

BE1000-1

HYDRAULIC EXCAVATOR



Flywheel Horsepower : 404 kW (542 hp) @ 1700 rpm
Operating mass : 95000 kg
Bucket capacity : 3.1 m³ - 5.55 m³



Flywheel Horsepower : 404 kW (542 hp) @ 1700 rpm
Operating mass : 98000 kg
Bucket capacity : 4.5 m³ - 7.0 m³

BE1000-1

Technical Specifications



Engine

BEML BSA6D170-1, 4 cycle, water cooled, overhead valve, direct injection, turbocharged, diesel engine with after cooler. Six cylinders of 170 mm bore x 170 mm stroke and 23.15 l piston displacement.

Flywheel horse power : 404 kW (542 hp) @ 1700 rpm. All speed control mechanical governor. Gear pump driven forced lubrication with full flow filter. Dry type air cleaner with an automatic dust evacuator for longer element service intervals and a dust indicator for simplified maintenance. 24 Volt electrical starting system.



Hydraulic System

Unique three-pump system and independent closed loop swing function assure smooth compound movements of the work equipment. Open-centre Load Sensing System (OLSS) with electronic load limiting control for all three pumps for efficient use of engine power. This system also reduces hydraulic loss during operation, resulting in low fuel consumption. Oil-to-air hydraulic oil cooler maintains optimum heat balance of the hydraulic oil.

Hydraulic pumps

- Two variable-capacity tandem pumps power the boom arm bucket and travel circuits.
Capacity (discharge flow) at rated rpm - 2x628 l/min
- One variable-capacity piston pump powers the swing closed loop circuit.
Capacity (discharge flow) at rated rpm - 1 x 405 l/min
- Tandem gear pump powers the pilot control circuit
Capacity (discharge flow) at rated rpm - 1 x 49 l/min

Hydraulic Motors :

Travel - Four, piston motors with brake valve and mechanical parking brake (two for each track).

Swing - Two piston motors with swing holding brake.

Control Valves :

Three single-spool type and one three spool type and five spool type.

Relief valve setting

Implement circuits	31.38 MPa (320 kg/cm ²)
Travel circuits	31.38 MPa (320 kg/cm ²)
Swing circuits	34.33 MPa (350 kg/cm ²)
Pilot circuits	2.94 MPa (30 kg/cm ²)

Hydraulic cylinders :(Backhoe)

Cylinder	Numbers	Bore x stroke (in mm)
Boom	2	225 x 2200
Arm	1	250 x 2015
Bucket	1	225 x 1630

Hydraulic cylinders : (Loading shovel)

Cylinder	Numbers	Bore x stroke (in mm)
Boom	2	225 x 1805
Arm	2	180 x 1765
Bucket	2	200 x 1530
Bottom dump	2	140 x 435



Steering

Type Steering / travel controls are actuated with either hand levers or foot pedals. Pushing both levers (or pedals) makes the machine move forward. Pulling them back makes machine move backward. Setting one lever (or pedal) in neutral and the other in forward enables machine make a pivot turn. Pushing one forward while pulling the other backward makes machine counter-rotate on the spot.



Filter Systems

Engine	Two stage fuel filter with water separator.
Air intake	Dry type, two stage air cleaner with dust evacuator
Hydraulic	One suction filter, three line filters and two return line filters.



Drives

Type	Fully hydrostatic drive system. Each track is driven by two hydraulic motors. Power is transmitted through spur gears and planetary reduction gears to the track.
Max. Drawbar pull	608 kN (62,000 kgf)
Max. travel speeds	High : 0.94 m/sec (3.4 km/h) Low : 0.67 m/sec (2.4 km/h)



Brakes

Hydraulic lock type brakes. Each travel motor is equipped with a brake valve. When the travel/steering levers are positioned in neutral, the brake is automatically applied. When the brakes are applied, the brake valve softens shocks and also serves to regulate speeds when making descent. Wet, multiple disc type parking brakes which are hydraulically interconnected with travel/steering lever are also automatically actuated on the final-drive shaft.



Swing System

Two piston motors power the swing system through two swing machineries with spur and planetary reduction gears. The wet built-in disc type swing holding brake in the swing motor is automatically applied when the control lever is positioned in neutral. Single-row shear type ball bearings with induction hardened internal gears are built-in in the swing circle.

Swing speed	4.5 r/min
Tail Swing radius	4650 mm



Under Carriage

Job proven undercarriage with long track and wide track gauge. Centre frame is mounted on the track frames and secured with bolts. Sealed and lubricated rollers and idlers. Hydraulic tank tension adjusters with cushion cylinders. Assembled track-type shoes with double grousers

Shoe width	: 710 mm
Grouser height	: 20 mm
No. of shoes 9each side)	: 51
No. of track rollers (each side)	: 8
No. of carrier rollers (each side)	: 3
Ground pressure (Backhoe)	: 120.00 kPa (1.22 kg/cm ²)
Ground pressure (Loading shovel)	: 123.56 kPa (1.26 kg/cm ²)



Service Refill Capacity

Fuel tank	:	1140 ℓ
Coolant	:	158 ℓ
Engine	:	51 ℓ
Final Drive (each side)	:	45 ℓ
Swing drive (each side)	:	13 ℓ
Hydraulic Tank	:	650 ℓ
Pump Drive (P.T.O.)	:	15 ℓ
Total Hydraulic System	:	1200 ℓ

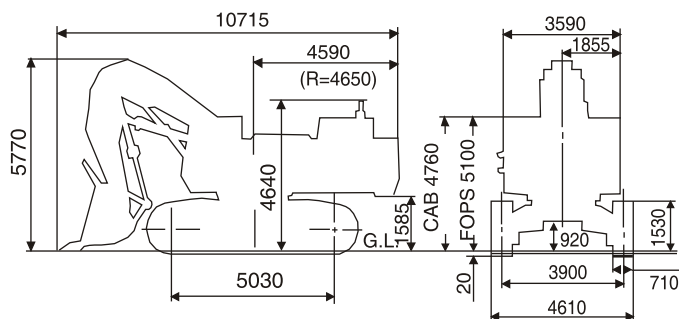
Optional Accessories

Low mount steel cab	Track shoe - 810 mm and 1010 mm
Heater	Wind shield guard
Air conditioner	Automatic lubrication system
Seat belt	Automatic fire supression system
Falling object protective structure (FOPS)	Wind shield washer

Working Range (Loading Shovel)

(With 5100mm boom & 3800 mm arm) and 6.1m³ Bottom dump bucket

A. Max Cutting Height	12170 mm
B. Max dumping height	8780 mm
C. Max digging depth	3910 mm
D. Level crowding distance	4720 mm
E. Max. digging reach at ground level	10,950 mm
F. Max. digging reach	11380 mm
G. Min. reach on ground	6125 mm
H. Reach at max. dumping height	6350 mm
I. Max. bucket throat opening	1815 mm
Digging Force (Bucket)	573.7 kN (58500 kgf)
Crowding force (arm)	549.2 kN (56000 kgf)



Bucket Range-(Loading Shovel)

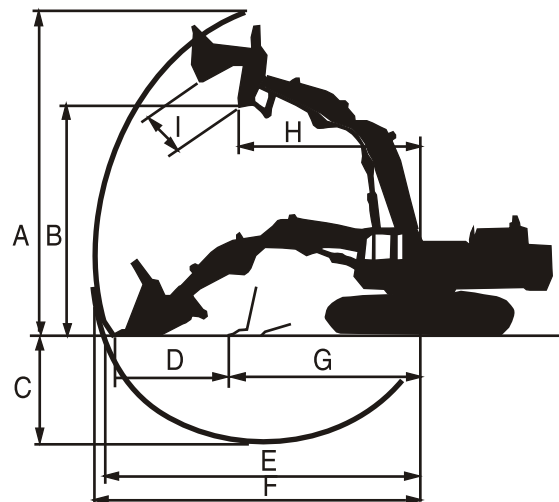
Bucket capacity m ³				
Heaped (SAE/ISO)	4.5	5.5	6.1	7.0
Struck	3.6	4.1	4.7	5.6
Bucket Width : mm	2320	2410	2650	2650
Bucket Mass kg (with teeth)	6450	8250	8350	8650
No. of bucket teeth	6	6	6	6
Type Bottom dump				
Recommended uses	Material with density about 2.5 t/m ³	Rock	STD Heavy duty	Light materials

Standard Accessories

2 x 24 V/7.5 kW starting motor	Tinted glass windows
24 V / 45 A alternator	Reclining seat
2 x 12 V / 200 Ah batteries	Magazine box
Air cleaner	Ash tray
Dust indicator	Rubber mat
OLSS two modes selection with electronic load limiting control	Rear view mirror
Track roller guards	Cabin fan
Wet disc parking brake	wind shield wiper
Vandalism Protection	Portable fire extinguisher and room lamp
Swing holding brake	Counter weight
Tool box	Centralised lubrication system
High mount steel cab including tinted glass window	Warning cluster.

Indicators / Alarms

Radiator coolant level	Engine oil level
Hydraulic oil level	Engine cooling water temperature
Engine pre-heating	Hydraulic oil Filter clogging
GAUGES & METERS	
Fuel level gauge	Hydraulic oil level sight gauge
Engine cooling water temperature	Engine oil pressure gauge
Service Meter	



Operating Mass (approx.)

Loading Shored :

Operating mass including 5100 mm boom, 3800 mm arm, 6.1 m³ standard bucket, operator, lubricant, coolant, full fuel tank and the standard accessories.

..... 98,000 kg.

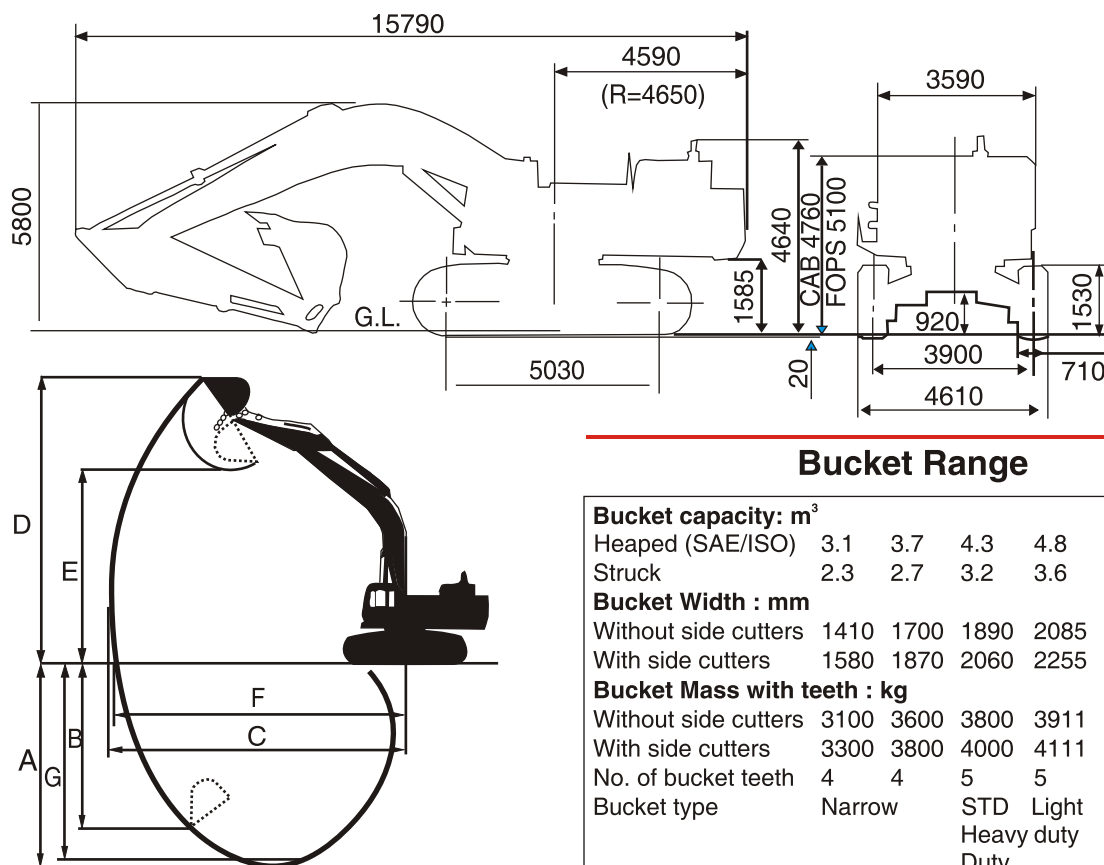
Backhoe :

Operating mass including 9250 mm boom, 3415 mm, arm 1m³ standar d bucket operator, lubricant, coolant, full fuel tank and the standard accessories..... 95,000 kg.



Dimensions (Bakhoe)

in mm



Bucket Range

Bucket capacity: m³						
Heaped (SAE/ISO)	3.1	3.7	4.3	4.8	5.4	5.55
Struck	2.3	2.7	3.2	3.6	4.2	4.5
Bucket Width : mm						
Without side cutters	1410	1700	1890	2085	2100	1940
With side cutters	1580	1870	2060	2255	2270	-
Bucket Mass with teeth : kg						
Without side cutters	3100	3600	3800	3911	4350	5270
With side cutters	3300	3800	4000	4111	4550	-
No. of bucket teeth	4	4	5	5	5	5
Bucket type	Narrow	STD	Light	Heavy duty	Wide	Coal Duty



Working Range-Backhoe

Boom length		7.9 m short boom		9.25 m Standard boom	
Arm length		3.4 m STD arm	3.4 m STD arm	4.6 m Semi long arm	5.7 m Long arm
Working range mm	A-Max. digging depth	7900	9300	10400	11500
	B-Max. vertical wall digging depth	6200	7400	7600	9200
	C-Max. digging reach	13900	15300	16200	17300
	D-Max. digging height	12700	13400	13100	13800
	E-Max. dumping height	8400	9100	9000	9500
	F- Max. digging reach at ground level	13500	15000	15900	17000
	G-Max. digging depth of cut at 2.44 m level	7800	9160	10300	11400
	Forces kN(kgf)				
	Crowding (arm)	334 (34000)	334 (34000)	284(29000)	240(24500)
	Digging (bucket)	363(37000)	363(37000)	363(37000)	299 (30500)

1. Illustrations may include optional equipment & accessories and may not include all standard accessories.
2. Materials and specifications are subject to change without notice.
3. All the specifications meet relevant ISO standards.



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