

MOBILE TUNNEL EXCAVATOR VOLVO EWR 170-T

SSM
SCHÖLLER SPECIAL MACHINES

OPERATING WEIGHT 20 - 21 T
ENGINE POWER 115 KW - TIER 4F (STAGE V)
FOR TUNNEL HEIGHTS FROM 4,5 M TO 7,3 M
BREAKOUT FORCE 108 KN
TEAROUT FORCE 85 KN
HIGH HYDRAULIC PERFORMANCE FOR ATTACHMENT TOOLS
OPTIONAL ALSO WITH ELECTRIC DRIVE



ENGINE

The Volvo engine Stage V fully meets the demands of the latest, emission regulations. The engine uses high pressure fuel injectors, turbo charger and air-to-air intercooler, and electronic engine controls to optimize machine performance. The Volvo Advanced Combustion Technology (V-ACT) with continuous passive regeneration essentially comprises a combination of exhaust gas recirculation (E-EGR), diesel oxidation catalytic converter (DOC) with a downstream diesel particle filter (DPF) and a selective catalytic reduction of nitrogen oxides (SCR, with AdBlue).

- Air Filter: 2-stage (optional with pre-cleaner)
- Automatic Idling System

Engine type	Volvo	D4J
No. of cylinders		4
Displacement	l	4,04
Max. power at	rpm	2 000
Power gross, ISO 14396/SAE J1995	kW/hp	115/156
Max. torque at engine speed	Nm/rpm	618

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. Contronics provides advanced monitoring of machine functions and important diagnostic information. The LCD colour monitor in the cabin enables central monitoring of the operating status and setting of the various functions.

Voltage	V	24
Batteries	V/Ah	2 x 12/100
Alternator	V/Ah	24/110

SWING SYSTEM

The superstructure is slewed by the means of a radial piston motor without reduction gear. Automatic slew holding brake and anti-rebound valve are standard.

Max. slew speed	rpm	9
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UNDERCARRIAGE

All-welded robust torsion box frame with parallel blade at rear side and bolted outriggers at front.

Front axle: Robust excavator axle with automatic or operator controlled front axle oscillation lock.

Oscillation of steering axel
(with mud guards)

± 6°

Width of axel
m
(optional 2.54 m wide)

DRIVE TRAIN

A variable axle piston motor in combination with a power shift gearbox supplies 3 speeds. The gearbox distributes the energy via propeller shafts to the axles.

Wheels	Twin tires	Type	WEX290/90-20 18PR (optional other type possible)
Travel speed, off road / on road		km/h	5 / 20
Travel speed, creep		km/h	4
Min. turning radius		km/h	7.3

BRAKE SYSTEM

Service brakes: servo-hydraulically manoeuvred self-adjusting wet multidiscs with two separate brake circuits on front and rear axle.

Parking brake	Negative wet disc in gear housing, spring applied and pressure released.
Digging brake	Service brake with mechanical lock system.
Security system	The 2-circuit travel brakes are supplied with two accumulators in the event of failure in the service brake system.

HYDRAULIC SYSTEM

The hydraulics system is combined with the fully electronic control system and advanced ECO mode.

The load sensing hydraulic system with pressure compensated valves enables load independence of movements and provides gives superior manoeuvrability and fast movements, for optimal working result and economy. The system covers following working modes: Parking mode (P), Travel mode (T), Working mode (W) and Customer mode (C): Operator can set oil flow in accordance with job conditions. an set oil flow in accordance with job conditions.

HYDRAULIC SYSTEM

Power Boost: All digging and lifting forces are increased.

Main pump with variable displacement axial piston pump

Maximum flow	l/min	275
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Brake and steering pump, type gear pump

Maximum flow	l/min	50
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Relief valve setting pressure:

Implement	bar	340/375
Travel circuit	bar	375
Pilot system	bar	35

CABIN

The operator's cab is supported on hydraulic dampening mounts to reduce shock and vibration levels. The cab has excellent allround 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. The ergonomic, air-suspended and heated comfort driver's seat and the joystick console can be adjusted independently of each other. The seat has different adjustments plus a seat belt for the operator's comfort and safety. Beside the multifunctional LCD colour monitor, also a radio with MP3, Bluetooth and a hands-free system is installed.

The cabin has an integrated heating and air-conditioning system (working with coolant of type R134a). The pressurized and filtered cab air is supplied by an automatically-controlled fan.

TUNNELING BOOM EQUIPMENT

- Heavy-duty tunnel boom with swivel mechanism 2x45° with double lifting cylinders including load retaining valves and with 2 swivel cylinders
- All main bearing points with exchangeable bushings and floating bolts
- Dipper arm with double lifting cylinders including load retaining valves and integrated, reinforced bucket cylinder
- Hydraulic hose line installation on the boom (hydraulic hoses for easy maintenance and exchangeability)
- Additional hydraulic control circuits for hammer / demolition shear / drum cutter, incl. rotary drive and drain oil line as well as additional compressed air line for hammer flushing or water spray

Tearout force (arm)	kN	85
Breakout force (bucket)	kN	108

MODIFICATIONS AND OPTIMIZATIONS

- Reinforcements on the excavator superstructure frame including side ram protection (tunnel protection cladding) and cover plates with screw protection on the underside of the superstructure
- Reinforced front and roof protection grille FGPS, (FOPS level 2)
- Hand operated fire extinguisher in protective box on the front upper structure
- LED headlights on the upper front and rear of the cab as well as driving 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)
- Additional compressed air line for optional drill or hammer flushing
- Optional: quick coupler, various buckets, central lubrication system, fire extinguishing equipment, etc.

SERVICE REFIL

Fuel tank	l	200
Hydraulic system, total	l	230
Hydraulic tank	l	104
DEF/AdBlue® tank	l	25
Engine oil	l	16
Engine coolant	l	32
Gearing mechanism	l	2,5
Front axle	l	9,5
Rear axle	l	12,5
Travel reduction unit	l	4 x 2,5

SOUND LEVEL

Sound pressure level in cab according to ISO 6396

LpA (Standard)	dB	71
External sound level according to ISO 6395 and EU Noise Directive 2000/14/EC		
LWA (Standard)	dB	102

Further details upon request

Subject to changes



