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**SAE J167 DEC86**

**Overhead Protection  
for Agricultural  
Tractors — Test  
Procedures and  
Performance**

SAE Standard  
Reaffirmed December 1986

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# OFF-HIGHWAY MACHINERY STANDARD

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SAE J167

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Supersedes J167 JUN81

## OVERHEAD PROTECTION FOR AGRICULTURAL TRACTORS - TEST PROCEDURES AND PERFORMANCE REQUIREMENTS

### 1. PURPOSE:

- 1.1 The purpose of this standard is to establish the test and performance requirements of a protective frame or enclosure with overhead cover designed for wheel-type agricultural tractors to minimize the frequency and severity of operator injury resulting from accidental upsets and overhead hazards during normal operation. General requirements for the protection of operators are specified in SAE J1194.

### 2. SCOPE:

- 2.1 Fulfillment of the intended purpose requires conformance to SAE J1194, and the following additional requirement of a drop test to verify the effectiveness of the overhead cover in protecting the operator from falling objects.
- 2.2 The test procedures and performance requirements outlined in this standard are based on currently available engineering data.

### 3. DEFINITIONS:

- 3.1 An agricultural tractor is defined in paragraph 3.1 of SAE J1194.
- 3.2 Tractor mass is defined in paragraph 3.2 of SAE J1194.
- 3.3 Seat Reference Point (SRP) is defined in paragraph 3.4 of SAE J1194.

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#### 4. DESCRIPTION:

- 4.1 The protective frame or enclosure to which this standard applies is a structure generally comprised of uprights mounted to the tractor and attached to an overhead cover extending above and over the operator's seat and conforming generally to Fig. 1.

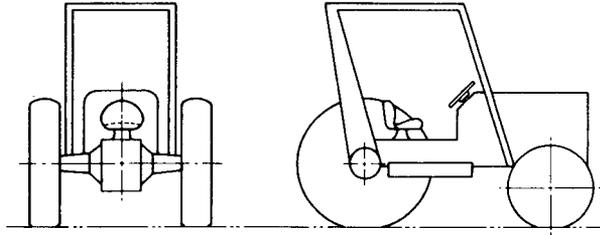


FIG. 1 - TRACTOR WITH TYPICAL PROTECTIVE FRAME AND OVERHEAD COVER

#### 5. SPECIFICATIONS FOR OVERHEAD COVER:

- 5.1 The overhead cover may be constructed of a solid material. If grid or mesh is used, the largest permissible opening shall be such that a 38 mm (1.5 in) diameter circle is the maximum circle that can be inscribed between the elements of grid or mesh.

#### 6. TEST PROCEDURES:

##### 6.1 General:

- 6.1.1 Appropriate and applicable test procedures are specified in Section 6 of SAE J1194.

##### 6.2 Drop Test Procedure:

- 6.2.1 The overhead cover shall be subjected to a drop test using a solid steel sphere or material of equivalent spherical dimension with a mass of 45.4 kg (weighing 100 lb) dropped once from a height of 3050 mm (10 ft) above the overhead cover.
- 6.2.2 The point of impact shall be on the overhead cover at a point within the zone of protection as shown in Fig. 2 which is furthest removed from major structural members.

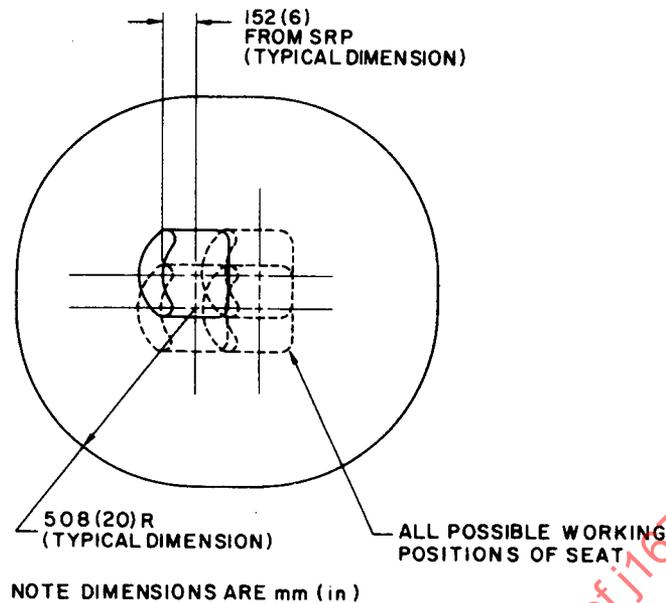


FIG. 2 - ZONE OF PROTECTION FOR DROP TEST

7. PERFORMANCE REQUIREMENTS:

7.1 General Requirements:

- 7.1.1 Performance requirements specified in Section 7 of SAE J1194 shall apply.
- 7.1.2 Additional performance requirements as specified in paragraph 7.2 of this standard shall apply when applicable.

7.2 Drop Test Performance Requirements:

- 7.2.1 Instantaneous deflection due to impact of the sphere shall not enter the clearance zone as illustrated in Fig. 12 of SAE J1194.
- 7.2.2 Minimum allowable dimensions are listed in paragraph 7.1.1 of SAE J1194.