# Volvo EC300E in detail

| Engine | | |
|---|---|---|
| The next-generation Volvo diesel engine uses Volvo Advanced Combustion Technology (V-ACT) to deliver lower emissions, superior performance and fuel efficiency. The engine uses precise, highpressure fuel injectors, turbo charger and intercooler, and electronic engine controls to optimize machine performance. | | |
| Engine | Volvo | D8M |
| Max power at | r/min | 1 600 |
| Net, ISO 9249/SAE J1349 | kW | 188 |
| | hp | 256 |
| Gross, ISO 14396/SAE J1995 | kW | 189 |
| | hp | 257 |
| Max torque | Nm | 1 290 |
| at engine speed | r/min | 1 400 |
| No. of cylinders | | 6 |
| Displacement | l | 7.7 |
| Bore | mm | 110 |
| Stroke | mm | 135 |

| 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. | | |
| Voltage | V | 24 |
| Batteries | V | 2 x 12 |
| Battery capacity | Ah | 170 |
| Alternator | V/A | 28 / 80 |
| Start motor | V - kW | 24 - 5.5 |

| Undercarriage | | |
|---|---|---|
| The undercarriage has a robust X-shaped frame. Greased and sealed track chains are standard. | | |
| Track shoes | | 2 x 50 |
| Link pitch | mm | 203.2 |
| Shoe width | mm | 600 / 700 / 800 / 900 |
| Shoe width, triple grouser | mm | 600 / 700 / 800 / 900 |
| Shoe width, triple grouser (HD) | mm | 600 |
| Shoe width, double grouser | mm | 700 |
| Bottom rollers | | 2 x 9 |
| Top rollers | | 2 x 2 |

| Swing system | | |
|---|---|---|
| The swing system uses an axial piston motors, driving a planetary gearbox for maximum torque. An automatic holding brake and anti-rebound valve are standard. | | |
| Max. slew speed | r/min | 11 |
| Max. slew torque | kNm | 114.8 |

| Travel System | | |
|---|---|---|
| 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. drawbar pull | kN | 248 |
| Max. travel speed (low) | km/h | 3.6 |
| Max. travel speed (high) | km/h | 5.4 |
| Gradeability | ° | 35 |

**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.
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 CO2-eq.

| 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 excellent fuel economy. The summation system, boom, arm and swing priority along with boom, arm and bucket regeneration provides optimum performance. | | |
| **Main pump, Type 2 x Variable displacement axial piston pumps** | | |
| Maximum flow | l/min | 2 x 276 |
| **Pilot pump, Type Gear Pump** | | |
| Maximum flow | l/min | 20.3 |
| **Relief value setting pressure** | | |
| Implement | MPa | 33.3 / 36.3 |
| Travel circuit | MPa | 36.3 |
| Slew circuit | MPa | 28.9 |
| Pilot circuit | MPa | 3.9 |

**Hydraulic Motors**

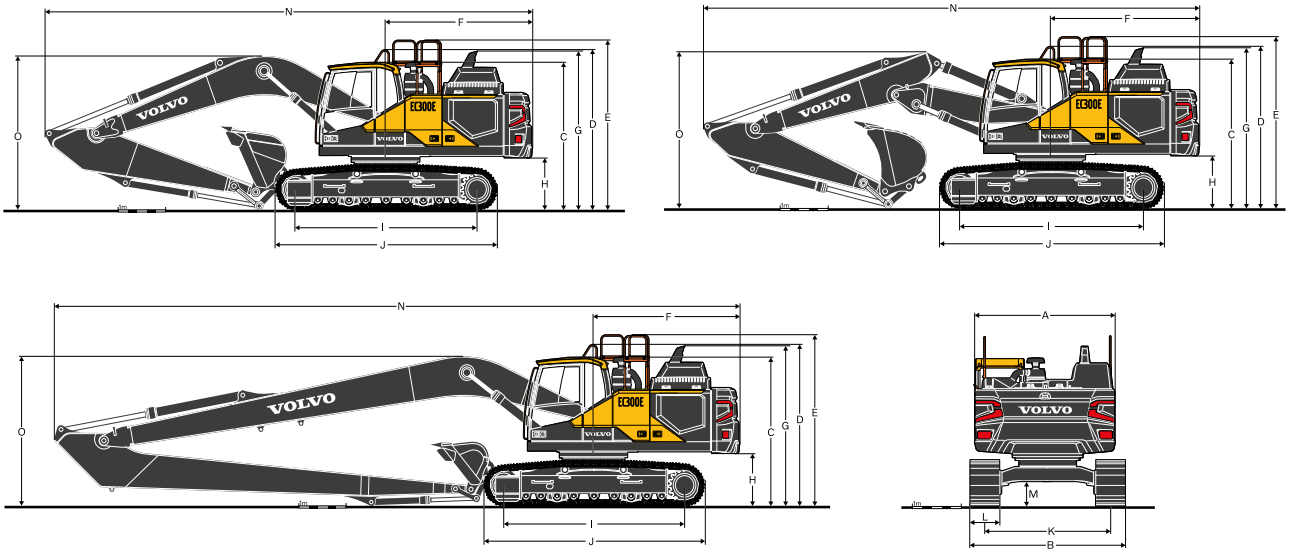
**Travel:** Variable displacement axial piston motor with mechanical brake
**Swing**: Fixed displacement piston motor with mechanical brake

| Hydraulic Cylinders | | |
|---|---|---|
| Mono boom | | 2 |
| Bore x Stroke | ø x mm | 140 x 1 480 |
| 2 piece boom | | 2 |
| Bore x Stroke | ø x mm | 170 x 1 300 |
| Arm | | 1 |
| Bore x Stroke | ø x mm | 150 x 1 745 |
| Bucket | | 1 |
| Bore x Stroke | ø x mm | 140 x 1 140 |
| Bucket for LR boom | | 1 |
| Bore x Stroke | ø x mm | 100 x 865 |

| Service Refill | | |
|---|---|---|
| Fuel tank | l | 472 |
| DEF/AdBlue® tank | l | 50 |
| Hydraulic system, total | l | 385 |
| Hydraulic tank | l | 215 |
| Engine oil | l | 30 |
| Engine coolant | l | 44 |
| Slew reduction unit | l | 6.1 |
| Travel reduction unit | l | 2 x 6 |

| Sound Level | | |
|---|---|---|
| Sound pressure level in cab according to ISO 6396 | | |
| $L_{pA}$ | dB | 70 |
| External sound level according to ISO 6395 and EU Noise Directive 2000/14/EC | | |
| $L_{WA}$ | dB | 104 |

# Specifications




| Description | Unit | EC300EL | | | EC300ENL | | | EC300EL/EC300ENL | | | EC300ELR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Boom** | **m** | **6.2** | | | **6.2** | | | **6.2 2-piece** | | | **10.2** |
| **Arm** | **m** | **2.55** | **3.05** | **3.7** | **2.55** | **3.05** | **3.7** | **2.55** | **3.05** | **3.7** | **7.9** |
| A. Overall width of upper structure | mm | 2 890 | 2 890 | 2 890 | 2 890 | 2 890 | 2 890 | 2 890 | 2 890 | 2 890 | 2 890 |
| B. Overall width | mm | 3 190 | 3 190 | 3 190 | 2 990 | 2 990 | 2 990 | 3 190 / 2 990 | 3 190 / 2 990 | 3 190 / 2 990 | 3 190 |
| C. Overall height of cab | mm | 3 110 | 3 110 | 3 110 | 3 110 | 3 110 | 3 110 | 3 110 | 3 110 | 3 110 | 3 110 |
| D. Overall height of handrail | mm | 3 360 | 3 360 | 3 360 | 3 360 | 3 360 | 3 360 | 3 360 | 3 360 | 3 360 | 3 360 |
| E. Overall height of guardrail (Unfolded) | mm | 3 570 | 3 570 | 3 570 | 3 570 | 3 570 | 3 570 | 3 570 | 3 570 | 3 570 | 3 570 |
| E'. Overall height of handrail/guardrail (Folded) | mm | 3 090 | 3 090 | 3 090 | 3 090 | 3 090 | 3 090 | 3 090 | 3 090 | 3 090 | 3 090 |
| F. Tail swing radius | mm | 3 120 | 3 120 | 3 120 | 3 120 | 3 120 | 3 120 | 3 120 | 3 120 | 3 120 | 3 155 |
| G. Overall height of diffuser | mm | 3 200 | 3 200 | 3 200 | 3 200 | 3 200 | 3 200 | 3 200 | 3 200 | 3 200 | 3 200 |
| H. Counterweight clearance * | mm | 1 105 | 1 105 | 1 105 | 1 105 | 1 105 | 1 105 | 1 105 | 1 105 | 1 105 | 1 105 |
| I. Tumbler length | mm | 4 015 | 4 015 | 4 015 | 4 015 | 4 015 | 4 015 | 4 015 | 4 015 | 4 015 | 4 015 |
| J. Track length | mm | 4 865 | 4 865 | 4 865 | 4 865 | 4 865 | 4 865 | 4 865 | 4 865 | 4 865 | 4 865 |
| K. Track gauge | mm | 2 590 | 2 590 | 2 590 | 2 390 | 2 390 | 2 390 | 2 590 / 2 390 | 2 590 / 2 390 | 2 590 / 2 390 | 2 590 |
| L. Shoe width | mm | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| M. Min. ground clearance * | mm | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 |
| N. Overall length | mm | 10 605 | 10 500 | 10 540 | 10 605 | 10 500 | 10 540 | 10 605 | 10 535 | 10 535 | 14 565 |
| O. Overall height of boom | mm | 3 470 | 3 345 | 3 580 | 3 470 | 3 345 | 3 580 | 3 385 | 3 325 | 3 605 | - |

* Without shoe grouser

' 2-piece boom

**DIMENSIONS**

**Boom**

| Description | Unit | mono | mono | 2-piece | Long-Reach |
|---|---|---|---|---|---|
| **Boom** | **m** | **6.2 GP** | **6.2 HD** | **6.2** | **10.2** |
| Length | mm | 6 425 | 6 425 | 6 425 | 10 425 |
| Height - Hose | mm | 1 780 | 1 780 | 1 595 | - |
| Height - Pipe | mm | 1 665 | 1 665 | 1 550 | 1 580 |
| Width | mm | 765 | 765 | 770 | 765 |
| Weight | kg | 2 505 | 2 735 | 3 375 | 3 380 |

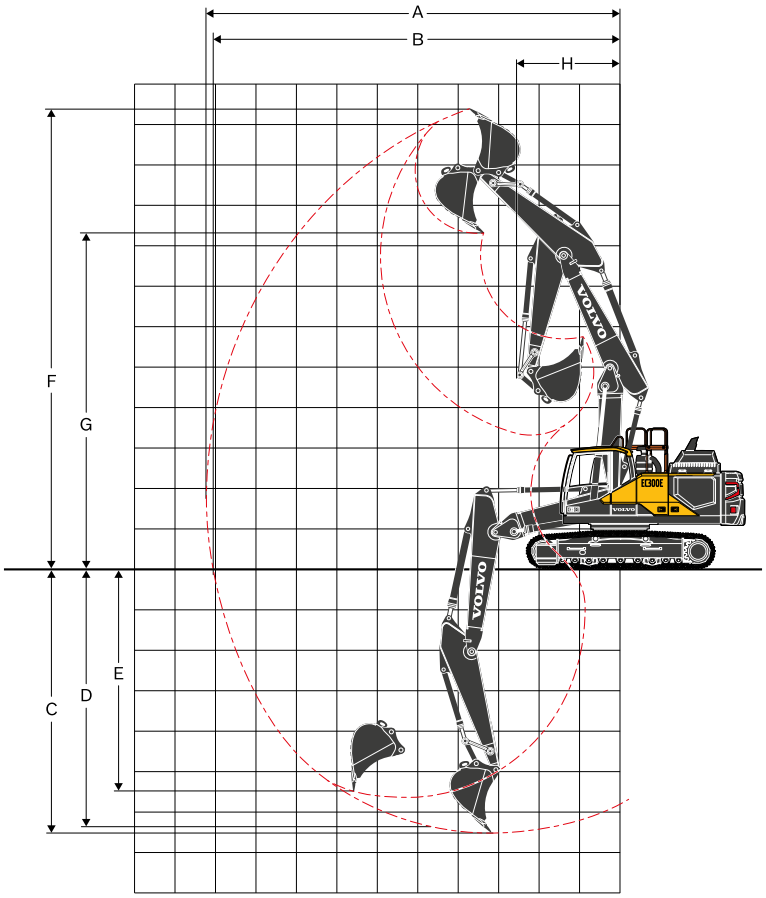
* Includes cylinder, piping and pin, excludes boom cylinder pin

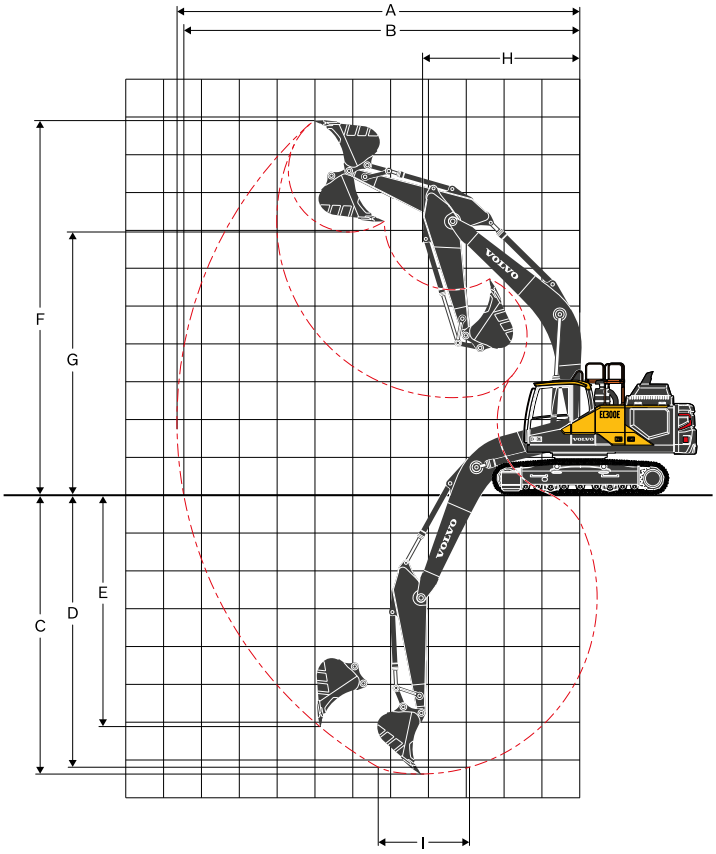
**Arm**

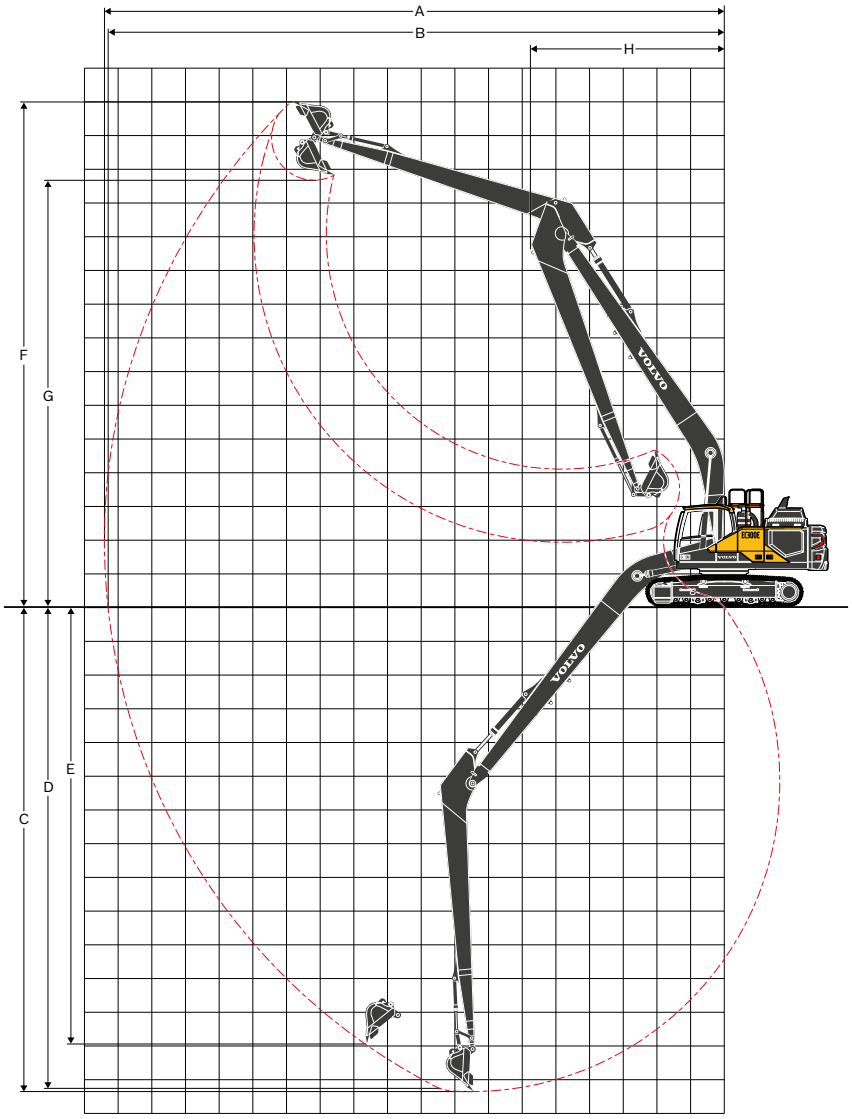
| Description | Unit | | | | | |
|---|---|---|---|---|---|---|
| **Arm** | **m** | **2.55 HD** | **3.05 GP** | **3.05 HD** | **3.7 GP** | **7.9 LR** |
| Length | mm | 3 720 | 4 145 | 4 145 | 4 800 | 9 055 |
| Height | mm | 1 005 | 1 010 | 1 010 | 1 005 | 1 095 |
| Width | mm | 560 | 560 | 560 | 560 | 435 |
| Weight | kg | 1 450 | 1 510 | 1 570 | 1 630 | 1 770 |

* Includes cylinder, linkage and pin

# Specifications






| WORKING RANGES | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Description** | | | **Unit** | **EC300EL / EC300ENL** | | | | | | **EC300ELR** |
| **Boom** | | | **m** | **6.2** | | | **6.2 2-piece** | | | **10.2** |
| **Arm** | | | **m** | **2.55** | **3.05** | **3.7** | **2.55** | **3.05** | **3.7** | **7.9** |
| A. Max. digging reach | | | mm | 10 180 | 10 710 | 11 310 | 10 250 | 10 780 | 11 390 | 18 590 |
| B. Max. digging reach on ground | | | mm | 9 970 | 10 520 | 11 130 | 10 040 | 10 580 | 11 210 | 18 480 |
| C. Max. digging depth | | | mm | 6 840 | 7 340 | 7 990 | 6 210 | 6 730 | 7 370 | 14 750 |
| D. Max.digging depth (2.44 m level) | | | mm | 6 600 | 7 150 | 7 830 | 6 100 | 6 630 | 7 280 | 14 650 |
| E. Max. vertical wall digging depth | | | mm | 5 320 | 6 080 | 6 680 | 5 040 | 5 630 | 6 240 | 13 630 |
| F. Max. cutting height | | | mm | 9 560 | 9 980 | 10 260 | 11 550 | 12 070 | 12 570 | 14 940 |
| G. Max. dumping height | | | mm | 6 680 | 7 040 | 7 330 | 8 360 | 8 850 | 9 360 | 12 600 |
| H. Min. front swing radius | | | mm | 4 220 | 4 180 | 4 240 | 2 750 | 2 580 | 2 770 | 6 190 |
| **DIGGING FORCES WITH DIRECT FIT BUCKET** | | | | | | | | | | |
| Bucket radius | | | mm | 1 624 | 1 624 | 1 624 | 1 624 | 1 624 | 1 624 | 1 248 |
| Breakout force | Normal | SAE J1179 | kN | 165 | 165 | 165 | 165 | 165 | 165 | 69 |
| | Power boost | | kN | 179 | 179 | 179 | 179 | 179 | 179 | 69 |
| | Normal | ISO 6015 | kN | 190 | 190 | 190 | 190 | 190 | 190 | 78 |
| | Power boost | | kN | 207 | 207 | 207 | 207 | 207 | 207 | 78 |
| Tearout force | Normal | SAE J1179 | kN | 158 | 133 | 116 | 158 | 133 | 116 | 51 |
| | Power boost | | kN | 172 | 144 | 126 | 172 | 144 | 126 | 51 |
| | Normal | ISO 6015 | kN | 163 | 136 | 118 | 163 | 136 | 118 | 52 |
| | Power boost | | kN | 177 | 148 | 129 | 177 | 148 | 129 | 52 |
| Rotation angle, bucket | | | ° | 179 | 179 | 179 | 179 | 179 | 179 | 178 |

# Specifications

**MACHINE WEIGHTS AND GROUND PRESSURE**

| Description | Shoe width | Operating weight | Ground pressure | Overall width | Operating weight | Ground pressure | Overall width |
|---|---|---|---|---|---|---|---|
| | mm | kg | kPa | mm | kg | kPa | mm |
| **EC300EL** | | | | | | | |
| | | **6.2 m boom (GP), 3.05 m arm (GP), 1 209 kg / 1.32 m³ bucket, 6 200 kg counterweight** | | | **6.2 m boom (HD), 3.05 m arm (HD), 1 209 kg / 1.32 m³ bucket, 6 200 kg counterweight** | | |
| Triple grouser | 600 | 30 640 | 59.1 | 3 190 | 30 940 | 59.7 | 3 190 |
| | 600 (HD) | 30 860 | 59.5 | 3 190 | 31 150 | 60.1 | 3 190 |
| | 700 | 31 230 | 51.6 | 3 290 | 31 520 | 52.1 | 3 290 |
| | 800 | 31 590 | 45.7 | 3 390 | 31 880 | 46.1 | 3 390 |
| | 900 | 31 950 | 41.1 | 3 490 | 32 240 | 41.5 | 3 490 |
| Double grouser | 700 | 31 420 | 52.0 | 3 290 | 31 710 | 52.4 | 3 290 |
| | | **6.2 m boom (2-piece), 3.05 m arm (GP), 1 209 kg / 1.32 m³ bucket, 6 200 kg counterweight** | | | **6.2 m boom (2-piece), 3.05 m arm (HD), 1 209 kg / 1.32 m³ bucket, 6 200 kg counterweight** | | |
| Triple grouser | 600 | 31 230 | 60.3 | 3 190 | 31 610 | 61.0 | 3 190 |
| | 600 (HD) | 31 450 | 60.7 | 3 190 | 31 820 | 61.4 | 3 190 |
| | 700 | 31 820 | 52.6 | 3 290 | 32 190 | 53.2 | 3 290 |
| | 800 | 32 180 | 46.6 | 3 390 | 32 550 | 47.1 | 3 390 |
| | 900 | 32 540 | 41.9 | 3 490 | 32 910 | 42.3 | 3 490 |
| Double grouser | 700 | 32 010 | 52.9 | 3 290 | 32 380 | 53.5 | 3 290 |
| **EC300ENL** | | | | | | | |
| | | **6.2 m boom (GP), 3.05 m arm (GP), 1 209 kg / 1.32 m³ bucket, 6 200 kg counterweight** | | | **6.2 m boom (HD), 3.05 m arm (HD), 1 209 kg / 1.32 m³ bucket, 6 200 kg counterweight** | | |
| Triple grouser | 600 | 30 510 | 58.9 | 2 990 | 30 800 | 59.4 | 2 990 |
| | 600 (HD) | 30 720 | 59.3 | 2 990 | 31 020 | 59.8 | 2 990 |
| | 700 | 31 090 | 51.4 | 3 090 | 31 390 | 51.9 | 3 090 |
| | 800 | 31 460 | 45.5 | 3 190 | 31 750 | 45.9 | 3 190 |
| | 900 | 31 820 | 40.9 | 3 290 | 32 110 | 41.3 | 3 290 |
| Double grouser | 700 | 31 290 | 51.7 | 3 090 | 31 580 | 52.2 | 3 090 |
| | | **6.2 m boom (2-piece), 3.05 m arm (GP), 1 209 kg / 1.32 m³ bucket, 6 200 kg counterweight** | | | **6.2 m boom (2-piece), 3.05 m arm (HD), 1 209 kg / 1.32 m³ bucket, 6 200 kg counterweight** | | |
| Triple grouser | 600 | 31 100 | 60.0 | 2 990 | 31 470 | 60.7 | 2 990 |
| | 600 (HD) | 31 310 | 60.4 | 2 990 | 31 690 | 61.1 | 2 990 |
| | 700 | 31 680 | 52.4 | 3 090 | 32 060 | 53.0 | 3 090 |
| | 800 | 32 040 | 46.4 | 3 190 | 32 420 | 46.9 | 3 190 |
| | 900 | 32 410 | 41.7 | 3 290 | 32 780 | 42.2 | 3 290 |
| Double grouser | 700 | 31 880 | 52.7 | 3 090 | 32 250 | 53.3 | 3 090 |
| **EC300ELR** | | | | | | | |
| | | **10.2 m boom (LR), 7.9 m arm (LR), 478 kg / 0.57 m³ bucket, 6 900 kg counterweight** | | | | | |
| Triple grouser | 600 | 31 770 | 61.3 | 3 190 | | | |
| | 600 (HD) | 31 980 | 61.7 | 3 290 | | | |
| | 800 | 32 710 | 47.3 | 3 390 | | | |
| | 900 | 33 080 | 42.5 | 3 490 | | | |