



SURFACE VEHICLE RECOMMENDED PRACTICE

J375™

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Superseding J375 MAY2012

Radius-of-Load or Boom Angle Indicating Systems

RATIONALE

J375 has been reaffirmed to comply with the SAE five-year review policy.

Foreword—This Document has not changed other than to put it into the new SAE Technical Standards Board Format.

1. Scope—This SAE Recommended Practice applies to cranes used in lifting-crane service which are equipped with radius-of-load or boom angle indicating devices.

1.1 Purpose—The purpose of this document is to establish the minimum performance criteria of systems which measure and display to the operator and/or other responsible persons the radius-of-load or boom angle at which the load is being lifted.

2. References

2.1 Applicable Publications—There are no referenced publications specified herein.

3. Definitions

3.1 Radius-of-Load Indicating System—A crane-mounted device which measures parameters and displays the radius-of-load.

3.2 Radius-of-Load—The horizontal distance from a vertical projection of the crane's axis of rotation to the supporting surface, before loading, to the center of the vertical hoist line or tackle with rated load applied.

3.3 Boom Angle—The angle between the longitudinal centerline of the boom base section and the horizontal plane.

3.4 Boom Angle Indicating System—A crane-mounted device which measures and displays boom angle.

3.5 Rated Load—The load value shown on the applicable load-rating chart of the crane for the particular crane configuration, boom length, boom angle, or functions of these variables. For radii outside those shown on the load-rating chart, the rated load is to be considered as zero.

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4. Performance Criteria

4.1 Accuracy

- 4.1.1 For Radius-of-Load Indicating Systems, the indicated radius is to be not less than 100% of the actual radius, nor more than 110% of the actual radius.
- 4.1.2 For Boom Angle Indicating Systems, the indication is to be as follows: For boom angles 65 degrees or more, the indicated angle is to be neither greater than the actual boom angle nor more than 2 degrees less than the actual boom angle. For boom angles less than 65 degrees, the indicated angle is to be neither greater than the actual boom angle nor more than 3 degrees less than the actual boom angle.

4.2 Temperature Effect—Specified accuracy is to be maintained over ambient temperature variations of -30 to $+50$ °C (-22 to $+122$ °F) without external adjustment.

4.3 Readout

- 4.3.1 The device readout is to be in units of measure which are compatible with the appropriate load-rating chart for the crane.
- 4.3.2 The device readout is to be located so that the operator and/or other responsible persons can obtain readings from normal operating position, and its location shall not create an operational hazard.

4.4 Set Points—Indicating systems equipped with adjustable working range set points having visual and/or audible warning signals are to have the visual signal clearly visible and the audible signal clearly distinguishable from engine and machinery noise.

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

4.6 Testing—The indicating system is to be performance tested by the installer initially and by the user at intervals recommended by the manufacturer(s), or at any time there is an indication of inaccuracy (see 4.1 and Section 6).

5. General Requirements

5.1 Installation and Maintenance—Installation and maintenance of the indicating device and maintenance of the crane are to be in accordance with the appropriate manufacturer's recommendations to attain system accuracy.

5.2 Identification—Labels, when provided, are to be conspicuously placed on the device readout or in the operator's cab, or both, giving the following information:

- a. Units of measure
- b. Operating range of the indicating system for which the accuracy criteria of 4.1 is met
- c. Basic operating instructions and precautions, including recommended intervals for performance testing
- d. Device manufacturer's name, address, and device model number

5.3 Manual—Manual(s) containing installation, operation, test, and service information is (are) to be provided by the manufacturer and shall be available to the operator and/or other responsible persons at all times.