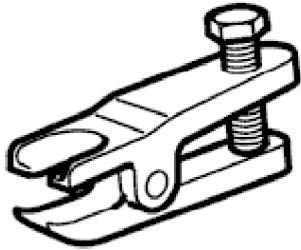


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Steering Gear 57.10.01

Special Service tools



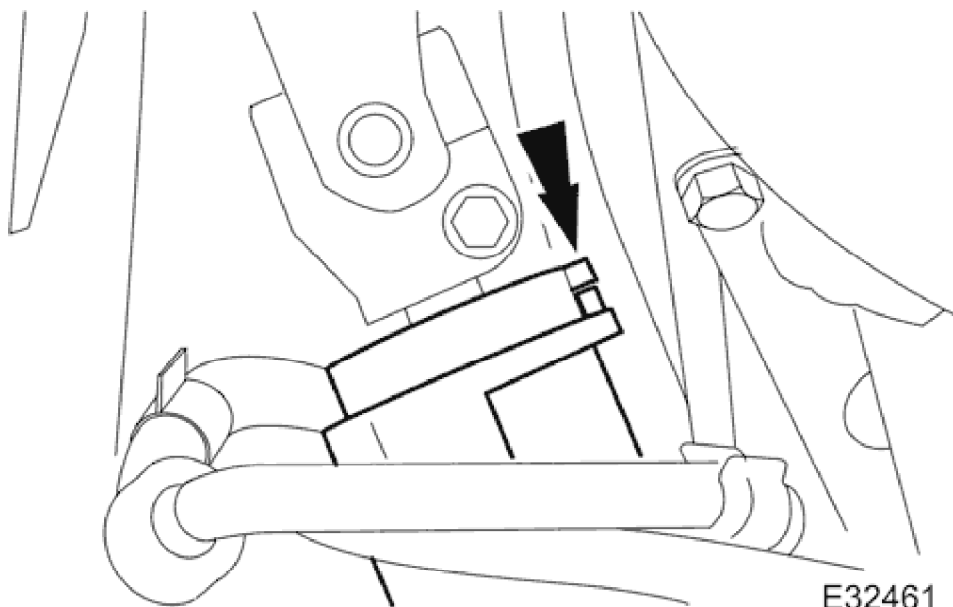
E36397

Taper Separator
211-098 (JD 100)

Removal

All vehicles

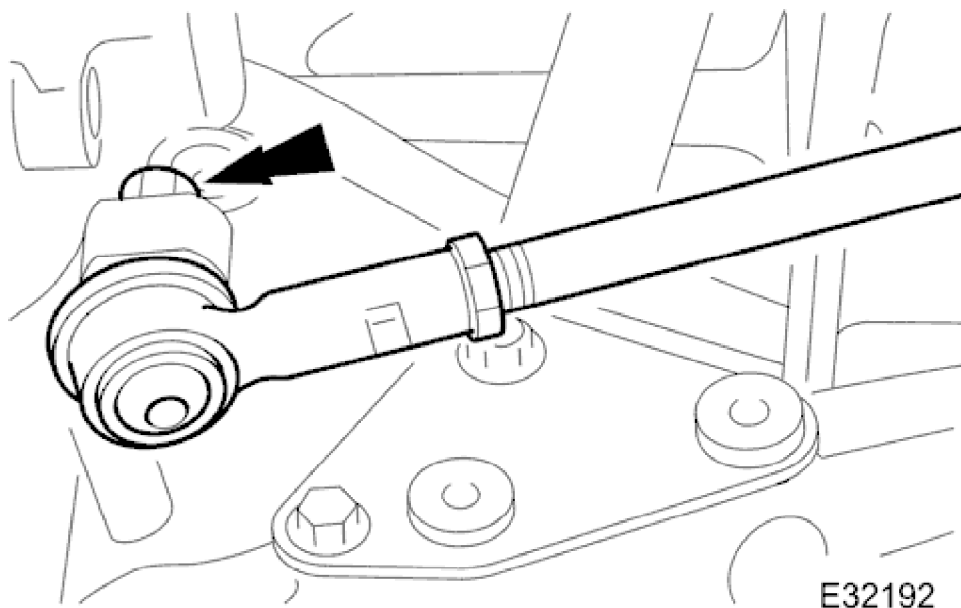
1. Centralize steering the wheel.
2. Raise and support the vehicle on a four-post ramp.
3. Place a suitable drain pan under the steering gear.



E32461

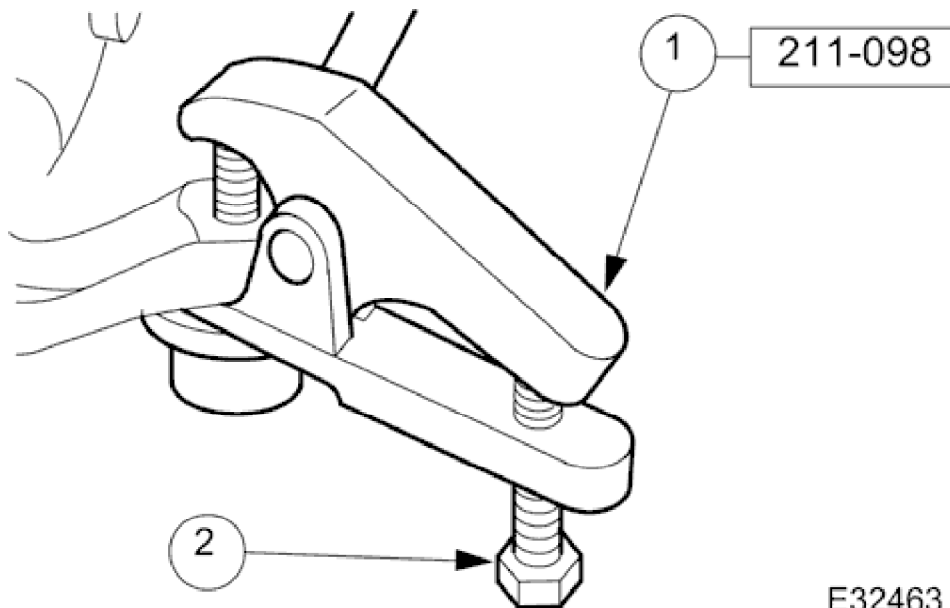
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4. From below the vehicle, check that steering gear is centralized by aligning the centralizing notch on the dirt protection cover with the location hole in the pinion housing casting.



5. **NOTE:**
Right-hand shown, left-hand similar.

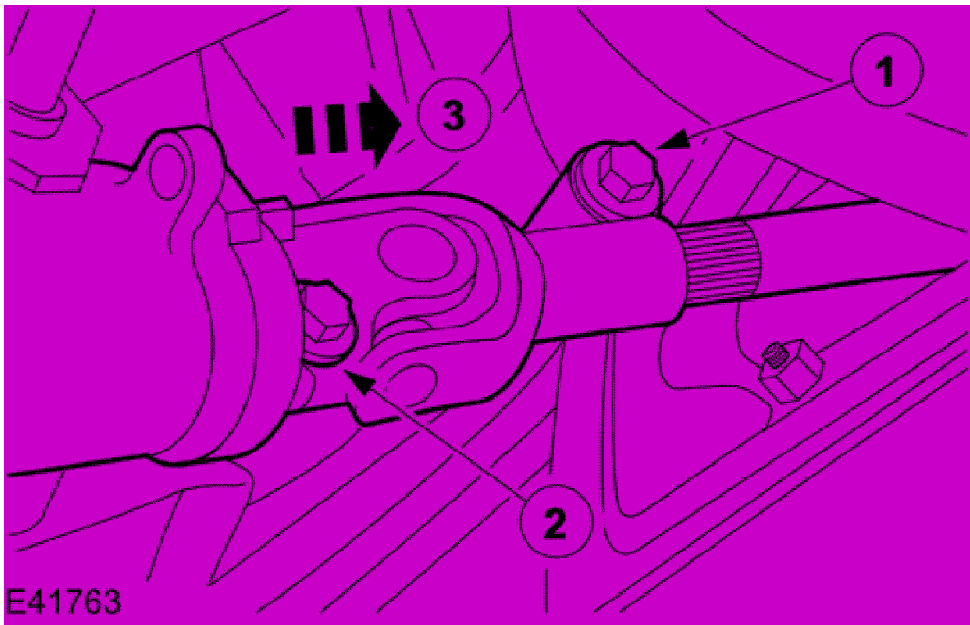
Remove and discard both tie rod end nuts.



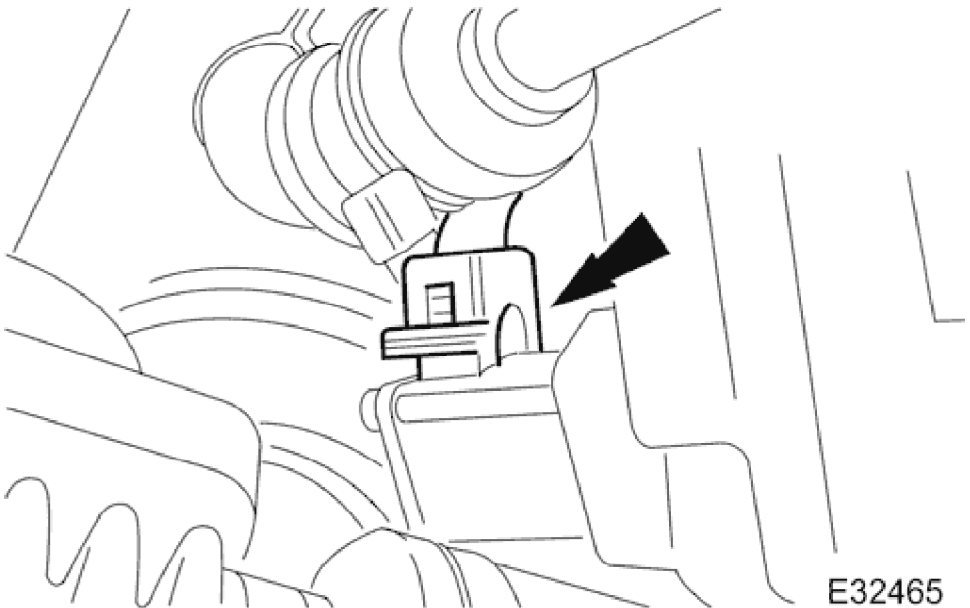
6. **NOTE:**
Right-hand shown, left-hand similar.

Detach both of the tie rod ends.

1. Fit the special tool to tie rod end.
 2. Tighten the tool bolt to release the taper.
- Remove the tool.



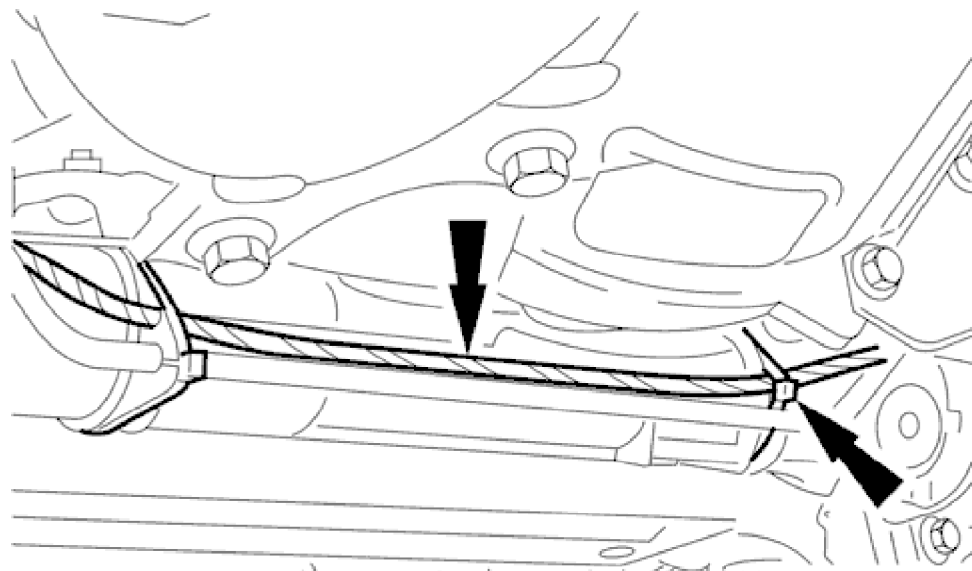
- 7. Detach the steering column lower shaft.
 - 1. Loosen the steering column lower shaft retaining bolt.
 - 2. Remove and discard the steering column lower shaft retaining bolt.
 - 3. Detach the steering column lower shaft.



- 8. Disconnect the steering gear transducer electrical connector.

Right-hand drive vehicles

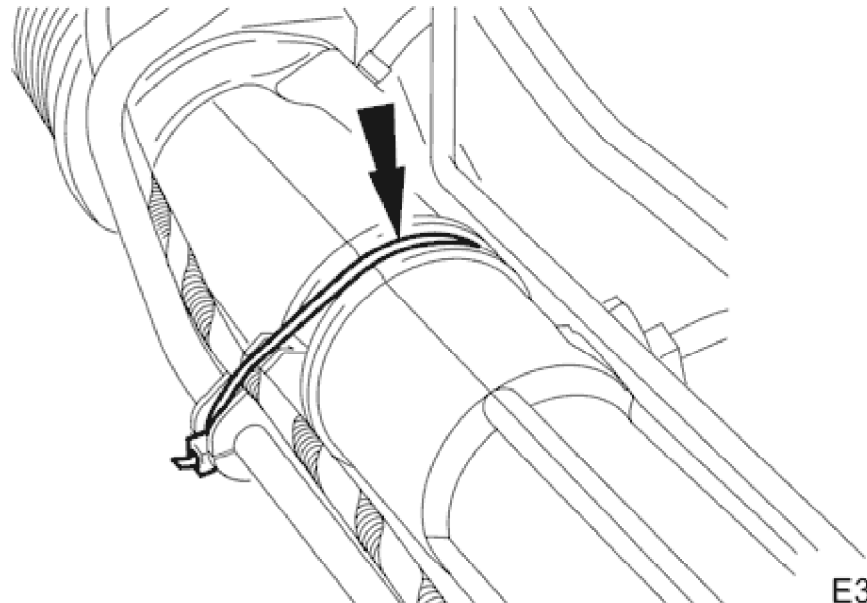
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E35091

9. Cut and discard the steering gear transducer harness tie-strap.

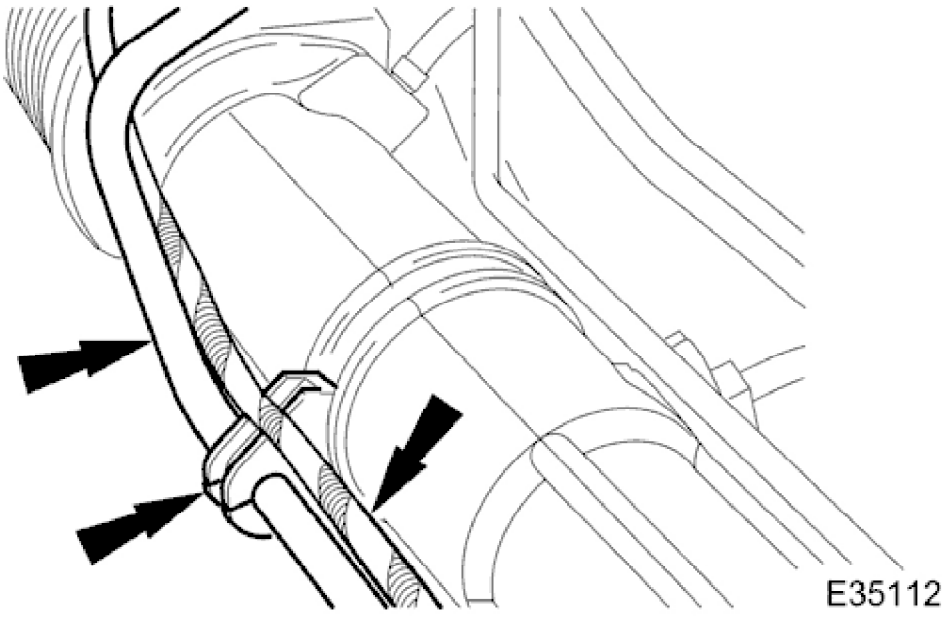
All vehicles



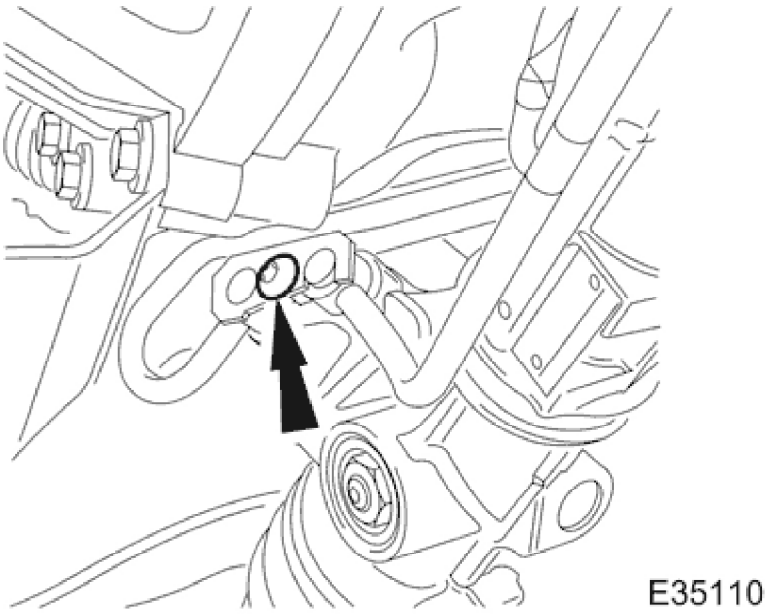
E35113

10. Cut and discard the power steering return pipe tie-strap.

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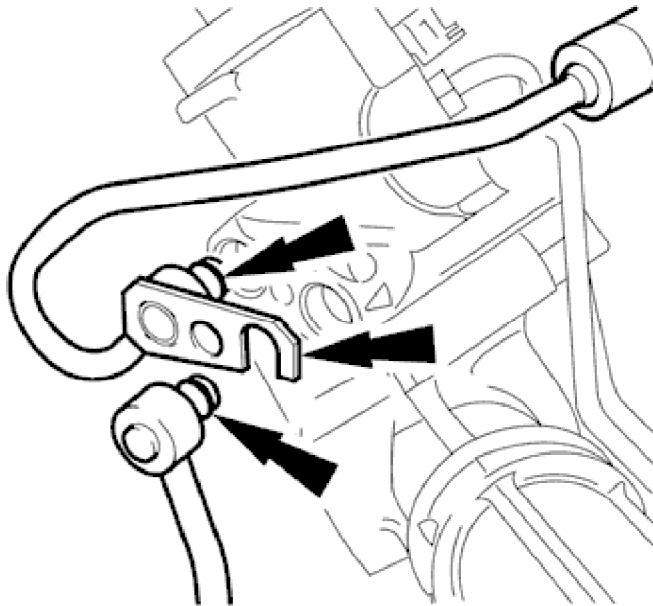


- 11. Detach the power steering return pipe from the mounting rubber.
 - Route the steering gear transducer harness from behind the power steering return pipe (right-hand drive vehicles only).



- 12. Remove the power steering supply and return pipe retaining plate bolt and withdraw the plate.

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E35111

13. Drain the power steering fluid.

- Disconnect the power steering supply and return pipes and allow the fluid to drain.
- Remove and discard the O-ring seals from the pipe connectors.
- Fit suitable blanking caps to the pipe connectors and pinion housing ports.

14. Remove the drain pan and discard the fluid.

15. **NOTE:**

The steering gear mounting bushings are handed; they are marked accordingly and must be replaced as a pair.

Remove the steering gear mounting bracket bushings. <<**Steering Gear Bushing**>>

16. **NOTE:**

When removing the steering gear, manoeuvre the power steering return pipe past the pinion housing to steering gear pipes.

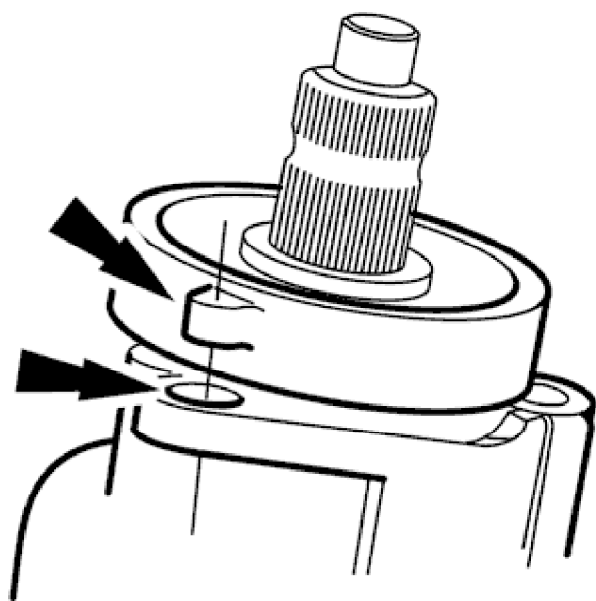
Remove the steering gear.

17. Using a tap (M10 x 1.5 mm), clean the steering gear to crossbeam bolt hole threads.

Installation

All vehicles

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E33832

1. If a new steering gear assembly is to be fitted, make sure steering gear is centralized before installation.

2. **NOTE:**

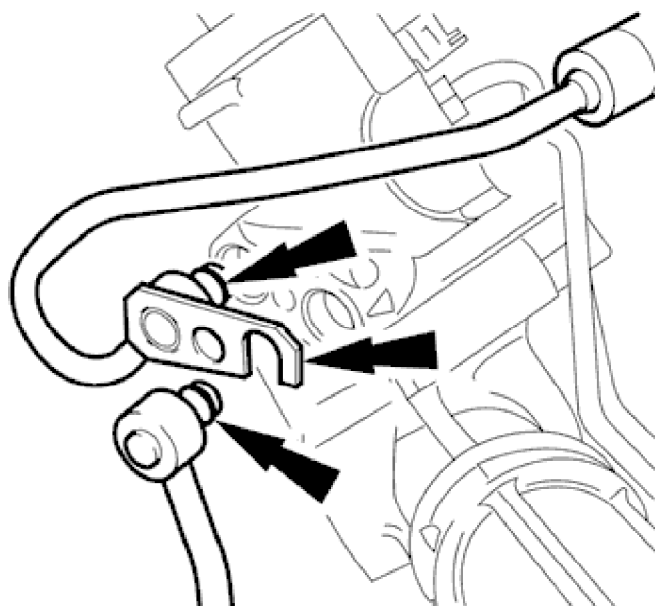
When installing the steering gear, manoeuvre the power steering return pipe past the pinion housing to steering gear pipes.

NOTE:

A new steering gear assembly is supplied with a dirt protection cover/centralizing cap fitted.

Position the steering gear to vehicle.

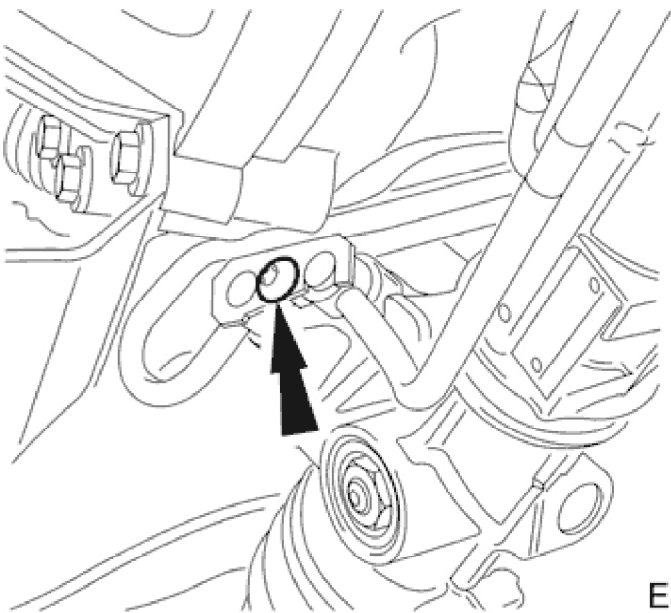
3. Install the steering gear mounting bracket bushings. <<**Steering Gear Bushing**>>



E35111

2002 XJ RANGE - Power Steering - 211-02

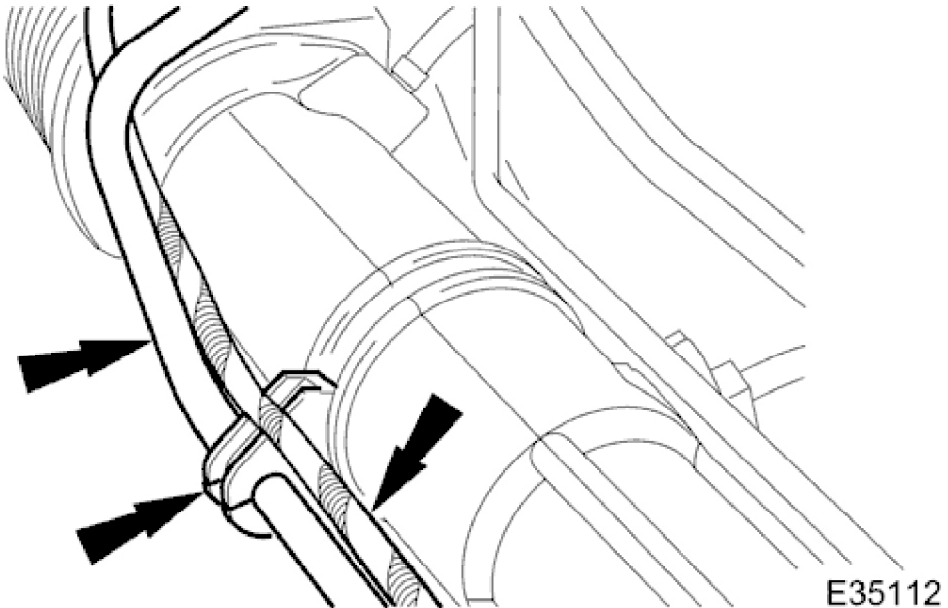
- 4. Connect the power steering supply and return pipes to the pinion housing.
 - Remove the blanking caps and install new O-rings in pipe connectors.
 - Lubricate the O-rings with clean power steering fluid.
 - Remove the blanking caps from the pinion housing ports.
 - Position the power steering supply and return pipes to the pinion ports and seat O-rings.



E35110

- 5. Attach the power steering supply and return pipes to the pinion housing.
 - Ensure the power steering supply and return pipes and the retaining plate are correctly seated.
 - Install the bolt.
 - Tighten to 9-12 Nm.

6. Clean any fluid spillage from the steering gear and surrounding area.

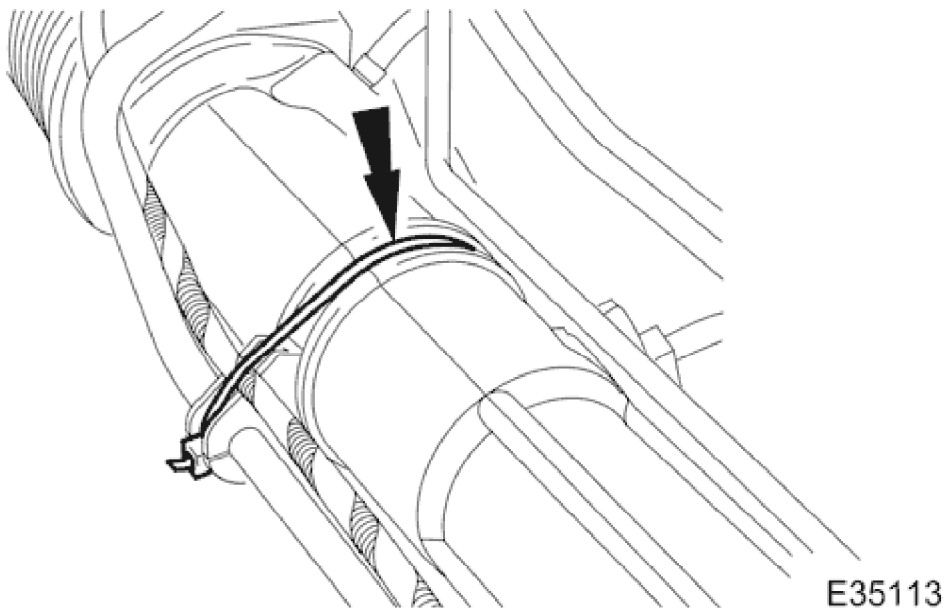


E35112

- 7. Attach the power steering return pipe to the steering gear.

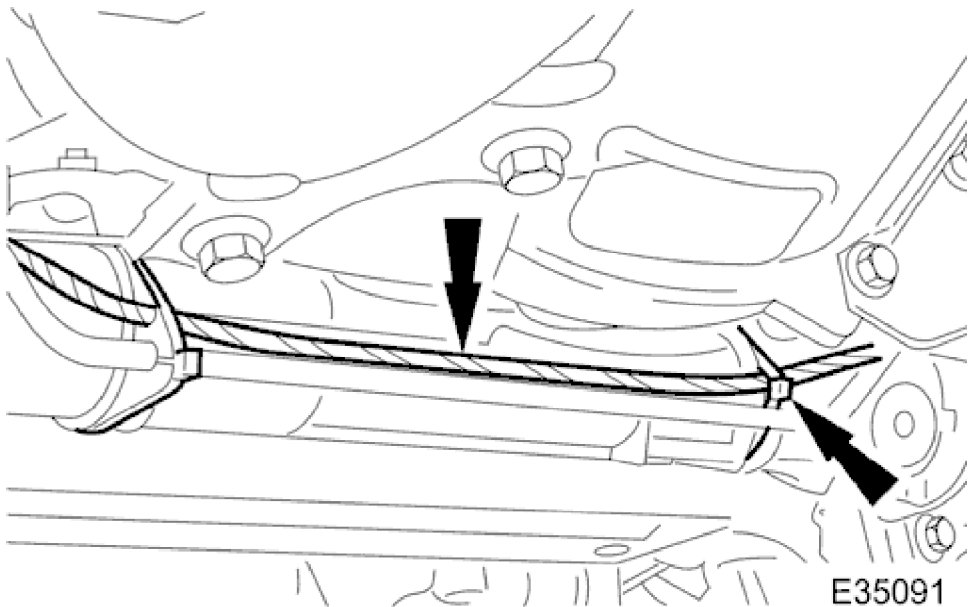
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- Attach the rubber support to the power steering return pipe.
- Route the steering gear transducer harness behind the power steering return pipe (right-hand drive vehicles only).



8. Install a new power steering return pipe tie-strap.

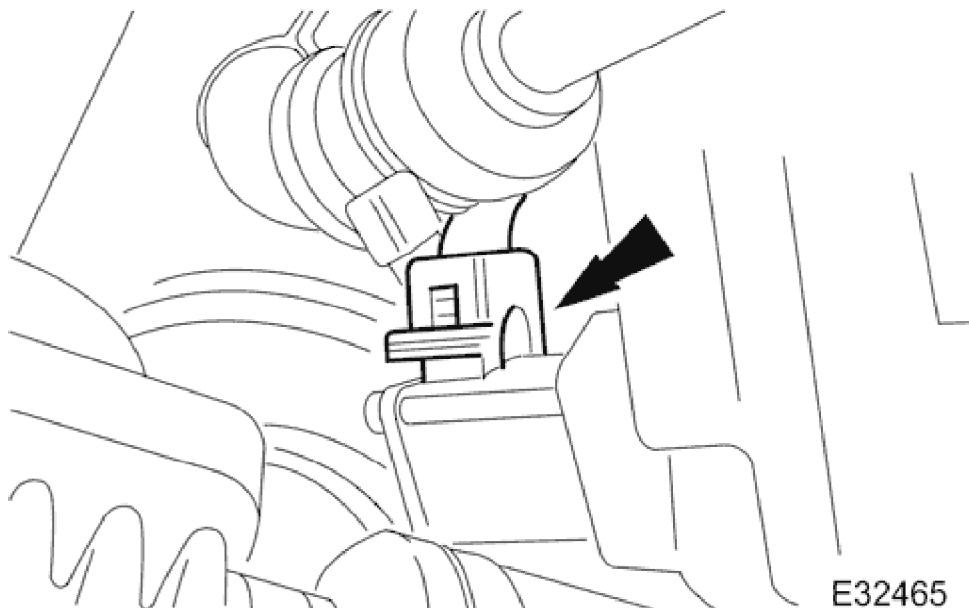
Right-hand drive vehicles



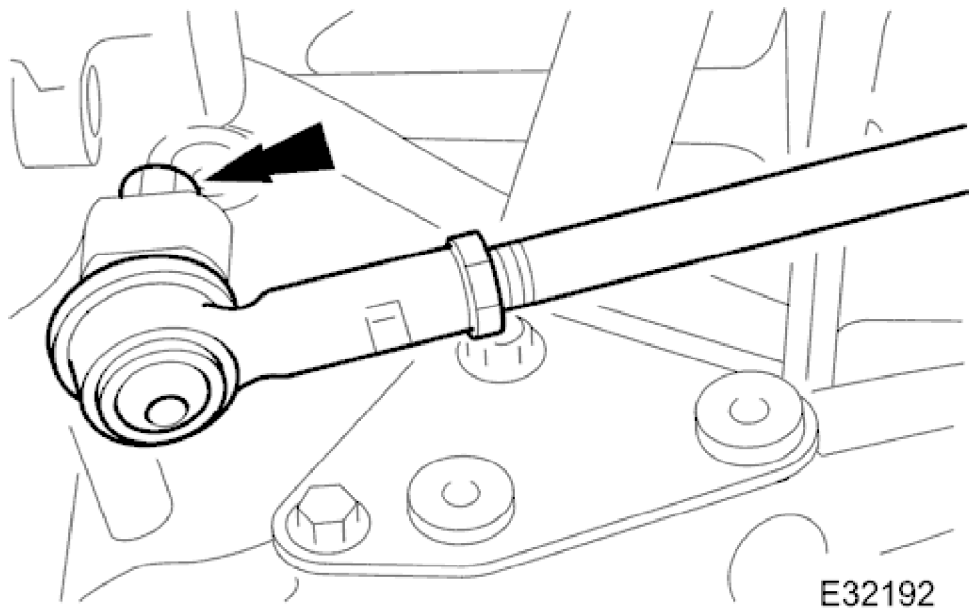
9. Install a new steering gear transducer harness tie-strap.

All vehicles

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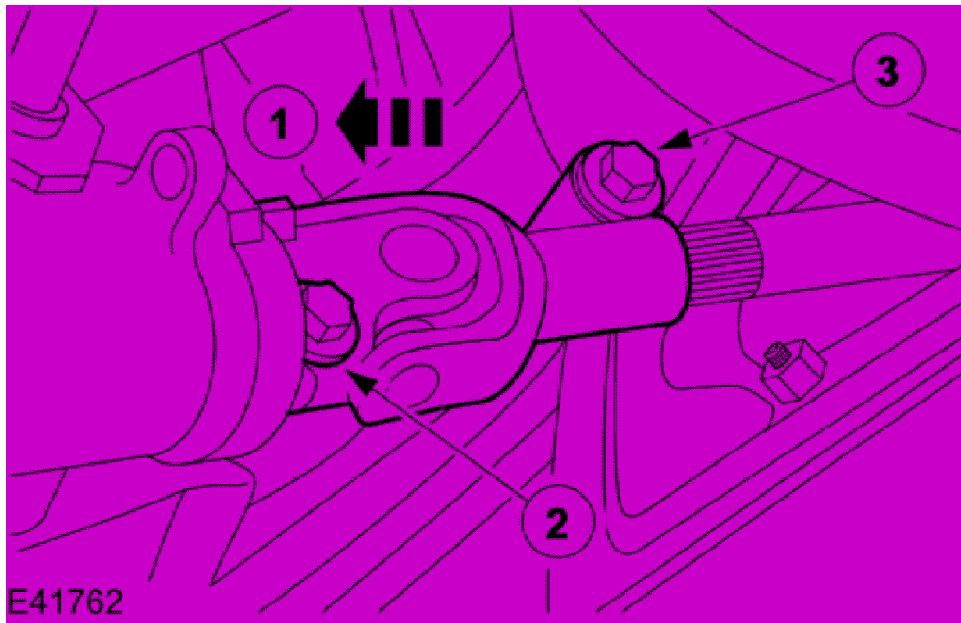


10. Connect the steering gear transducer electrical connector.
- On right-hand drive vehicles, position the steering gear transducer harness behind the power steering return pipe.



11. **NOTE:**
Right-hand shown, left-hand similar.
- Attach the tie rod end.
- Locate the tie rod end into the steering arm.
 - Install a new nut.
 - Tighten the nut to 22-28 Nm.

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12. NOTE:

Make sure the steering wheel and wheel and tire assemblies are in the straight ahead position before fitting the steering column lower shaft.

Attach the steering column lower shaft.

1. Attach the steering column lower shaft.
2. Install the steering column lower shaft retaining bolt.
 - Tighten to 28 - 34 Nm.
3. Tighten to 28 - 34 Nm.

13. Fit a new power steering fluid reservoir, refill with new power steering fluid and bleed air from the system. <<211-00>>[Power Steering System Filling and Bleeding]

14. Check and adjust the front toe. <<204-00>>[Front Toe Adjustment]