Volvo ECR50D in detail.

**Engine**

- Engine: EU Stage 3A Volvo D2.6A
- Rated speed: 36.6 / 2 200 r/min
- Maximum Gross power, ISO 3046-1: 31.2 / 41.8 kW / hp
- Max torque: 155 / 1 300 Nm / r/min
- Nb of cylinders: 4
- Displacement: 2.615 l
- Bore: 87 mm
- Stroke: 110 mm
- Compression ratio: 19

**Electrical system**

- Rated voltage: 12 V
- Battery capacity: 74 Ah
- Alternator: 12 / 70 V / A

**Hydraulic system**

- Maximum system flow: 103 l/min
- Maximum flow for accessories: 75 l/min
- Maximum pressure for accessories: 22 / 220 MPa/bar
- Maximum flow for 2nd accessory circuit (option): 23 l/min
- Maximum operating pressure: 26 / 260 MPa/bar

**Digging performances**

- Standard bucket width (blade, W/O side cutter): 600 mm
- Standard bucket mass: 113 kg
- Standard bucket rated capacity: 0.144 m³
- Bucket rotation: 200 deg
- Short arm (1400mm) ISO tearout force: 2 983 daN
- Long arm (1800mm) ISO tearout force: 2 177 daN

**Swing system**

- Max, slew speed: 9.5 r/min
- Max, slew torque: 3 612 daN.m

**Undercarriage**

- Rubber track width: 400 mm
- Bottom / Top rollers per side: 5 / 1
- Blade (width x height): 1 920 x 351 mm

**Drive**

- Max, drawbar pull: 3 450 daN
- Max, travel speed (low / high): 3.0 / 4.9 km/h
- Gradeability: 30 deg

**Service refill capacities**

- Fuel tank: 64.5 l
- Hydraulic system, total: 62 l
- Hydraulic tank: 32 l
- Engine oil: 10.2 l
- Engine coolant: 9.8 l
- Travel reduction unit: 2 X 1

**Sound Level**

- Interior sound level according to ISO 6396 (LpA): 78 dB(A)

**Weight and ground pressure**

- Operating weight according to ISO 6016 (according to most usual configuration and including 75kg operator): 5 010 kg
- Ground pressure: 0.29 kg/cm² (28.4 kPa)
- Transport weight (Heated cab, 380mm rubber tracks, short arm, 600mm direct-fit bucket, full fuel tank): 4 935 kg
- With thumb: +65 kg
- With extra counterweight: +170 kg
- With long arm and additional counterweight: +195 kg
- With 380mm steel tracks: +100 kg

**LIFTING CAPACITY ECR50D**

These capacities are given for a machine equipped with a cabin, 400mm rubber tracks and without a bucket or quick-coupler.

The below values are in compliance with ISO standard 10567. They do not exceed 75% of the tipping load or 87% of the hydraulic limit with the machine on firm level ground.

*Caution: In accordance with standard EN 474-5, the machine must be equipped to carry out handling operations. It is the operator's obligation to know and follow the applicable national and local safety regulations.*

<table>
<thead>
<tr>
<th>Lifting point height (B) m</th>
<th>2.0 m</th>
<th>3.0 m</th>
<th>4.0 m</th>
<th>Max. reach</th>
<th>Max. m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm: 1 400mm + Dozer blade up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 kg</td>
<td>892</td>
<td>770</td>
<td>700</td>
<td>605</td>
<td>4.65</td>
</tr>
<tr>
<td>2 kg</td>
<td>1 332</td>
<td>1 129</td>
<td>866</td>
<td>745</td>
<td>615</td>
</tr>
<tr>
<td>1 kg</td>
<td>1 250</td>
<td>1 052</td>
<td>853</td>
<td>713</td>
<td>589</td>
</tr>
<tr>
<td>0 kg</td>
<td>1 217</td>
<td>1 021</td>
<td>811</td>
<td>692</td>
<td>610</td>
</tr>
<tr>
<td>-1 kg</td>
<td>2 404</td>
<td>1 922</td>
<td>1 217</td>
<td>1 021</td>
<td>808</td>
</tr>
<tr>
<td>-2 kg</td>
<td>2 449</td>
<td>1 962</td>
<td>1 244</td>
<td>1 046</td>
<td>961</td>
</tr>
<tr>
<td>Arm: 1 800mm + Additional counterweight + Dozer blade up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 kg</td>
<td>877</td>
<td>839</td>
<td>764</td>
<td>672</td>
<td>5.07</td>
</tr>
<tr>
<td>2 kg</td>
<td>1 318</td>
<td>1 241</td>
<td>1 076</td>
<td>810</td>
<td>689</td>
</tr>
<tr>
<td>1 kg</td>
<td>1 569</td>
<td>1 150</td>
<td>1 041</td>
<td>772</td>
<td>572</td>
</tr>
<tr>
<td>0 kg</td>
<td>1 514</td>
<td>1 098</td>
<td>1 011</td>
<td>744</td>
<td>684</td>
</tr>
<tr>
<td>-1 kg</td>
<td>2 030</td>
<td>1 961</td>
<td>1 339</td>
<td>772</td>
<td>908</td>
</tr>
<tr>
<td>-2 kg</td>
<td>2 487</td>
<td>2 067</td>
<td>2 197</td>
<td>1 102</td>
<td>962</td>
</tr>
<tr>
<td>Arm: 1 400mm Dozer blade down</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 kg</td>
<td>877</td>
<td>839</td>
<td>764</td>
<td>672</td>
<td>5.07</td>
</tr>
<tr>
<td>2 kg</td>
<td>1 318</td>
<td>1 241</td>
<td>1 076</td>
<td>810</td>
<td>689</td>
</tr>
<tr>
<td>1 kg</td>
<td>1 569</td>
<td>1 150</td>
<td>1 041</td>
<td>772</td>
<td>572</td>
</tr>
<tr>
<td>0 kg</td>
<td>1 514</td>
<td>1 098</td>
<td>1 011</td>
<td>744</td>
<td>684</td>
</tr>
<tr>
<td>-1 kg</td>
<td>2 030</td>
<td>1 961</td>
<td>1 339</td>
<td>772</td>
<td>908</td>
</tr>
<tr>
<td>-2 kg</td>
<td>2 487</td>
<td>2 067</td>
<td>2 197</td>
<td>1 102</td>
<td>962</td>
</tr>
</tbody>
</table>

*hydraulic limit*
Specifications.

**DIMENSIONS ECR50D**

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit</th>
<th>Arm 1 400 mm</th>
<th>Arm 1 800 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Maximum cutting height</td>
<td>mm</td>
<td>5 400</td>
<td>5 656</td>
</tr>
<tr>
<td>B Maximum dump height</td>
<td>mm</td>
<td>3 809</td>
<td>4 070</td>
</tr>
<tr>
<td>C Digging depth</td>
<td>mm</td>
<td>3 400</td>
<td>3 800</td>
</tr>
<tr>
<td>C* Maximum digging depth</td>
<td>mm</td>
<td>3 659</td>
<td>4 048</td>
</tr>
<tr>
<td>D Maximum vertical wall digging depth</td>
<td>mm</td>
<td>2 417</td>
<td>2 791</td>
</tr>
<tr>
<td>E Maximum digging reach at ground level</td>
<td>mm</td>
<td>5 771</td>
<td>6 161</td>
</tr>
<tr>
<td>F Maximum digging reach</td>
<td>mm</td>
<td>5 908</td>
<td>6 288</td>
</tr>
<tr>
<td>G Highest position dozer blade</td>
<td>mm</td>
<td>441</td>
<td></td>
</tr>
<tr>
<td>H Lowest position dozer blade</td>
<td>mm</td>
<td>580</td>
<td></td>
</tr>
<tr>
<td>I Tumbler length</td>
<td>mm</td>
<td>1 955</td>
<td></td>
</tr>
<tr>
<td>J Track length</td>
<td>mm</td>
<td>2 507</td>
<td></td>
</tr>
<tr>
<td>K Dozer blade, maximum reach at ground level</td>
<td>mm</td>
<td>1 478</td>
<td></td>
</tr>
<tr>
<td>L Overall width with 400mm rubber tracks</td>
<td>mm</td>
<td>1 870</td>
<td></td>
</tr>
<tr>
<td>L* Overall width with 380mm steel tracks</td>
<td>mm</td>
<td>1 900</td>
<td></td>
</tr>
<tr>
<td>M Overall length</td>
<td>mm</td>
<td>5 266</td>
<td>5 090</td>
</tr>
<tr>
<td>M* Transport length</td>
<td>mm</td>
<td>5 992</td>
<td>5 883</td>
</tr>
<tr>
<td>N Overall height of engine hood</td>
<td>mm</td>
<td>1 678</td>
<td></td>
</tr>
<tr>
<td>O Minimum ground clearance</td>
<td>mm</td>
<td>360</td>
<td></td>
</tr>
<tr>
<td>P Dozer blade height</td>
<td>mm</td>
<td>367</td>
<td></td>
</tr>
<tr>
<td>Q Shoe width (rubber)</td>
<td>mm</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>Q* Shoe width (steel)</td>
<td>mm</td>
<td>380</td>
<td></td>
</tr>
<tr>
<td>R Ground clearance to superstructure</td>
<td>mm</td>
<td>666</td>
<td></td>
</tr>
<tr>
<td>S Front slew radius</td>
<td>mm</td>
<td>2 450</td>
<td>2 495</td>
</tr>
<tr>
<td>T Front slew radius with maximum offset</td>
<td>mm</td>
<td>1 948</td>
<td>1 984</td>
</tr>
<tr>
<td>U Overall height</td>
<td>mm</td>
<td>2 570</td>
<td></td>
</tr>
<tr>
<td>W Overall width of superstructure</td>
<td>mm</td>
<td>1 603</td>
<td></td>
</tr>
<tr>
<td>X Tail slew radius</td>
<td>mm</td>
<td>960</td>
<td>1 033</td>
</tr>
<tr>
<td>X* Additional counterweight overhang</td>
<td>mm</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Y Angle of approach</td>
<td>deg</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Z Dozer blade width</td>
<td>mm</td>
<td>1 920</td>
<td></td>
</tr>
<tr>
<td>α₁ Maximum boom swing angle to the left</td>
<td>deg</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>β₁ Maximum boom offset to the right</td>
<td>mm</td>
<td>592</td>
<td></td>
</tr>
<tr>
<td>α₂ Maximum boom swing angle to the right</td>
<td>deg</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>β₂ Maximum boom offset to the left</td>
<td>mm</td>
<td>726</td>
<td></td>
</tr>
</tbody>
</table>
STANDARD EQUIPMENT

**Engine**
- Low emission, direct injection, water-cooled, Volvo 4-cylinder diesel engine, meeting EU Stage 3A environmental regulations.
- Engine restart prevention system. Starter motor is protected against ignition when engine is already running.
- Auto engine shutdown. A maximum low idling time can be defined by operator. This function can be set, engaged and stopped easily through the keypad.
- Dry-type single element air filter.
- Plastic fuel tank with drain plug.
- Water separator.
- Translucent fuel filter.

**Electric/Electronic control system**
- Maintenance free battery.
- IP67 protected electrical system and high quality connectors.
- Removable battery cut-off switch.
- Two working lights on cab.
- In-cab 12V power socket.
- V-CADS pro

**Hydraulic system**
- Variable displacement, load-sensing piston pump.
- Closed centre flow-sharing main control valve.
- Boom up
- Arm out
- Boom offset, both sides
- Patented filtering and filling element.
- Large tiltable oil cooler.
- Double-acting hydraulic circuit for accessories up to arm end.
- Hammer / shear valve.
- Plastic tank with drain plug.

**Swing system**
- Radial piston hydraulic motor with direct engagement on the ball internal crown wheel (no reduction gears).
- Integrated shockless valve.
- Automatic multi-disc slew brake.
- Centralized and remote lubrication of crown wheel & ball bearing.

**Drivetrain**
- Axial piston hydraulic motors equipped with an epicyclic reduction gears.
- Automatic two speed travel.
- Bottom flanged rollers lubricated for life.
- Grease tensioning wheel lubricated for life.

**Undercarriage and dozer blade**
- "X" shape, box welded fabricated frame with sloping side members.
- 2 Tie-down points on the dozer blade.
- 2 Tie-down points on the frame.
- 2 Integrated lifting points.
- Sturdy removable protecting covers for track motors and slew system.
- 400HB weld-on edge on dozer blade

**Digging Equipment**
- Monobloc box welded boom.
- Boom cylinder rod protection.
- Monobloc box welded arm.
- Long-life steel bushings.
- Hardened, pre-lubricated and corrosion resistant pins.
- 50 hours greasing intervals.
- Single side greasing points

**Cab**
- FOPS on top level 1 (Falling Object Protective Structure).
- TOPS (Tip-Over Protective Structure).
- ROPS (Roll-Over Protective Structure).
- Cushioned operator station.
- Large door access.
- Large and roomy uncluttered floor.
- Gas-strutt assisted front window opening.
- Front windshield wiper and washer nozzle.
- Right hand side sliding window.
- Heating systems with adjustable control of temperature and air flow level.
- Multiple adjustable air vents.
- Filtered air inlet.
- Provision for a radio (antenna and electric wiring already fitted).
- Cab inside light.
- Seat-belt with warning indicator.
- Right rear-view mirror.
- Cupholder.
- Net.

**Machine controls**
- Proportional finger tip control for boom offset.
- Proportional finger tip control for auxiliary circuit with flow adjustment.
- Direct access to main auxiliary settings [X1] via 3 function oriented buttons.
- Possibility to individually adjust and register the flow settings.
- Breaker toggle switch on right joystick.
- Digital engine control with direct access to ECO mode, auto-idle and two preset engine speed.
- Possibility to individually adjust and register the two preferred engine speed.
- Access to machine management system through right display and intuitive keypad.
- Automatic locking device for pilot controls and travel levers when the left console is raised.
- Engine starting safety device: the left console must be raised to operate the starter.
- Pressure accumulator to lower the equipment on the ground when the engine is switched off.
- High torque / automatic two speed change over button on the keypad.
- High speed toggle switch on the dozer blade lever.
- Large travel pedals

**Instrumentation and monitoring**
- Water temperature and fuel level gauges.
- Warning lights for hydraulic filter and air filter restriction.
- Self-acting emergency engine shutdown. Prevents failures in case of coolant overheating or too low engine oil pressure.
- Several warning lights, coupled to an audible signal, in the event of malfunction (overheating, drop in oil pressure, low battery voltage...).

**Official approval**
- Machine conforming to European directive 2006/42/EC.
- Noise emissions in the environment conforming to directive 2000/14/EC.
- Hand Arm Vibrations - Whole Body Vibrations compliant with directive 2002/44/EC.
- Electromagnetic compatibility (EMC) conforming to European directive 2004/108/EC and its amendments.
- Object handling device conforming to EN 474-1 and EN 474-5 standards.
- FOPS on top level 1 conforming to ISO 10262 standard.
- ROPS conforming to ISO 3471-2 and SAE J1040 standards.
- Object handling device conforming to ISO 12117 and EN 13531 standards.
- DUNOS conforming to ISO 12117 and EN 13531 standards.