

# BL40

FRONT END LOADER

- High Productivity
- Increased Reliability
- Exceptional Manoeuverability
- Excellent Serviceability & Easy Maintenance
- Superior Operating Comfort



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**Bucket capacity** : 4.7 cu.m.

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**Operating mass** : 28,000 kg

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**Net power** : 224 kW (300 fhp) at 2100 rpm

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## FRONT END LOADER

### Salient Features :

#### Productivity :

High power BEML BS6D140-1 engine, rugged electric shift transmission featuring three-forward and three-reverse speeds with heavy duty planetary axle for high tractive effort and gradability in all operating conditions.

#### Reliability :

Maintenance-free wet multiple disc brakes at rear and front axle, box-type chassis construction for uniform stress distribution Z - bar linkage assures optimum breakout force and faster cycle time.

#### Manoeuverability :

Centre - point articulation with power steering, optimum combination of travel speed and hydraulic cycle time, turning circle and wheel base.

#### Serviceability & Maintainability :

Electronic display and monitoring system helps prevent minor problems from becoming major ones, Sealed loader linkage pins account for higher performance and less maintenance.

#### Comfort :

Spacious cab, with ergonomically arranged, manually operated control lever for speeds in forward / reverse selection, air suspension, adjustable seat. Excellent visibility ensures easy loading on dump trucks.



### ENGINE

Make	BEML
Model	BS6D140-1
Type	Diesel, 4-cycle, water-cooled direct injection
Aspiration	Turbocharged
Number of Cylinders	6
Bore & Stroke	∅ 140 x 165 mm
Piston displacement	15.2 ltrs.
Compression ratio	15.0:1
Net power	224 kW (300 fhp) at 2100 rpm (As per ISO:9249)
Maximum torque	1247.8 Nm (127.2 kgm) @ 1400 rpm
Governor	Mechanical
Lubrication system	Forced lubrication, gear pump
Air cleaner	Dry type
<b>Electricals</b>	
Alternator	24V, 100A
Starting motor	24V, 7.5 kW
Battery	2 x 12V, 200 Ah



### TRANSMISSION

Torque converter	3-Element, single stage, single phase	
Stall torque ratio	3.23:1	
Transmission	Full powershift planetary gear type Electro hydraulic control valve, 3 forward, 3 reverse	
Speed (Kmph)	<b>Forward</b>	<b>Reverse</b>
	6.67	6.4
	12.9	12.57
	24.75	23.72



### STEERING

Type	Centre pivot frame articulation
Steering mechanism	Full hydraulic power steering system, independent of engine speed
Steering pump	Gear pump
Capacity	193 l pm @ 2100 rpm
Steering angle	Wide articulation of 35° on each side
Steering cylinder	Two, double acting type
Bore x Stroke	∅ 110 x 547.5 mm
Relief pressure setting	175 kg/cm <sup>2</sup> (17.17 MPa)



### BRAKES

Service Brake	4-Wheel, enclosed, air over hydraulically actuated outboard mounted wet disc brakes, independent front & rear brake line
Parking brake	Dry disc type applied on intermediate shaft
Emergency brake	Automatically actuates the parking brake when air pressure goes below the rated value.

### STANDARD EQUIPMENT

**Engine :** Starter, Alternator

**Electrical Lights :** Front Working Lights (2), Headlights (2), Rear working lights (2).

**Brake Lamp & Tail Lamp :** Turn indicators (Front & Rear)

**GAUGES :** Fuel level, Engine oil pressure, Coolant temp, Ammeter, T/C oil temp. Air pressure, RPM Meter, Hour Meter, Transmission oil pressure.

**PILOT LAMPS :** High beam, Parking brake applied, Turn indicators

**CAUTION LAMPS :** Battery charging, Trans oil pressure, Engine Oil Pressure Engine Water Temp. Air Pressure

**OTHERS :** Sight gauges, Dust indicators, Emergency brake, Bucket positioner, Boom kickout, General purpose bucket (4.7cu.m) Suspension seat, Front fender, Floor Mat, Sun visor, ROPS/FOPS cabin, Fire Extinguisher 6 kg, Rear View Mirror, Fan, Seat Belt, Back-up Alarm, Wind Shield Wiper and washer.

### OPTIONAL ATTACHMENTS

Air Conditioner	Heater and defroster
Auto Fire suppression system	Tyre inflation kit
Auto Lub System	Pre Heater

## TYRES

Front & rear 29.5 x 29-28 PR (L-3)

## HYDRAULICS

Main Pump	Tandem gear pump
Capacity	410 l pm @ 2100 rpm
Relief pressure	210 kg/cm <sup>2</sup> (20.6 MPa)
Lift cylinder (Boom)	Two, double acting type
Bore x Stroke	∅ 200 x 805 mm
Tilt cylinder	One, double acting type
Bore x Stroke	∅ 225 x 526 mm
<b>Hydraulic cycle time</b>	
Raise	6.6 ± 0.5 sec
Dump	2.2 ± 0.1 sec
Lower	4.8 ± 0.2 sec

## COOLANT & LUBRICANT REFILL CAPACITY

System	Litres
Engine oil pan	32
Fuel tank	445
Cooling system	80
Brake oil tank	2.4
Hydraulic system	181
Front axle	59
Rear axle	59
Transmission & Torque converter	62

## BUCKET CONTROLS

Pilot operated hydraulics required little effort to operate the bucket and boom control lever assuring responsive boom and bucket action. Automatic boom kickout adjustable from horizontal to full lift and automatic bucket positioner adjustable to desired loading angle. No visual spotting required.

### Control Positions

Lift arm - Raise, hold, lower and float  
Bucket - Tiltback, hold and dump

## TURNING RADIUS & ANGLES

Turning radius	8900 mm
Steering angle	35°
Departure angle	25°
Ramp angle	140°
Approach angle	74°

## BUCKET RANGE

BUCKET TYPE			BOLT - ON - TEETH		
			HEAVY DUTY	EXCAVATION	STANDARD
# Bucket capacity	SAE rated	Cu.m.	2.8	4.0	4.7
	Struck	Cu. m	2.3	3.4	4.0
Bucket Mass		kg	1750	1800	2050
Static tipping load	Straight	kg	20100	19491	19085
	Full turn	kg	18600	18000	17600
Breakout force (bucket cylinder)		kg	28000	25300	23500
Operating Mass		kg	27700	27750	28000
Bucket width		mm	3380	3510	3510
Dumping clearance, max. height and 45° dump angle	(A) mm		3475	3330	3265
Reach at 2130 mm (7") cut edge clearance and 45° dump angle	(B) mm		2050	2100	2160
Reach at max. height 45° dump	(C) mm		1305	1445	1520
Operating height (fully raised)	(D) mm		5750	5895	6095
Overall length	(E) mm		8890	9085	9185

# Optional Bucket of 3.2 cum & 3.5 cum (Heavy duty), 5.0 cum (Light duty) and 6 cum (Extra light duty) capacities are also available.

All dimensions, weights and performance values based on SAE-J732c and J742b standard. Static tipping load and operating weight shown includes lubricants, coolant, full fuel tank, cabin and operator.

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

## OPERATING MASS

Operating mass, including rated capacity of lubricants, coolant, fuel, 29.5 x 29-28 PR tyres. 4.7 cu. m SAE heaped capacity bucket : 28,000 kg.

## CABIN

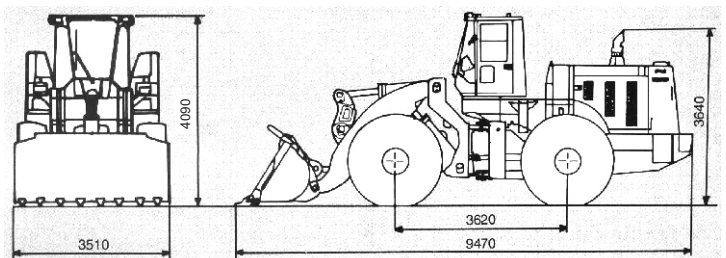
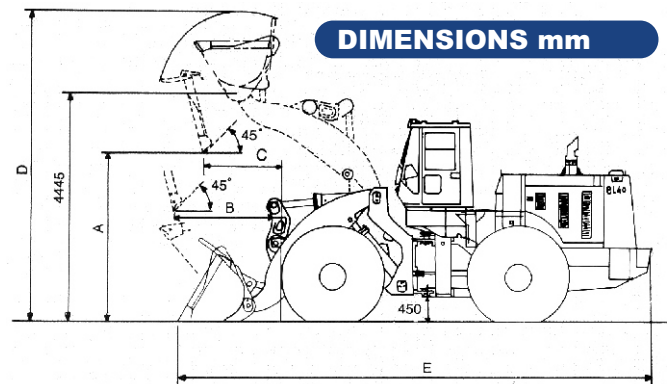
Spacious ROPS/FOPS Cabin with door on LH side and with rubber mounting to reduce vibration.

## LIFT ARM CONTROL

Z-Bar linkage for high breakout force and easy digging through material. Sealed loader linkage pins with dust seals extend greasing intervals.

## AXLES & FINAL DRIVE

Drive system	4 Wheel drive
Front and rear axle	Full floating type
Reduction and differential gear	Spiral bevel gear reduction
Final drive	Planetary gear
Oscillation angle	± 15° (Total 30°)
Wheel tread	2500 mm



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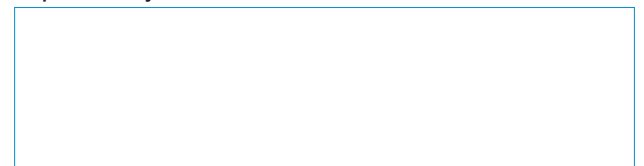
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**BEML LIMITED**

Schedule 'A' Company under Ministry of Defence, Govt. of India

Front End Loader From BEML :

BL200-1

BL30-1

BL40

Form No. BL40/01/2020