

**§ 570.7**

**49 CFR Ch. V (10–1–12 Edition)**

start the engine. If brake pedal does not fall slightly under force when the engine starts, there is a malfunction in the power assist system.

**§ 570.7 Steering systems.**

(a) *System play.* Lash or free play in the steering system shall not exceed values shown in Table 1.

(1) *Inspection procedure.* With the engine on and the wheels in the straight ahead position, turn the steering wheel in one direction until there is a perceptible movement of a front wheel. If a point on the steering wheel rim moves more than the value shown in Table 1 before perceptible return movement of the wheel under observation, there is excessive lash or free play in the steering system.

**TABLE 1—STEERING SYSTEM FREE PLAY VALUES**

Steering wheel diameter (inches)	Lash (inches)
16 or less .....	2
18 .....	2¼
20 .....	2½
22 .....	2¾

(b) *Linkage play.* Free play in the steering linkage shall not exceed one-quarter of an inch.

(1) *Inspection procedure.* Elevate the front end of the vehicle to load the ball joints. Insure that wheel bearings are

correctly adjusted. Grasp the front and rear of a tire and attempt to turn the tire and wheel assembly left and right. If the free movement at the front or rear tread of the tire exceeds one-quarter inch there is excessive steering linkage play.

(c) *Free turning.* Steering wheels shall turn freely through the limit of travel in both directions.

(1) *Inspection procedure.* Turn off steering wheel through the limit of travel in both directions. Feel for binding or jamming in the steering gear mechanism.

(d) *Alignment.* Toe-in and toe-out measurements shall not be greater than 1.5 times the value listed in the vehicle manufacturer's service specification for alignment setting.

(1) *Inspection procedure.* Verify that toe-in or toe-out is not greater than 1.5 times the values listed in the vehicle manufacturer's service specification for alignment settings as measured by a bar-type scuff gauge or other toe-in measuring device. Values to convert toe-in readings in inches to scuff gauge readings in ft/mi side-slip for different wheel sizes are provided in Table I. Tire diameters used in computing scuff gauge readings are based on the average maximum tire dimensions of grown tires in service for typical wheel and tire assemblies.

**TABLE I—TOE-IN SETTINGS FROM VEHICLE MFR'S SERVICE SPECIFICATIONS**

Wheel size (inches)	Nominal tire diameter (inches)	Readings in feet per mile sideslip								
		¼ in	⅜ in	½ in	¾ in	1 in	1 ¼ in	1 ½ in	1 ¾ in	2 in
13 .....	25.2	13.1	26.2	39.3	52.4	65.5	78.6	91.7	104.8	117.9
14 .....	26.4	12.5	25.0	37.5	50.0	62.5	75.0	87.5	100.0	112.5
15 .....	28.5	11.5	23.0	34.5	46.0	57.5	69.0	80.5	92.0	103.5
16 .....	35.6	9.3	18.6	27.9	37.2	46.5	55.8	65.1	74.4	83.7

(e) *Power steering system.* The power steering system shall not have cracked or slipping belts, or insufficient fluid in the reservoir.

(1) *Inspection procedure.* Examine fluid reservoir and pump belts for conditions indicated.

[38 FR 23950, Sept. 5, 1973, as amended at 39 FR 12868, Apr. 9, 1974]

**§ 570.8 Suspension systems.**

(a) *Suspension condition.* Ball joint seals shall not be cut or cracked. Structural parts shall not be bent or damaged. Stabilizer bars shall be connected. Springs shall not be broken, or extended above the vehicle manufacturer's design height. Spacers, if installed, shall be installed on both front springs, both rear springs, or on all