FRONT AXLE and STEERING GEAR

Front Wheel Alignment Specifications

Caster Setting

Passenger Cars—All Models from 1932 to 1936 Inclusive: Maximum caster 9 degrees; minimum caster 4½ degrees; allowable tolerance or variation of setting between wheels, ½ degree.

Trucks (131½" and 157" wheelbase)—All Models from 1932 to 1936 Inclusive: Maximum caster 5 degrees; minimum caster, 3 degrees; allowable tolerance or variation of setting between wheels, ½ degree.

Camber Setting

Passenger Cars and Trucks (131½" and 157" wheelbase)—All Models from 1932 to 1935 Inclusive: Maximum camber 2 degrees; minimum camber ¼ degree. The variation of the camber setting between the wheels should not exceed ¼ degree.

Passenger Cars and Trucks (131½" and 157" wheelbase)—All 1936 Models: Maximum camber ¾ degree; minimum camber ½ degree. The variation of the camber setting between the wheels should not exceed ¼ degree.

Caution: The camber of the right wheel must never be greater than that of the left wheel.

Toe-In Setting

Passenger Cars and Trucks (131½" and 157" wheelbase)—All Models from 1932 to 1935 Inclusive: The wheels should toe-in 3/32" at the front.

Passenger Cars—All 1936 Models: The wheels should toe-in 1/16" at the front.

Trucks (131½" and 157")—All 1936 Models: The wheels should be parallel when the truck is not loaded. The amount of toe-in increases as the truck is loaded.

Note: The toe-in specifications given in inches above for all passenger car and truck models are for normal average settings. The exact toe-in setting should vary with the camber setting and may be calculated for any given camber setting in the following way. Add the camber setting of the two front wheels and divide the total by ten. In other words, the toe-in setting should be exactly 1/10 of the total camber of both wheels added together.

How to Adjust the Steering Gear

The steering gear used in all Ford V-8 passenger cars and trucks is of the worm and sector type. While there have been several improvements from time to time, the adjustment operations have remained practically the same for all models from 1932 to 1936 inclusive.

Cross Shaft Adjustment: To remove the endplay from the cross shaft (sometimes called sector shaft), first jack up the front wheels and disconnect the drag link from the steering arm ball; also make sure all the housing cover nuts are tight. Next, turn the steering wheel to the end of its travel, either right or left, and then back it up one-eighth of a turn. Slack off on adjusting screw lock nut A, Fig. 71, and turn the adjusting screw B in a clockwise direction until all endplay has been removed from the cross shaft. The amount of endplay can be determined by grasping the pitman arm hub and working the shaft back and forth. All endplay should be removed yet the shaft should not be tight enough to drag.

Worm and Sector Mesh Adjustment: This adjustment is made to obtain the correct clearance between the teeth of the steering gear sector and worm. Jack the

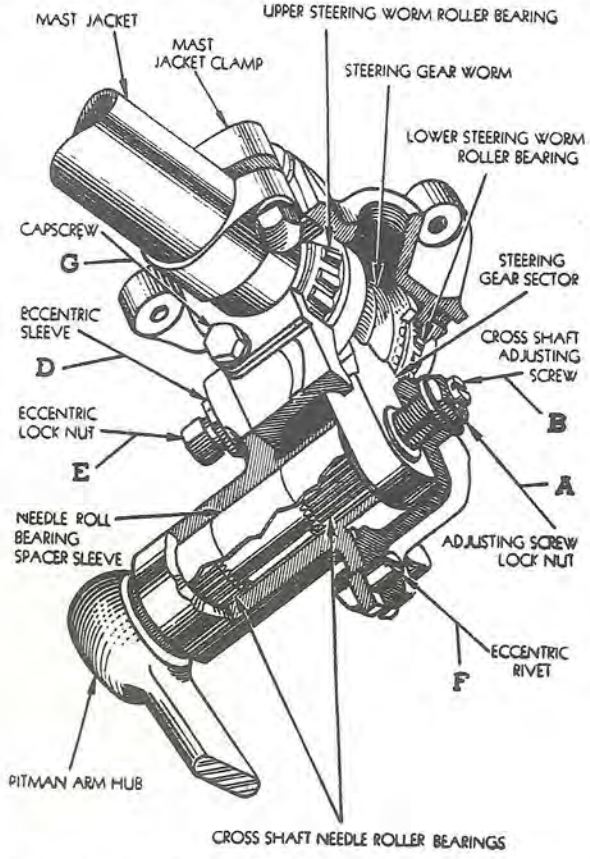


Fig. 71
Sectional view of steering gear assembly used on Ford V-8 passenger cars and trucks.

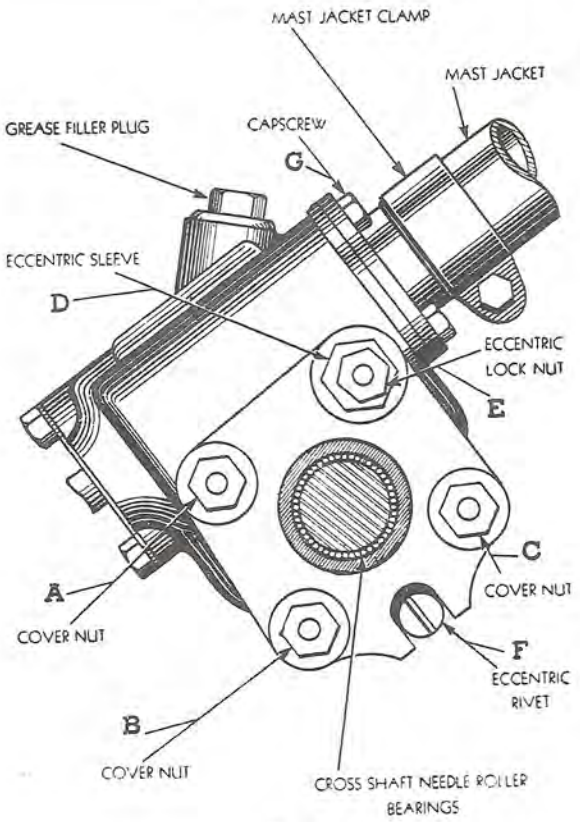


Fig. 72
Side view of steering gear used in Ford V-8 showing location of eccentric sleeve adjustment and eccentric rivet adjustment.

front wheels off the floor and turn the steering wheel to the straight ahead position which is exactly midway of its travel. Loosen the three cover nuts A, B and C, Fig. 72, one-fourth turn and the eccentric lock nut E one-half turn. Turn the eccentric sleeve D, clockwise gradually until all backlash between the sector and worm has been taken up. The amount of backlash can be determined by moving the pitman arm back and forth with the hand. The movement of the eccentric sleeve should always be finished in a clockwise direction, otherwise there may be danger of the adjustment changing when the cover is tightened. If on the first attempt the adjustment is found to be too tight, back off the eccentric sleeve until there is a perceptible backlash between the worm and sector and repeat the operation of removing the backlash by turning the eccentric sleeve in a clockwise direction as before.

Eccentric Rivet Adjustment: This adjustment is made for centralizing the sector tooth contact with the worm by equalizing the backlash between the worm and sector at positions equidistant from the "high spot" or central position in either or both directions of travel of the sector. To make the adjustment, first jack up the front wheels and disconnect the drag link from the steering arm ball. Set the steering wheel in the exact central position of its travel. Next, turn the steering wheel one-half turn to the right and test the amount of backlash between the worm and sector by moving the pitman arm back and forth. Next, turn the steering wheel exactly one-half turn to the left of the central position and again test the amount of backlash. If the backlash, when tested one-half turn to the left is not the same as it was when tested one-half turn to the right, it should be equalized.

The backlash can be equalized by turning the eccentric rivet F. To make this adjustment, loosen the three cover nuts A, B and C, Fig. 72, one-fourth turn and the eccentric sleeve lock nut E, one-half turn. The backlash between the worm and sector can now be increased by turning the eccentric rivet clockwise or decreased by turning it counter-clockwise. With the steering wheel still in the position of one-half turn to the left, either increase or decrease the backlash until it is exactly the same one-half turn either side of the central position of the steering wheel.

After the backlash has been equalized for both positions, it will be necessary to readjust the worm and sector mesh with the steering wheel in the central position. This adjustment procedure will be found under "Worm and Sector Mesh Adjustment" above.

Do not forget to tighten the eccentric lock nut and three cover nuts, when the adjustment operation is finished. The eccentric lock nut should be tightened first.

Steering Column Shaft Adjustment: The steering column is supported on roller bearings as shown in Fig. 73. Under normal conditions, the endplay in the steering column shaft is taken on the spring thrust washer assembly; however, when wear produces endplay in excess of .010", adjusting shims should be removed.

The amount of endplay in the steering column shaft can be determined in the following way. Turn the steering wheel three-quarters of a turn either to the right or left of the central position of its travel and tie one spoke of the wheel to the door pillar with a leash. Next, mount a dial indicator against the bottom of the steering wheel

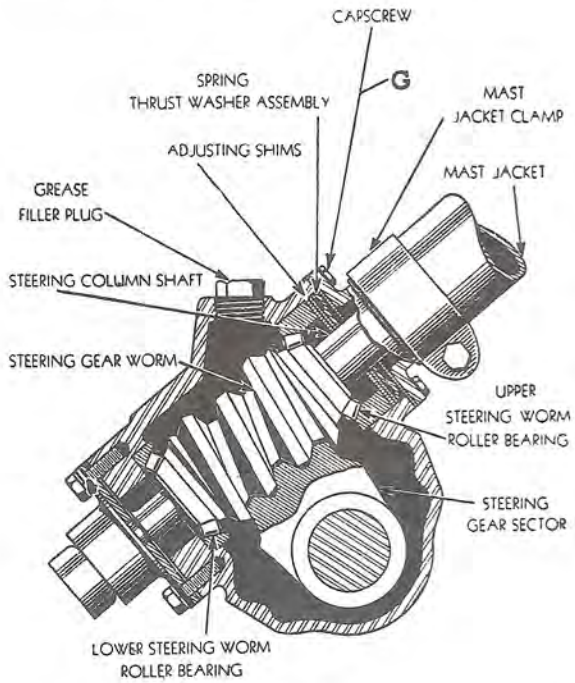


Fig. 73
Cross section view of steering gear used in Ford V-8 showing location of spring thrust washer assembly and adjusting shims for controlling endplay in steering gear worm.