

SECTION 6E

STEERING COLUMN

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دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

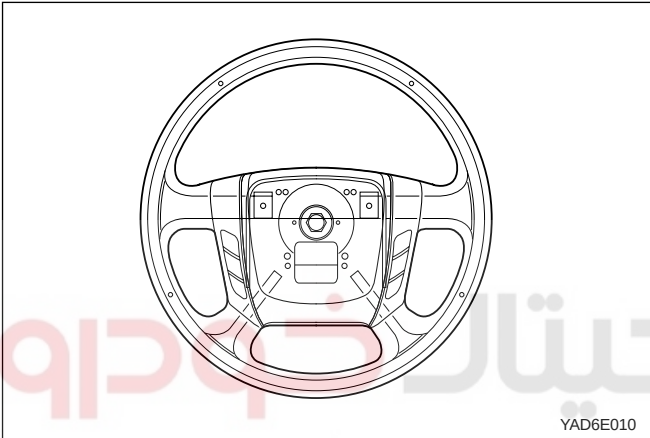
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



GENERAL DESCRIPTION AND OPERATION

The steering wheel and column have the function of steering. When collidings they soften the impact by the steering wheel and also are designed in order that the steering column shaft may be folded or absorb the impact. The ignition switch and lock cylinder is installed in steering column. If pulling the ignition switch in “LOCK” position and draw out the key, as the lock cylinder installed in column operates, you cannot steer the vehicle.

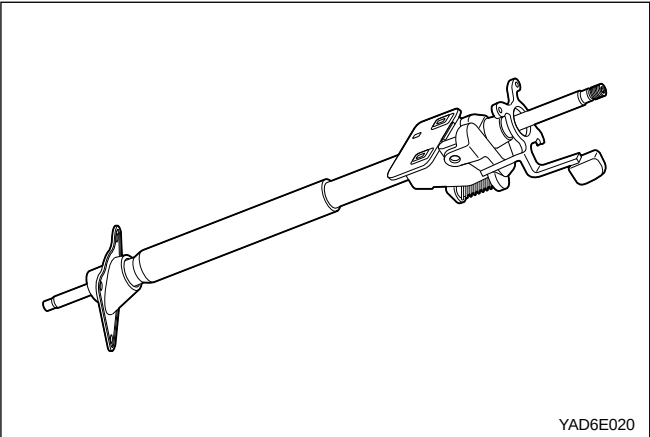
STEERING WHEEL



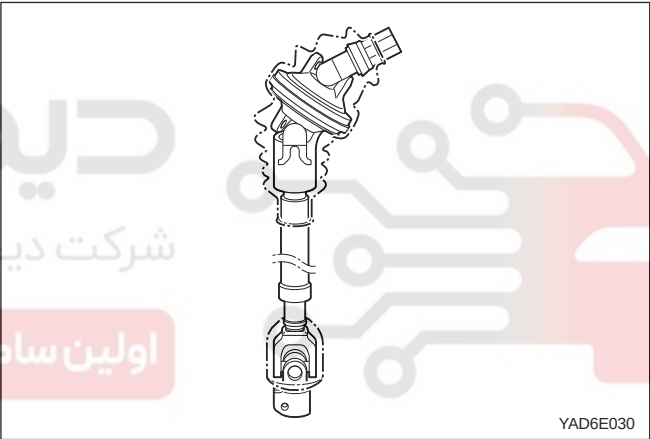
Type	4 Spoke Type
Outer Diameter	390 mm

The vibration absorbing damper is mounted in steering wheel in order that the vibration may be minimized.

COLUMN & SHAFT ASSEMBLY



LOWER SHAFT



Type	4 Spoke Type
Angle	390 mm

Because the lower shaft uses the constant velocity joint which the angular belocity change is not, torque fluctuation is very little.

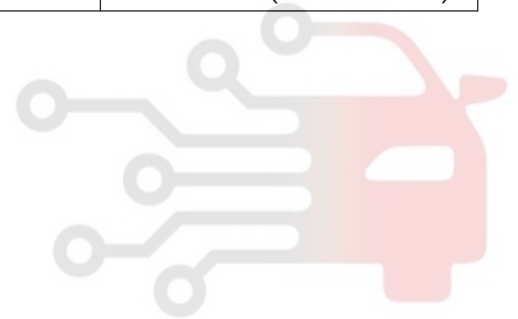
TIGHTENING TORQUE

Item		Torque
Steering Column Shaft	Steering Column Mounting Bolt (upper)	20 - 25 N•m (15 - 18 lb-ft)
	Steering Column Mounting Bolt (lower)	20 - 25 N•m (15 - 18 lb-ft)
	Steering Wheel and Steering Column shaft Lock Nut	40 - 60 N•m (30 - 44 lb-ft)
	Steering Column and Airbag Module Connection Bolt	7 - 11 N•m (62 - 97 lb-in)
	Steering Column and Lower Shaft Connection Bolt	25 - 30 N•m (18 - 22 lb-ft)
Power Steering Gear Box	Steering Gear Box and Gear Box Cross Member Mounting Bolt	70 - 90 N•m (52 - 66 lb-ft)
	Steering Gear Box and Lower Shaft Connection Bolt	25 - 30 N•m (18 - 22 lb-ft)
	Tie Rod End and Steering Lock Connection Nut	35 - 45 N•m (26 - 33 lb-ft)
	Tie Rod End Lock Nut	65 - 80 N•m (48 - 59 lb-ft)
	Steering Gear Box and Pressure Hose Connection Nut	15 - 20 N•m (11 - 15 lb-ft)
	Steering Gear Box and Return Line Connection Nut	15 - 20 N•m (11 - 15 lb-ft)
Power Steering Pump	Power Pump Bracket and Timing Gear Case Cover Mounting Bolt	20 - 23 N•m (15 - 17 lb-ft)
	Power Pump and Pressure Hose Connection Nut	40 - 50 N•m (30 - 37 lb-ft)
Power Steering Line	Return Line and Cilp Connection Bolt	9 - 14 N•m (80 - 124 lb-in)

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

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DIAGNOSTIC INFORMATION AND PROCEDURES

Phenomena	Checks	Action
Noise (When operating the steering wheel)	Loosened or Poor Tightening Steering Column Nut	Retightening
	Worn or Damaged Steering Shaft Bearing	Replace steering column
	Loosened or Poor Inter shaft Pinch Bolt	Retightening
Excessive Steering Force	Worn or Damaged Steering Shaft Bearing	Replace steering column
Poor Operating of Ignition Switch	Inner Defect of Lock Cylinder	Replace steering column
	Inner Defect of Ignition Switch	Replace ignition switch

دیجیتال خودرو

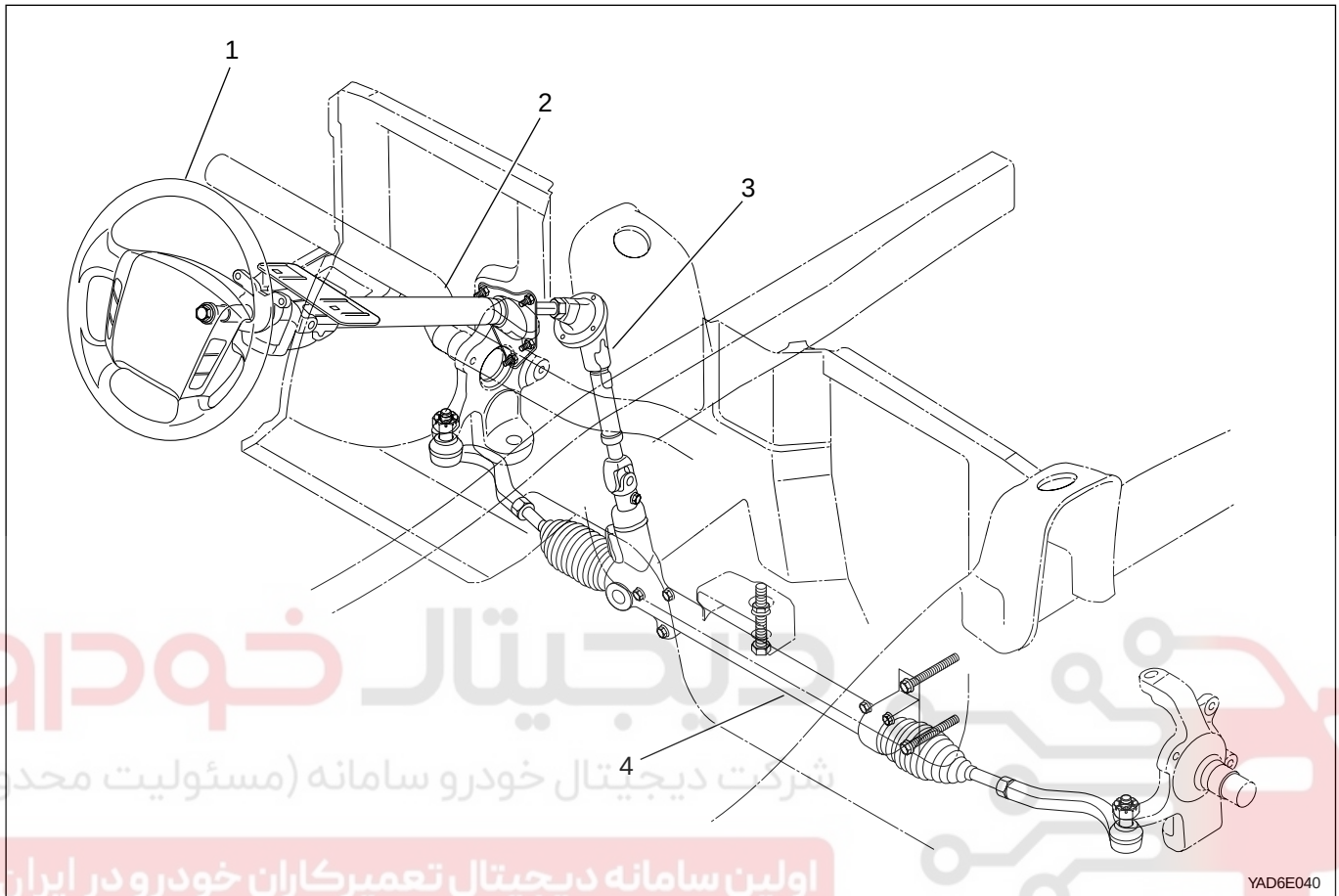
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



COMPONENT LOCATOR

STEERING COLUMN ASSEMBLY

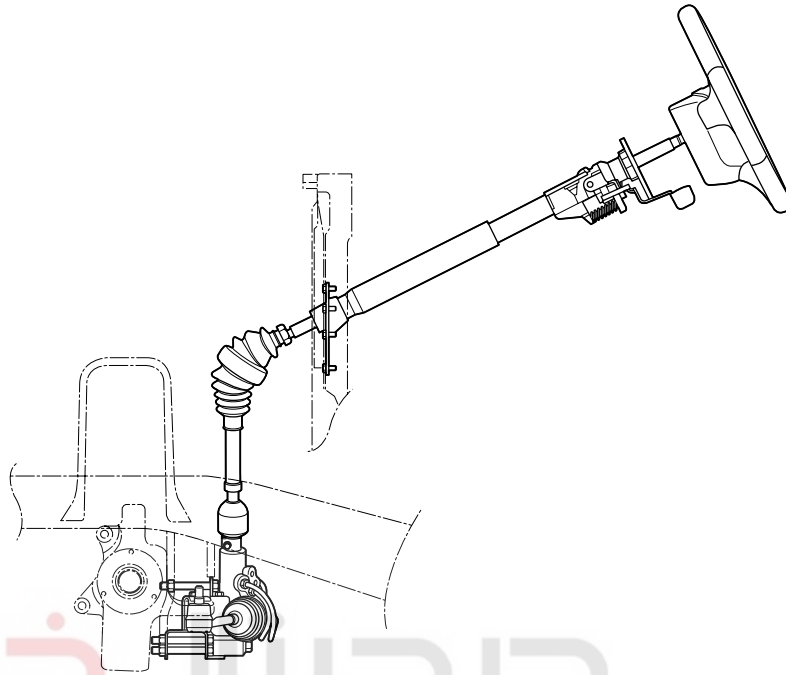


- 1 Steering Wheel
- 2 Column Shaft Assembly

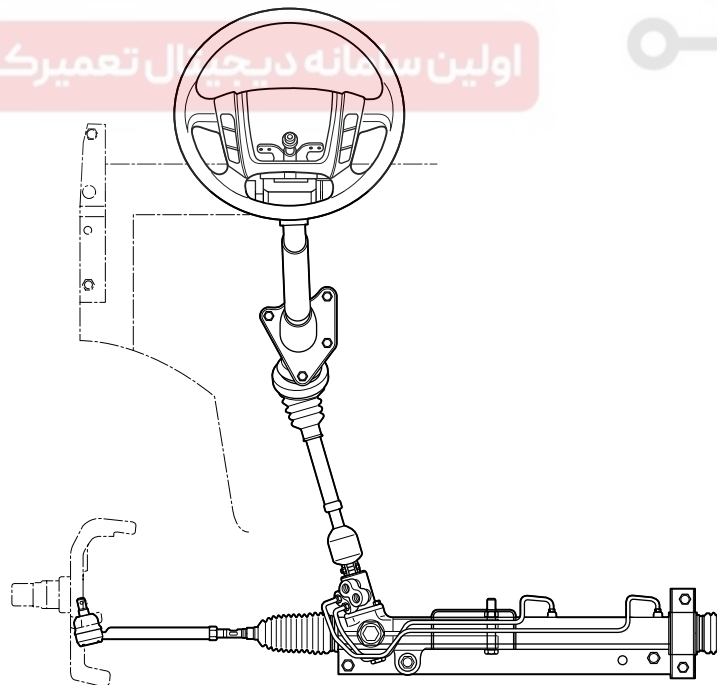
- 3 Lower Shaft Assembly
- 4 Steering Gear Assembly

STEERING ASSEMBLY CROSS SECTION

Side

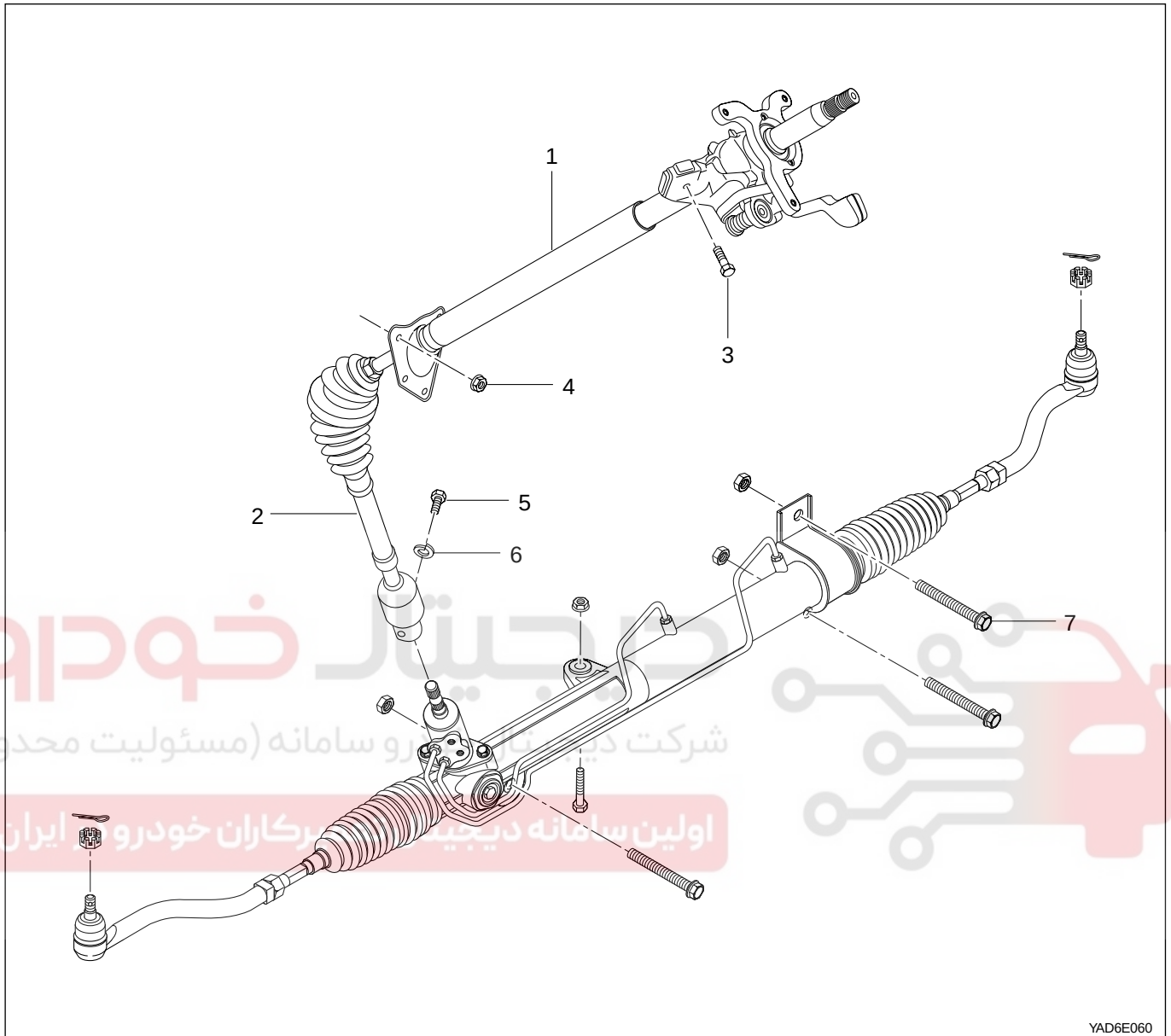


Rear



YAD6E050

STEERING COLUMN & WHEEL



YAD6E060

- 1 Steering Column shaft
- 2 Lower Shaft
- 3 Bolt
- 4 Nut

- 5 Bolt
- 6 Washer
- 7 Bolt

MAINTENANCE AND REPAIR

ON-VEHICLE SERVICE

STEERING COLUMN

Removal

1. Disconnect the negative terminal of battery and place the tires in front straight direction.
2. Untighten the fixing screw in the left/right of steering wheel and remove the horn pad (airbag module assembly) in the wheel.

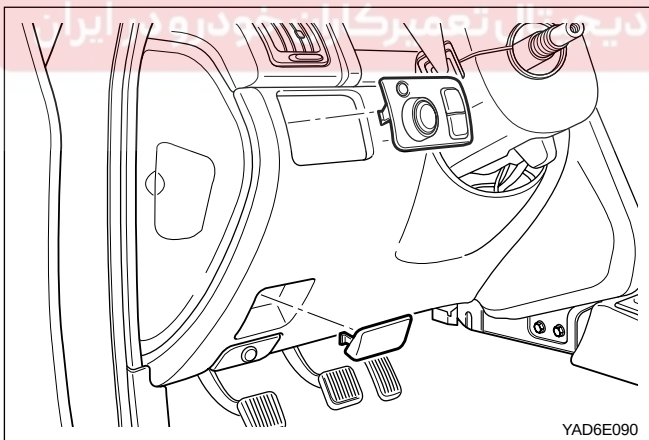
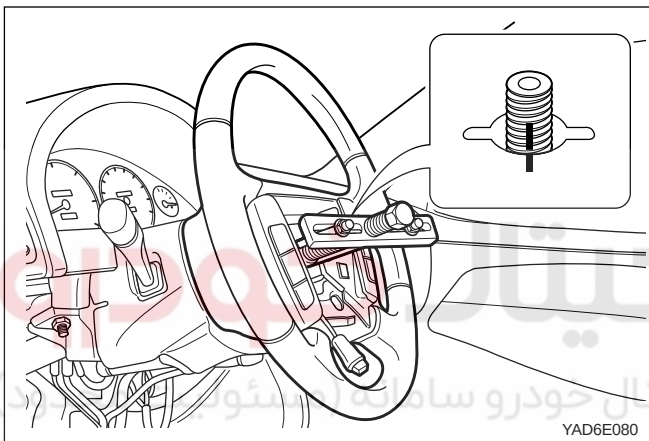
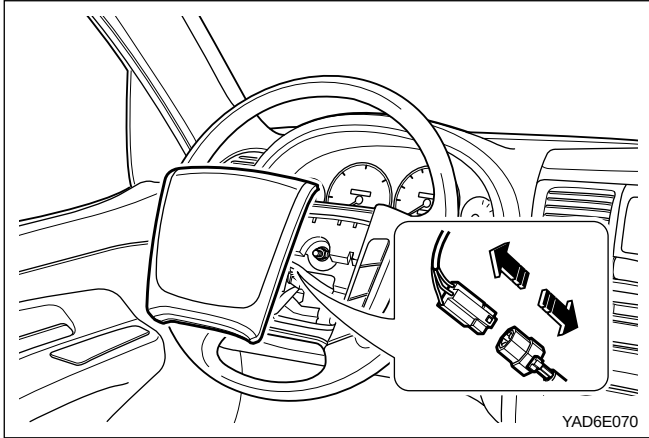
At this time, remove the airbag module connector simultaneously.

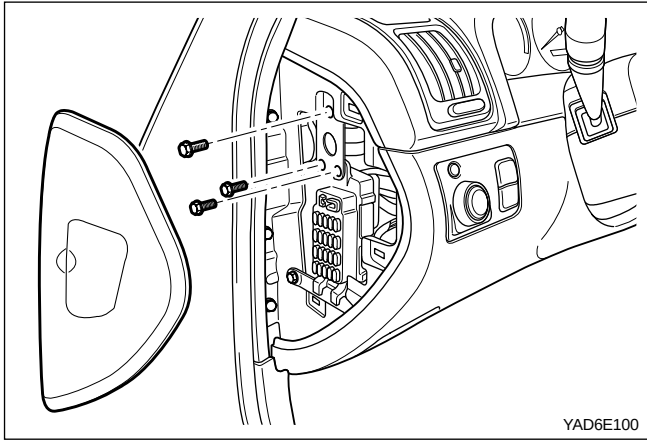
3. Untighten the wheel fixing nuts and remove the steering wheel using the special tool.

Notice:

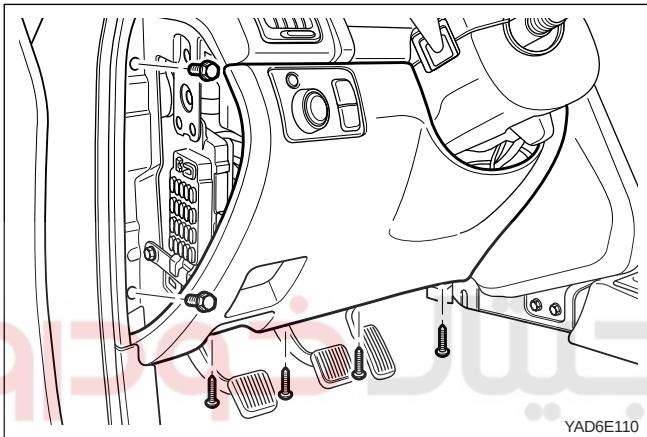
- When you remove the wheel, be sure to do alignment mark in column shaft and wheel.
- Remove the remote control switch connector (airbag connector, horn connector)

4. Remove the fuel filler door release cable, hood release cable, side mirror switch.

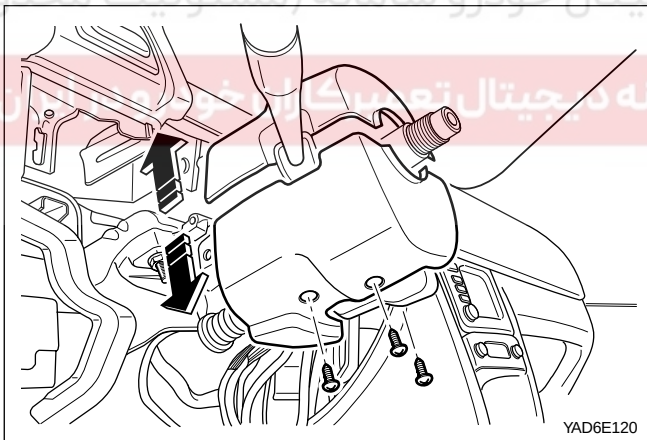




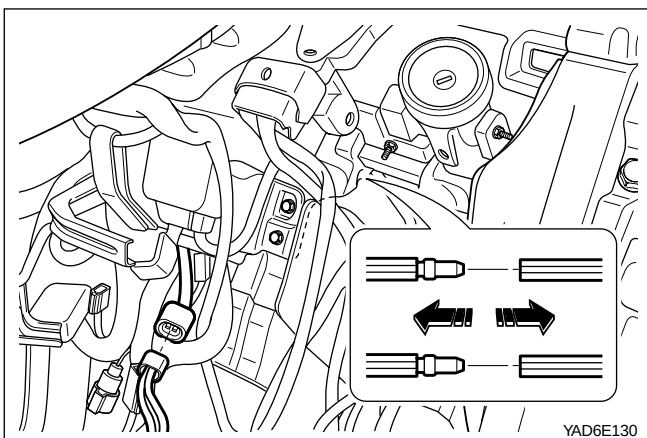
5. Remove the instrument panel side cover and untighten the fixing bolts of inner fuse box.



6. Untighten the side fixing bolts/screws of instrument panel and then remove the panel.

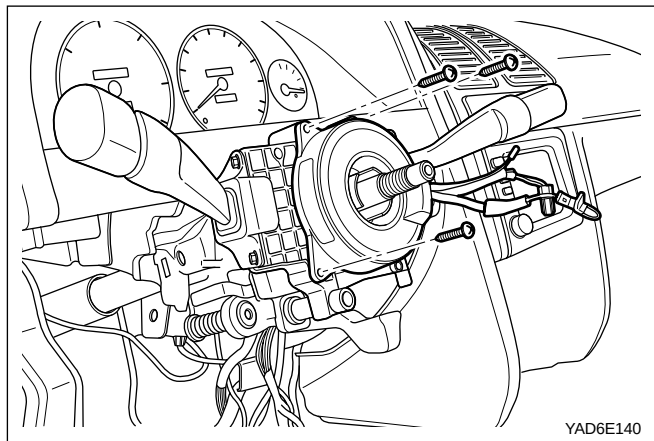


7. Ntighten the column fixing bolts from the steering column shaft and then remove the upper/lower column cover.

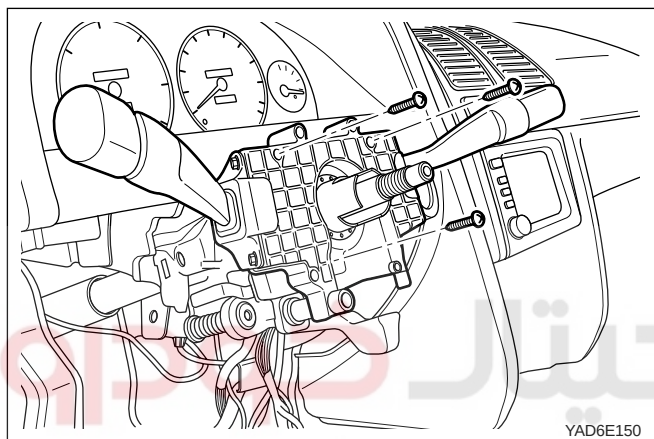


8. Disconnect the connector connected with the combination switch and the fuel cut vacuum hose.

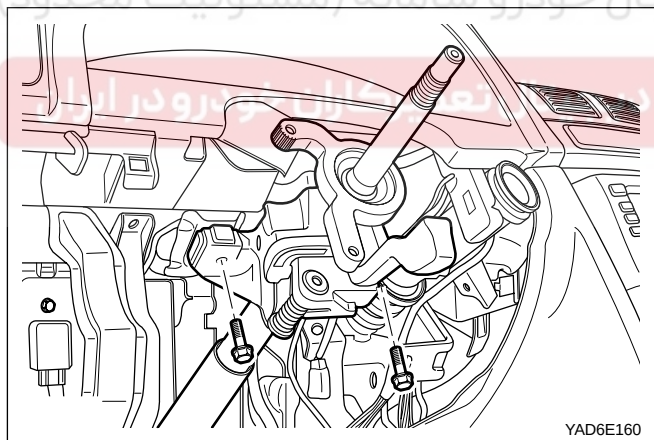
Notice: Be sure to check the fuel cut hose because the identification color is marked.



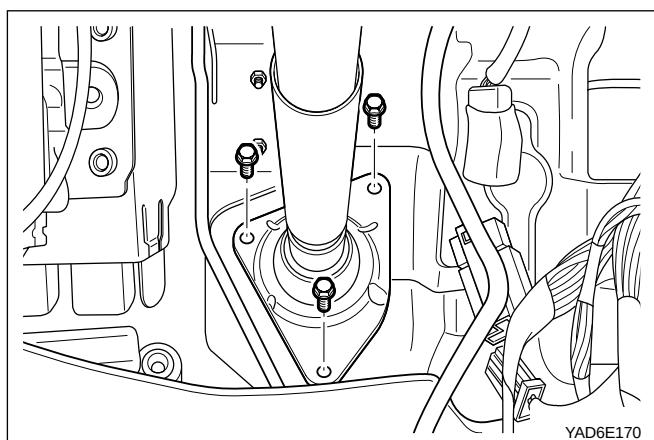
9. Remove the contact coil from the steering column shaft.



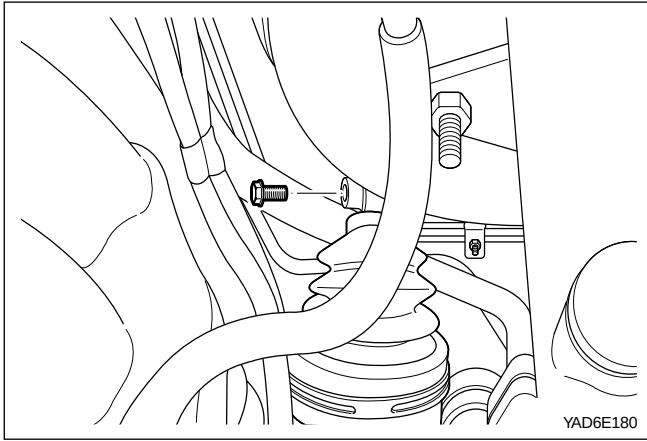
10. Remove the combination switch assembly from the column shaft which the airbag module is separated.



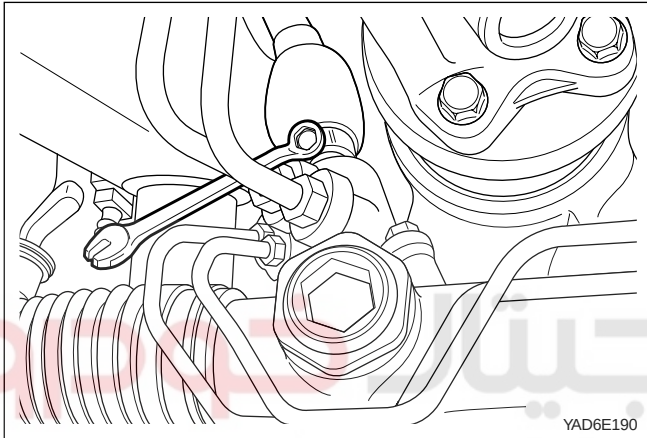
11. Mark the assembly marking on the column shaft and lower shaft and then untighten the upper fixing bolt of column shaft.



12. Untighten the housing floor fixing bolts of steering column shaft.



13. Untighten the upper fixing bolts (2EA) of steering column shaft and then remove the steering column assembly.

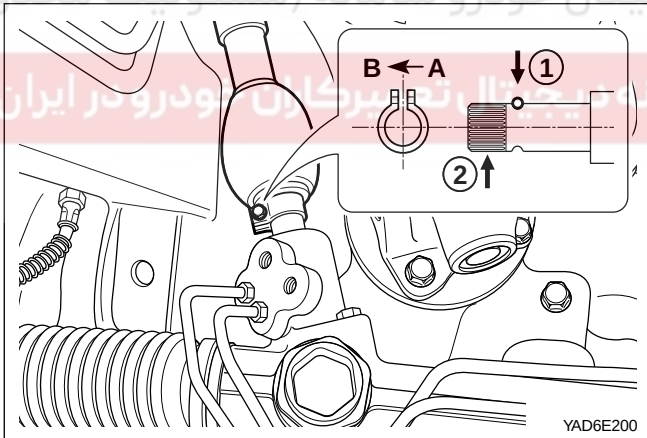


STEERING WHEEL & SHAFT

Removal

1. Remove the upper bolt of lower shaft.
2. Remove the bolt of lower shaft and steering gear box coupling and then remove the lower shaft

Notice: Mark the assembly marking.



Installation

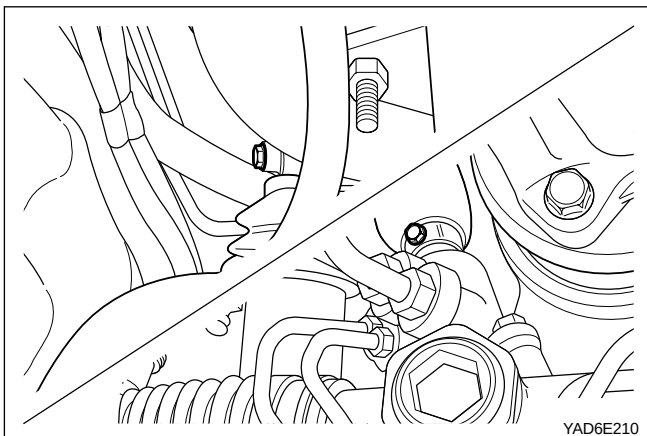
1. Insert the lower shaft into the gear box (spline part) and then tighten the bolts as specified torque.

Notice:

- Install the lower shaft to tighten the bolt in non-spline part of upper spline part
- Install to align the assembly marking

Installation Notice

Tightening Torque	30 - 40 N•m (22 - 30 lb-ft)
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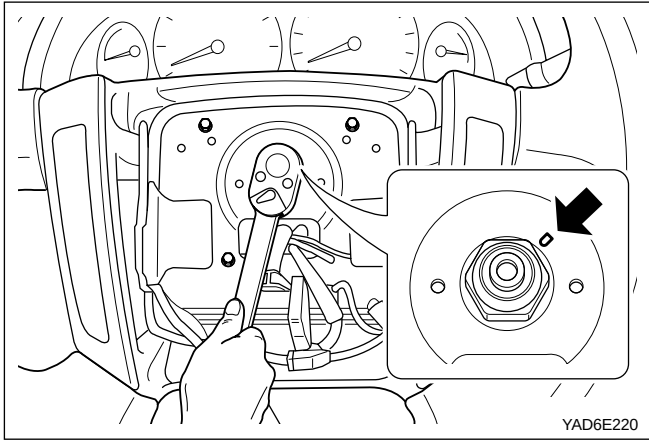
2. Install the steering column shaft in the lower shaft to align the assembly marking and then tighten the bolt.

Notice:

- Install the lower shaft to tighten the bolt in non-spline part of upper spline part
- Install to align the assembly marking

Installation Notice

Tightening Torque	30 - 40 N•m (22 - 30 lb-ft)
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3. Tighten the floor bolt of steering column as specified torque.

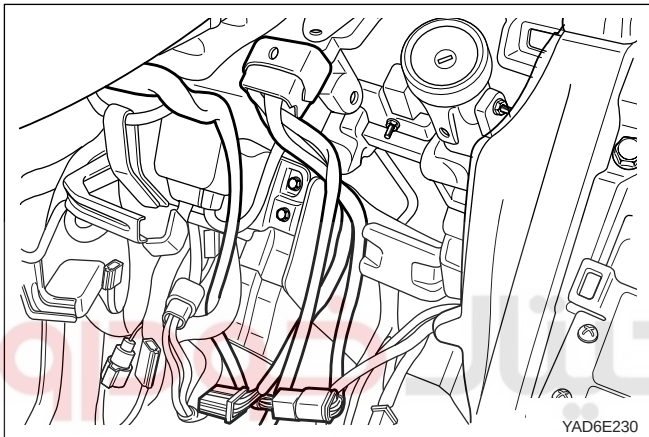
Installation Notice

Tightening Torque	20 - 25 N•m (15 - 18 lb-ft)
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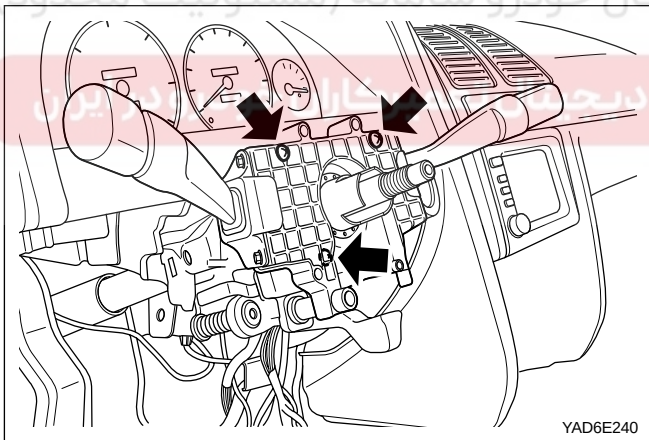
4. Tighten the upper bolt of steering column shaft as specified torque.

Installation Notice

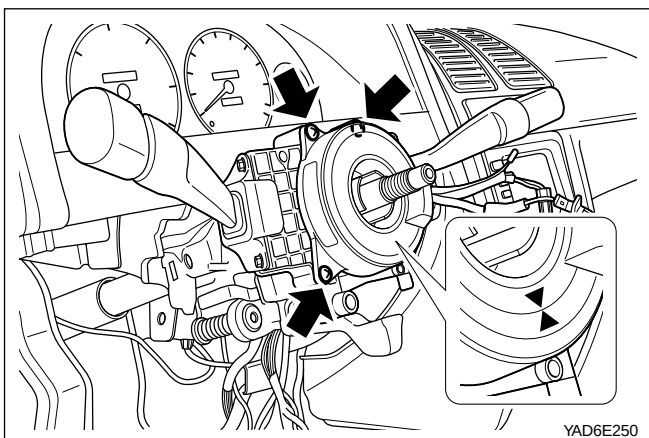
Tightening Torque	20 - 25 N•m (15 - 18 lb-ft)
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5. Connect each wiring connector of steering column.

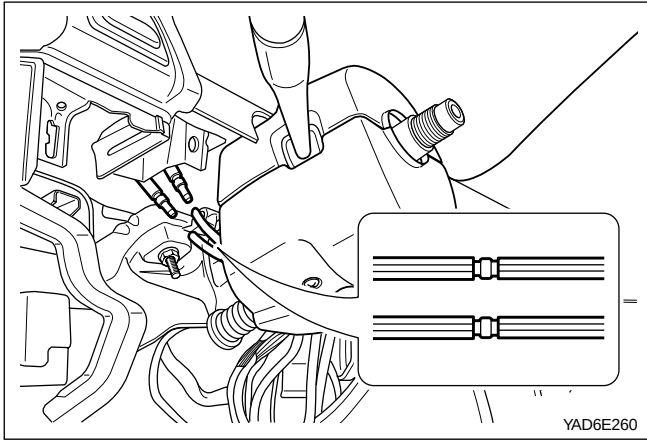


6. Install the combination switch assembly in steering column shaft.



7. Install the contact coil in steering column shaft which the combination switch is installed.

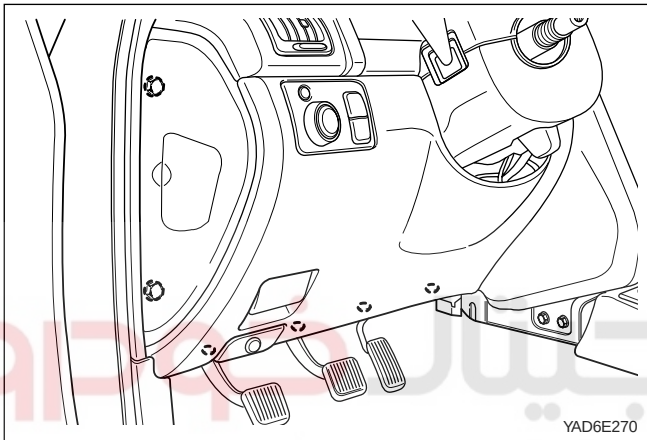
Notice: When you adjust the neutral position of contact coil, rotate the contact coil to C.W. direction until it stops and then again rotate it by 2.9 ± 0.2 to C.C.W. direction. Align the mark (►◄) Which is marked in contact coil.



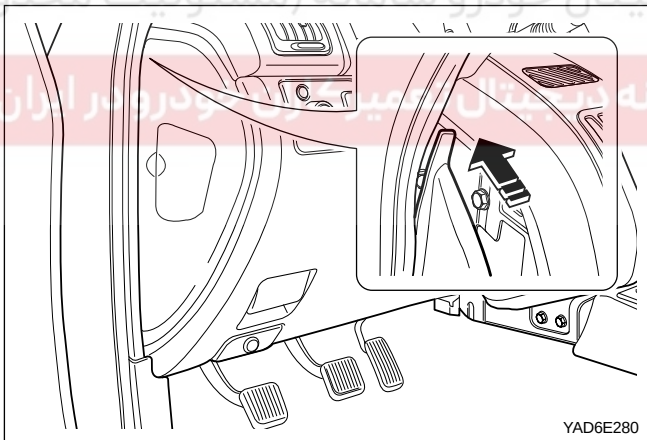
8. Connect the fuel cut vacuum hose with the connector.

Notice: The identification color is marked in fuel cut vacuum hose.

Classification	Color
Fuel Cut Vacuum Hose-Inlet	Green
Fuel Cut Vacuum Hose-Outlet	Blue

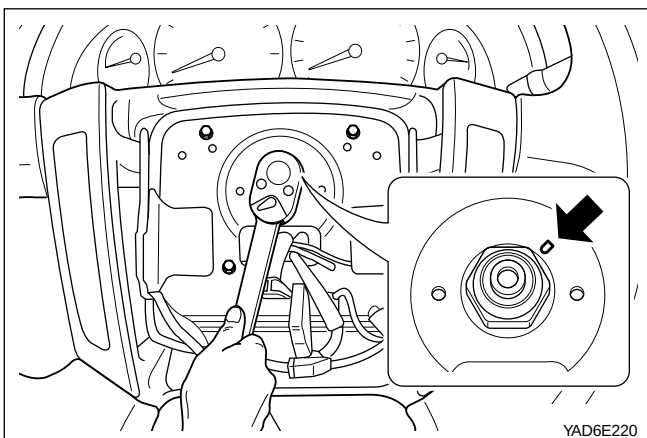


9. Install the steering column cover and instrument panel.



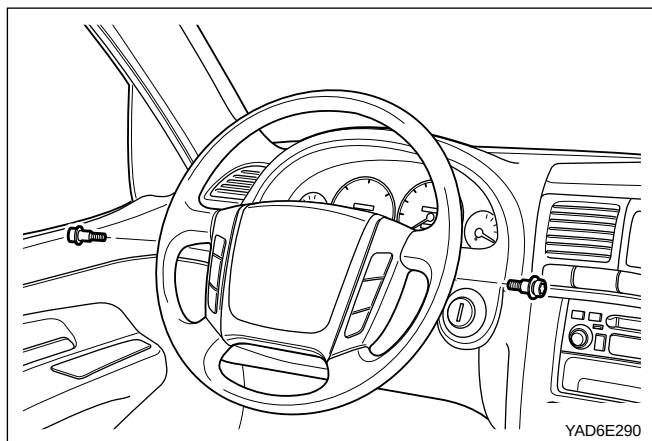
10. Install the fuse box in the panel, each cable and switch. Insert the panel side cover.

Notice: The panel side cover should be inserted to the inside of molding and then installed.



11. Install the steering wheel in order that it is aligned to the assembly mating of column shaft.

Notice: Apply the grease to the shaft spline part in order that the wheel is installed easily.



12. Before installing the horn pad in steering wheel, first install each connector and then install the horn pad.

Notice: When installing the pad, insert the safety pin to the wheel hold and align the shaf end part with the pad groove.

13. Tighten the left/right screw of steering wheel and connect the negative terminal of battery.

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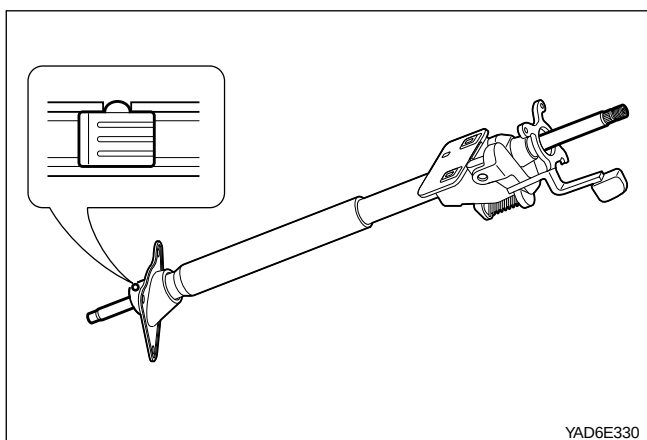
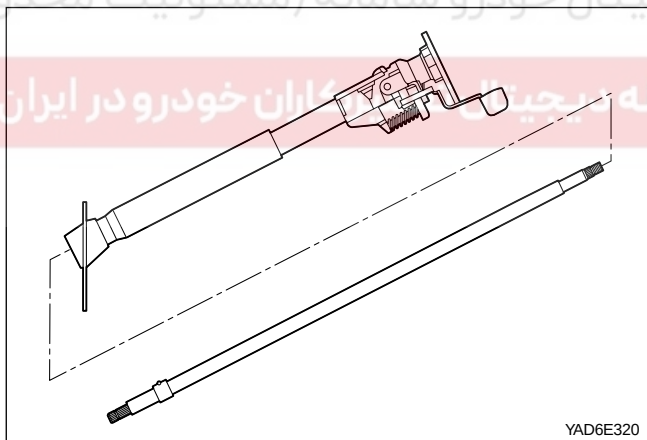
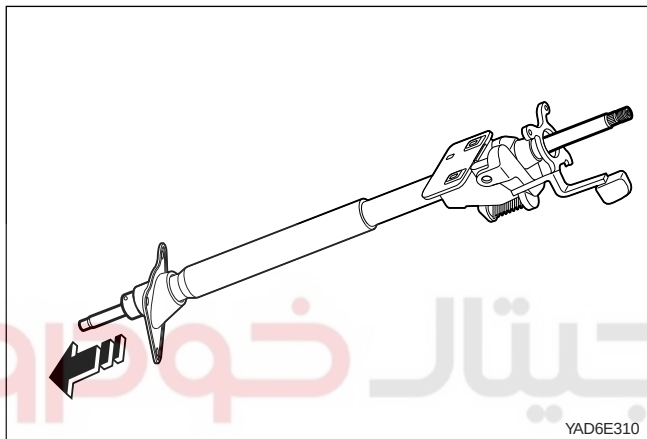
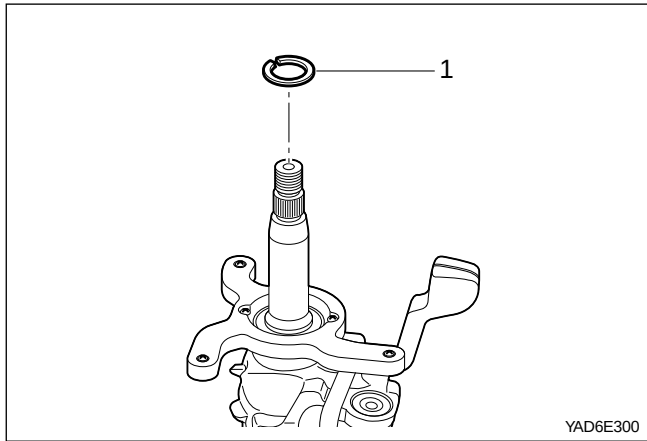
UNIT REPAIR

STEERING GEAR BOX

Disassembly

1. Remove the steering column assembly from the vehicle.

Notice: Be careful so that the steering column/steering column shaft is not gotten the impact. If being gotten the impact, in case of the frontal collision, the plastic sleeve may be broken.

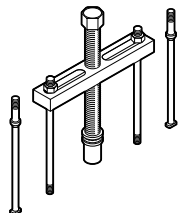


Assembly

1. Assemble in reverse order of disassembly.

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS TABLE

 YAD6E340	SteeringWheel Remover
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