

Steering Gear Checks After a Collision

General Equipment

Feeler gauge
Straight edge
Ford diagnostic equipment

Items to be observed when checking the steering system

The following list of steering gear conditions and the methods of testing should be taken into account when carrying out checks to the steering system:

- If the steering gear has no faults after completing the following checks, do not install a new steering gear.
- Surface corrosion and marks on the tie-rod are acceptable.
- When checking for turning effort torque peaks in the steering gear, turn the steering wheel from steering lock stop to steering lock stop in approximately 15 seconds.
- A steady increase of turning effort torque from steering center to steering lock stop is acceptable.
- Noises from the power steering, for example the power steering motor, are acceptable. If in doubt, compare the noise level to a known good vehicle of similar specification.

STEERING GEAR HOUSING

1. Connect the Ford diagnostic equipment to the vehicle and check for any EPAS DTC(s). If DTC U3000-49, U3000-53 or U3000-96 is present, install a new steering gear.
 REFER to: [Steering Gear - RWD](#) (211-02 Power Steering, Removal and Installation).
2. Raise and support the vehicle.
 REFER to: [Jacking and Lifting](#) (100-02 Jacking and Lifting, Description and Operation).
3. Visually inspect the steering gear housing (especially along the split lines), power steering motor, electrical connectors, rubber bushes, and wiring harness for cracks, cuts and damage. If the steering gear housing, power steering motor/electrical connector or bushes of the steering gear are cracked or damaged, install a new steering gear.
 REFER to: [Steering Gear - RWD](#) (211-02 Power Steering, Removal and Installation).
 If the vehicle-side wiring harness or electrical connectors are cut or damaged, install a new wiring harness.

STEERING GEAR BOOTS

1. Visually inspect the steering gear boot(s) for splits, damage and correct fitment. If the steering gear boot(s) is split, damaged or incorrectly fitted, install a new steering gear boot(s) as necessary.
 REFER to: [Steering Gear Boot](#) (211-02 Power Steering, Removal and Installation).

TIE RODS AND TIE-ROD ENDS

1. Using a straight edge and feeler gauge, check the tie-rods to see if they are straight. If the distance between the tie-rod and straight edge is greater than 0.5 mm, install a new steering gear.
 REFER to: [Steering Gear - RWD](#) (211-02 Power Steering, Removal and Installation).
2. Check the tightening torque of the tie-rod end to wheel knuckle nut.
 REFER to: [Tie Rod End](#) (211-02 Power Steering, Removal and Installation).
3. Check the tightening torque of the tie-rod end locking nut.
 REFER to: [Tie Rod End](#) (211-02 Power Steering, Removal and Installation).

CHECK FOR TURNING EFFORT TORQUE PEAKS IN THE STEERING GEAR

1. Lower and support the vehicle making sure that the road wheels are just clear of the floor.
2. With the ignition switch in position I (engine off), slowly turn the steering wheel from steering lock stop to steering lock stop.
3. Only continue to the step 4, if a turning effort torque peak or judder is felt while turning the steering wheel.
4. Detach the tie-rods from the wheel knuckles.
5. Slowly turn the steering wheel from steering lock stop to steering lock stop.

- If no torque peak or judder can be felt now, investigate the front suspension for damage.
- If a turning effort torque peak or judder is felt while turning the steering wheel, install a new steering gear.
REFER to: [Steering Gear - RWD](#) (211-02 Power Steering, Removal and Installation).

6. Lower the vehicle and drive it onto a four-post hoist or inspection pit.
7. Run the engine at idle and slowly turn the steering wheel to the left-hand steering lock stop. Hold the steering wheel in this position for 5 seconds with a turning effort torque of 15 Nm at the steering wheel rim and check for steering gear movements and touch conditions to surrounding components.
8. Turn the steering wheel away from the left-hand steering lock stop for 30 seconds.
9. Run the engine at idle and slowly turn the steering wheel to the right-hand steering lock stop. Hold the steering wheel in this position for 5 seconds with a turning effort torque of 15 Nm at the steering wheel rim and check for steering gear movements and touch conditions to surrounding components.
10. Turn the steering wheel away from the right-hand steering lock stop.
11. Rectify any touch conditions found.
12. Install new steering gear retaining bolts and tighten to the correct torque if steering gear movement was found.
REFER to: [Steering Gear - RWD](#) (211-02 Power Steering, Removal and Installation).
13. Drive the vehicle on roads at different vehicle speeds while executing different steering manoeuvres. In an appropriate location, drive several figures of 8. Carry out a parking manoeuvre and steer to full lock during this manoeuvre. Check for torque peaks, judder noise and any warning messages in the message center.
14. If available, use Active Park Assist to carry out a parking manoeuvre.
15. If available, drive on straight roads with clearly visible side limitation bars at speeds above 60 km/h and check the Lane Departure Warning and Lane Keeping Aid for correct function.
16. Rectify any faults found.

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