

$X = D \times 0.000873$,

Where:

X = the width of a line, in the unit of measurement D, representing 3 minutes of arc;
 D = distance from center point of driver's eye location to the center of the mirror's surface; and

0.000873 = tangent of 3 minutes of arc.

For 9 minutes of arc:

$X = D \times 0.002618$,

Where:

X = the width of a line, in the unit of measurement D, representing 9 minutes of arc;
 D = distance from center point of driver's eye location to the center of the mirror's surface; and

0.002618 = tangent of 9 minutes of arc.

(b) Photograph each cylinder through the mirror(s) that provides a view of the cylinder. Photograph each cylinder with the camera located so that the view through its film or image plane is located at any single location within the semicircle established under 13.4, [POINT A,B,C, OR D] ensuring that the image of the mirror and comparison chart fill the camera's view finder to the extent possible.

13.8 Make all observations and take all photographs with the service/entry door in the closed position and the stop signal arm(s) in the fully retracted position.

[41 FR 36025, Aug. 26, 1976, as amended at 41 FR 56813, Dec. 30, 1976; 47 FR 38700, Sept. 2, 1982; 48 FR 38844, Aug. 26, 1983; 48 FR 40262, Sept. 6, 1983; 56 FR 58516, Nov. 20, 1991; 57 FR 57015, Dec. 2, 1992; 58 FR 60402, Nov. 16, 1993; 60 FR 15692, Mar. 27, 1995; 63 FR 28929-28931, May 27, 1998; 63 FR 51000, Sept. 24, 1998; 69 FR 18497, Apr. 8, 2004]

§ 571.112 [Reserved]

§ 571.113 Standard No. 113; Hood latch system.

S1. *Purpose and scope.* This standard establishes the requirement for providing a hood latch system or hood latch systems.

S2. *Application.* This standard applies to passenger cars, multipurpose passenger vehicles, trucks, and buses.

S3. *Definitions.* *Hood* means any exterior movable body panel forward of the windshield that is used to cover an engine, luggage, storage, or battery compartment.

S4. *Requirements.*

S4.1 Each hood must be provided with a hood latch system.

S4.2 A front opening hood which, in any open position, partially or completely obstructs a driver's forward view through the windshield must be provided with a second latch position on the hood latch system or with a second hood latch system.

§ 571.114 Standard No. 114; Theft protection and rollaway prevention.

S1. *Scope.* This standard specifies vehicle performance requirements intended to reduce the incidence of crashes resulting from theft and accidental rollaway of motor vehicles.

S2. *Purpose.* The purpose of this standard is to decrease the likelihood that a vehicle is stolen, or accidentally set in motion.

S3. *Application.* This standard applies to all passenger cars, and to trucks and multipurpose passenger vehicles with a GVWR of 4,536 kilograms (10,000 pounds) or less. However, it does not apply to walk-in van-type vehicles.

S4. *Definitions.*

Combination means a variation of the key that permits the starting system of a particular vehicle to be operated.

Key means a physical device or an electronic code which, when inserted into the starting system (by physical or electronic means), enables the vehicle operator to activate the engine or motor.

Open-body type vehicle means a vehicle having no occupant compartment doors or vehicle having readily detachable occupant compartment doors.

Starting system means the vehicle system used in conjunction with the key to activate the engine or motor.

Vehicle type, as used in S5.1.2, refers to passenger car, truck, or multipurpose passenger vehicle, as those terms are defined in 49 CFR 571.3.

S5. *Requirements.* Each vehicle subject to this standard must meet the requirements of S5.1 and S5.2. Open-body type vehicles are not required to comply with S5.1.3.

S5.1 *Theft protection.*

S5.1.1 Each vehicle must have a starting system which, whenever the key is removed from the starting system prevents:

(a) The normal activation of the vehicle's engine or motor; and

(b) Either steering, or forward self-mobility, of the vehicle, or both.

S5.1.2 For each vehicle type manufactured by a manufacturer, the manufacturer must provide at least 1,000 unique key combinations, or a number equal to the total number of the vehicles of that type manufactured by the manufacturer, whichever is less. The same combinations may be used for more than one vehicle type.

S5.1.3 Except as specified below, an audible warning to the vehicle operator must be activated whenever the key is in the starting system and the door located closest to the driver's designated seating position is opened. An audible warning to the vehicle operator need not activate:

(a) After the key has been inserted into the starting system, and before the driver takes further action; or

(b) If the key is in the starting system in a manner or position that allows the engine or motor to be started or to continue operating; or

(c) For mechanical keys and starting systems, after the key has been withdrawn to a position from which it may not be turned.

S5.1.4 If a vehicle is equipped with a transmission with a "park" position, the means for deactivating the vehicle's engine or motor must not activate any device installed pursuant to S5.1.1(b), unless the transmission is locked in the "park" position.

S5.2 Rollaway prevention in vehicles equipped with transmissions with a "park" position.

S5.2.1 Except as specified in S5.2.3, the starting system required by S5.1 must prevent key removal when tested according to the procedures in S6, unless the transmission or gear selection control is locked in "park" or becomes locked in "park" as a direct result of key removal.

S5.2.2 Except as specified in S5.2.4, the vehicle must be designed such that the transmission or gear selection control cannot move from the "park" position, unless the key is in the starting system.

S5.2.3 *Key removal override option.* At the option of the manufacturer, the key may be removed from the starting

system without the transmission or gear selection control in the "park" position under one of the following conditions:

(a) In the event of electrical failure, including battery discharge, the vehicle may permit key removal from the starting system without the transmission or gear selection control locked in the "park" position; or

(b) Provided that steering or self-mobility is prevented, the vehicle may have a device by which the user can remove the key from the starting system without the transmission or gear selection control locked in "park." This device must require:

(i) The use of a tool, and

(ii) Simultaneous activation of the device and removal of the key; or

(c) Provided that steering or self-mobility is prevented, the vehicle may have a device by which the user can remove the key from the starting system without the transmission or gear selection control locked in "park." This device must be covered by an opaque surface which, when installed:

(i) Prevents sight of and use of the device, and

(ii) Can be removed only by using a screwdriver or other tool.

S5.2.4 *Gear selection control override option.* The vehicle may have a device by which the user can move the gear selection control from "park" after the key has been removed from the starting system. This device must be operable by one of the three options below:

(a) By use of the key; or

(b) By a means other than the key, provided steering or forward self-mobility is prevented when the key is removed from the starting system. Such a means must require:

(i) The use of a tool, and

(ii) Simultaneous activation of this means and movement of the gear selection control from "park;" or

(c) By a means other than the key, provided steering or forward self-mobility is prevented when the key is removed from the starting system. This device must be covered by an opaque surface which, when installed:

(i) Prevents sight of and use of the device, and

(ii) Can be removed only by using a screwdriver or other tool.

S5.2.5 When tested in accordance with S6.2.2, each vehicle must not move more than 150 mm on a 10 percent grade when the gear selection control is locked in "park."

S6. Compliance test procedure for vehicles with transmissions with a "park" position.

S6.1 Test conditions.

S6.1.1 The vehicle shall be tested at curb weight plus 91 kg (including the driver).

S6.1.2 Except where specified otherwise, the test surface shall be level.

S6.2 Test procedure.

S6.2.1

(a) Activate the starting system using the key.

(b) Move the gear selection control to any gear selection position or any other position where it will remain without assistance, including a position between any detent positions, except for the "park" position.

(c) Attempt to remove the key in each gear selection position.

S6.2.2

(a) Drive the vehicle forward up a 10 percent grade and stop it with the service brakes.

(b) Apply the parking brake (if present).

(c) Move the gear selection control to "park."

(d) Note the vehicle position.

(e) Release the parking brake. Release the service brakes.

(f) Remove the key.

(g) Verify that the gear selection control or transmission is locked in "park."

(h) Verify that the vehicle, at rest, has moved no more than 150 mm from the position noted prior to release of the brakes.

S6.2.3

(a) Drive the vehicle forward down a 10 percent grade and stop it with the service brakes.

(b) Apply the parking brake (if present).

(c) Move the gear selection control to "park."

(d) Note the vehicle position.

(e) Release the parking brake. Release the service brakes.

(f) Remove the key.

(g) Verify that the gear selection control or transmission is locked in "park."

(h) Verify that the vehicle, at rest, has moved no more than 150 mm from the position noted prior to release of the brakes.

[71 FR 17755, Apr. 7, 2006]

§571.115 [Reserved]

§571.116 Standard No. 116; Motor vehicle brake fluids.

S1. *Scope.* This standard specifies requirements for fluids for use in hydraulic brake systems of motor vehicles, containers for these fluids, and labeling of the containers.

S2. *Purpose.* The purpose of this standard is to reduce failures in the hydraulic braking systems of motor vehicles which may occur because of the manufacture or use of improper or contaminated fluid.

S3. *Application.* This standard applies to all fluid for use in hydraulic brake systems of motor vehicles. In addition, S5.3 applies to passenger cars, multi-purpose passenger vehicles, trucks, buses, trailers, and motorcycles.

S4. *Definitions.*

Blister means a cavity or sac on the surface of a brake cup.

Brake fluid means a liquid designed for use in a motor vehicle hydraulic brake system in which it will contact elastomeric components made of styrene and butadiene rubber (SBR), ethylene and propylene rubber (EPR), polychloroprene (CR) brake hose inner tube stock or natural rubber (NR).

Chipping means a condition in which small pieces are missing from the outer surface of a brake cup.

Duplicate samples means two samples of brake fluid taken from a single packaged lot and tested simultaneously.

Hydraulic system mineral oil means a mineral-oil-based fluid designed for use in motor vehicle hydraulic brake systems in which the fluid is not in contact with components made of SBR, EPR or NR.

Packager means any person who fills containers with brake fluid that are subsequently distributed for retail sale.

Packaged lot is that quantity of brake fluid shipped by the manufacturer to