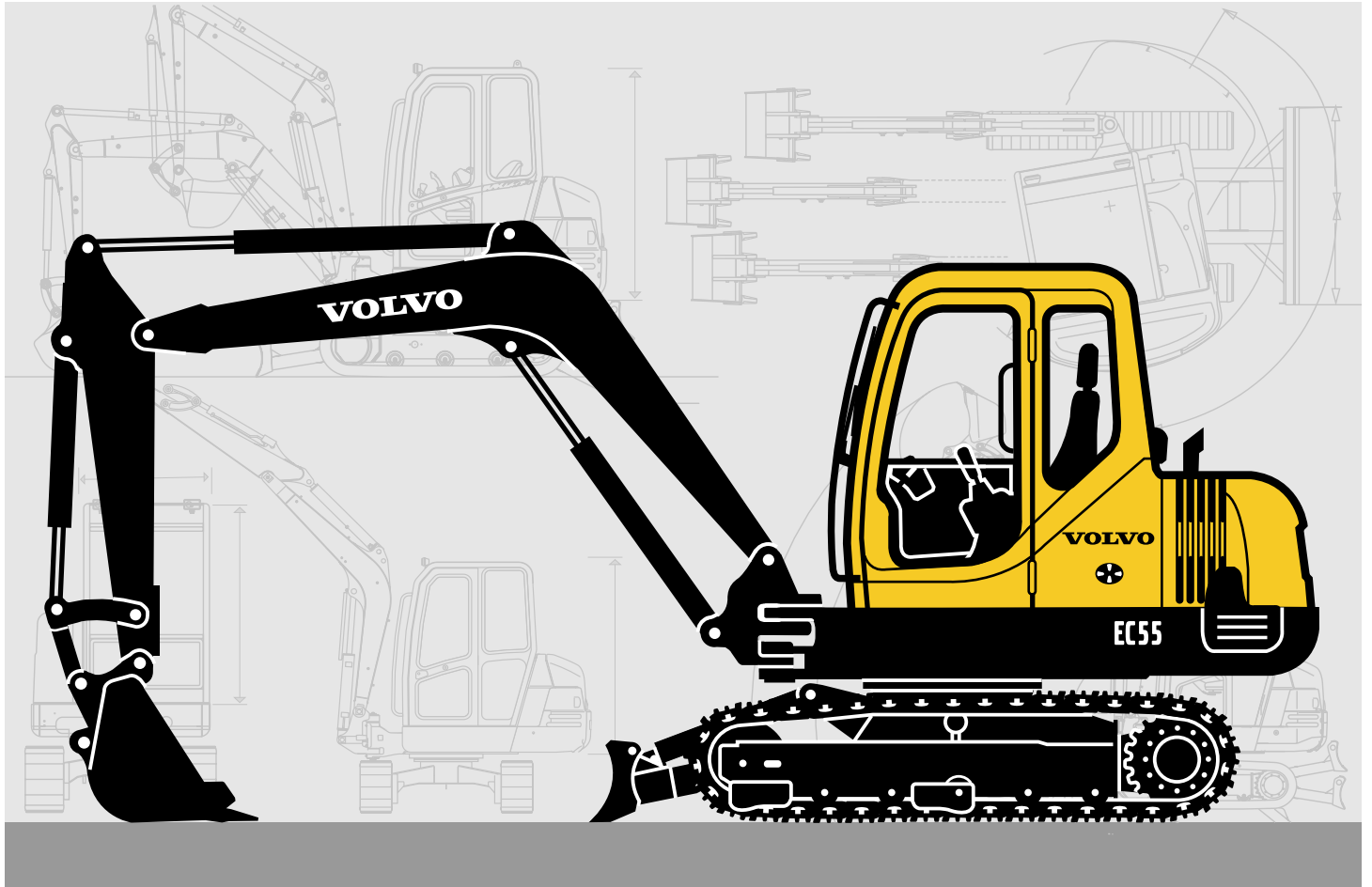


VOLVO EXCAVATOR

EC55



- **Engine power, gross:**
40 kW (53 hp)
- **Operating weight:**
4.91 ~ 5.05 t
- **Buckets (SAE):**
68 ~ 176 l

- Low-emission, Yanmar diesel engine with direct injection
- 2 variable displacement piston pumps
- Cab
 - Ergonomic environment
 - Low sound level

- High lifting, breakout and tearout forces for tough digging conditions
- Long undercarriage for good stability
- Prepared for a number of optional items

VOLVO



ENGINE

The engine is a low-emission, 4-stroke diesel engine with water cooling, direct injection and 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

Low-emission engine

Maker	Yanmar
Model	4TNE94-SM
Power output at	37 r/s (2200 rpm)
Net (ISO 9249/DIN 6271)	38 kW (52 ps / 51 hp)
Gross (SAE J1349).....	40 kW (54 ps / 53 hp)
Max. torque	181 N·m (18.5 kg·m)
	at 1600 rpm
No. of cylinders.....	4
Displacement	2.8 l
Bore	94 mm
Stroke	100 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.

Voltage	12 V
Battery	1 X 12 V
Battery capacity.....	100 Ah, MF (Maintenance) type
Alternator	12 V / 40 A



SERVICE REFILL CAPACITIES

Fuel tank.....	90 l
Hydraulic system, total	130 l
Hydraulic tank	90 l
Engine oil	9.7 l
Engine coolant	12.1 l
Swing reduction unit	1.1 l
Travel reduction unit	2 X 1.7 l



SWING SYSTEM

The superstructure is swung by the means of an axial piston motor and a planetary reduction unit. Automatic swing holding brake is standard.

Max. swing speed 10 rpm



UNDERCARRIAGE

The reinforced track chain is standard.

No. of track pads	2 X 39
Link pitch	135 mm
Shoe width, triple grouser	350 / 380 mm
Shoe width, rubber	400 mm
No. of lower track rollers.....	2 X 5
No. of upper rollers	2 X 1



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	42.8 kN
	(4360 kg)
Max. travel speed(1st/2nd)	2.6 / 4.3 km/h
Gradeability	35° (70 %)



HYDRAULIC SYSTEM

The hydraulic system, named "Total Power Control", is designed for high productivity, high digging capacity, high maneuvering precision and good fuel economy. The summation system, as well as boom, arm and swing priority 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.

Holding valve: Boom holding valve is standard.

Pumps

Main pump:

Type 2 X variable displacement axial piston pumps
+ 1 gear pump

Maximum flow 2 X 55+35.6 l/min

Pilot pump:

Type Gear pump

Maximum flow 9.9 l/min

Hydraulic motors

Travel 2 X variable displacement axial piston motors

Swing Fixed displacement piston motor
with mechanical brake

Relief valve setting

Attachment 20.6 MPa (210 kg/cm²)

Travel circuit 20.6 MPa (210 kg/cm²)

Swing circuit 18.6 MPa (190 kg/cm²)

Pilot circuit 3.2 MPa (33 kg/cm²)

Hydraulic cylinders

Boom 1

bore X stroke Ø105 mm X 720 mm

Boom offset (swing) 1

bore X stroke Ø90 mm X 570 mm

Arm 1

bore X stroke Ø90 mm X 825 mm

Bucket 1

bore X stroke Ø80 mm X 660 mm

Dozer blade 1

bore X stroke Ø105 mm X 230 mm



CAB

Easily accessible cab with a wide door and lined with sound-absorbing material.
The cab 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 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 (preliminary):

 According to the Directive 86/662/EEC.

Exterior noise (ISO 6395)

mean value of L_{WA} (sound power level) 100 dB(A)

Operator's position (ISO 6396)

with the door closed

mean value of L_{PA} (sound pressure level) 79 dB(A)



GROUND PRESSURE

• Machine with 3.03 m boom, 1.54 m arm, 176 l (144 kg) bucket and 240 kg counterweight.

Description	Shoe width	Operating weight	Ground pressure	Overall width
Triple grouser steel shoe	350 mm	5030 kg	32.4 kPa (0.33 kg/cm ²)	1870 mm
	380 mm	5050 kg	30.4 kPa (0.31 kg/cm ²)	1900 mm
Rubber shoe	400 mm	4910 kg	28.1 kPa (0.29 kg/cm ²)	1920 mm

BUCKET & ARM COMBINATION

• Volvo K bucket (straight side) and 240 kg counterweight.

Bucket	Narrow bucket	Standard bucket
Bucket capacity (SAE / CECE)	68 / 62 l	176 / 150 l
Bucket width (with / without side cutters)	370 / 322 mm	735 / 690 mm
Weight (with side cutters)	110 kg	144 kg
No. of teeth	3	5
Application	Trenching	General Purpose
Boom 3.03 m + Arm 1.54 m	Applicable for general purpose up to 2000 kg/m ³	

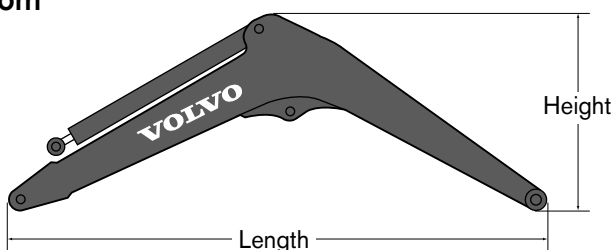
• Max. permitted sizes for direct fit buckets when the dozer blade is on or off the ground
Machine with counterweight: 240 kg

Description	unit	1.54 m Arm
GP bucket 1.5 t/m ³	l	275
GP bucket 1.8 t/m ³	l	225

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

DIMENSIONS

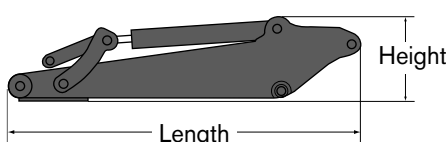
• Boom



Description	3.03 m
Length	3200 mm
Height	1100 mm
Width	360 mm
Weight *	400 kg

* Includes cylinder, piping and pin

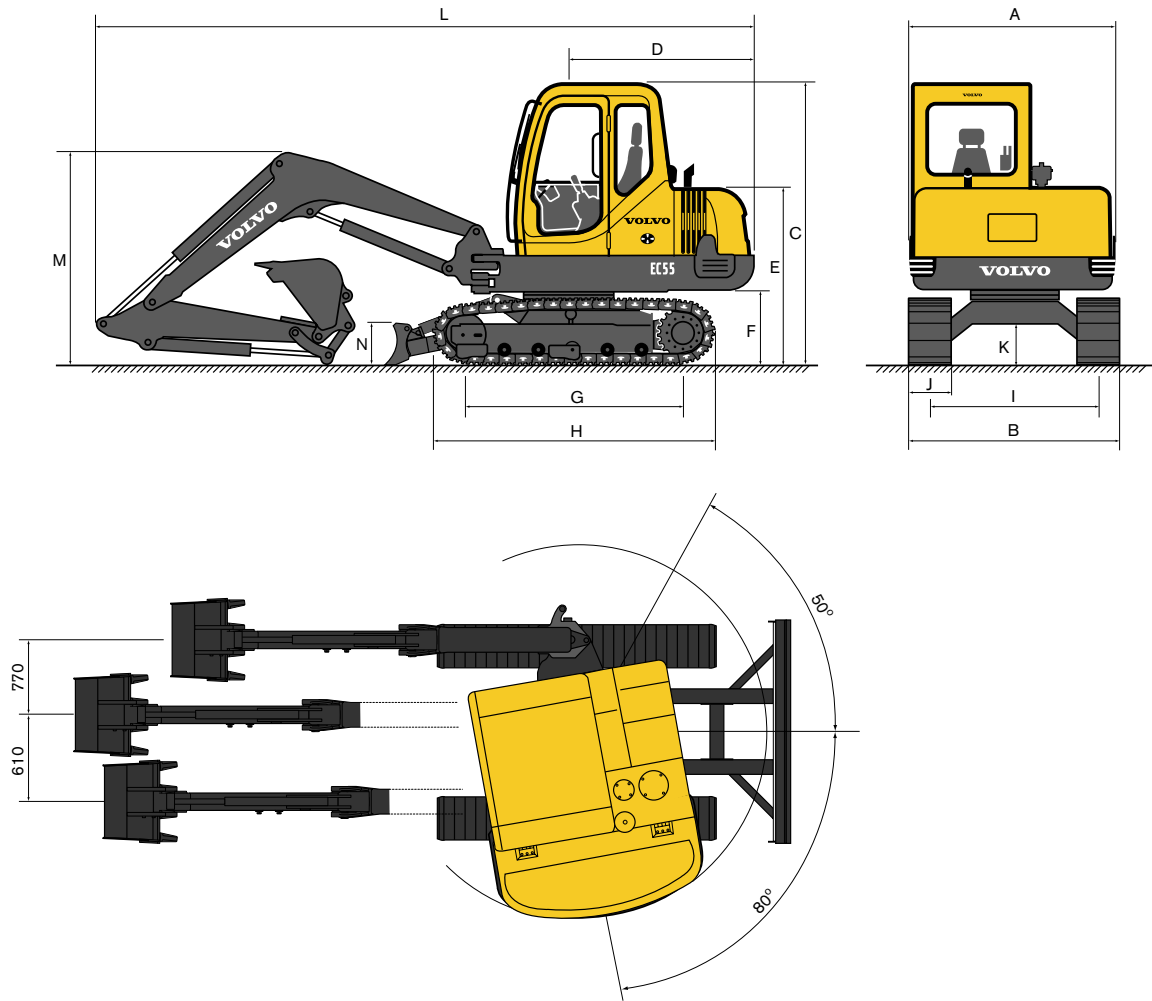
• Arm



Description	1.54 m	
	Std.	Heavy duty
Length	2040 mm	2040 mm
Height	486 mm	486 mm
Width	300 mm	300 mm
Weight *	184 kg	200 kg

* Includes cylinder, piping and pins

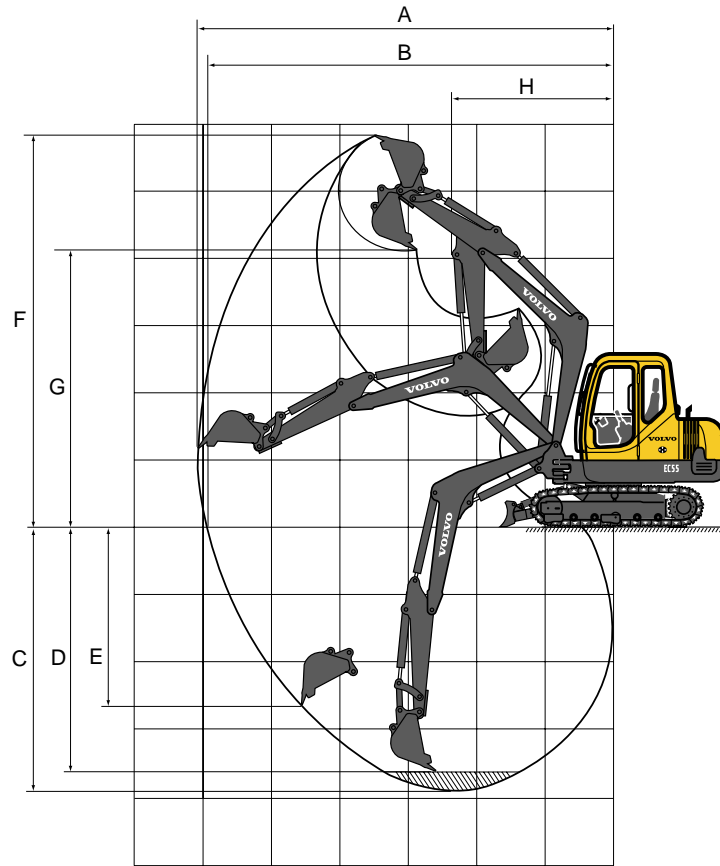
DIMENSIONS



Description	Unit	Steel shoe	Rubber shoe
A. Overall width of upper structure	mm	1840	1840
B. Overall width	mm	1900	1920
C. Overall height of cab	mm	2545	2550
D. Tail swing radius	mm	1650	1650
E. Overall height of engine hood	mm	1595	1600
F. Counterweight clearance*	mm	685	690
G. Tumbler length	mm	1950	1950
H. Track length	mm	2495	2500
I. Track gauge	mm	1520	1520
J. Shoe width	mm	380	400
K. Min. ground clearance*	mm	375	380
L. Overall length	mm	5900	5900
M. Overall height of boom	mm	1875	1880
N. Overall height of blade	mm	360	360

* Without shoe grouser

WORKING RANGES



● Machine with direct fit bucket

Description	unit	1.54 m arm
A. Max. digging reach	mm	6110
B. Max. digging reach on ground	mm	5975
C. Max. digging depth	mm	3820
D. Max. digging depth (8' level)	mm	3395
E. Max. vertical wall digging depth	mm	2615
F. Max. cutting height	mm	5770
G. Max. dumping height	mm	4090
H. Min. front swing radius	mm	2355



● Digging forces with direct fit bucket

Description	unit	1.54 m arm
Bucket tip radius	mm	870
Breakout force-bucket	SAE kN (kg)	36.0 (3670)
Breakout force-bucket	ISO kN (kg)	40.7 (4150)
Tearout force-arm	SAE kN (kg)	26.6 (2710)
Tearout force-arm	ISO kN (kg)	27.3 (2780)
Rotation angle, bucket	°	176



LIFTING CAPACITY (At the arm end without bucket)

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

EC55 (Steel shoe 380 mm, Counterweight 240 kg, Dozer blade 1900 mm)

 Across under-carriage  Along under-carriage	Lifting hook related to ground level	1.5 m		3 m		4.5 m		Max.reach		Max. mm
		kg	kg	kg	kg	kg	kg	kg	kg	
Boom 3.03 m + Arm 1.54 m Dozer blade on the ground	4.5 m							940	*990	3815
	3 m					680	*990	580	*980	4895
	1.5 m			1260	*1800	640	*1160	480	*1030	5263
	0 m			1130	*2360	600	*1300	490	*1110	5107
	-1.5 m	*2370	*2370	1110	*2160			620	*1270	4358
Boom 3.03 m + Arm 1.54 m Dozer blade off the ground	4.5 m							940	*990	3815
	3 m					680	*970	580	*840	4895
	1.5 m			1260	*1800	640	*930	480	710	5263
	0 m			1130	1680	600	890	490	720	5107
	-1.5 m	*2370	*2370	1110	*1670			620	920	4358

EC55 (Rubber shoe 400 mm, Counterweight 240 kg, Dozer blade 1900 mm)

 Across under-carriage  Along under-carriage	Lifting hook related to ground level	1.5 m		3 m		4.5 m		Max.reach		Max. mm
		kg	kg	kg	kg	kg	kg	kg	kg	
Boom 3.03 m + Arm 1.54 m Dozer blade on the ground	4.5 m							870	*990	3814
	3 m					630	*990	530	*980	4895
	1.5 m			1160	*1800	580	*1160	430	*1030	5263
	0 m			1030	*2360	540	*1300	440	*1110	5107
	-1.5 m	*2370	*2370	1010	*2160			560	*1270	4358
Boom 3.03 m + Arm 1.54 m Dozer blade off the ground	4.5 m							870	*990	3814
	3 m					630	870	530	750	4895
	1.5 m			1160	1640	580	830	430	630	5263
	0 m			1030	1500	540	780	440	640	5107
	-1.5 m	*2370	*2370	1010	1480			560	810	4358

- Notes :
- 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.

STANDARD EQUIPMENT

Engine

Low-emission engine with air heater, complying with EPA (Environment Protection Association, USA) emission standards
2-stage air filter with indicator
Air pre-cleaner
Electric engine shut-off
Fuel filter
Fuel filler pump, 35 lpm

Electronic control system

Engine restart prevention circuit
Powerful halogen lights:
- Frame mounted 2
- Boom mounted 1
Batteries, 1 X 12V/100Ah
Start motor, 12V/2.3kW
Adjustable monitor

Hydraulic system

Total power control system
- Summation system
- Boom priority
- Arm priority
- Swing priority
Semi-long joysticks
Boom holding valve
Multi-stage filtering system
Cylinder cushions
Cylinder contamination seals
Auxiliary hydraulic valve port, for hammer
Straight travel circuit
Hydraulic oil, ISO VG 46

Superstructure

Tool storage area
Counterweight, 240 kg

Cab and interior

TOPS (Tip Over Protection Structure) cab
Adjustable operator seat and control consoles
Flexible antenna
Hydraulic safety lock lever
Cab, all-weather sound suppressed, includes:
- Ashtray
- Cigar lighter
- Door locks

- Floor mat
- Horn
- Pull-up type front window
- Removable lower windshield
- Seat belt
- Safety glass
- Windshield wiper with intermittent feature

Master ignition key

Undercarriage

Hydraulic track adjusters
Reinforced track chain
Track guards

ALTERNATIVE EQUIPMENT

Hydraulic system

Hammer piping
Hammer piping, with stop valves

Cab and interior

Fabric seat
Fabric seat, with suspension
Air conditioner
Heater
Heater & air conditioner

Track shoes

- 350/380 mm steel track shoes with triple grousers
- 400 mm rubber shoes

Attachment

Boom: 3.03 m monobloc fixed boom
3.03 m monobloc offset boom
Arm: 1.54 m
1.54 m, heavy duty
Dozer blade, 1870 mm/1900 mm

Undercarriage

Steel crawler (triple grousers)
Rubber crawler (rubber shoes)

OPTIONAL EQUIPMENT (Standard in certain markets)

Electronic control system

Travel alarm

Hydraulic system

Hydraulic oil, ISO VG 32
Hydraulic oil, ISO VG 68

Cab and interior

Falling object guard (FOG)
Stereo cassette radio (AM/FM)
Specific key

Service

Spare parts
Tool kit
Bracket for grease can

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.

VOLVO

**Volvo Construction
Equipment Group**

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