



SURFACE VEHICLE STANDARD

J1014™

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Superseding J1014 AUG2017

Classification and Nomenclature Towing Winch for Skidders and Crawler Tractors

RATIONALE

SAE J1014 has been reaffirmed to comply with the SAE Five-Year Review policy.

1. Scope—This SAE Standard includes only those towing winches commonly used on skidders and crawler tractors. These winches are used on self-propelled machines described in SAE J1057, J1116, and J1209. Specifically excluded are those winches used for hoisting operations.

1.1 Purpose—This document classifies the major types of winches and establishes nomenclature for major winch components. Examples used here are not intended to include all existing winches nor to be descriptive of any particular winch.

2. References

2.1 Applicable Publications—The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated the latest issue of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J1057—Identification Terminology of Earthmoving Machines

SAE J1116—Categories of Off-Road Self-Propelled Work machines

SAE J1209—Identification Terminology of Mobile Forestry Machines

3. Winch Classification—Classification of winches is based on their functions.

3.1 Power In/Power Out—Power is applied to the winch drum to either pull in or unwind the wire rope. Additional functional classifications as listed as follows should be used when applicable.

3.1.1 WINCH-ON-THE-FLY (SIMULTANEOUS WINCHING WHILE TRAVELING) CAPABILITY—The load can be engaged/disengaged while the machine is in powered motion.

3.1.2 FREE SPOOL CAPABILITY—The drum is disengaged from the drive and brake to allow the drum to rotate freely as the wire rope is pulled out.

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3.2 Power In/Free Spool Out—Power is applied to the winch drum to pull the wire rope in. The drum is disengaged from the drive and brake to allow the drum to rotate freely as the wire rope is pulled out. Additional functional classifications as listed below should be used when applicable.

3.2.1 WINCH-ON-THE-FLY (SIMULTANEOUS WINCHING WHILE TRAVELING) CAPABILITY—The load can be engaged/disengaged while the machine is in powered motion.

3.3 Two Drum Winch—A winch having two drums, each of which can be classified by 3.1 and/or 3.2.

4. Wire Rope Anchor Classification

4.1 Fixed Anchor—A method of fastening the wire rope to the drum such that as the last wrap leaves the drum, the rope will remain attached to the drum.

4.2 Break-Away Anchor—A method of fastening the wire rope such that as the last wrap leaves the drum, the rope disengages from the drum.

5. Winch Control Classification

5.1 Power Hydraulic Control

5.1.1 Winch control is by means of hydraulic power from the machine hydraulic circuit.

5.1.2 Winch control is by means of hydraulic power from a source within the winch.

5.2 Manual Hydraulic Control—Winch control is by means of hydraulic power generated in the control unit by manual force.

5.3 Manual Mechanical Control—Winch control is by means of mechanical force.

6. Component Nomenclature—See Figure 1.

1. Power hydraulic control (machine circuit)
2. Manual hydraulic control
3. Manual mechanical control
4. Input shaft
5. Counter shaft
6. Drum shaft
7. Housing
8. Clutch¹
 - a. Friction input clutch¹
 - b. Friction forward clutch¹
 - c. Friction reverse clutch¹
 - d. Friction free spool clutch¹
 - e. Sliding gear forward-reverse clutch¹
 - f. One-way sprag clutch¹
 - g. Jaw clutch¹
9. Brake
10. Wire rope drum
 - a. Wire rope drum flange
 - b. Wire rope drum barrel

1. Not shown on diagram—clutch nomenclature indicates type and function.