

TRUCK SERVICE BULLETIN



GENERAL MOTORS TRUCK COMPANY -- Pontiac, Michigan

GROUP ... Steering

NUMBER ... 16-5

SUBJECT: Worm and Sector Type Steering Gear Adjustments

Correct adjustment of the steering gear to remove looseness or binding is essential to free, easy steering. There are definite adjustments that must be made at periodic intervals in order to obtain maximum service from steering gears.

These adjustments, also shown in current "Care and Maintenance" books, are repeated in this bulletin to emphasize the importance of regular inspection and adjustment.

Three adjustments are provided to compensate for wear in mechanism and should be made in sequence shown below. A typical worm and sector type steering gear is shown on sketch.

Sector Shaft Thrust Adjustment

1. Disconnect drag link from steering arm.
2. Loosen lock-nut (1) and turn thrust screw (2) clockwise just enough to take up all perceptible end-play without causing sector to bind. Hold thrust screw in this position and tighten lock-nut securely. This method of adjustment provides .002" to .003" clearance to insure proper lubrication of thrust faces and prevent scoring. This can be determined by a side pull back and forth at top of pitman arm.

Worm Bearing Adjustment

1. With drag link still disconnected from steering arm, loosen steering column at instrument panel and disconnect horn wire. (This is important)
2. Loosen housing clamp bolt (3) one-half turn.
3. Turn adjusting nut (4) clockwise as far as possible without stiffening action of hand wheel. Do not back off adjusting nut as it must be in positive contact with bearing cup after adjustment is completed. If adjusting nut is turned too far so that bearings bind, it should be backed off one-half turn. Then turn hand wheel several times from one extreme to the other, to free bearings. Adjusting nut should then be turned clockwise to secure proper adjustment.

4. Tighten housing clamp bolt securely.
5. Tighten steering column at instrument board and connect horn wire.

Backlash Adjustment

1. Locate front wheels in exactly straight-ahead position. (This is very important). Turn steering wheel to right and left, counting number of turns in both directions. Turn wheel back one-half number of total turns, mark wheel at this point with a piece of tape.
2. Disconnect drag link from steering arm.
3. Move arm back and forth to determine amount of backlash.
4. Loosen four mounting bolts (5) one-half turn only.
5. Loosen four nuts (6) one-quarter turn only.
6. Loosen nut (7) one-half turn only.
7. With one wrench on eccentric bolt (8) and another on eccentric sleeve (9), turn bolt (8) clockwise and sleeve (9) in opposite direction in gradual stages. Note result by shaking steering gear arm after each stage. Use care at last stage by turning eccentrics just enough to remove backlash and no farther. Gear will be damaged if eccentric is moved too far. In most cases one-eighth turn is sufficient.
8. Tighten nuts (6 and 7) and bolts (5). Connect drag link to steering arm.

After completing the three adjustments, check backlash at hand wheel. In straight-ahead position, wheel should have no free movement, but it should not bind.

NOTE: Steering will be without backlash in straight-ahead position only. This design permits numerous adjustments without developing tight spots.

In addition to above three steering gear adjustments, the following inspection should be made:

1. Check the pivots at each end of drag link and make sure

these connections are snug with no binding. Examine for broken springs if looseness is found, or slack off slightly on the end plug if there is binding.

2. Check tie rod pivots in same manner.
3. Check for looseness in wheel bearings and the king pins.

GENERAL MOTORS TRUCK COMPANY

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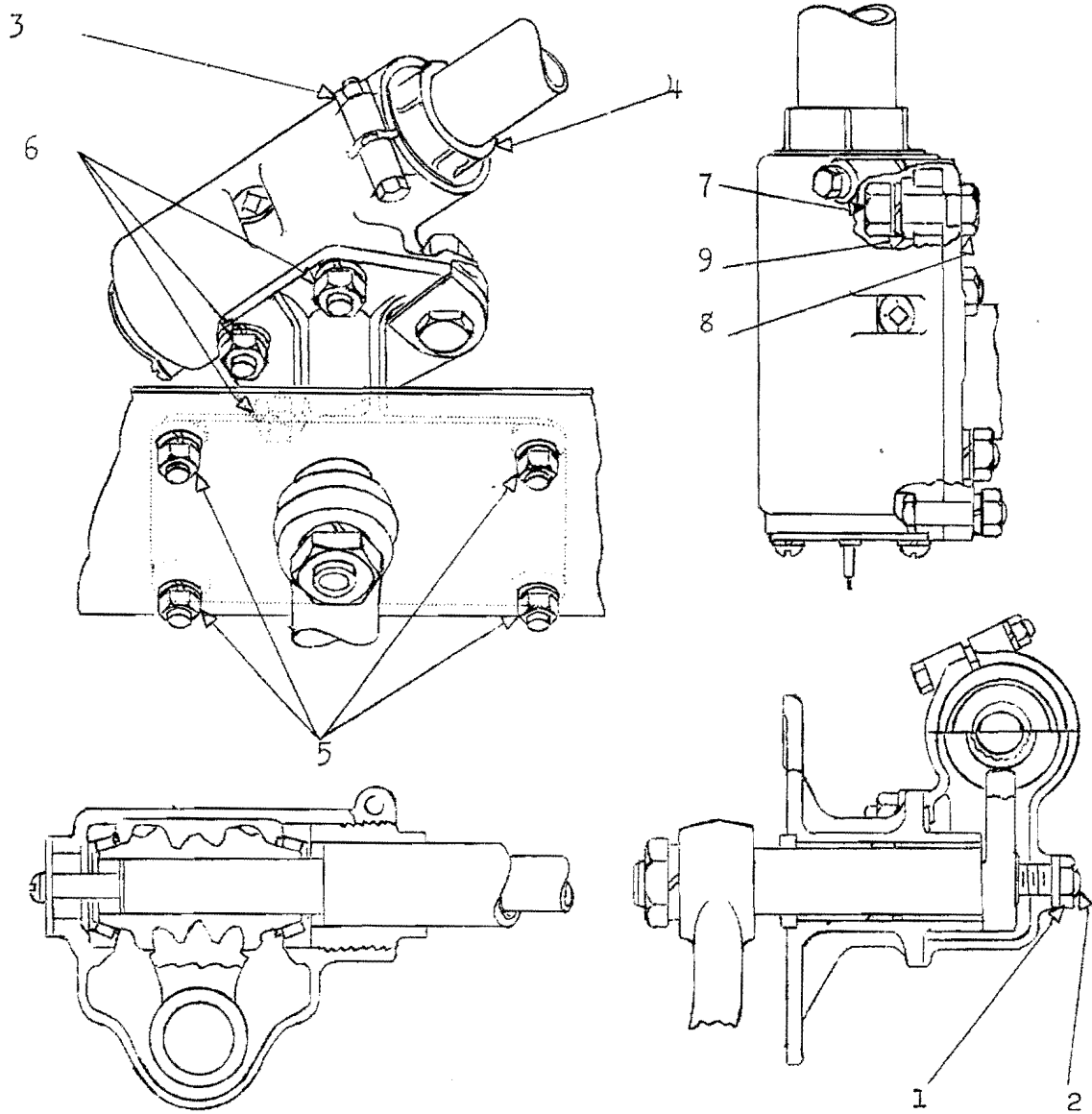


Fig. 1 - Typical Sectional View of Steering Gear Showing Mounting and Adjustments