

Maintenance and Repair of the Steering Mechanisms of the Car

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Annotation

The main malfunctions of the steering control, steering mechanism, steering. The main malfunctions of the steering wheel. Maintenance of the steering wheel. Current repair of steering department mechanisms.

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The steering control provides movement in the direction determined by the driver while driving the car.

The task. The steering mechanism serves to deliver the torque to the steering wheel with an increase in the torque applied to the steering wheel to allow easy turning of the driven wheels [1].

The steering department includes the following:

- steering mechanism;
- steering wheel.

The steering mechanism increases the number of easy turns and transmissions of the driven wheels. Today's modern cars use worm, screw and pinion steering mechanisms (Figures 1 and 2).

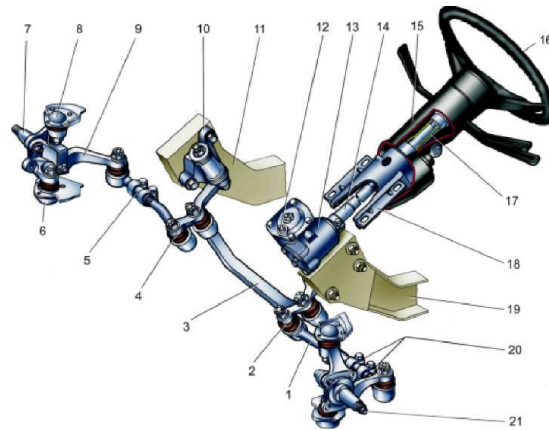


Figure 1. Structure of worm steering:

1,4-middle pull, 2-ball sleeve, 3-middle pull, 5,20-adjusting mechanism, 6-lower hinge, 7,9-row, 8-upper hinge, 10-pendulum, 11, 19-plunger, 12-oil filler cap, 13-worm mechanism, 14-sleeve, 15-steering column, 16-steering belt, 17-steering shaft, 18-case.



Figure 2. Rack and pinion steering structure:

1-steering wheel; 2-steering column; 3-cardan shaft; 4-steering wheel torque sensor; 5-steering wheel electric; 6-spoke steering mechanism; 7-steering wheel; 8-spherical hinged puller.

The steering system receives the increased force in the steering mechanism through the fork, transmits it to the shafts of the steered wheels and turns the steered wheels.

The main faults of the steering department. The steering mechanism queries, rolling, mechanism, and chonvyak pair, rail and gear shaft are key faulty.

In the alphanumeric steering wheelchair, in addition to the above-role, the pump container, in the system, the system of oil and the entry of the water, the entry of the filter, the filter's access, protection and transferring valves faulty Work is that the pumping outbreakation strap is not properly pulled [2-3].

Diagnostics of the steering wheel. Diagnostic blinds include the somersault of the steering wheel and the determination of the required force to twist it. A luftomer is used to determine the path or angle of the Salt walk (figure 3). This figure should be in the range of $7...12^\circ$, units for passenger cars, $10...15^\circ$, units for buses and trucks, and the power required for turning the steering wheel should be in the range of 40 to 60 N [4].



Figure 3. Determining the steering wheel luffi using the lupmer

Maintenance of the steering wheel. When maintenance of the steering control, the slits in the pulleys, sharnir and steering mechanism joints are lost. The displacement of the chervyak bearing on the steering mechanism by the axis is adjusted using gaskets. And the shift of the steering soshka on the axis is adjusted using a base bolt.

The fastening work on the steering wheel consists in checking whether the aggregate and mechanisms are hardened, and before doing this, it is checked whether the steering mechanism crankcase is fixed to the car frame, the turning fist of the steering wheel puller, the sash, the longitudinal and transverse steering wheel puller finger [5].

For steering mechanisms in the Chervyak-roller, screw-nut, Reika-gear sector structure, there are two types of adjustment, which is the displacement of the shaft screw bearing along the axis and the adjustment of the annular slot.

To adjust the longitudinal shift of the axis, the steering wheel is seen pulling forward along the axis. If a shift is felt, it is adjusted by reducing the number of densities (Figure 4, a).

The limiting Nut (3) is loosened and the notch is adjusted through the adjusting screw (1) using the auger to adjust chervyak's screw with the roller (Figure 4, b). This in turn ensures that the free walking path of the steering wheel is of normative value [7].

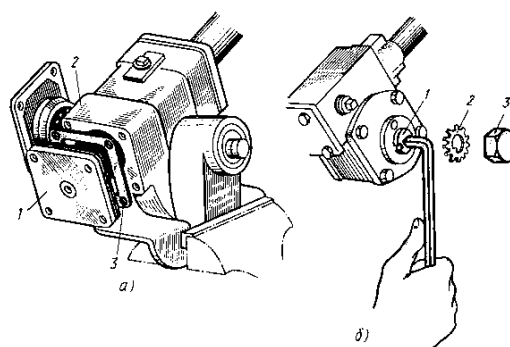


Figure 4. Steering mechanism slot adjustment form:

a) adjusting the longitudinal shift of the Axis: 1-the lower Cover; 2-the steering mechanism; 3-The adjusting gasket; b) adjusting the chervyak with the roller to the coupling slot: 1-The adjusting screw; 2-the puck; 3-the limiting nut

Railal mechanisms are adjusted between rail and screw teeth (Fig. 5). To do this, limit nuts (6) are vacated, and the settings are fastened. Then the freely rotation and prize of the roll shower is inspected.

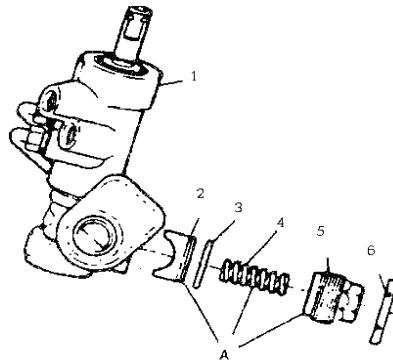


Figure 5. Form of sliding adjustment between rail and screw:

1-wheel querfire; 2-plunger; 3-Conditioning ring; 4-purely; 5th settings stick; 6-boundary nut

To determine the technical condition of the steering gear, the steering wheel is turned right and left to check the position of the ball finger of the puller. If the finger moves freely or a tingling sensation is felt in the joints, then in passenger cars, ball torques are replaced with a new one without adjustment. If the adjustment of the position of the ball finger is provided in trucks and buses, as well as in the structure of the pulley, the free movement of the ball finger is lost (rasted). To do this, the adjusting stopper splint is taken, then the stopper with a special torsion is turned to the end and the splint is pushed back until it is correct and the splint is inserted into place [6-7].

In the case of hydraulic steering, the oil level in the mechanism crankcase and the hydraulic actuator tank is checked and brought to the norm during the next maintenance. The HydroMassage tank, its filters as well as the crankcase are washed with gasoline and replaced with oil (in the year, at least once or in seasonal service). Oil is poured into the hydrocracker while the engine is running salt. The steering mechanism is poured with Tap-10 and Tap-15L oils or transmission oil intended for the gearbox. A turbine oil (brand 22) is poured into the hydraulic steering mechanism in the summer, and an AU-urchuq(veretyon) oil in the winter.

Modern cars currently in production are poured into the hydroconductor of the steering cocktail with transmission oils belonging to Dexron-Form II or the same class [8].

The current repair of steering mechanisms is carried out at the expense of replacing their details. The eaten areas of the details, such as the sochka vali necks, are restored by chroming, the rezba at the end of the shaft is driven out, the surface is welded, and a new rezba is opened. The eaten areas of the slot where the bearing on the steering mechanism crankcase will be installed are driven in and the steel ring is fixed by a press.

During the repair, Springs with reduced tension and broken, eaten insoles of spherical fingers, longitudinal and transverse traction fingers are replaced. The bent steering wheel pulls are straightened either cold or by heating to a temperature of 800° C [9].

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