



# SURFACE VEHICLE RECOMMENDED PRACTICE

J1308™

AUG2024

Issued 1985-09  
Revised 2013-12  
Reaffirmed 2024-08

Superseding J1308 JAN2019

## Fan Guard for Off-Road Machines

### RATIONALE

This standard is being revised to reflect the latest revision of SAE J1116 which removed Agricultural Tractors from the scope.

SAE J1308 has been reaffirmed to comply with the SAE Five-Year Review policy.

### FOREWORD

This update consists of referring to the 2013 version of SAE J1116.

#### 1. SCOPE

This practice applies to guarding of engine cooling fans used on Off-Road Self-Propelled Work Machines defined in SAE J1116. It does not include guarding for belts, pulleys, or other rotating equipment used on these machines.

##### 1.1 Purpose

This document provides performance guidelines for engine cooling fan guard device(s).

#### 2. REFERENCES

##### 2.1 Applicable Document

The following publication forms a part of the specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

##### 2.1.1 SAE Publication

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), [www.sae.org](http://www.sae.org).

SAE J1116 Categories of Off-Road Self-Propelled Work Machines

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### 3. DEFINITIONS

#### 3.1 FAN GUARD

A device to protect against inadvertent contact with a rotating fan by objects or personnel.

#### 3.2 FAN SHROUD

A device to improve the performance of a cooling fan by enclosing the blade tips.

#### 3.3 EXPOSED AREA OF FAN

The portion of the fan from the hub to the blade tips not blocked by integral components of the machine that remain in place during maintenance or periodic inspection.

### 4. PERFORMANCE REQUIREMENTS

- 4.1 The fan guard shall cover or enclose all exposed areas of the fan blades and spider with which inadvertent contact could be made by personnel or extraneous material.
- 4.2 The maximum nominal width of opening in the guard shall depend on its distance from the exposed area of the fan according to Table 1:

- MAXIMUM OPENING WIDTH

Opening	Distance From Guard to Fan
12 mm (0.47 in)	Less Than 90 mm (3.54 in)
16 mm (0.63 in)	91 mm (3.58 in) to 140 mm ( 5.51 in)
19 mm (0.75 in)	141 mm (5.55 in) to 165 mm ( 6.50 in)
22 mm (0.87 in)	166 mm (6.54 in) to 190 mm ( 7.48 in)
32 mm (1.26 in)	191 mm (7.52 in) to 320 mm (12.60 in)

- 4.3 The guard shall be sufficiently rigid to retain the distances defined in 4.2 under the following conditions:

- 4.3.1 When subjected to a force of 800 N (179.8 lbs.) distributed over any 75 x 150 mm (2.95 x 5.90 in.) area and applied in any direction toward the fan.
- 4.3.2 When subjected to a force of 1100 N (247.3 lbs.) distributed over any 75 x 150 mm (2.95 x 5.90 in.) area and directed radially to the axis of the fan rotation.
- 4.3.3 Any surface within 20 degrees of horizontal must meet the requirements of 4.3.2.

#### 4.4 Design Considerations

- 4.4.1 The fan guard shall minimize sharp edges and pinch points.
- 4.4.2 The guard shall be easy to remove and install with common hand tools.
- 4.4.3 The guard should allow belt adjustment and replacement as required and reversal of fan if needed.
- 4.4.4 When the fan shroud or other components are used as a fan guard, they must meet fan guard performance requirements.