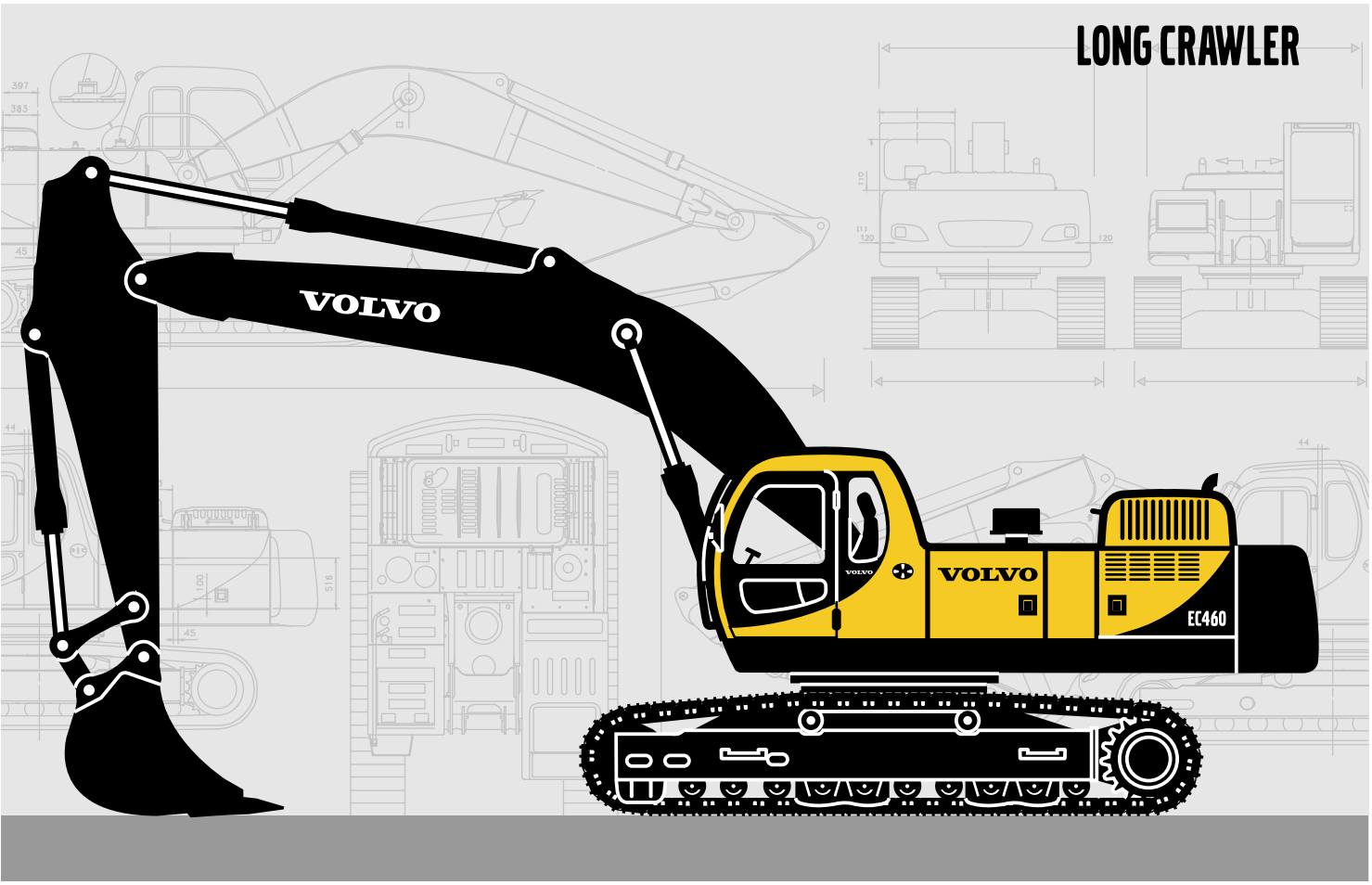
VOLVO EXCAVATOR

EC460

LONG CRAWLER



- Engine power, gross: 239 kW (321 hp)
- Operating weight: 44.3 ~ 46.0 t
- Buckets (SAE): 1900 ~ 2300 l
- 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 digging equipment are controlled by the “Automatic sensing work mode”.
- Cab
  - Ergonomic environment
  - 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 good stability
- Auxiliary hydraulic valve as standard
- 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	M11-C
Power output at	33 r/s (2000 rpm)
Net (ISO 9249/DIN 6271)	221 kW (300 ps / 296 hp)
Gross (SAE J1349)	239 kW (325 ps / 321 hp)
Max. torque	1177 N·m (120 kg·m) at 1500 rpm
No. of cylinders	6
Displacement	10.8 l
Bore	125 mm
Stroke	147 mm

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	200 Ah
Alternator	24 V / 50 A

SWING SYSTEM

The superstructure is swung by the means of two axial piston motors and planetary reduction units. Automatic swing holding brakes and anti-rebound valves are standard.

Max. swing speed	8.0 rpm

SERVICE REFILL CAPACITIES

Fuel tank	665 l
Hydraulic system, total	540 l
Hydraulic tank	285 l
Engine oil	34 l
Engine coolant	49 l
Swing reduction units	2 X 6.0 l
Travel reduction units	2 X 5.0 l

UNDERCARRIAGE

The undercarriage has an X-shaped frame.
The greased and sealed track chain is standard.

No. of track pads	2 X 52
Link pitch	216 mm
Shoe width, triple grouser	600/700/750 800/900 mm
Shoe width, double grouser	600 mm
No. of lower track rollers	2 X 10
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 hydraulically released.
The travel motors, brake and planetary gears are well-protected in the track frame.

Max. tractive effort	320.7 kN (32700 kg)
Max. travel speed (1st/2nd)	2.8/4.3 km/h
Gradeability	35º (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 arm flow 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 330 l/min

Pilot pump:
- Type ····· Gear pump
- Maximum flow ····· 30 l/min

Hydraulic motors
- Travel ····· 2 X variable displacement axial piston motors
- Swing ····· 2 X fixed displacement piston motors with mechanical brakes

Relief valve setting
- Attachment ····· 31.4/34.3 MPa (320/350 kg/cm²)
- Travel circuit ····· 31.4 MPa (320 kg/cm²)
- Swing circuit ····· 24.5 MPa (250 kg/cm²)
- Pilot circuit ····· 3.9 MPa (40 kg/cm²)

Hydraulic cylinders
- Monobloc boom ····· 2
  - bore X stroke ····· ø165 mm X 1590 mm
- Arm ····· 1
  - bore X stroke ····· ø190 mm X 1880 mm
- Bucket ····· 1
  - bore X stroke ····· ø165 mm X 1335 mm

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: Approved according to the Directive 86/662/EEC.
- Exterior noise (ISO 6395)
  - mean value of L_{WA} (sound power level) 106 dB(A)
- Operator's position (ISO 6396)
  - with the door closed
  - mean value of L_{PA} (sound pressure level) 75 dB(A)

GROUND PRESSURE

● *Machine with 7.0 m boom, 3.35 m arm, 2060 l (1730 kg) bucket and 9300 kg counterweight.*

Description	Shoe width	Operating weight	Ground pressure	Overall width
Triple grouser	600 mm	44500 kg	77.5 kPa (0.79 kg/cm²)	3470 mm
	700 mm	45000 kg	66.7 kPa (0.68 kg/cm²)	3570 mm
	750 mm	45240 kg	62.8 kPa (0.64 kg/cm²)	3620 mm
	800 mm	45500 kg	58.8 kPa (0.60 kg/cm²)	3670 mm
	900 mm	46020 kg	53.0 kPa (0.54 kg/cm²)	3770 mm
Double grouser	600 mm	44250 kg	76.5 kPa (0.78 kg/cm²)	3470 mm

BUCKET & ARM COMBINATION

●*Volvo GP bucket (curved side) and 9300 kg counterweight.*

Bucket		Direct fit - GP bucket			Quick fit - GP bucket	
Bucket capacity (SAE / CECE)		1900 / 1690 l	2100 / 1860 l	2300 / 2030 l	1900 / 1690 l	2100 / 1860 l
Cutting width		1550 mm	1700 mm	1800 mm	1550 mm	1700 mm
Weight		1720 kg	1810 kg	1900 kg	1700 kg	1790 kg
No. of teeth		5	5	5	5	5
Boom 6.3 m + Arm 2.55 m		◎	◎	◎	◎	◎
Boom 7.0 m + Arm options	2.55 m	◎	◎	◎	◎	◎
	3.35 m	◎	◎	○	◎	◎
	3.9 m	◎	○	□	◎	○
	4.8 m	○	□	□	□	□

◎: Applicable for material density up to 2.0 t/m³ □: Applicable for material density up to 1.5 t/m³
○: Applicable for material density up to 1.8 t/m³ △: Applicable for material density up to 1.2 t/m³

● Max. permitted sizes for direct fit buckets:
Counterweight 9300 kg

Description	unit	6.3 m Boom	7.0 m Boom			
		2.55 m Arm	2.55 m Arm	3.35 m Arm	3.9 m Arm	4.8 m Arm
GP bucket 1.5 t/m³	l	3850	3375	3075	2825	2475
GP bucket 1.8 t/m³	l	3350	2950	2675	2475	2175
RB bucket 1.8 t/m³	l	3100	2725	2475	2275	2000
RB bucket 2.0 t/m³	l	2875	2525	2300	2125	1850

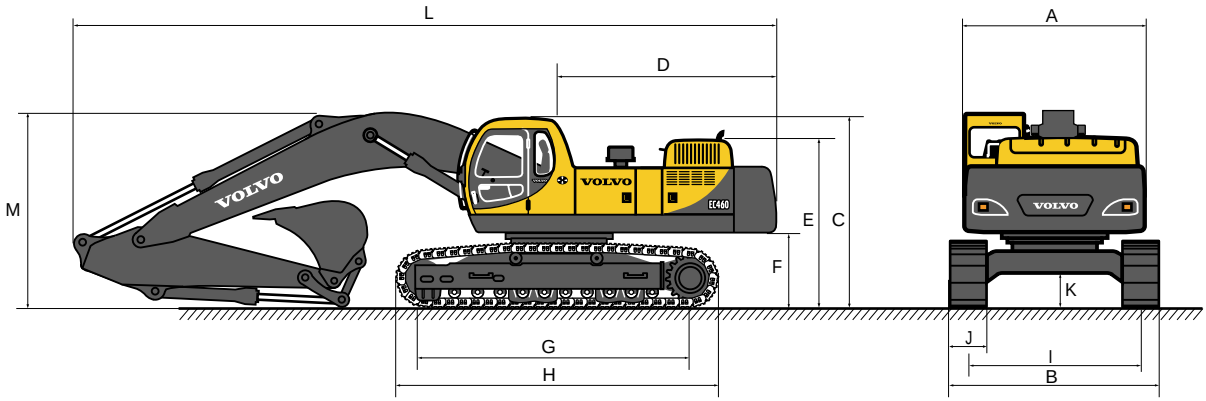
Note: 1. Bucket size based on SAE-J296, heaped material with a 1:1 angle of repose.
2. “Max. permitted sizes” are for reference only and are not necessarily available from the factory.

● Max. permitted sizes for quick fit buckets:
Counterweight 9300 kg

Description	unit	6.3 m Boom	7.0 m Boom			
		2.55 m Arm	2.55 m Arm	3.35 m Arm	3.9 m Arm	4.8 m Arm
GP bucket 1.5 t/m³	l	3700	3250	2925	2700	2350
GP bucket 1.8 t/m³	l	3250	2825	2575	2350	2050
RB bucket 1.8 t/m³	l	3000	2625	2375	2175	1900
RB bucket 2.0 t/m³	l	2775	2425	2200	2025	1750

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.

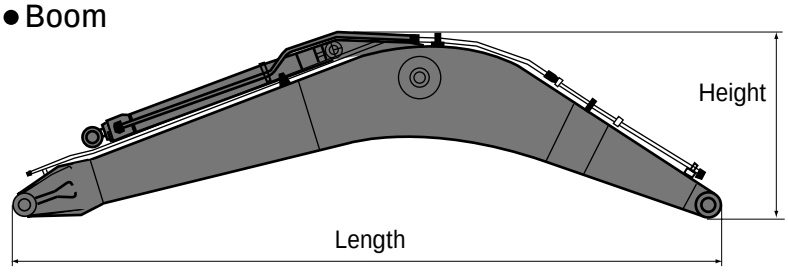
DIMENSIONS



Description	unit	6.3 m Boom	7.0 m Boom			
		2.55 m Arm	2.55 m Arm	3.35 m Arm	3.9 m Arm	4.8 m Arm
A. Overall width of upper structure	mm	2990	2990	2990	2990	2990
B. Overall width	mm	3470	3470	3470	3470	3470
C. Overall height of cab	mm	3230	3230	3230	3230	3230
D. Tail swing radius	mm	3730	3730	3730	3730	3730
E. Overall height of engine hood	mm	2850	2850	2850	2850	2850
F. Counterweight clearance*	mm	1250	1250	1250	1250	1250
G. Tumbler length	mm	4370	4370	4370	4370	4370
H. Track length	mm	5370	5370	5370	5370	5370
I. Track gauge	mm	2870	2870	2870	2870	2870
J. Shoe width	mm	600	600	600	600	600
K. Min. ground clearance*	mm	525	525	525	525	525
L. Overall length	mm	11390	12090	12040	12090	11870
M. Overall height of boom	mm	4120	3980	3650	3860	4790

* Without shoe grouser

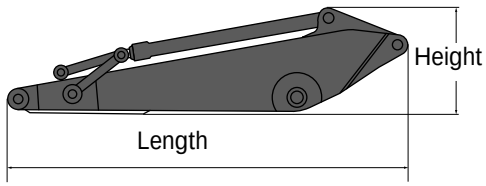
● Boom



Description	6.3 m	7.0 m
Length	6550 mm	7240 mm
Height	2000 mm	1840 mm
Width	960 mm	960 mm
Weight *	3870 kg	3925 kg

* Includes cylinder, piping and pin

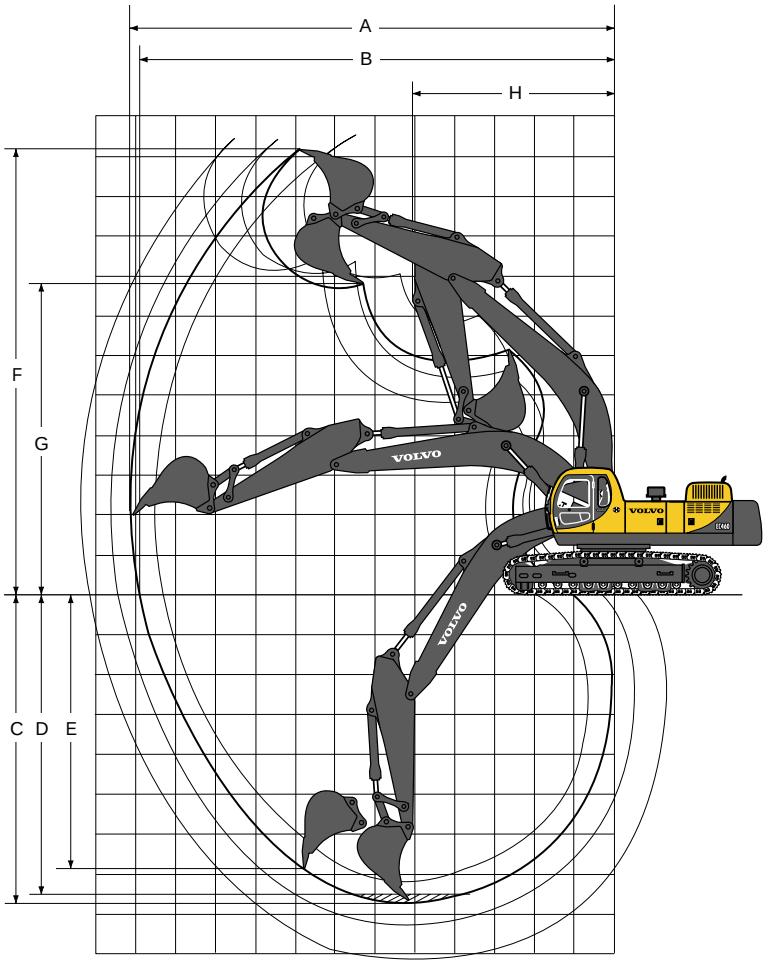
● Arm



Description	2.55 m	3.35 m	3.9 m	4.8 m
Length	3620 mm	4555 mm	5115 mm	6080 mm
Height	1235 mm	1140 mm	1230 mm	1230 mm
Width	600 mm	600 mm	600 mm	600 mm
Weight *	2110 kg	2365 kg	2505 kg	2905 kg

* Includes cylinder, linkage and pins

WORKING RANGES



● Machine with direct fit bucket

Description	unit	6.3 m Boom	7.0 m Boom			
		2.55 m Arm	2.55 m Arm	3.35 m Arm	3.9 m Arm	4.8 m Arm
A. Max. digging reach	mm	10810	11520	12100	12630	13370
B. Max. digging reach on ground	mm	10570	11290	11890	12420	13180
C. Max. digging depth	mm	6320	6940	7740	8290	9190
D. Max. digging depth (8' level)	mm	6140	6770	7590	8160	9080
E. Max. vertical wall digging depth	mm	5130	5870	6920	7430	7920
F. Max. cutting height	mm	11130	11570	11220	11480	11490
G. Max. dumping height	mm	7500	7940	7790	8050	8140
H. Min. front swing radius	mm	4450	5020	5050	4980	5090

● Digging forces with direct fit bucket:

Description		unit	2.55 m Arm	2.55 m Arm	3.35 m Arm	3.9 m Arm	4.8 m Arm
Bucket tip radius		mm	1850	1850	1850	1850	1850
Breakout force-bucket (Normal / Power boost)	SAE	kN (kg)	218.8 / 239.3 (22310 / 24400)	218.8 / 239.3 (22310 / 24400)	218.8 / 239.3 (22310 / 24400)	218.8 / 239.3 (22310 / 24400)	218.8 / 239.3 (22310 / 24400)
Breakout force-bucket (Normal / Power boost)	ISO	kN (kg)	250.8 / 274.4 (25580 / 27980)	250.8 / 274.4 (25580 / 27980)	250.8 / 274.4 (25580 / 27980)	250.8 / 274.4 (25580 / 27980)	250.8 / 274.4 (25580 / 27980)
Tearout force-arm (Normal / Power boost)	SAE	kN (kg)	227.4 / 248.7 (23190 / 25360)	227.4 / 248.7 (23190 / 25360)	188.5 / 206.1 (19220 / 21020)	170.2 / 186.2 (17360 / 18990)	155.6 / 170.2 (15870 / 17360)
Tearout force-arm (Normal / Power boost)	ISO	kN (kg)	236.4 / 258.6 (24110 / 26370)	236.4 / 258.6 (24110 / 26370)	195.0 / 212.6 (19820 / 21680)	174.7 / 191.1 (17820 / 19490)	159.1 / 174.0 (16220 / 17740)
Rotation angle, bucket		º	183º	183º	183º	183º	183º

LIFTING CAPACITY (At the arm end 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.

EC460 (Shoe 600 mm, Counterweight 9300 kg)

Across under-carriage / Along under-carriage	Lifting hook related to ground level	4.5 m		6 m		7.5 m		9 m		Max.reach		
		kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	Max. mm
Boom 7.0 m + Arm 2.55 m	7.5 m					10590	*10980			9230	*11330	8094
	6 m			*12670	*12670	10420	*11340			7850	*11150	8902
	4.5 m			13990	*14680	10090	*12280	7660	*11150	7110	10730	9401
	3 m			13300	*16790	9740	*13390	7500	11360	6750	10220	9639
	1.5 m			12820	*18280	9440	*14310	7350	11200	6680	10140	9638
	0 m			12610	*18830	9270	14440	7270	11110	6890	10490	9395
	-1.5 m	*19220	*19220	12590	*18480	9240	14400			7450	11380	8892
	-3 m	19790	*21830	12730	*17130	9380	*13330			8610	*11470	8078
	-4.5 m	*18080	*18080	13120	*13960					*10740	*10740	6842
	-6 m											
Boom 7.0 m + Arm 3.35 m	7.5 m					*9620	*9620			*7900	*7900	8786
	6 m					*10210	*10210	7870	*9780	7110	*7680	9534
	4.5 m	*17270	*17270	*13230	*13230	10190	*11270	7700	*10230	6480	*7680	10001
	3 m	20430	*21980	13470	*15500	9780	*12510	7490	*10880	6150	*7880	10226
	1.5 m	*14160	*14160	12860	*17350	9420	*13640	7280	11140	6050	*8310	10224
	0 m	*17430	*17430	12500	*18400	9170	14350	7140	10990	6190	*9030	9996
	-1.5 m	19130	*24830	12370	*18560	9060	14230	7090	10940	6600	10130	9525
	-3 m	19310	*23300	12430	*17810	9100	*14020			7440	*11280	8772
	-4.5 m	19690	*20450	12680	*15790	9370	*11850			9140	*11380	7651
	-6 m											

Notes : 1. Machine in “Fine Mode-F” (Power Boost), for lifting capacities
2. The above loads are in compliance with SAE and ISO 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.

LIFTING CAPACITY (At the arm end 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.

EC460 (Shoe 600 mm, Counterweight 9300 kg)

Across under-carriage / Along under-carriage	Lifting hook related to ground level	4.5 m		6 m		7.5 m		9 m		Max.reach		
		kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	Max. mm
Boom 7.0 m + Arm 3.9 m	7.5 m							8030	*8910	*6550	*6550	9395
	6 m					*9430	*9430	7940	*9070	*6360	*6360	10098
	4.5 m			*12180	*12180	10290	*10540	7740	*9630	5950	*6370	10539
	3 m	*20140	*20140	13640	*14540	9840	*11860	7500	*10370	5660	*6520	10752
	1.5 m	*18730	*18730	12940	*16610	9440	*13110	7260	*11110	5570	*6850	10750
	0 m	*18770	*18770	12480	*17960	9140	*14040	7080	10930	5680	*7380	10534
	-1.5 m	18940	*23820	12280	*18460	8970	14140	6990	10830	6010	*8240	10089
	-3 m	19050	*24020	12270	*18080	8960	14120	7020	10870	6680	*9680	9381
	-4.5 m	19360	*21720	12440	*16600	9110	*12880			7960	*10810	8345
	-6 m	*17460	*17460	12890	*13120					*10620	*10620	6826
Boom 7.0 m + Arm 4.8 m	7.5 m							*7540	*7540	*6180	*6180	10242
	6 m							*7890	*7890	5710	*6070	10890
	4.5 m					*9210	*9210	7790	*8560	5260	*6120	11300
	3 m	*16970	*16970	*12750	*12750	9920	*10630	7490	*9400	5000	*6300	11498
	1.5 m	20010	*21240	13050	*15120	9440	*12050	7200	*10280	4910	*6620	11497
	0 m	19020	*22670	12430	*16910	9040	*13220	6960	10820	4970	*7140	11295
	-1.5 m	18610	*24350	12070	*17910	8790	13960	6790	10640	5200	*7940	10881
	-3 m	18550	*24510	11940	*18080	8680	13840	6740	10580	5680	8850	10230
	-4.5 m	18730	*23070	12010	*17320	8730	*13560	6830	10680	6570	*10090	9290
	-6 m	19170	*20120	12290	*15230	8990	*11550			8330	*10400	7958

Notes : 1. Machine in “Fine Mode-F” (Power Boost), for lifting capacities
2. The above loads are in compliance with SAE and ISO 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.

LIFTING CAPACITY (At the arm end 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.

EC460 (Shoe 600 mm, Counterweight 9300 kg)

Across under-carriage / Along under-carriage	Lifting hook related to ground level	4.5 m		6 m		7.5 m		9 m		Max.reach		
		kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	Max. mm
Boom 6.3 m + Arm 2.55 m	7.5 m									9720	*10640	7234
	6 m			*11850	*11850	9260	*10870			7810	*9730	8130
	4.5 m	*17950	*17950	13310	*13620	9100	*11560			6860	*9400	8674
	3 m			12670	*15630	8830	*12540			6430	*9470	8932
	1.5 m			12150	*17180	8570	*13390			6370	*9870	8930
	0 m	18680	*18880	11880	*17820	8410	13630			6670	*10640	8668
	-1.5 m	18790	*23260	11840	*17360	8400	*13180			7480	*11240	8119
	-3 m	19150	*20530	12030	*15380					9180	*10900	7217
	-4.5 m											
	-6 m											

Notes : 1. Machine in “Fine Mode-F” (Power Boost), for lifting capacities
2. The above loads are in compliance with SAE and ISO 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
Low-emission engine with air heater, complying with EPA (Environment Protection Agency, USA) emission standards
2-stage air filter with indicator
Air pre-cleaner
Electric engine shut-off
Fuel filter and water separator

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 4

Batteries, 2 X 12V/200Ah
Start motor, 24V/7.8kW

Hydraulic system
Automatic sensing work mode
- Summation system
- Boom priority
- Arm priority
- Swing priority

Arm flow regeneration
Swing anti-rebound valve
Boom and arm holding valves
Multi-stage filtering system
Cylinder cushions
Cylinder contamination seals
Straight travel circuit
Automatic two-speed travel motors
Hydraulic oil, ISO VG 46

Superstructure
Access way with handrail
Counterweight, 9300 kg
Tool storage area
Punched metal anti-slip plates

Cab and interior
Hydraulic dampening cab mounts
Adjustable operator seat and control console
Flexible antenna
Hydraulic safety lock lever
Cab, all-weather sound suppressed, includes :
- Ashtray
- Cigar lighter
- Door locks
- Floor mat
- Horn
- Large storage area
- Pull-up type front window
- Removable lower windshield
- Seat belt
- Safety glass
- Windshield wiper with intermittent feature

Master ignition key

Undercarriage
Hydraulic track adjusters
Greased and sealed track chain
Track guards

ALTERNATIVE EQUIPMENT

Engine
Alternator, 50A / 70A
Fuel filler pump: 35 lpm / 50 lpm / 50 lpm, with automatic shut-off

Hydraulic system
Pilot-operated wrist control joysticks
- Semi-long joysticks
- Joysticks, with 3 switches ea.
- Joysticks, with 5 switches ea.

Cab and interior
Leather seat
Fabric seat
Fabric seat, with heater
Fabric seat, with heater and air suspension

Track shoes
– 600/700/750/800/900 mm track shoes with triple grousers
– 600 mm track shoes with double grousers

Digging equipment
Boom: 6.3 m monobloc
7.0 m monobloc
Arm: 2.55 / 3.35 / 3.9 / 4.8 m

OPTIONAL EQUIPMENT (Standard in certain markets)

Engine
Block and oil pan heater: 120V, 240V
Fuel warmer
Tropical kit

Electronic control system
Pump flow control for hammer & shear
Work lights (4):
- Cab-mounted 3 (front 2, rear 1)
- Counterweight-mounted 1

Overload warning device
Rotating warning beacon
Travel alarm

Hydraulic system
Hose rupture protection valve: boom, arm
Hydraulic piping
- Hammer & shear:
  1 pump flow
  2 pump flow
  Additional return filter
  Extra piping for slope & rotator
- Slope & rotator
- Grapple
- Oil leak line

Volvo hydraulic quick-fit, S3 size
Hydraulic oil, ISO VG 32
Hydraulic oil, ISO VG 68

Superstructure
Undercover (heavy duty)
Service walk
Removable counterweight

Cab and interior
Air-conditioner
Heater
Falling object guard (FOG)
Cab mounted falling object protective structures (FOPS)
Rain shield, front
Sun shield, front
Clear tinted roof hatch
Stereo cassette radio (AM/FM)
Safety mesh for front window
Anti-vandalism kit
Sliding rear window
Specific key

Undercarriage
Full track guards
Undercover (heavy duty)

Service
Hand lamp
Spare parts
Tool kit

All products are not available on all markets. Under our policy of continuous improvement, we reserve the right to change specifications and design without prior notice. The illustrations do not necessarily show the standard version of the machine.

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