

## Winches

A winch is a mechanical piece of equipment which specializes in pulling in or winding up or letting out or winding out the tension of a wire cable, cable, wire rope or a rope. In its most basic form it is made of a spool together with an attached hand crank. More complicated winches are found at the heart of machinery like for instance steam shovels, tow trucks and elevators. Sometimes the spool can be known as the winch drum. Complex designs have gear assemblies which could be powered by internal, hydraulic, electric or pneumatic combustion drives. Various winches can comprise a mechanical brake or a solenoid brake or a ratchet and pawl mechanism to be able to prevent it from unwinding unless the pawl is retracted.

Usually, the rope is stored on the winch. There is similar piece of equipment known as a capstan which does not store the rope. In sailing, when a line is trimmed on a sailboat, the crew member works the winch handle with one hand while tailing the other so as to maintain tension on the turns. Some winches have a cleat or stripper to maintain tension. These designs are called "self-tailing" winches.

Often, winches are used backstage as part of the mechanism in order to transfer scenery in big theatrical productions. Many times the winches are actually embedded in the stage floor and utilized to be able to transfer huge set pieces on and off stage.

Recently, winches have been fabricated in certain designs for snow and water sports. This new generation of winches is designed in order to pull riders swiftly across a body of water or of snow. This can stimulate a riding experience that is usually supplied by a boat, snow mobile or a wave runner.