

# BE300LC

**HYDRAULIC EXCAVATOR**

- Efficient Hydraulic System
- Powerful Economical Engine
- Effort-free Operation
- Maximum working performance
- Easy maintenance
- Operator Comfort



Operating Mass	: 30,800 kg
Flywheel Power	: 147 kW (197 HP) @ 1550 rpm
Bucket Capacity	: 0.5m <sup>3</sup> - 2.0m (SAE Heaped)

# BE300LC HYDRAULIC EXCAVATOR

## Salient Features :

### Efficient Hydraulic System

Positive control double pump hydraulic system with advanced optimum hydraulic control system assures both independent and simultaneous compound functions make easy and also yield maximum control and smoothness of all hydraulic functions. The horse power (hp) summation system makes full use of engine power output for maximum productivity with faster cycle time. The positive control pump and boom and arm functions regeneration featured tandem parallel circuit, advanced control valve with load sensing features reduces the hydraulic loss during idle and increases oil flow in direct proportion to joystick movement for precise control

### Powerful economic engine

BEML diesel engine delivers 147 kW (197 FHP). A direct injection system for reduced fuel consumption and assures high operational economy. The turbo charger allows engine to attain high performance even on high altitude job sites.

### Effort free operation

Work equipment controls are simple and feather touch due to the hydraulically assisted control system.

### Maximum working performance

Model selection switch provided in the operators cabin can be used for high excavating efficiency. Depending on the operations like general digging and loading, light material lifting, slope finishing etc., the mode can be selected for a particular application.

### Easy maintenance

Centralised monitoring system within the operator's cab allows fast daily checks and also keeps the operator constantly informed of any abnormality during operation.

### Operator Comfort

Aesthetically improved cabin provides plenty of work space and excellent visibility.



## ENGINE

Make	BEML
Model	BS6D125
Type	Diesel, 4 Stroke, Water cooled, Turbocharged, Direct injection
Net Power	147 kW (197 HP) @ 1550 rpm
Maximum Torque	1030 Nm (105 kgm) @ 1200 rpm
No. of Cylinders	6, In-line
Bore & Stroke	φ 125 mm x 150 mm
Total Displacement	11.051 litres (11050cc)
<b>ELECTRICALS</b>	
Alternator	24V / 45A
Starting Motor	24V / 7.5 kw
Battery	2 x 12V, 150Ah

## DRIVES

Drive type	Fully hydrostatic, two stage planetary reduction
Max. Draw bar pull	210.84 kN (21500 kg)
Max. Travel speed	0.89 m/s. (3.2 kmph)

## UNDER CARRIAGE

Track frame type	Sturdy H-bar type centre frame is bolted on the track frame for easy serviceability
Shoe width	610 mm
No. of shoes	51 each side
Grouser height	31 mm
No. of carrier rollers	2 each side
No. of track rollers	9 each side
Ground pressure	55.39 kPa (0.57 kg/cm <sup>2</sup> )
Ground contact area	53777 cm <sup>2</sup>

## SWING SYSTEM

Type	Spur & Planetary gear reduction, with mechanical pin-lock type for swing lock.
Swing speed	9.4 rpm
Swing circle	Internal gear & pinion, immersed in grease bath
Min. Swing Radius (Work equipment fully retracted)	4245 mm
Tail swing radius	3225 mm

## CONTROLS

Work attachment	Hand operated joy-stick pilot pressure controls with in-built accumulator system for work attachments.
Travel	Actuated with either hand levers or foot pedals operated pilot pressure control valve for forward and reverse travel.

## BRAKES

Traveling / Steering Type	Hydraulic lock
Parking Type	Spring applied and hydraulically released oil disc brakes in the final drive. Travel motors equipped with counter-balance valve which regulates speed when making descents.

## STANDARD EQUIPMENT

One piece Boom (6.47 m), Arm (3.13m)  
 Backhoe bucket (1.57 m<sup>3</sup> SAE heaped)  
 Starting motor alternator, dry type air cleaner, PPC hydraulic control, OLSS system, 610mm triple grouser shoes, hydraulic track adjuster, fully hydrostatic drive, suction fan, batteries, front light, bolt on sprocket, 4790 kg counter weight, all weather steel cab (with safety glass window, lockable door, window wiper, electric horn, room lamp and adjustable seat with reclining device) monitor system, tool kit, rear view mirror, ash tray, portable fire extinguisher.



## HYDRAULIC SYSTEM

### Hydraulic Pumps

Main	Type	Variable displacement piston type double pump
	Max. oil flow	2 x 244 l /min @ 1550 rpm
Pilot	Type	Gear pump
	Max. oil flow	1 x 35 l /min @ 1550 rpm

### Hydraulic Motors

Travel	2 Nos. axial piston motor with counter balance valve
Swing	1 No. axial piston motor

### Control Valve

Type	7 spool tandem parallel boom & arm regenerative control valve.
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Relief valve Setting	Implement circuits (Boom / Arm / Bucket)	31.4 MPa (320 kg/cm <sup>2</sup> )
	Swing circuit	26.85 MPa (275 kg/cm <sup>2</sup> ) (for better acceleration and deceleration)
	Travel circuit	31.4 MPa (320 kg/cm <sup>2</sup> )
	Pilot circuit	2.94 MPa (30 kg/cm <sup>2</sup> )
	Port Relief with Anti cavitation (Boom / Arm / Bucket)	33.3 MPa (340 kg/cm <sup>2</sup> ) (for safety of hyd. system)

### Hydraulic Cylinders

Type	Double acting piston	
	<b>Numbers</b>	<b>Bore x Stroke</b>
Boom	2	φ 140 mm x 1480 mm
Arm	1	φ 160 mm x 1645 mm
Bucket	1	φ 140 mm x 1290 mm



## FILTER SYSTEM

Engine	Two stage fuel filter with water separator
Air intake	Dry type two stage air cleaner with dust evacuator
Hydraulic	One suction filter, one line filter for pilot & one return oil full flow fine filter



## REFILL CAPACITY (Coolant & Lubricant)

System	litres	Final Drive, each side	10.5
Fuel Tank	510 (specified)	Swing Drive	11.5
Radiator	52 (Specified)	Hydraulic Tank	225
Engine	28		



## ATTACHMENTS

### BUCKET :

**Backhoe bucket :** Backhoe buckets of different capacities are available for selection, on the basis of specific job requirement.

**Trapezoidal bucket :** Ideal for digging ditches and for drainage works. 0.90 cu.m capacity.

**Slope finishing bucket :** For scraping slopes or banks 0.35 cu.m capacity 2200 mm width.

**Ripper bucket :** For hard, rocky ground 0.90 cu.m capacity 950 mm width.

**Clamshell bucket :** is recommended for vertical digging. Two types available, digging and loading types.

**Ripper :** Choice of single shank or three shank ripper. For rock digging and crushing hard soil digging, pavement removal work, etc.

**Hydraulic breaker** with impact energy of 500-800 blows/min

**Custom built** equipment available for granite application.

**Also available :** Light duty bucket, narrow bucket.



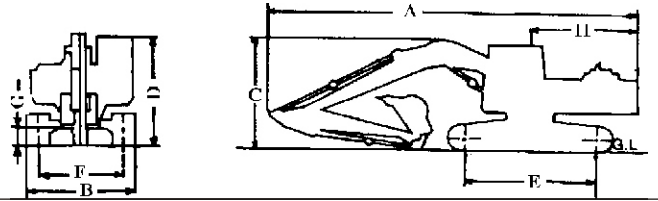
## GAUGES

Fuel gauge, hydraulic oil level sight gauge, engine cooling water temperature gauge.



## DIMENSIONS

A - Overall length	10810 mm
B - Overall width	3190 mm
C - Overall height (Top of boom)	3430 mm
D - Overall height (Top of cab)	3060 mm
E - Track length on ground	4045 mm
F - Track gauge	2580 mm
G - Minimum ground clearance	648 mm
H - Tail swing radius	3225 mm



## TRAVEL & STEERING

**Travel and Steering** Forward and reverse travel, Steering actuated with either levers or foot pedals. Independent drive to each track enables machine to make a pivot turn in either direction



## BACKHOE BUCKETS

Bucket type	Narrow		Std. Bucket	Heavy Duty	Light Duty	
<b>Bucket capacity m<sup>3</sup></b>						
SAE heaped	0.50	1.10	1.57	1.32	1.80	2.00
Struck	0.38	0.79	1.10	1.00	1.25	1.46
<b>Bucket width mm</b>						
Without side cutters	610	1105	1475	1290	1660	1831
With side cutters	740	1235	1605	1420	----	----
<b>Bucket mass : kg (with teeth)</b>						
Without side cutters	609	815	1200	1067	1056	1310
With side cutters	652	858	1263	1110	----	----
<b>No. of Bucket teeth</b>	3	4	6	5	6	6



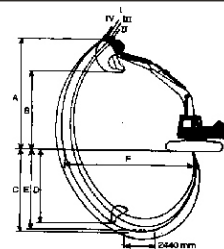
## OPERATING MASS (Approximate)

30800 kg  
(Including one piece 6.47m Boom, 3.13m Arm, 1.57 m<sup>3</sup> (SAE heaped) backhoe bucket, operator, lubricant, coolant, hydraulic oil, full fuel)



## WORKING RANGE (Fig A)

Arm length	I 2.20 m	II 2.55 m	III 3.13 m	IV 4.02 m
<b>A. Max. digging height</b>	9.58 m	9.95	10.15 m	10.54 m
<b>B. Max. dumping height</b>	6.58 m	6.86 m	7.10 m	7.46 m
<b>C. Max. digging depth</b>	6.38 m	6.73 m	7.32 m	8.20 m
<b>D. Max. vertical wall digging depth</b>	5.12 m	5.77 m	6.22 m	7.16 m
<b>E. Max. digging depth of cut for 2440 mm level bottom</b>	6.16 m	6.55 m	7.14 m	8.07 m
<b>F. Max. digging reach at ground level</b>	9.96 m	10.55 m	10.92 m	11.90 m
<b>Bucket digging force kN(kg)</b>	169(17200)	169(17200)	169(17200)	169(17200)
<b>Arm Crowd force kN(kg)</b>	171(17400)	149(15200)	128(13000)	105(11000)



Material and specifications are subject to change without notice, Illustrations may include optional equipment & accessories

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A Govt. of India Miniratna Company Under Ministry of Defence

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**BEML LIMITED**

A Govt. of India Miniratna Company Under Ministry of Defence

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BE75 | BE200 | BE220 | BE240HD | **BE300LC** | BE450LC | BE700 | BE700E | BE1000 | BE1000E | BE1250 | BE1600 | BE1800E