

Winches

A winch is a mechanical device which specializes in winding out or pulling in or winding up or letting out the tension of a rope, wire cable, cable or a wire rope. In its most basic form it is constructed of a spool along with a connected hand crank. More complex winches are seen at the heart of machines like for example elevators, steam shovels and tow trucks. At times the spool could be known as the winch drum. Elaborate designs have gear assemblies which could be driven by hydraulic, electric, pneumatic or internal combustion drives. Various winches can comprise a mechanical brake or a solenoid brake or a pawl and ratchet apparatus in order to prevent it from unwinding unless the pawl is retracted.

Commonly, the cable or rope is stored on the winch, nevertheless the capstan, a similar machine, does not store the rope. In sailing, when trimming a line on a sailboat, the crew member works the winch handle making use of one hand while tending the other to be able to maintain tension on the turns. Various winches have a stripper or cleat in order to maintain tension. These designs are called "self-tailing" winches.

Frequently, winches are used backstage as part of the mechanics in order to arrange setting in large theatrical productions. Many times the winches are actually embedded in the stage floor and utilized so as to move large set pieces on and off stage.

The new generation of winches have been made for snow and water sports allowing the riders to be pulled quickly across a body of snow or of water. This can stimulate a riding experience that is usually supplied by a snow mobile, wave runner or a boat.