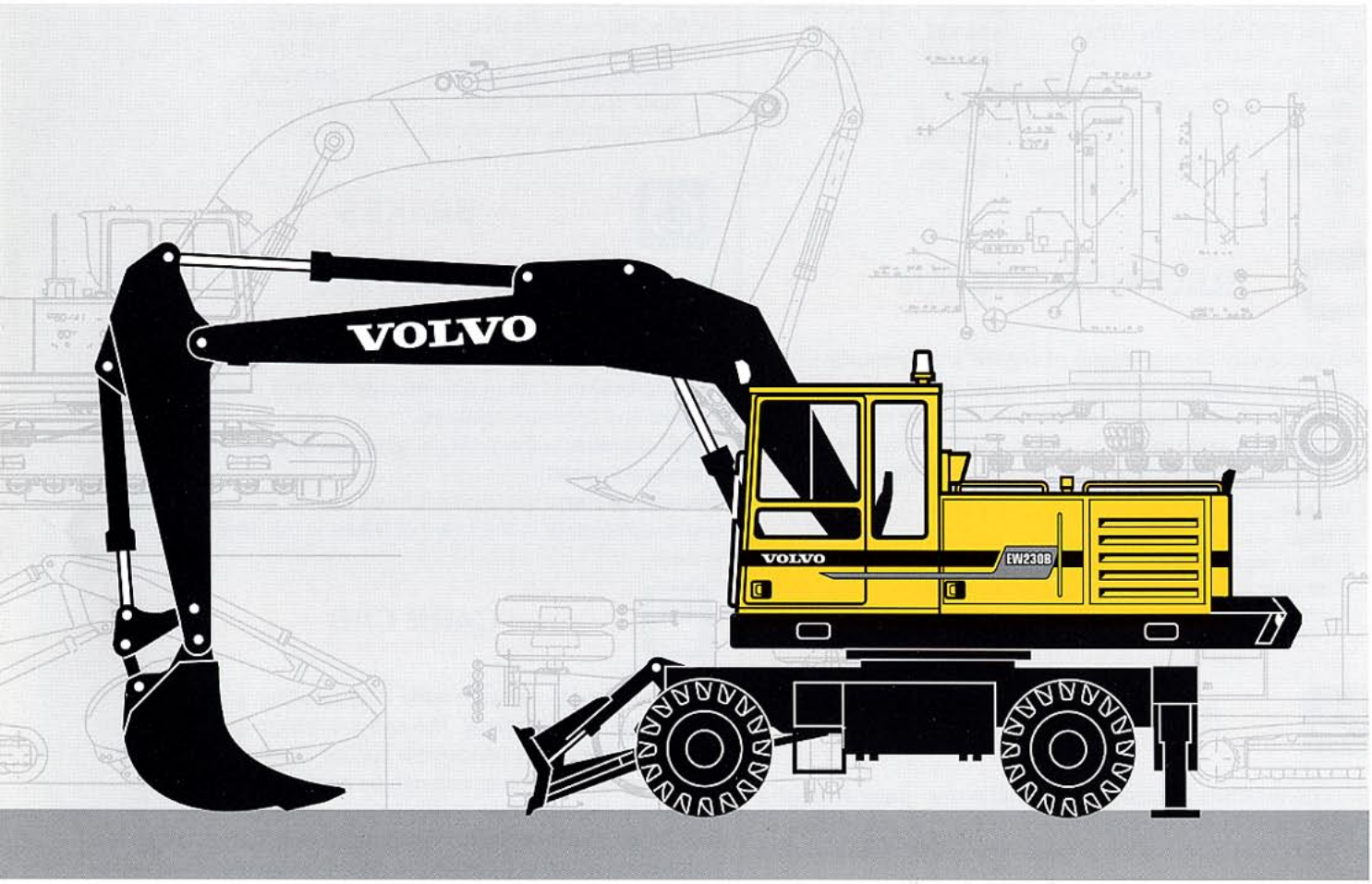
VOLVO EXCAVATOR

EW230B



- **Engine Power: 127 kW (173hp)**
- **Operating Weight: 20,0 t**
- **Buckets: 725 – 1 300 l**
- Low-emission, turbo-charged Volvo diesel engine with direct injection and intercooler
- Three-circuit multilevel priority hydraulic system
- COS = Capacity Optimized System – all three pumps for the digging movements
- Mode selector and electric pump regulation (SSC) Speed Sensing Control
- Care cab
  - computerized monitoring system
  - ergonomic environment
  - low sound level
  - filtered air
- Rugged digging equipment with spherical steel bearings
- Slew circuit in oil bath
- Prepared for a number of optional items of equipment
- Individually operated outriggers and dozer blade
- Four travel speeds – max. 30 km/h

VOLVO

ENGINE

The engine is a low-emission, turbocharged, 4-stroke diesel engine with intercooler, specially developed for excavator use. The machine can work at low engine speeds, contributing to good fuel economy, low sound level, less wear and longer life.

Air filter: 3-stage

Auto idling: Reduces the engine speed to an idling speed when levers and pedals are not activated.

Model	TD 63 KIE	
Output at	35 r/s	(2 100 r/min)
Net (ISO 9249/DIN 6271)	119 kW	(162 hp)
Gross (SAE J1349)	127 kW	(173 hp)
No. of cylinders	6	
Displacement, total	5,48 l	
Bore	98,43 mm	
Stroke	120 mm	

ELECTRICAL SYSTEM

Micro processor for monitoring of engine and hydraulic system. High capacity and well protected electrical system. Printed, circuit board based electric central with clearly arranged fuses and relays. Central prepared for connecting optional equipment. Battery disconnector standard.

Voltage	24 V
Battery	4 x 12 V
Battery capacity	120 Ah
Alternator	28 V / 55 A
Alternator rating	1 540 W

SLEWING SYSTEM

The superstructure is slewed by a axial piston motor through a servo released slew holding brake, into the two-step slew gear giving torque to the inner tooth race of the slew ring. The slew ring runs in an oil bath.

Slew, start to stop*	
90° turn	6,2 s
180° turn	8,2 s
Slew speed	7,4 r/min

** Empty bucket – extended equipment*

SERVICE REFILL CAPACITIES

Fuel tank	340 l
Fuel pump capacity	60 l/min
Hydraulic system, total	400 l
Diesel engine oil	22 l
Cooling system (incl. glycol)	32 l
Slew ring	35 l
Slew gearbox	18 l
Travel gearbox	4,2 l

UNDERCARRIAGE

Drive train: One variable axial-piston motor on the the mid-mounted two-step gearbox gives power to front and rear axles, both with hub reductions.
Framework and support: All-welded robust torsion box frame with two outriggers on on the rear end and a dozer blade on the front end. These three supports can by choice be operated separately or simultaneously for quick repositioning.
Wheels: Alternative single and twin wheels available.
Front axle: Oscillating ±8°.

Twin wheels	10.00–20 PR16
Max. tractive force (brutto)	148 kN
Max. tractive force (net)	118 kN
Travel speed, road travel	30,0 km/h
Travel speed, site travel	8,0 km/h
Turning radius, front wheels	8,0 m

BRAKES

Brake system corresponds to ISO 3450.

Travel brakes: consist of a 2-circuit oil servo system with drum brakes on each axle.
Parking brake: of drum type mounted on the gearbox, spring applied and pressure released.
Digging brake: without play is obtained through the same drum brake system.
Security system: the 2-circuit travel brakes are supplied with two accumulators in the event of failure in the service brake system.

CARE CAB

Easily accessible cab with wide door opening. Lined with sound-absorbent material. The cab mountings are vibration-inhibiting. The upper windshield can be lifted up and locked into place and the lower one can be removed. Sliding side window in the cab door.
Cab heater and defroster: Pressurized and filtered cab air is supplied by a 3-speed fan underneath the operator's seat. The air passes through the cab heater and can be distributed via 14 vents. Prepared for air-conditioning.
Ergonomic operator's seat: Electrically heated operator's seat with adjustable suspension and headrest. The fore/aft position, height and angle of the seat are adjustable, as the lumbar support. Individually adjustable armrests and control levers.
Sound level: Approved according to 86/662/EEC.

Exterior noise (ISO 6 395)	
mean value of L_{wA} (sound power level)	105 dB(A)
Operator's position (ISO 6 396)	
with the door closed	
mean value of L_{pA} (sound pressure level)	78 dB(A)

WEIGHT AND AXLE LOAD

Machine with 5,2 m boom, 2,25 m dipper arm, 160 kg quickfit, 1 000 l bucket and 3 000 kg counterweight.

Operating weight (incl. dozer blade)	20 000 kg
Axle load (incl. dozer blade)	
Front axle	9 200 kg
Rear axle	10 800 kg

HYDRAULIC SYSTEM

3-circuit hydraulic system all-servo controlled.

Pumps: P1 is a pressure-controlled variable pump with priority to the slew circuit. P2 and P3 are power- and pressure-controlled variable pumps to the boom, dipper arm, bucket and travel circuits. Electronically controlled pump regulation for highest power output.

Mode selector: Three working modes:

Power Boost (HLD) = Heavy Lift Device
ECO = Economy
CAP = Capacity

Powerboost (HLD) is temporarily selectable 10 seconds even in Economy and Capacity mode.

Valve system: Boom, dipper arm and bucket are operated by dual main valves, connected in accordance with our patented priority valve system, to obtain best combination of precision maneuverability and minimized fuel consumption.

Float position: Boom cylinder movement equipped with floating position to increase the digging speed and reducing wear on bucket.

Security: Hose rupture valve on boom cylinder is standard.

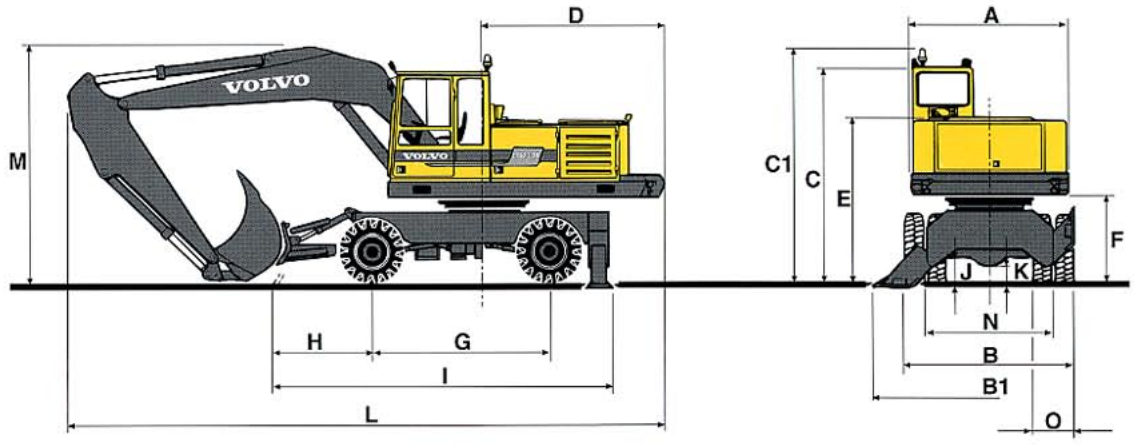
Pump P1
- Max. pressure ..... 26 MPa
- Max. flow ..... 88 l/min

Pumps P2 and P3
- Max. pressure ..... 28 MPa
- Max. pressure with HLD ..... 32 MPa
- Max. flow ..... 2 x 142 l/min

Servo pump
- Pressure ..... 6,5 MPa
- Flow ..... 28 l/min

Steering pump
- Pressure ..... 14 MPa
- Flow ..... 34 l/min

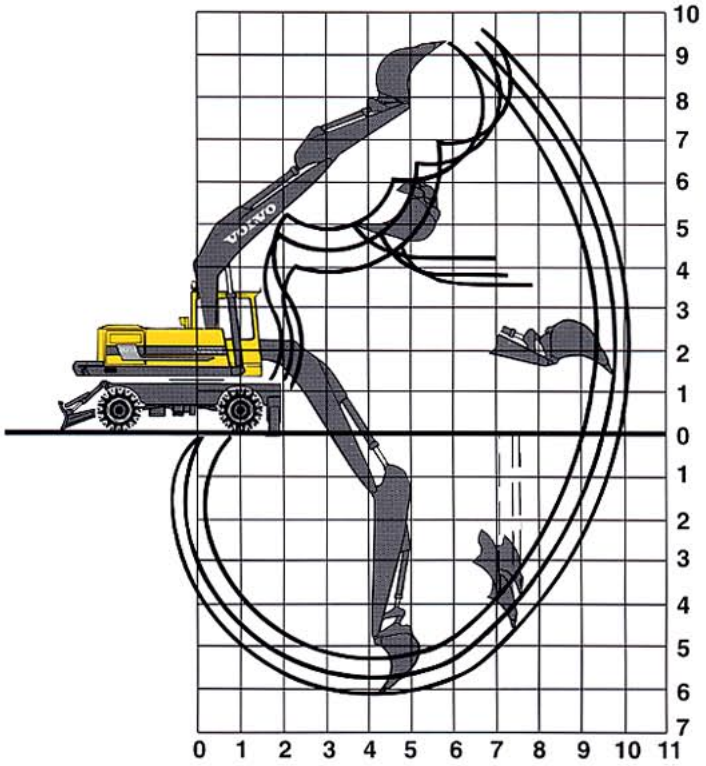
DIMENSIONS



A:	2 490 mm	J:	400 mm	
B:	2 470 mm (2 580 mm with widening rings)	K:	330 mm	
B1:	3 330 mm (3 350 mm with articulated plate)			**Dipper arm**
		L:	9 200 mm	2,25 m
C:	3 260 mm	L:	9 100 mm	2,80 m
C1:	3 530 mm	L:	9 000 mm	3,30 m
D:	2 870 mm	M:	3 900 mm	2,25 m
E:	2 460 mm	M:	4 200 mm	2,80 m
F:	1 270 mm	M:	4 500 mm	3,30 m
G:	2 780 mm	N:	1 900 mm	
H:	1 170 mm	O:	600 mm	
I:	4 990 mm			

DIGGING RANGES

Boom 5,2 m and dipper arm 2,25 m, 2,8 m, 3,3 m



Boom	**m**	**5,2**	**5,2**	**5,2**
Dipper arm	**m**	**2,25**	**2,8**	**3,3**
Max. reach	m	9,4	9,8	10,2
Max. reach at ground level	m	9,1	9,5	9,9
Max. digging depth	m	5,4	5,8	6,2
Max. height ground – tooth tip	m	9,2	9,2	9,5
Max. dumping height	m	6,1	6,3	6,8
Max. practical dumping height	m	4,0	3,8	3,7
Practical digging depth for a material with a 45° angle of repose	m	4,5	4,8	5,1
Max. vertical digging depth	m	3,9	3,9	4,6
Min. front slew radius	m	4,1	4,1	4,2

Digging forces* with quickfit and 900 l bucket:				
Breakout force	kN	177	177	177
Tearout force	kN	120	105	99

* According to Standard SAE J1179

Max. permitted **buckets for quickfit**:				
GP bucket 1,5 t/m³ material density	l	1 300	1 150	1 030
GP bucket 1,8 t/m³ material density	l	1 130	1 010	900
RB bucket 1,8 t/m³ material density	l	1 080	970	860
RB bucket 2,0 t/m³ material density	l	1 000	900	800

LIFTING CAPACITY (At the quickfit lifting hook without bucket. Unit: tonne = 1 000kg)

Across under-carriage / Along under-carriage	Lifting point related to ground level m	Reach from machine center — u = support up d = support down																			
		4,5 m				6,0 m				7,5 m				9,0 m				Max. reach				
		u	d	u	d	u	d	u	d	u	d	u	d	u	d	u	d	u	d	u	d	Max. m
5,20 m boom 2,25 m dipper arm 160 kg quickfit Outriggers and dozerblade	7,5 m					3,1*	4,6*	3,4	4,6*									3,0	3,8*	3,3	3,8*	6,1
	6,0 m					3,0	4,7	3,3	4,8									2,1	3,4	2,4	3,9*	7,3
	4,5 m	4,2	6,5*	4,6	6,5*	2,8	4,5	3,1	5,5*	1,9	3,1	2,2	4,3					1,7	2,8	1,9	3,9	8,0
	3,0 m	3,7	6,2	4,2	8,4*	2,6	4,2	2,9	5,8	1,8	3,0	2,1	4,2					1,5	2,5	1,7	3,5*	8,4
	1,5 m	3,4	5,9	3,8	8,6	2,3	3,9	2,6	5,6	1,7	2,9	1,9	4,1					1,4	2,5	1,7	3,4	8,4
	0,0 m	3,3	5,8	3,8	8,5	2,2	3,8	2,5	5,4	1,7	2,8	1,9	4,0					1,5	2,6	1,7	3,6	8,1
	-1,5 m	3,3	5,8	3,8	8,5	2,2	3,8	2,5	5,4	1,7	2,8	1,9	4,0					1,7	2,8	1,9	4,0	7,5
	-3,0 m	3,5	5,9	3,9	8,2*	2,3	3,9	2,6	5,6									2,2	3,6	2,5	5,1	6,4
5,20 m boom 2,80 m arm 160 kg quickfit Outriggers and dozerblade	6,0 m									2,0	3,3	2,3	4,3*					1,8	2,6*	2,0	2,6*	7,9
	4,5 m					2,9	4,5	3,2	4,9*	1,9	3,1	2,2	4,3					1,5	2,5	1,7	3,0*	8,5
	3,0 m	3,8	6,4	4,3	7,5*	2,6	4,2	2,9	5,8*	1,8	3,0	2,0	4,2					1,3	2,3	1,5	2,5*	8,9
	1,5 m	3,4	5,9	3,8	8,6	2,3	3,9	2,6	5,5	1,7	2,8	1,9	4,0					1,3	2,2	1,5	2,9*	8,9
	0,0 m	3,2	5,7	3,7	8,4	2,2	3,7	2,5	5,4	1,6	2,7	1,8	3,9					1,3	2,3	1,5	3,2	8,6
	-1,5 m	3,2	5,7	3,6	8,4	2,1	3,7	2,4	5,3	1,6	2,7	1,8	3,9					1,4	2,5	1,7	3,6	8,0
	-3,0 m	3,3	5,8	3,7	8,5	2,2	3,8	2,5	5,4									1,8	3,1	2,1	4,4	7,0
5,20 m boom 3,30 m dipper arm 160 kg quickfit Outriggers and dozerblade	6,0 m									2,1	3,3	2,3	3,9*					1,6	2,7	1,8	3,1*	8,4
	4,5 m									2,0	3,2	2,2	4,2*	1,3	2,3	1,5	3,2*	1,3	2,2	1,5	2,6*	9,1
	3,0 m	4,0	6,6	4,5	6,7*	2,6	4,3	2,9	5,4*	1,8	3,0	2,1	4,2	1,3	2,2	1,5	3,1	1,2	2,0	1,4	2,7*	9,4
	1,5 m	3,5	6,0	3,9	8,8	2,4	4,0	2,7	5,6	1,7	2,8	1,9	4,0	1,2	2,1	1,4	3,0	1,1	2,0	1,3	2,8	9,4
	0,0 m	3,2	5,7	3,7	8,4	2,2	3,8	2,5	5,4	1,6	2,7	1,8	3,9	1,2	2,1	1,4	3,0	1,1	2,0	1,3	2,8*	9,2
	-1,5 m	3,2	5,6	3,6	8,4	2,1	3,7	2,4	5,3	1,5	2,7	1,7	3,8					1,2	2,2	1,4	3,2	8,6
	-3,0 m	3,2	5,7	3,6	8,4	2,1	3,7	2,4	5,3	1,6	2,7	1,8	3,9					1,5	2,6	1,7	3,8	7,7
	-4,5 m	3,4	5,9	3,8	7,2*	2,3	3,9	2,6	5,0*									2,2	3,8	2,5	4,8*	6,1

Note: For lift capacity including bucket, simply subtract actual weight of bucket from the above values.

* Load capacity limited by machine's hydraulic lifting capacity.

The above values have been calculated in compliance with ISO standard 10 567. They do not exceed 87 % of hydraulic lifting capacity or 75 % of tipping load with the machine on firm, level ground. Working pressure with HLD = 32 MPa (320 bar)

STANDARD EQUIPMENT

Engine and Electrical System
Computerized controlled monitoring system
Battery disconnector and fuel shut-off cock
Auto idling
3-stage air filter with indicator
Hour meter
Tachometer
Fuel level gauge
Temperature gauge for coolant and hydraulic oil
Electric preheating coil
24 V electrical system

Undercarriage
4-wheel drive
Oscillating front axle ±8°
Axles with hub reduction
2-circuit travel brakes
Slew ring in oil bath

Superstructure
Counterweight 3 000 kg

Safety and Comfort
Safety bar to prevent accidental actuation vial levers and pedals
Hose rupture valve on boom cylinder
Hydraulically powered fuelling pump, 60 l/min
Over load alarm
Rotating warning beacon
Working lights (halogen):
3 front
1 rear
Interior lighting in cab, engine and fuel filling compartment
Rear view mirrors:
3 exterior
1 interior
Cab-heating and filtered air intake
Ergonomic, electrically heated operator's seat
Adjustable steering wheel
Cab skylight
Sliding side window in the cab door
Emergency exit through rear window
Tinted windows (clear front)
Interior sun visor
Upper and lower windshield wipers with intermittent function
Windshield washer
Horn

Hydraulics
Float position
3 variable axial piston pumps
Mode selector, 3 steps
Power boost (HLD)
Dual main valve for the travel and equipment functions
Standard filter cartridges for return, leak oil and breathing filter
Swing-out oil cooler

Digging Equipment
Spherical steel link bearings in all large pivot points
Electric end dampening on boom- and dipper arm cylinders
Safety lifting hook
Friction-welded piston rod eyes

ALTERNATIVE EQUIPMENT

Undercarriage
Twin wheels
10.00 – 20 PR16
11.00 – 20 PR16
Solid tyres
Single wheels
Dozer blade in front, and two outriggers rear
Dozer blade 2,5 m
Dozer blade 2,6 m
Oscillating outriggers plates

Digging equipment
Boom
5,2 m

Dipper arms
2,25 m
2,80 m
3,30 m

Buckets
For quickfit
725 l
825 l
900 l
1 000 l
1 300 l

Hydraulic quickfit
(weight: 160 kg)

OPTIONAL EQUIPMENT

Engine and Electrical System
Diesel driven engine and cab heater with digital timer
Electric over speed protector
Electric engine heater, 220V
Extra headlights on boom

Undercarriage
Tool box
Mud guards
Widening rings 2 x 50 mm
Stone protection rings

Safety and Comfort
Protective net for windshield
Protective bars for skylight (FOPS 3 449 approved)
Protective cab roof (FOGS ISO 10 262 approved)
Fire extinguisher
Seat belts
Protection against overfilling fuel
Extra circulation pump for the heating system
Extra hose rupture valve on dipper arm cylinder
Wheelknob
Exterior sun visor
Rear window jalousie
Air conditioning
Micro filter for the cab
Radio with tape player
Cruise controller
Tool kit

Hydraulics
Biodegradeable hydraulic oil
Hydraulic equipment for:
Slope bucket
Roto-tilt
Grab
Hydraulic hammer
Shears
Crusher
Jib
Magnet
Hydraulic quickfit
Installation of a 4th working pump
Thermostat kit

VOLVO

Volvo Construction Equipment Group

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