SAE International™ SURFACE VEHICLE STANDARD

SAE J1014 REAF. MAY2004

Issued 1974-03
Reaffirmed 2004-05

Superseding J1014 JUN1995

Classification and Nomenclature Towing Winch for Skidders and Crawler Tractors

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.

TO PLACE A DOCUMENT ORDER:
Tel: 877-606-7323 (inside USA and Canada)
Tel: 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: custsvc@sae.org
SAE WEB ADDRESS: http://www.sae.org

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. Clutch
   a. Friction input clutch[1]
   b. Friction forward clutch[1]
   c. Friction reverse clutch[1]
   d. Friction free spool clutch[1]
   e. Sliding gear forward-reverse clutch[1]
   f. One-way sprag clutch[1]
   g. Jaw clutch[1]
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.

11. Wire rope
12. Wire rope anchor
    a. Ferrule
    b. Wedge
    c. Socket

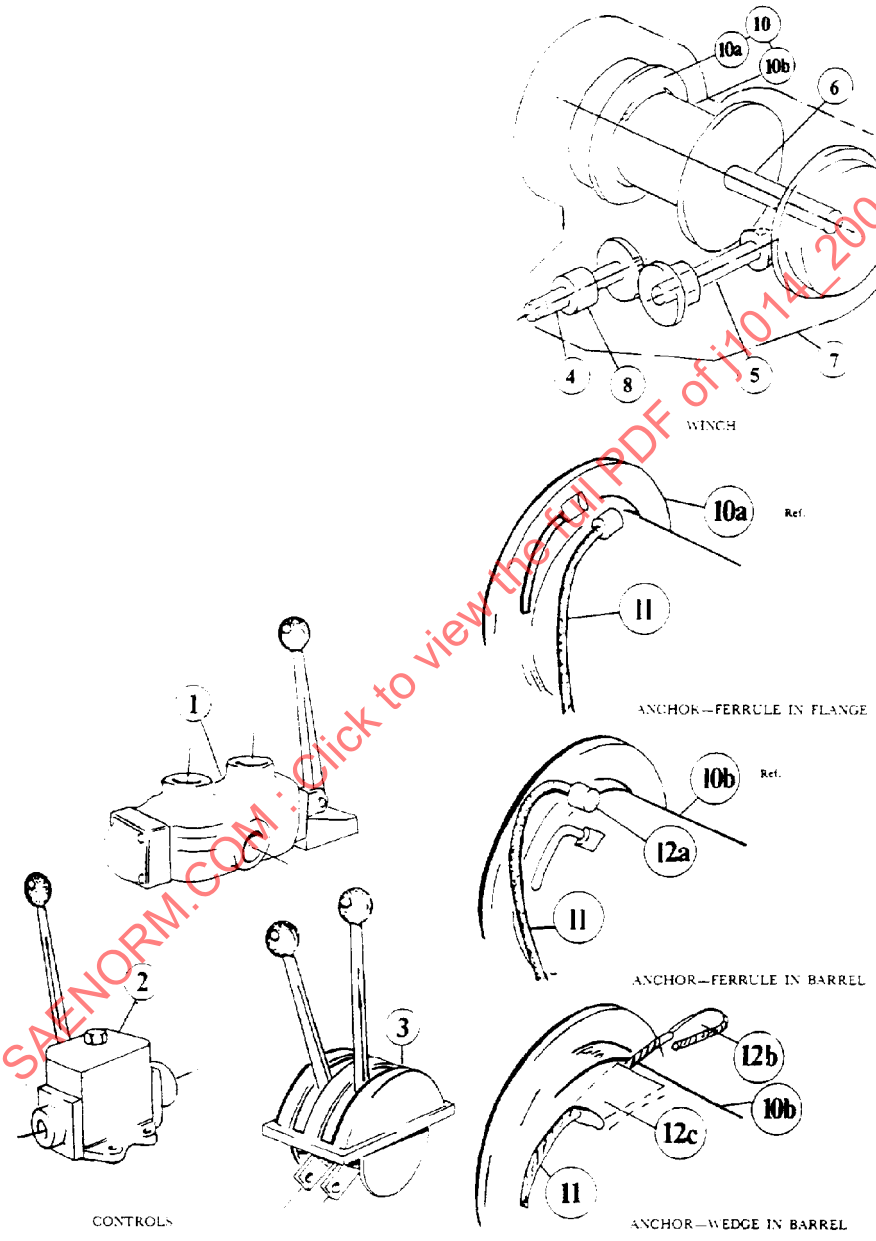

FIGURE 1—COMPONENT NOMENCLATURE

PREPARED BY THE SAE MACHINE TECHNICAL FORESTRY AND LOGGING SUBCOMMITTEE
OF THE SAE MACHINE TECHNICAL COMMITTEE