*5 270	*5 270	*4 430	3 920	3 990	2 800		*3 270	2 570	7 910
	1,5 m kg			*5 140	*5 140	*6 970	5 620	*5 270	3 740	3 900	2 720		*3 520	2 460	8 020
	0 m kg			*5 570	*5 570	8 140	5 360	5 270	3 600	3 830	2 650		3 600	2 490	7 840
	-1,5 m kg	*4 800	*4 800	*8 430	*8 430	8 020	5 260	5 190	3 530				3 910	2 690	7 350
	-3,0 m kg	*8 160	*8 160	*13 000	9 970	8 040	5 270	5 210	3 540				4 700	3 220	6 470
	-4,5 m kg			*11 010	10 230	*7 390	5 420						*6 490	4 700	4 990

- Notes:
- Machine in "Fine Mode-F" (Power Boost), for lifting capacities.
 - The above loads are in compliance with SAE J1097 and ISO 10567 Hydraulic Excavator Lifting 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.

LIFTING CAPACITY (At the arm and without bucket)

Note: For lifting capacity including bucket, simply subtract actual weight of the direct fit bucket or the bucket with quick fit from the following values.

EC180B LC

 Across undercarriage  Along undercarriage	Lifting hook related to ground level	1,5 m		3,0 m		4,5 m		6,0 m		7,5 m		Max. reach			
														Max. mm	
with 600 mm shoe 3 350 kg CWT 2-piece boom 5,0 m + arm 2,3 m	7,5 m kg											*5 560	*5 560	4 120	
	6,0 m kg					*6 450	6 430					*4 800	4 300	5 740	
	4,5 m kg			*7 860	*7 860	*6 990	6 230	5 700	3 970				*4 640	3 370	6 640
	3,0 m kg					*7 990	5 860	5 550	3 830				4 270	2 960	7 110
	1,5 m kg					8 330	5 490	5 380	3 680				4 090	2 820	7 230
	0 m kg					8 100	5 290	5 260	3 570				4 210	2 890	7 030
	-1,5 m kg			*10 050	9 930	*7 640	5 260	5 240	3 550				4 730	3 220	6 470
	-3,0 m kg					*5 350	*5 350						*4 090	*4 090	5 380
with 600 mm shoe 3 350 kg CWT 2-piece boom 5,0 m + arm 2,6 m	7,5 m kg					*4 790	*4 790					*4 350	*4 350	4 670	
	6,0 m kg					*5 550	*5 550	*4 290	4 060			*3 790	*3 790	6 140	
	4,5 m kg			*5 870	*5 870	*6 360	6 310	*5 690	4 010			*3 650	3 130	6 980	
	3,0 m kg			*11 810	11 160	*7 740	5 930	5 590	3 860			*3 710	2 780	7 430	
	1,5 m kg					8 380	5 540	5 400	3 690	3 880	2 680	3 850	2 650	7 550	
	0 m kg			*5 630	*5 630	8 120	5 300	5 260	3 570			3 940	2 710	7 360	
	-1,5 m kg			*9 670	*9 670	*7 920	5 240	5 220	3 530			4 370	2 990	6 830	
	-3,0 m kg					*5 940	5 310					*3 950	3 720	5 860	
with 600 mm shoe 3 350 kg CWT 2-piece boom 5,0 m + arm 3,0 m	7,5 m kg					*4 650	*4 650					*3 600	*3 600	5 270	
	6,0 m kg					*4 680	*4 680	*4 340	4 120			*3 200	*3 200	6 600	
	4,5 m kg					*5 140	*5 140	*5 100	4 050			*3 080	2 860	7 390	
	3,0 m kg			*10 820	*10 820	*7 350	6 000	5 610	3 880	3 960	2 740	*3 130	2 560	7 810	
	1,5 m kg			*6 320	*6 320	*8 400	5 580	5 410	3 700	3 870	2 670	*3 310	2 450	7 930	
	0 m kg			*6 050	*6 050	8 110	5 290	5 250	3 550	3 800	2 600	3 640	2 490	7 740	
	-1,5 m kg			*9 010	*9 010	7 990	5 190	5 170	3 480			3 980	2 710	7 240	
	-3,0 m kg			*8 880	*8 880	*6 560	5 220	*4 520	3 520			*3 940	3 280	6 350	

- Notes:
1. Machine in "Fine Mode-F" (Power Boost), for lifting capacities.
 2. The above loads are in compliance with SAE J1097 and ISO 10567 Hydraulic Excavator Lifting Capacity Standards.
 3. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping load.
 4. Rated loads marked with an asterisk (*) are limited by hydraulic capacity rather than tipping load.

STANDARD EQUIPMENT

Engine

Turbocharged, 4 stroke diesel engine with water cooling, direct injection and charged air cooler that meets EU Step 2 requirements
3-stage air filter with indicator
Air intake heater
Electric engine shut-off
Fuel filter and water separator
Fuel filler pump: 50 l/min with automatic shut-off
Coolant filter
Alternator, 80 A

Electric / Electronic control system

Contronics:
- Advanced mode control system
- Self-diagnostic system
Machine status indication
Engine speed sensing power control
"Power Max" mode system
Automatic idling system
One-touch power boost

Safety stop/start function
Overload warning device
Adjustable monitor
Master switch
Engine restart prevention circuit
High capacity halogen lights:
- Frame mounted 2
- Boom mounted 2
Batteries, 2 x 12 V / 150 Ah
Start motor, 24 V / 4,8 kW

Hydraulic system

Automatic hydraulic system:
- Summation system
- Boom priority
- Arm priority
- Slew priority
Boom and arm regeneration valves
Slew anti-rebound valves
Boom and arm holding valves
Multi-stage filtering system
Cylinder cushioning
Cylinder contamination seals
Hose rupture valve: boom
Auxiliary hydraulic valve

Straight travel circuit
Automatic two-speed travel motors
Hydraulic oil, ISO VG 46

Superstructure

Access way with handrail
Tool storage area
Punched metal anti-slip plates
Counterweight, 3 350 kg
Undercover (heavy duty 4,5 mm)

Cab and interior

Heater & air-conditioner, automatic
Hydraulic dampening cab mounts
Adjustable operator seat and joystick control console
Flexible antenna
Hydraulic safety lock lever
Control joystick, with 5 switches each
Cab, all-weather sound suppressed, includes:
- Ashtray
- Cup holder
- Lighter
- Door locks

- Tinted glass
- Floor mat
- Horn
- Large storage area
- Pull-up type front window
- Removable lower windshield
- Seat belt
- Safety glass
- Windshield wiper with intermittent feature
- Rain shield, front
- Sun shield, front, roof, rear
- Stereo cassette radio
Anti-vandalism kit assembly preparation
Master ignition key

Undercarriage

Hydraulic track adjusters
Greased and sealed track chain
Track guards
Undercover (heavy duty 10 mm)

Service

Tool kit, daily maintenance

ALTERNATIVE EQUIPMENT

Cab and interior

Seat:
- Fabric seat
- Fabric seat, with heater
- Fabric seat, with heater and air suspension

Track shoes

600 / 700 / 800 / 900 mm track shoes with triple grousers

Digging equipment

Boom: 5,2 m monoblock
5,0 m 2-piece
Arm: 2,3 / 2,6 / 3,0 m

OPTIONAL EQUIPMENT (Standard in certain markets)

Engine

Block heater, 120V / 240 V
Diesel coolant heater
Tropical cooling kit

Electric

Extra lamps:
- Cab-mounted 3, (front 2, rear 1)
- Counterweight-mounted 1
Rotating warning beacon
Travel alarm

Hydraulic system

Hose rupture valve: dipper arm
Hydraulic piping
- Hammer & shears:
1 pump flow
2 pump flow
Additional return filter
Pump flow control for hammer & shears
Extra piping for slope & rotator
- Slope & rotator
- Grapple
- Oil leak (drain) line
- Quick fit piping
Volvo hydraulic quick-fit, S1, S6 size
Hydraulic oil, ISO VG 32
Hydraulic oil, ISO VG 68
Hydraulic oil, biodegradable 32
Hydraulic oil, biodegradable 46
Boom floating function

Cab and interior

Falling object guard (FOG)
Cab mounted falling object protective structures (FOPS)
Safety net for front window
Lower wiper
Anti-vandalism kit

Service

Tool kit, full scale

All products are not available in all markets. 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

Construction Equipment
www.volvo.com

Ref. No. 21 C 100 0659 English
Printed in Sweden 2005.12-1,0 EXB
Volvo, Eskilstuna

Courtesy of Machine.Market