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Exploring the Roots: Brief history of ‘Diggers’ in India

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recent entrants in the market are M&M, Escorts and Leyland Deere (Ashok Leyland and John Deere). Other manufacturers of backhoe loaders in India include Case Holland, Telcon, Bull India, and Liugong.

Enduring Demand: Still the Messiah of the Equipment industry

This particular machine has been the superstar of construction equipment industry time and again despite repeated attempts by other large and small robots to force retirement upon it! Its sales have been rising consistently in the past few years thanks to the construction boom in the country.

Projection of the Indian economy to grow at more than 7% during the 12th plan period and $1 trillion ambitious investment plans of the government, seem to make the Indian CE market in general and backhoe loaders market in particular, lucrative. India is the largest Backhoe Market in the world and Backhoe loaders contribute approximately 50% of the total EM sector here. With record sales exceeding 33,000 units in 2011, production forecast for 2013 is placed around 43,000 units with an astounding CAGR of 40%. The market is thus witnessing entry of new players whereas the existing manufacturers are ramping up their production capacities.

Ever thought what makes the backhoe loader so popular? Versatility! In an era when equipment manufacturers are designing machines to do as many jobs as possible or trying to follow the ‘Swiss-army-knife’ approach, the design of the backhoe-loader has long stood as a model. The machine is at once a dedicated trenching unit, as well as a front-end-loading tool.

It’s true, of course, that a comparatively sized hydraulic excavator may ‘out-trench’ a backhoe and that a wheel loader may ‘out-load’ it; but no other machine combines these two basic earthmoving functions as efficiently as a backhoe-loader, while offering excellent maneuverability and ease of transport. And, everything considered, the backhoe-loader is also one of the most affordable earthmovers around. The existing and new entrants in backhoe loaders manufacturing in India are thus rethinking product offering strategies to suit the emerging demand order.

Also, the government is now picking up again on awarding new infra projects and clearing the stuck up processes in order to put proposed green field power projects on fast track, and to meet the emerging urban and rural infra demands from remote areas, tier-I and tier-II cities, which will assure manufacturers that the demand for the versatile equipment will remain quite firm and wide.

Technological Developments

The construction equipment sector in India has evolved over the years and is at present in an intermediate stage of development. The industry is trying to bring in international levels of technology as demand and the scale of operation increases.

The users are now not looking at only the initial cost of the equipment, but focusing on total costing, or cost per ton of usage. Demand in value is a natural phenomenon in any maturing market, which needs to be addressed by manufacturers through their products - backed by necessary improvements in production line, allowing both sides to reap, honest benefits on their investment.

One of the major factors that add to the versatility of a backhoe loader is the development in number of applications it can work in with the help of attachments. Buckets at both the loader end and backhoe end can be replaced with a host of attachments like pallet forks, rock breaker, jib crane, sweeper collector, auger, six-in-one clam shovel bucket, ripper tooth, jaw bucket, ditch cleaning bucket, taper ditching bucket, bucket mounted fork lift etc. Hence, a construction and earthmoving machine can be used in several other applications like solid waste management and material handling.

However, the percentage of sales budgeted for R&D is meager - ranging from 0.5 to 3% of sales. Although many of the manufacturers have established full-fledged R&D units to update their products/technologies, the industry in India does not invest adequately in R&D activities compared to world leaders like Volvo or Komatsu, as the existing market cannot absorb the development costs. However, we may see more R&D work by world majors in India, taking advantage of low R&D manpower costs.

A Bright Future

Construction in India is fast approaching international standards. The profile of Indian demand is characterized by cost consciousness more than value consciousness. Contractors want sophisticated equipments at Indian prices and they want to use them roughly (in-fact abuse them). Also, there is higher awareness about the utility of this machine in rural markets and more farmers-cum-entrepreneurs are starting to own them.

Backhoe loaders will remain the most popular type of equipment sold in the country for some time to come, though already a change in the structure of demand can be seen. Its sales have been growing rapidly since 1998 (except for a dip during 2008-2009). While it will continue to remain the most popular equipment type amongst plant hirers and small contractors on account of its versatility and mobility, it is expected to be increasingly replaced by more efficient and productive - specialized construction machines, such as crawler excavators and wheeled loaders, particularly on large infrastructure projects. Therefore, the future growth rate of the backhoe loader industry may decline; then again, it may well see increasing applications in rural areas which will sustain its strong market presence.

Sneak Peek: Top manufacturers of Backhoe Loaders in India

Entry of new players is well likely to expand the market. Proper product positioning will help the new entrants create a stand in this highly competitive industry. However, viewed from the long-term prospective, existing brands with wide market base will continue to connect their names with product support, an initiative which they will now be making stronger than before for higher brand recall.

Shown below are some of the most popular models of this versatile machine (with specifications) manufactured by prominent market players in the country.
Case Holland Equipment Pvt. Ltd

Product: Case-Holland 770 Loader Backhoe

- **Engine**: Power 76 hp engine
- **Hydraulic System**: Low operating cost and low hourly diesel consumption
- **Backhoe Bucket**: 0.243 cu.m
- **Loader Bucket**: 1.00 cu.m
- **Equipment weight**: 7.1 T
- Four-wheel drive (4x4 traction)
- Rock-breaker
- Lifting arrangement
- Extending type dipper
- Bottom dump bucket
- Ripper tooth
- Black fill blade
- Heavy duty tyres-14 x 25 -2.0 PR
- Dozer blade
- Lime stone scrape

Caterpillar India

Product: 424B Backhoe Loader

- **Engine**: Power - Net 67 hp, Engine Model KOEL/4R - 1040 T Turbo Charged, Engine Displacement 244.09 in3
- **Hydraulic System**: The Cat 424B is fitted with unique technology, Variable Displacement Piston Pump, which is an efficient system and has longer life.
- **Operator Station**: Spacious and comfortable operator station.
- **Power Train**: More reliable and durable power train.
- **Backhoe**: Efficient backhoe performance.
- **Serviceability**: Ease of maintenance and service.
- **Work Tools**: Cat Work Tools for backhoe loaders extend the versatility of the machine. Built for performance and durability, these tools deliver high productivity, long service and excellent value.
- **Electrical System**: More reliable electrical system.
Escorts India

**Product: Backhoe Loader Digmax**

- **Engine:** 76 HP
- **Dig Depth:** 4.8 m Loader
- **Dump Height:** 3.00 m
- **Loader Bucket:** 1.2 Cu.m
- **Backhoe Bucket:** 0.26
- **Options:** 4x4 option available,
- **Choice of Bucket:** 6 in 1 Trenching of buckets of 0.12 Cu to 0.18 Cu m
- **Rock Breaker Circuit:** Ripper tooth, 90 HP engine

JCB

**Product: 3DX**

- **Engine:** 92 hp, Turbo Charged, water cooled JCB engine ecoMAX for better performance in hot and dusty working conditions.
- **Four Wheel Transmissions:** The JCB synchroshuttle transmission is designed to provide high traction forces and long life for continuous loading duties.
- **Excellent Loader Performance:** Versatile 6-in-1 front shovel with high breakout forces give extraordinary loader productivity. Excellent visibility, improved front reach, lower turning radius and high traction and breakout forces give ‘best-in-class’ loader performance.
- **Improved Excavator Performance:** Increased diesel tank capacity, protection on excavator end hoses and improved excavator valve block features ensure even better excavation economics.
- **Quick Inter-site:** Movement High road speed of 36kph enables quick inter-site movement.

- **IP 69 Electrics:** For increased reliability.
- **Best-in-class Cabin:** Spacious cabin with ergonomic operator environment, with instrument console on the operator’s side results in long hours of fatigue free operation.
- **Unmatched Style:** Powder coated, curved exteriors in black and yellow color scheme give the machine a very smart look.
Leyland Deere

**Product: 435 Backhoe Loader**

- Over all length 5867 mm
- Dump height 2735 mm
- Max dig depth 4569 mm
- Weight: 7697 Kg
- Generously-spaced cabin 'H'-Series platform
- Power shift transmission
- Higher breakout forces
- Greater dig depths
- Innovative customer care package
- Strong and rugged
- Service capacity
- Controlled Speed Transmission
- Hydraulic Oil 37.9 Lt
- Engine Oil 8.5 Lt
- Rear Axle Oil 18 Lt
- Transmission Oil 18 Lt
- Engine coolant 20.2 Lt
- Diesel 151 Lt
- Hydraulics
- Pump flow 106 lpm
- System relief pressure 250 bar

Mahindra Construction Equipment

**Product: Earthmaster Backhoe Loader**

- Engine: Compact 3.3 liter DITEC Engine
- Power: 83 HP
- Highly Fuel Efficient: Turbo Charger and Intercooler
- USA Tier III Emission Norms
- Two Years Unlimited Hours Warranty
- Extensive Service Network
**Product: Tata 315-E**

**Engine:** Tata 497 TC IC  
**Horsepower:** 76 Ps @ 2200 RPM  
**Max. Travel Speed:** 36 KMPH (F), 13 KMPH (R)  
**Operating Weight:** 7350 kgs  
**Bucket capacity:** Backhoe 0.25 M³  
**Loader:** 1.0 M³  
**Type:** Turbo Charged, Intercooled 4 Cylinder Diesel Engine

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**Product: Tata 315 - V**

**Engine:** TATA 497 TC IC  
**Horsepower:** 86 PS @ 2200 rpm  
**Max. Travel Speed:** 36 kmph (F), 21 kmph (R)  
**Operating Weight:** 7500 Kgs  
**Configuration:** Backhoe Loader  
- Bucket Capacity 0.30 cum - 1.00 cum  
**Available Attachments**  
- Rock Breaker  
- Heavy-duty Bucket  
- Bottom Dump (6 in 1) Loader Bucket  
- Single Point Ripper  
- V-shape Trenching Bucket  
- Square Hole Cutting Bucket  
- General Purpose Bucket  
- Ditch Cleaning Bucket  
- Fork Lift Attachment  
- Crane Attachment
**Product: BL 70**

Engine: Volvo D5D  
Max Power: SAE J1995  
Gross*: 94 hp (70 kW)  
Net Power*, hp (KW):  
90 hp (68 kW)

Max Torque SAE J1995 Gross**:  
273 lbf-ft (370 Nm)  
Maximum Speed: 21.2 mph (34 km/h)  
Bucket Breakout Force (LDR): 12,445 lbf (55.4 kN)  
Lifting Capacity (LDR): 6,953 lb (3,154 kg)  
SAE Digging Depth***: 14'9" - 18'3" (4,496 - 5,562 mm)  
Bucket Digging Force: 13,296 lbf (59.1 kN)  
Operating Weight (Min-Max): 17,248 lb - 21,727 lb (7,824 kg - 9,810 kg)

**Product: BL61 Plus**

Engine: Volvo D5D  
Net Power: 68 kW (91 hp)  
Max power SAE J1995 gross: 70 kW (94 hp)  
Max torque SAE J1995 gross: 400 Nm  
Maximum Speed: 36.7 km/h  
Bucket Breakout Force: 47.9 kN  
Lifting Capacity: 2922 kg  
SAE Digging Depth: 4238 - 5321 mm  
Bucket Digging Force: 62.8 kN  
Operating Weight: 8168 kg