SAE International™

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J1305

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Two-Block Warning and Limit Systems in Lifting Crane Service

1. ***Scope***—This SAE Recommended Practice applies to cranes in lifting crane service which are equipped with two-block warning and/or limit systems.

1.1 **Purpose**—The purpose of this SAE Recommended Practice is to establish the minimum performance requirements of devices which signal and/or automatically prevent two-blocking.

2. ***References***—There are no referenced publications specified herein.

3. ***Definitions***

3.1 **Two-Blocking**—Contact of the lower load block or hook with the upper load block, boom point, or boom point machinery.

3.2 **Two-Block Sensor**—A device which senses impending two-blocking.

3.3 **Two-Block Warning System**—A device applied to cranes which warns of impending two-blocking.

3.4 **Two-Block Limit System**—A device applied to cranes which prevents two-blocking.

4. ***Performance Criteria***

4.1 The Two-Block Warning System is to warn the operator by audible, visual or other means of impending two-blocking in sufficient time to allow reasonable reaction of the operator.

4.2 The Two-Block Limit System shall perform one or more of the following:

4.2.1 CONTROL LOCK-OUT—The system is to prevent two-blocking by automatically neutralizing the control and/or stopping motion which would result in two-blocking. The system is to allow control of motion in directions that eliminate two-blocking. Occurring motions that do not affect a two-blocking condition are not to be interrupted and are to be allowed to continue in the desired controlled manner.

4.2.2 CONTROLLED PAYOUT—The system shall prevent a two-blocking condition by providing controlled payout of the load hoist rope at impending two-blocking.

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4.3 Temperature Effect—The system shall operate over an ambient temperature range of –30 to +50 °C (–22 +122 °F).

4.4 Operation Check—The system shall have a means for the operator or other responsible person to determine that it is operative prior to crane use.

4.5 Testing—The two-block prevention system shall be performance tested by the installer initially and by the user at intervals recommended by the manufacturer, or at any time that there is an indication of possible malfunction (See 4.1, 4.2 and Section 6).

5. General Requirements

5.1 Installation and Maintenance—Installation and maintenance of the two-block sensor and maintenance of the crane should be in accordance with the appropriate manufacturer's recommendations.

5.2 Identification—Labels, when applicable, shall be placed on the device or in the operator's cab, or both, giving the following information:

a. Basic operating instructions and precautions.
b. Device manufacturer's name, address, device model number and serial number.

5.3 Manual—Operation, installation and service manual(s) shall be provided by the manufacturer and shall be available to the operator or other responsible persons at all times.

6. Performance Evaluation Tests

6.1 General Testing Requirements

6.1.1 Specific test instructions shall be provided by the manufacturer.

6.1.2 Test personnel shall be thoroughly familiar with the device's operation and the manufacturer's recommended test procedures and shall check the system for all functions.

6.1.3 The system shall be initially tested to establish compliance with the appropriate paragraph(s) in Section 4.

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