SSM

SCHÖLLER SPECIAL MACHINES

VOLVO ECR 145-T TUNNEL EXCAVATOR

- OPERATING WEIGHT 40,00 TO 44,000 LB
- ENGINE POWER 120HP – TIER 4F (STAGE V)
- 2 BOOM LENGTHS AVAILABLE, FOR DIFFERENT RANGES
- FOR TUNNEL HEIGHTS FROM 13 TO 24 FT
- BREAKOUT FORCE 25,200 LBF
- TEAROUT FORCE 19,600 LBF
- OPTIONAL ALSO WITH ELECTRIC DRIVE

VOLVO ECR 145-T TECHNICAL DATA

ENGINE

The latest generation, Volvo engine Stage V emissions compliant diesel engine fully meets the demands of the latest, emission regulations. Featuring Volvo Advanced Combustion Technology (V-ACT), it's designed to deliver superior performance and fuel efficiency. The engine uses precise, high pressure fuel injectors, turbo charger and air-to-air intercooler, and electronic engine controls to optimize machine performance. The exhaust gas emission control system with continuous passive regeneration essentially comprises a combination of externally cooled exhaust gas recirculation (E-EGR), a diesel oxidation catalytic converter (DOC) with a downstream diesel particle filter (DPF) and a selective catalytic reduction of nitrogen oxides (SCR, with reducing agent AdBlue).

- Air Filter: 3-stage with pre-cleaner
- 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	D4J
No. of cylinders		4
Displacement	in^3	244
Max. power at	rpm	2000
Power gross, ISO 14396/SAE J1995	kW / hp	90 / 121
Max. torque at engine speed	lbf ft / rpm	417

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	28 / 110

SWING SYSTEM

The swing system uses an axial piston motors, driving a planetary gearbox for maximum torque. An automatic holding brake and antirebound valve are standard.

Max. slew speed	rpm	12.7
Max. slew torque	lbf ft	30,910

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	lbf ft	26,700
Max. travel speed (low / high)	mph	1.9 / 3.4
Max: gradeability	°	35

UNDERCARRIAGE

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

Track shoe		2 x 46
Shoe width, triple grouser	in	24
Bottom rollers		2 x 7
Top rollers		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 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 CD player, 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.

HYDRAULIC SYSTEM

The hydraulics system, combined with the fully electronic control system and advanced ECO mode, has been optimized to work in harmony with engine to match the engine power, reduce power loss and improve controllability and response time. The following important functions are included in the system:
Summation system: Combines the flow of both hydraulic pumps to ensure quick cycle times and high productivity.
Arm priority: Gives priority to the arm operation for faster cycle times in leveling and for increased bucket filling when digging.
Swing priority: Gives priority to swing functions for faster simultaneous Operations.
Regeneration system: Prevents cavitation and provides flow to other movements during simultaneous operations for maximum productivity.
Power boost: All digging and lifting forces are increased.
Holding valves: Boom and arm holding valves prevent the digging equipment from creeping.

Main pump, type 2 x variable displacement axial piston pumps		
Maximum flow	gpm	2 x 33
Pilot pump, type gear pump		
Maximum flow	gpm	1 x 5
Implement	psi	4690 / 4980
Travel circuit	psi	4980
Slew circuit	psi	3840
Pilot circuit	psi	570

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
- Reinforcement of the dozer blade incl. additional protection via support shield cylinder and central lubrication strip for relevant lubrication points on the support blade
- Additional guides for drive chains
- Reinforced front and roof protection gride 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.

TUNNELING BOOM EQUIPMENT

- Standard version (short) and optional long boom
- Heavy-duty tunnel boom with swivel mechanism 2x45 °
- All main bearing points with exchangeable bushings and floating bolts
- Basic boom with double lifting cylinders including hose rupture safety valves
- Swivel bracket (2x45 °) with 2 swivel cylinders
- Dipper arm with double lifting cylinders including hose rupture safety 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)	lb	19.6
Breakout force (bucket)	lb	25.2

SERVICE REFIL

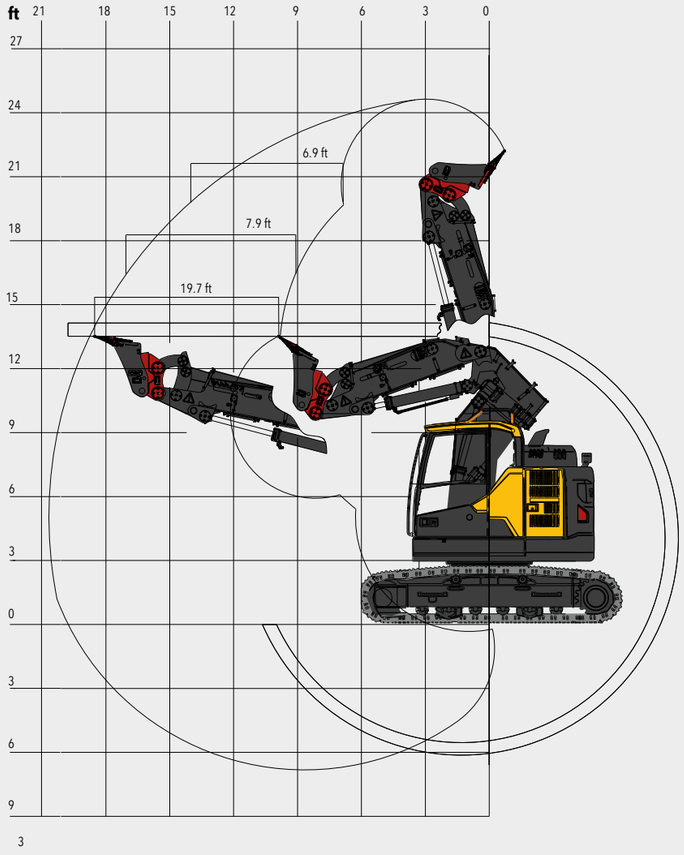
Fuel tank	gal	53
DEF/AdBlue® tank	gal	4
Hydraulic system, total	gal	53
Hydraulic tank	gal	16
Engine oil	gal	4
Engine coolant	gal	7
Slew reduction unit	gal	1
Travel reduction unit	gal	2 x 0.6

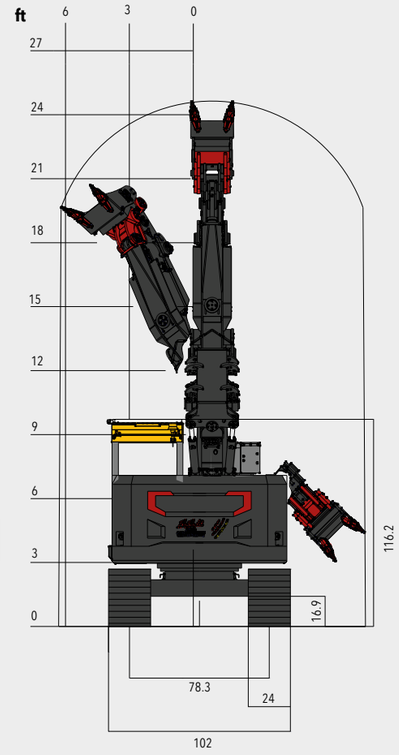
SOUND LEVEL

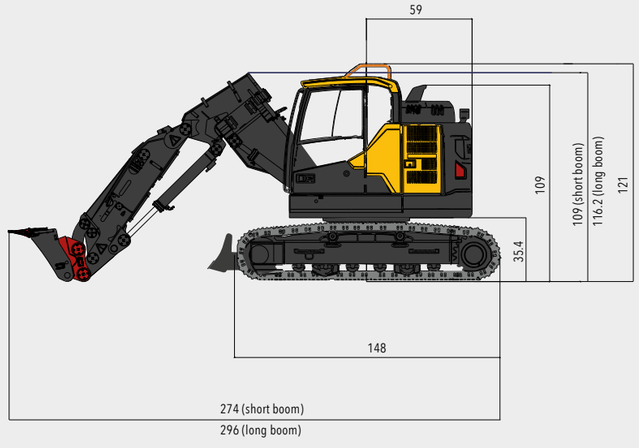
Sound pressure level in cab according to ISO 6396		
LpA (Standard)	dB	71
External sound level according to ISO 6395 and EU Noise Directive 2000/14/EC		
LWA (Standard)	dB	100

Further details upon request

Subject to changes







Digging curve for short standard boom system: recommended tunnel heights 13 ft to 23 ft (optional long boom system version available: recommended tunnel heights 15 ft to 24 ft).

Machine dimensions in inch.



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