

Excavators

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EXCAVATORS

Excavator

Excavators are heavy equipment used in civil works and surface mining. An excavator, also called a 360-degree excavator or digger, sometimes abbreviated simply to a 360, is an engineering vehicle consisting of a backhoe and cab mounted on a pivot (turntable is a more apt description) atop an undercarriage with tracks or wheels. The term excavator is sometimes used as a general term for any piece of digging equipment. Excavators are fun to watch. Look around and you'll probably notice that most excavators are on tracks. Wheeled excavators are popular heavy equipment used for mining large volumes of soil, coal or ore and civil works. All excavators are designed to move large amounts of soil and earth in a minimal amount of time. Large excavators are useful for digging foundations and other huge projects, but many times you need a smaller excavator to handle more delicate jobs. These smaller excavators are also called compact excavators or min excavators. Mini excavators bring many advantages to a wide range of construction jobsites. Mini excavators are most often found at work at construction sites in densely populated urban areas. However, mini excavators can just as easily be spotted in modern suburbia on a new home construction or remodel site. Another place to spot these versatile pieces of equipment is on the farm.

Excavators often have attachments, or you can purchase additional attachments to fit the machinery. Few of the attachments include jackhammers (breakers), shovels, grapples, augers, etc.. Grapples are similar to claws and are used to grasp objects (trees, stumps, etc..). Hydraulic Mining Excavators often uses shovels. Finally, augers are similar to a drill bit, and are used to move materials.

The role of excavators is to dig holes, trenches, and foundations. Excavators use large machinery with hinge metal buckets, which are often attached to hydraulic arms, while using the equipment to move heavy or bulky quantities of soil or earth. In addition, excavators are used in demolition, general landscaping, grading, heavy lifting, laying pipes, river dredging, mining, open-pit mining, brush cutting, etc. Brush cutting is possible when operators use hydraulic attachments. Roles of Excavators

Excavators are used in many roles:

- 1- Digging of trenches, holes, foundations
- 2- Demolition
- 3- General grading/landscaping
- 4- Heavy lift, e.g. lifting and placing of pipes
- 5- River dredging
- 6- Mining, especially, but not only open-pit mining
- 7- Brush cutting with hydraulic attachments

Varieties of Excavators

Excavators come in a wide variety of sizes. The smaller ones are called a mini-excavator or compact excavator. One manufacturer's largest model weighs 84,980 kg (187,360 lb) and has a maximum bucket size of 4.5 m³ (5.9 yd³). The same manufacturer's smallest mini-excavator weighs 1470 kg (3240 lb), has a maximum bucket size of 0.036 m³ (0.048 yd³) and the width of its tracks can be adjusted to 89 cm (35 inches). Another company makes a mini excavator that will fit through a doorway with tracks that can be adjusted to only 70 cm (28 inches) wide.

Often the bucket can be replaced with other tools like a breaker, a grapple or an auger. Excavators are usually employed together with loaders and bulldozers. Most smaller excavators have a small backfill (or dozer-) blade. It's a horizontal bulldozer like blade attached to the undercarriage and is used for pushing removed material back into a hole.

Types of Excavators

- 1- Compact excavator (Mini Excavator)
 - 2- Dragline excavator
 - 3- Bucket-wheel excavator
 - 4- Long-reach excavator
 - 5- long front excavator
 - 6- Hydraulic excavator (Hydro excavator)
- Heavy Construction Equipment Manufacturer

1- Hitachi Construction Machinery (Europe)

Hitachi Construction Machinery (Europe) NV is a subsidiary of Hitachi Construction Machinery Group. It is responsible for Hitachi's construction machinery-related activities in Europe, Africa, Russia, and the Middle East.

HCME's main products are hydraulic excavators, ranging from mini excavators up to 780-ton ultra-large face shovels. In addition, HCME markets wheeled loaders, rigid dump trucks, crawler carriers and other products made by HCM Group companies.

2- Telco Construction Equipment Company (TATA Hitachi), India

Telco Construction Equipment Company is a subsidiary of TATA Group. The company manufactures construction equipment that is used in major infrastructure projects in India. It has remained a market leader for the past five years, despite stiff competition.

The company has collaborations with Hitachi Construction Machinery Company, Japan, for hydraulic excavators and cranes; and John Deere, USA, for backhoe loader technology, Lebrero, Spain, for compactors and CESAN, Turkey, for asphalt plants.

Telco Construction Equipment Company (Telcon) manufactures a range of earthmoving machinery and construction equipment. It is the largest manufacturer of hydraulic excavators in India, offering eight models that range from 2 tonnes to 60 tonnes in size. The company also designs and develops products indigenously and customises solutions to suit the requirements of its customers.

Telcon revolutionised the Indian construction equipment industry, with the introduction of the V-series of hydraulic excavators, and was the first to introduce mini-excavators in the country. The company enjoys a 90-per cent share of the crawler-crane market in India, and is the only Indian manufacturer that produces 100-tonne cranes. Also among its products are backhoe loaders, mining shovels, wheel loaders, vibratory compactors, motor graders, asphalt plants and dumpers.

The company has used state-of-the-art technology to manufacture excavators and backhoe loaders. It enjoys a 90 per cent share of the crawler crane market in India. It is the only Indian manufacturer that produces 100 tonne cranes. These are the largest machines made locally. The company was the first to introduce mini-excavators in India, and its brand EX60, is the most successful machine to be made in India so far, with more than 1,300 machines being sold in the last three years. It is the largest manufacturer of hydraulic excavators in India, with over 6,000 machines in the market. It offers the widest available range of hydraulic excavators, eight models ranging from two tonnes to 60 tonnes in size. The company can indigenously design and develop products.

3- Caterpillar Inc.

Caterpillar Inc. is a United States-based corporation headquartered in Peoria, Illinois. Caterpillar (commonly referred to simply as CAT) is, according to their corporate website, "the world's largest manufacturer of construction and mining equipment, diesel and natural gas engines, and industrial gas turbines." Caterpillar products range from track-type tractors to hydraulic excavators, backhoe loaders, motor graders, off-highway trucks, wheel loaders, agricultural tractors, diesel and natural gas engines and gas turbines. They are used in construction, road-building, mining, forestry, energy, transportation and material-handling industries.

4- Volvo Construction Equipment

Volvo Construction Equipment (originally Volvo BM) is a subsidiary and business area of AB Volvo. Volvo Construction Equipment develops, manufactures and markets equipment for the construction and related industries. The products, leaders in many world markets, include a comprehensive range of wheel loaders, wheeled and crawler hydraulic excavators, articulated haulers, motor graders, backhoe loaders, skid steer loaders, as well as compact excavators, skid steers, and wheel loaders. Volvo Construction Equipment has production facilities in Europe, Asia, North America, and South America. The company offers worldwide service and spare-part distribution.

5- JCB, or "J.C.Bamford (Excavators) Ltd."

JCB, or "J.C.Bamford (Excavators) Ltd." as it is more properly known, is a family business named after its founder J.C.Bamford, producing distinctive yellow-and-black engineering vehicles, diggers ("Backhoes") and excavators. JCB employ 6,300 people, and have operations in 150 countries. They have a range of more than 250 products. 17 factories - UK, Brazil, North America, India, China & Germany JCB is one of the world's top four construction equipment manufacturers with 550 dealers worldwide.

Most of the vehicles produced are some variant of the backhoe, with variations including:

- Tracked or wheeled vehicles
- Mini and large versions (but not the "ridiculously large" mining vehicles sometimes associated with CAT)
- Variations for carrying and moving items, for example the fork lift vehicles, and telescopic forklifts for moving materials to

the upper floors of a building site.

6- Komatsu Company