

VOLVO ECR 88-T TUNNEL-EXCAVATOR

SSM
SCHÖLLER SPECIAL MACHINES

- OPERATING WEIGHT 10 – 11 T
- ENGINE POWER 42 KW – TIER 4F (STAGE V)
- FOR TUNNEL HEIGHTS FROM 3.5 TO 5.8 M
- BREAKOUT FORCE 42 KN
- TEAROUT FORCE 60 KN
- HIGH HYDRAULIC PERFORMANCE FOR ATTACHMENT TOOLS
- FOR TUNNEL HEADING IN SOFT GROUND CONDITIONS
- OPTIONAL ALSO WITH ELECTRIC DRIVE OR TWIN-DRIVE



ENGINE

The certified Volvo diesel engine fully meets the demands of the latest emission regulations Tier 4f / Stage V. The watercooled engine uses precise, high pressure fuel injectors and turbo to provide optimized machine performance and high fuel efficiency. The exhaust gas emission control essentially comprises a combination of cooled exhaust gas recirculation (E-EGR), a diesel oxidation catalytic converter (DOC) and a downstream diesel particle filter (DPF).

The stacked water and hydraulic oil cooler is easily accessible and equipped with a single-speed fan for the cooling system.

Air Filter: 2-stage (optional cyclon pre-filter)

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.

Engine type	Volvo	D2.6H
No. of cylinders		4
Displacement	l	2,62
Max. engine speed	rpm	2.000
Max. gross power	kW/hp	42 / 57
Max. torque at engine speed	Nm / rpm	220/1300

ELECTRICAL SYSTEM

Well protected high-capacity electrical system. 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. The I-ECU control panel beside the operator seat provides controls and displays the machine functions. The machine is equipped with a yellow beacon, acoustic drive alert and codec-secured anti-theft device.

Voltage	V	12
Batteries	V/Ah	12 / 100
Alternator	V/Ah	12 / 70

SWING SYSTEM

Maintenance free hydrostatic swing system, with radial piston motor and an automatic holding brake and anti-rebound valve are standard.

Max. slew speed	rpm	8,3
Max. slew torque	kNm	22,9

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	65
Max. travel speed (low / high)	km / h	2,6 / 5,2
Max. gradeability	°	35

UNDERCARRIAGE

Robust X-shaped frame with permanently greased and sealed track chains as standard. Dozer blade on the undercarriage

Track shoe	ea	2 x 39 (optional with rubber pads)
Shoe width, triple grouser	mm	450 mm
Bottom rollers	ea	2 x 5
Top rollers	ea	2 x 1

CABIN

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 allround visibility. The front windshield with wiper unit can easily slide up into the ceiling, and the lower front glass can be removed and stored in the side door.

The spring-suspended driver's seat and the joystick console can be adjusted independently of each other. The seat has different adjustments plus a seat belt with warning device for the operator's comfort and safety. Beside the multifunctional operating panel, also an AM/FM radio with USB port is installed. The cabin has an integrated heating and air-conditioning system (working with coolant of type R134a).

HYDRAULIC SYSTEM

The hydraulics system operates with an open negative control system which optimally matches to the engine and components and allows independent and simultaneous movements. The high flow system operates with a combination of 3 axial piston pumps.

Hose burst protection valves at the boom and dipper arm cylinders provide safe operation.

Main pumps, type 3 x variable displacement axial piston pumps		
Maximum flow	l/min	2x68 + 54 l/min (at 2000 rpm)
Pilot pump, type gear pump		
Maximum flow	l / min	13
Max. flow for hammer/shear/drum cutter (X1)	l / min	68 @ max. 294 bar
Optional high flow version with priority valve kit	l / min	max. 120
Max. flow for rotator (X3)	l / min	28 @ max. 147 bar
Hydraulic relief valve setting pressures		
Implement	bar	294
Travel circuit	bar	294
Slew circuit	bar	245
Pilot circuit	bar	34

MODIFICATIONS AND OPTIMIZATIONS

- Optimised excavator superstructure frame including modification of the aggregate suspensions a cable & hose installation
- Side ram protection (tunnel protection bar) at the outside of the upper-carriage frame
- Bigger rear counter weight (1690 kg) for better stability while working
- Additional guides for drive chains
- Crawler chain dirt scrapers (height adjustable, at front and rear side, optional)
- Reinforced cabin front and roof protection grid FGPS, (FOPS level 2)
- Hand operated fire extinguisher in protective box on the upper-carriage
- Electric filling pump for hydraulic oil
- LED headlights on the upper front and rear of the cab
- Drive warning lights (flashing lights) on the front and rear of the chassis
- Emergency stop switch on the superstructure (1 x cabin and 2 x rear of the superstructure)
- Drain oil line installation on boom and in basic machine
- Other various modifications and optimizations
- Central lifting point at the boom, for crane transport (optional)
- Optional accessories: central lubrication system, fire extinguishing system, quick coupler, various buckets and attachment tools, etc.

TUNNELING BOOM EQUIPMENT

- Heavy-duty tunnel boom with swivel mechanism 2x40° with 2 swivel cylinders
- All main bearing points with exchangeable bushings and floating bolts
- Hydraulic adjustable king post toward the uppercarriage, allows max. manoeuvrability of the boom
- Basic boom with lifting cylinder including hose burst protection valve
- Dipper arm with lifting cylinder including hose burst protection valve and reinforced bucket cylinder integrated in the dipper stick
- Hydraulic hose line installation on the boom (hydraulic hoses for easy maintenance and exchangeability)
- Additional hydraulic control circuits for hammer / demolition shear / drum cutter (X1), incl. rotary drive circuit (X3) and drain oil line

Tearout force (arm)	kN	42
Breakout force (bucket)	kN	60

SERVICE REFILL

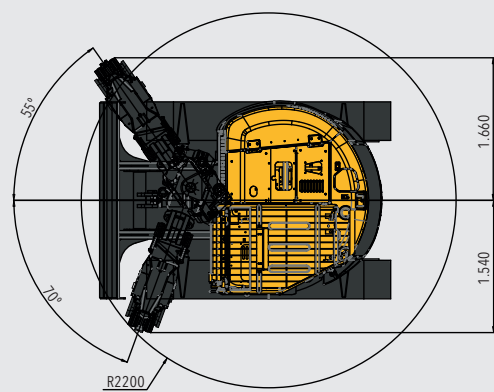
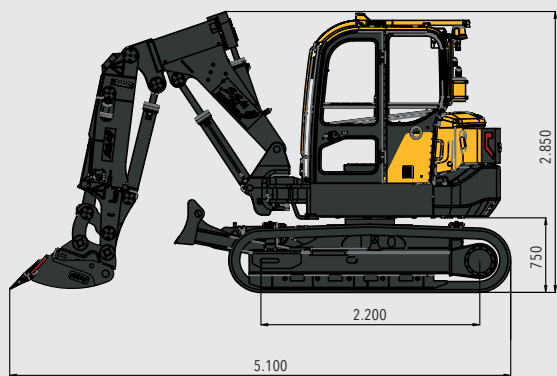
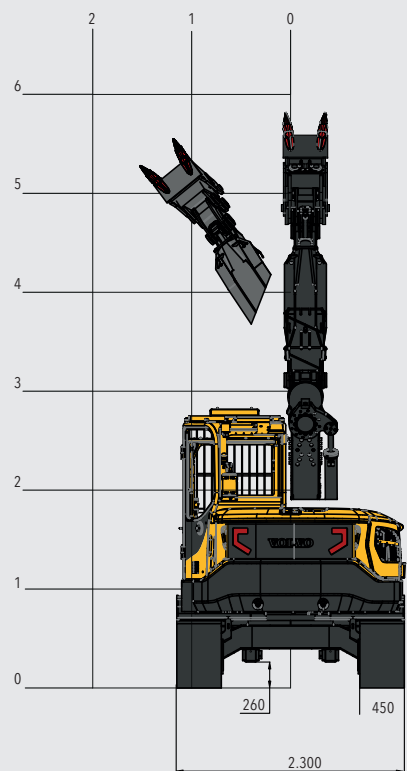
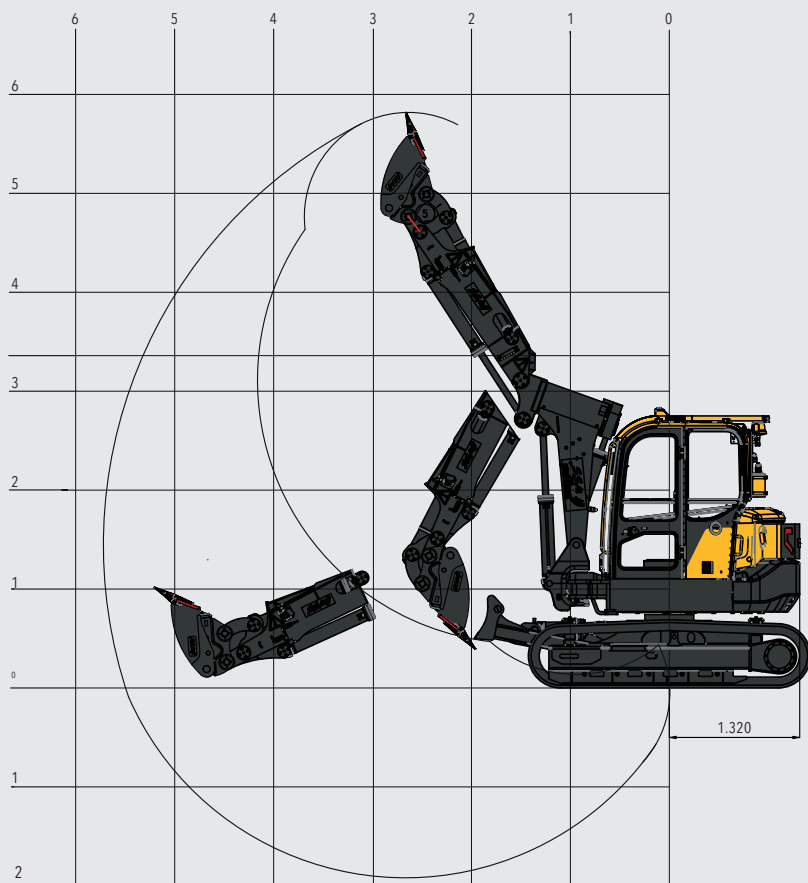
Fuel tank	l	110
Hydraulic system, total	l	140
Hydraulic tank	l	84
Engine oil	l	10
Engine coolant	l	9,3
Travel reduction unit	l	2 x 1,6

SOUND LEVEL

Sound pressure level in cab according to ISO 6396		
LpA (Standard)	dB	74
External sound level according to ISO 6395 and EU Noise Directive 2000/14/EC		
LWA (Standard)	dB	98

Further details upon request.

Subject to changes





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