Drag Line Excavator

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Drag line excavator systems are heavy machinery that is used in civil engineering, surface mining, and excavation. With civil engineering, the smaller types are used for road and port construction. The larger types of drag line excavators are used in strip mining operations to extract coal. A kind of transportation services for miners.These are among the largest types of mobile equipment and weigh upwards of 10,000 tons!

The drag line excavator bucket system consists of a large bucket that is suspended from a boom. The bucket is moved by a number of chains and ropes. The hoisting rope, which is powered by either a large diesel or electric motor, will support the bucket and hoist coupler assembly from the boom. The drag rope on the assembly is used to draw the bucket assembly horizontally. Through skillful maneuvering of the hoist and drag rope, the bucket can be controlled for many different types of operations.Operation

With a typical excavation cycle, the bucket is positioned high above the material that is being excavated. The bucket is then lowered down and the drag rope is drawn so that the bucket is dragged along the materials surface. Using the hoist rope, the bucket is then lifted. A swing operation is then performed in order to move the bucket to the place where the material is going to be dropped. The drag rope is then released which will cause the bucket to tilt, making the material in the bucket fall down, which is commonly known as a dump operation.With smaller drag line excavators, the bucket is thrown by winding up the jib then releasing a clutch on the drag cable, which swings the bucket like a pendulum. Skillful operators can make the bucket land about 1/2 the length of the jib further away than if it had just been spun or dropped.Limitations

The limitations of drag line excavators are the height and length of their boom, as this limits where the drag line can dump waste material. Being inherent with their construction, the drag line is most effective when excavating material below the level of their tracks. Drag lines aren't suitable for loading piled up material.Despite their limitations and high capital cost, drag line excavators remain very popular with several mines, due to their very low waste removal cost, performance, and reliability.They also have different cutting sequences. The first is the side casting method which uses offest benches. This method involves throwing the overburden sideways onto blasted material to make a bench. The second method is a key pass. This pass will cut a key at the toe of the new highwall and will also shift the bench further towards the low wall. This can also require a chopping pass if the wall is blocky. A chopping pass will involve the bucket being dropped down onto an angled highwall to scale the surface. The next method is the slowest, known as the blocks pass. This method will however, move the most material. The blocks pass involves using the key to access the bottom of the material to lift it up to spoil or to an elevated bench level. If required, the final cut is a pull back, which pulls the material back further to

the low wall side.For construction, mining, or excavation, drag line excavators are great to have. They can move even the biggest of material, which is great for deep holes in the ground. If you've been looking for a great way to maximize mining or excavation productivity, the drag line excavator is just what you need.