

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

SECTION G92.420.1
Issue 2, January, 1953
AT&T Co Standard

POWER WINCHES
DOUBLE-DRUM

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1. GENERAL

- 1.01 This section covers the standard double-drum winches.
- 1.02 This section is reissued to include information on recognizing and inspecting for sheared taper pins.

2. SAFETY PRECAUTIONS

2.01 If a load is put on the winch line when it is off the drum it may become wedged between the winch drive housing assembly and either drum, usually the fall line drum, causing a high sideward force on the drum. This force can shear the taper pin which positions the drum laterally on the winch drum shaft. If this pin is sheared, and the line is put back on the drum, the winch may appear to operate normally for an indefinite period. However, because the drum can move laterally on the shaft, it is possible that when the winch clutch and brake lever is moved to the engaged position, the drum can move with the clutch and the clutch will not engage fully. In some cases the clutch may engage so slightly that it may disengage at any time under load.

2.02 In order to prevent the possibility of an accident any time a line has come off of a drum and become wedged on the winch, the two drums should be checked for lateral movement on the winch drum shaft. If the drum will move more than one-eighth inch it is probable that the taper pin is sheared and the winch should not be used until it has been inspected by the motor vehicle forces.

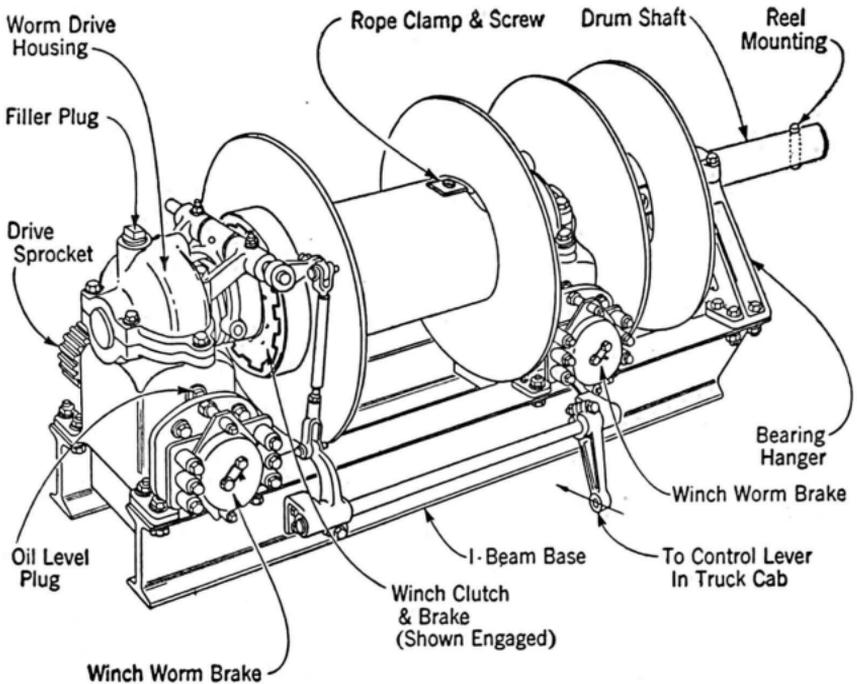
2.03 In order to apply sufficient force to move the drum it may be necessary to use a bar or some such device as a pry. The clutch should be in the engaged position and there should not be any strain on the line. If the taper pin is sheared the drum should move quite easily; therefore, do not exert a great force because with good leverage it is possible to shear the pin when making the check.

2.04 As an additional precaution the foreman should frequently check the position of the drum when the clutch is in the engaged position, to see whether or not the drum has moved away from the boom line winch drive housing. A space of 1/8 inch or more can be noticed when standing at the rear of the truck.

3. DESCRIPTION OF WINCHES

3.01 These winches consist of two winch worm drive housings and a bearing hanger mounted on two I-beams fastened to winch mounting brackets which are attached to the truck frame. On the old type double-drum winch, the larger drum is 12 inches long, with 19-inch diameter flanges and an 8-inch diameter body, or spool. The small drum is 6 inches long, with 16-inch flanges and an 8-inch diameter body. The larger drum is equipped with a winch clutch and brake and both drums have automatic worm brakes on the worm drives of the winch.

3.02 On the new type double-drum winch the larger drum is 16 inches long, with 19-inch diameter flanges and an 8-inch diameter spool. The small drum is 6 inches long with 19-inch diameter flanges and has an 8-inch diameter spool. The length of winch line accommodated on these drums is greater than that afforded by the old type double-drum winches.



DOUBLE-DRUM WINCH

3.03 The two drums are driven independently of each other and the larger drum is equipped with a winch clutch and brake, permitting it to be rotated freely on its shaft, while the small drum is permanently keyed to its shaft and can not be freely rotated. The long drum shaft is supported by the two worm drive housings. The small shaft is supported by the housing between the drums and the bearing hanger. The small drum shaft is extended so that its end is flush with the right side of the body and forms a mounting for the collapsible or removable spool power reels.

4. USE

4.01 Double-drum winches were designed for use on trucks equipped with live boom line derricks. The line used on the load is known as the fall line and is carried on the large drum. The boom line, used to support the derrick boom is carried on the small drum. These winches are suitable for cable placing and for general pole work.

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