

Bulldozer

Contributed by Clark Kantrall
Tuesday, 20 June 2006
Last Updated Monday, 31 July 2006

The bulldozer is a very powerful crawler that is equipped with a blade. The term bulldozer is often used to mean any type of heavy machinery, although the term actually refers to a tractor that is fitted with a dozer blade. Often times, bulldozers are large and extremely powerful tracked vehicles. The tracks give them amazing ground mobility and hold through very rough terrain. Wide tracks on the other hand, help to distribute the weight of the dozer over large areas, therefore preventing it from sinking into sandy or muddy ground.

Bulldozers have great ground hold and a torque divider that's designed to convert the power of the engine into dragging ability, which allows it to use its own weight to push heavy objects and even remove things from the ground. Take the Caterpillar D9 for example, it can easily tow tanks that weight more than 70 tons. Due to these attributes, bulldozers are used to clear obstacles, shrubbery, and remains of structures and buildings.

The blade

The blade on a bulldozer is the heavy piece of metal plate that is installed on the front. The blade pushes things around. Normally, the blade comes in 3 varieties: 1. A straight blade that is short and has no lateral curve, no side wings, and can be used

only for fine grading.

2. A universal blade, or U blade, which is tall and very curved, and features large side wings to carry more material around.

3. A combination blade that is shorter, offers less curvature, and smaller side wings.

Modifications

Over time, bulldozers have been modified to evolve into new machines that are capable of things the original bulldozers weren't. A good example is that loader tractors were created by removing the blade and substituting a large volume bucket and hydraulic arms which will raise and lower the bucket, therefore making it useful for scooping up the earth and loading it into trucks.

Other modifications to the original bulldozer include making it smaller to where it can operate in small working areas where movement is very limited, such as mining caves and tunnels. Very small bulldozers are known as calldozers.

History

The first types of bulldozers were adapted from farm tractors that were used to plough fields. In order to dig canals, raise earth dams, and partake in earthmoving jobs, the tractors were equipped with a thick metal plate in the front. Later on, this thick metal plate earned the name blade.

The blade of the bulldozer peels layers of soil and pushes it forward as the tractor advances. The blade is the heart and soul of the bulldozer, as it was the first accessory to make full use for excavation type jobs.

As the years went by, when engineers needed equipment to complete larger jobs, companies such as CAT, Komatsu, John Deere, Case, and JCB started to manufacture large tracked earthmoving equipment. They were very loud, very large, and very powerful and therefore earned the nickname "bulldozer".

Over the years, the bulldozers got bigger, more powerful, and even more sophisticated. The important improvements include better engines, more reliable drive trains, better tracks, and even hydraulic arms that will enable more precise manipulation of the blade and automated controls. As an added option, bulldozers can come equipped with a rear ripping claw to break up pavement or loosen rocky soil.

The best known manufacturer of bulldozer is CAT, which has earned a vast reputation for making tough and durable, yet reliable machines. Even though the bulldozer started off a modified farm tractor, it rapidly became one of the most useful pieces of equipment with excavating and construction.