

PROPELLER SHAFT

0000-00

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PROPELLER SHAFT

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دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



PROPELLER SHAFT**0000-00****GENERAL INFORMATION****1. SPECIFICATIONS**

Items		Specifications
Structure		2-pieces type consisting of CV joint, universal joint, rubber coupling
Weight		10.5kg
Joint type		Constant velocity joint, cross-axis, rubber coupling
Size (Length x Diameter)	Single axle (TM to cross axle)	1,061.5mm x Ø60mm
	Double axle (Cross axle to axle)	847mm x Ø60mm
Tube run-out (after installation)		Max. 0.3 mm
Unbalance amount		80 g.mm at 3,500 rpm (120 g.mm when re-measuring)
Universal joint	Number	1 (installed to the center bearing)
	Outside diameter	Ø24mm
	Total size	Ø62.5mm
	Starting torque	0.3Nm ~ 0.7Nm
	Minimum starting angle	18°
Amount of charged grease in CV joint boot		110±10g

2. TIGHTENING TORQUE

Items	Tightening torque
CV joint bolt to transmission	29.4 ~ 39.2Nm
Rubber coupling bolt/nut to rear axle	39.2 ~ 49.0Nm
Center bearing mounting bolt	58.8 ~ 68.6Nm

Modification basis	
Application basis	
Affected VIN	

PROPELLER SHAFT

TIVOLI 2015.06

CONFIGURATION AND FUNCTIONS

S.G.N.

0000-00 PROPELLER SHAFT

1) Overview

The propeller shaft is a thin steel pipe which transfers the power from the transmission to the E-coupling, and has high resistance to torsion and bending. The propeller shaft is used at the AWD vehicle only. The specifications such as length are same for both the propeller shaft installed to the vehicle with M/T and one to the vehicle with A/T.

The propeller shaft has the constant velocity joint to compensate for the angle and length in order to accommodate the height and length changes which occur as the shaft rotates at high speed. And the rubber bushing for center bearing in the center of the propeller shaft keeps the balance of the shaft and absorbs its vibration.



NOTE

Function of propeller shaft

- Transmits driving torque.
- Compensates for angle change (joint type: universal joint / CV joint)
- Compensates for axial length change (splines for the slip joint).

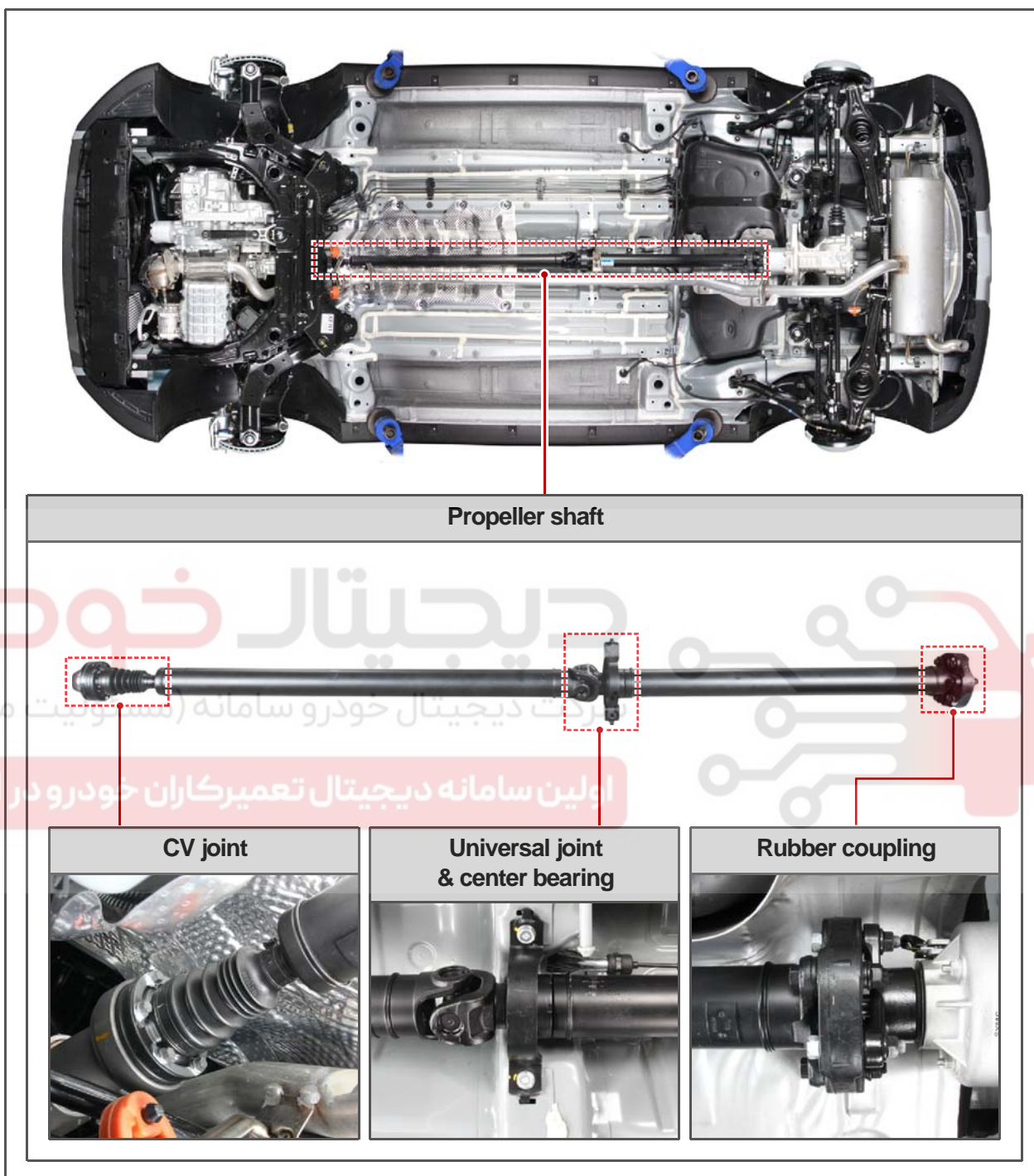
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Modification basis	
Application basis	
Affected VIN	

2) Mounting Location and Components

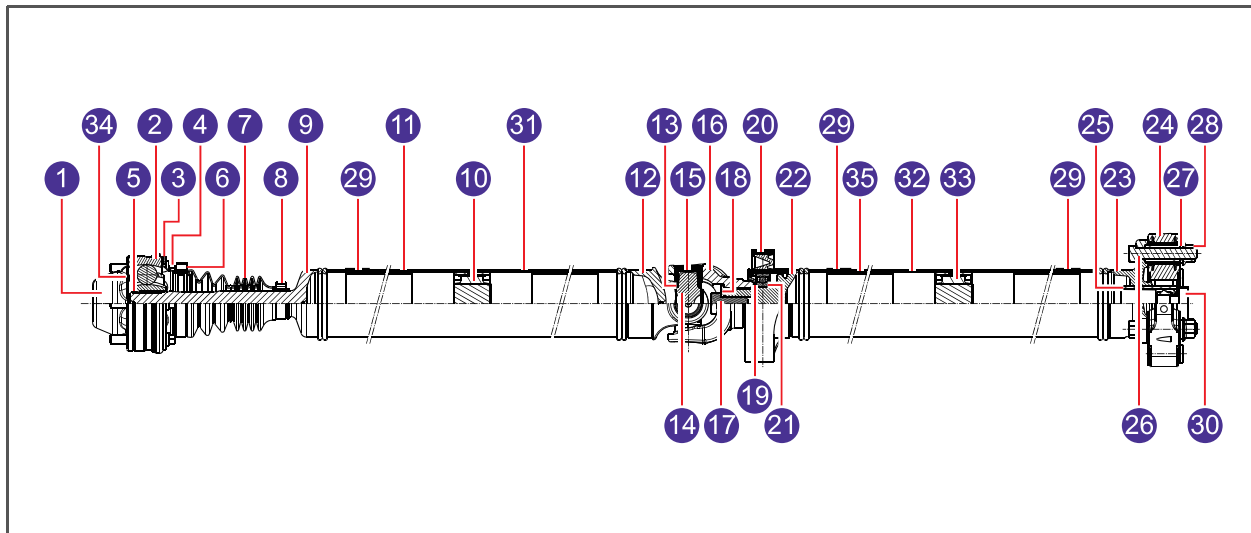


Modification basis	
Application basis	
Affected VIN	

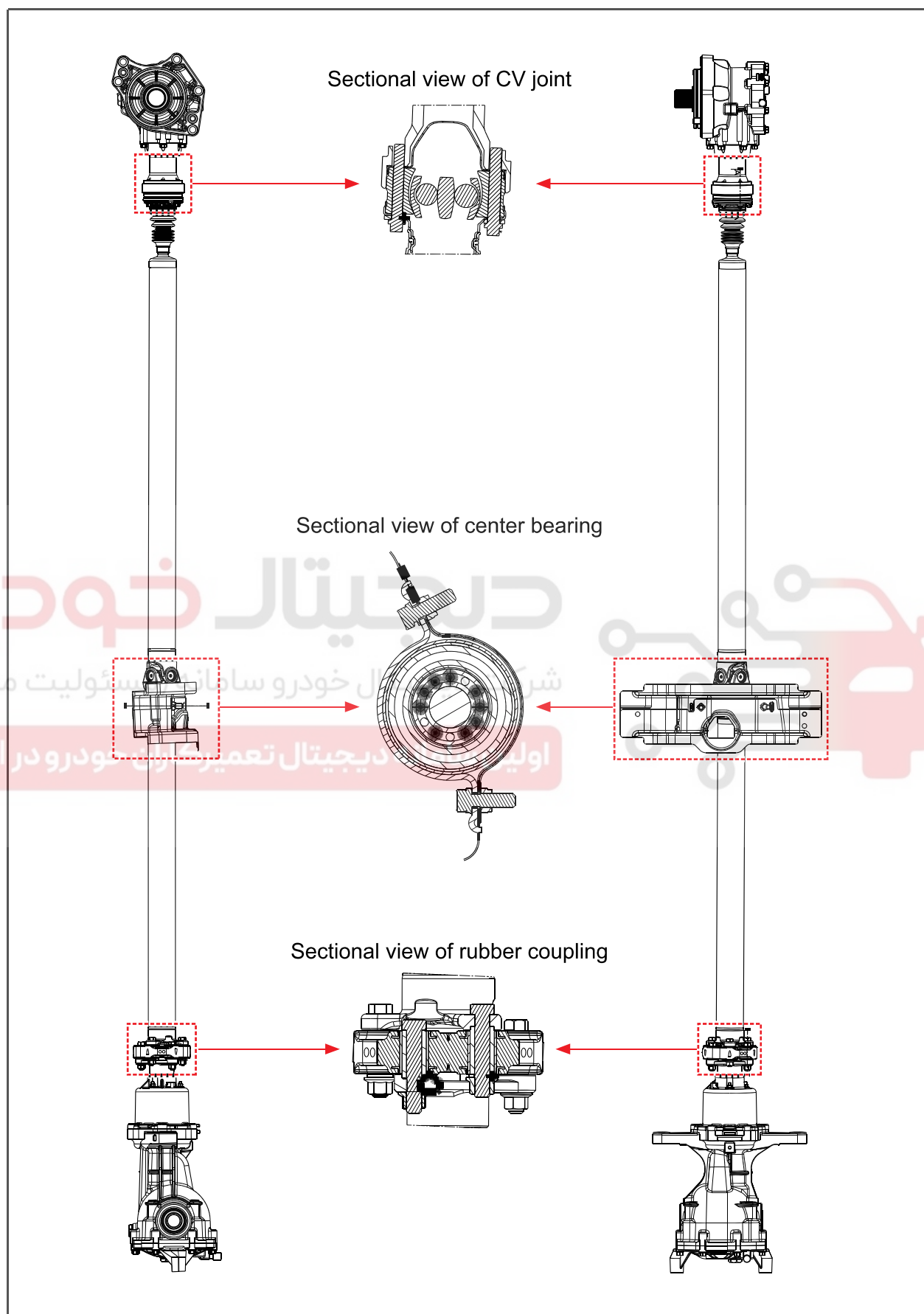
PROPELLER SHAFT

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► Configuration diagram



- | | |
|-----------------------|-----------------------------|
| 1. End cap | 19. Dust shield |
| 2. VL joint assembly | 20. Center bearing assembly |
| 3. Washer | 21. Ball bearing |
| 4. Bolt | 22. Intermediate shaft |
| 5. Circlip | 23. Fork yoke |
| 6. Clamp (Big end) | 24. Rubber coupling |
| 7. Boot | 25. Aligning support |
| 8. Clamp (Small end) | 26. Bolt |
| 9. Stub shaft | 27. Washer |
| 10. Bending absorber | 28. Lock nut |
| 11. DEADENER | 29. Balance weight |
| 12. Tube yoke | 30. Protector |
| 13. Oil seal | 31. Tube |
| 14. Spider | 32. Tube |
| 15. Bearing cap | 33. Bending absorber |
| 16. Intermediate yoke | 34. Gasket |
| 17. Bolt | 35. DEADENER |
| 18. Flat washer | |



Modification basis	
Application basis	
Affected VIN	

PROPELLER SHAFT

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AISIN 6
SPEED6-SPEED
M/T

CLUTCH

PROPELLER

DRIVE
SHAFT

AWD

SUSPENSION

BRAKE
SYSTEM

ESP

ABS

ELECTRIC
POWERWHEEL
AND TIRE

TPMS

SUB
FRAME

REMOVAL AND INSTALLATION

S.G.N.

0000-00 TROUBLESHOOTING INSPECTION

Symptom	Cause	Action
Vibration	Poor installation of CV joint	Reassemble
	Bending of propeller shaft	Replace
	Asymmetry of universal joint	Reassemble
	Poorly tightened yoke	Reassemble and Retighten
Abnormal noise	Worn or damaged center bearing	Replace
	Missing universal joint	Adjust or Replace
	Loose yoke connection	Retighten

1. Run-out of propeller shaft

Install the dial gauge to the center of the propeller shaft and measure the run-out of the propeller shaft at the PTU side and E-coupling side each by rotating the shaft. If the measured value exceeds the threshold value, replace the shaft with new one.

Run-out limit	0.3mm
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2. Starting torque of universal joint

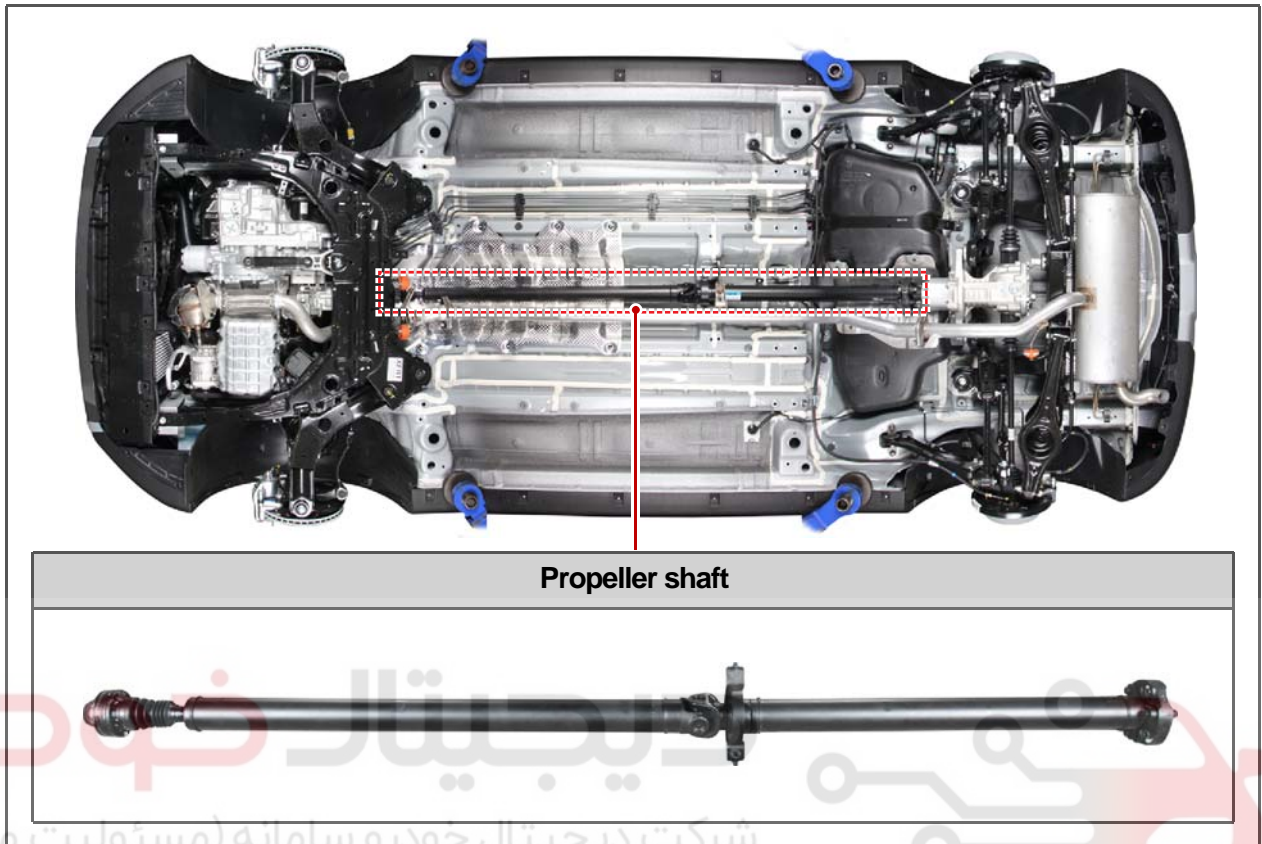
Specified value	0.3 ~ 0.7Nm
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3. Major reasons of vibration

- Displacement of balance weights
- Excessive run-out of propeller shaft
- Regular bolts used to tighten
- Excessive wear of universal joint
- Stuck CV joint

S.G.N.

0000-00 PROPELLER SHAFT



1. Make a paint mark on the CV joint part and flange part of the propeller shaft.



2. Unscrew the 6 CV joint mounting bolts (8 mm).

Tightening torque 29.4 ~ 39.2Nm

CAUTION

Check all washers are not missing and tighten the bolts and nuts in two or three steps diagonally.

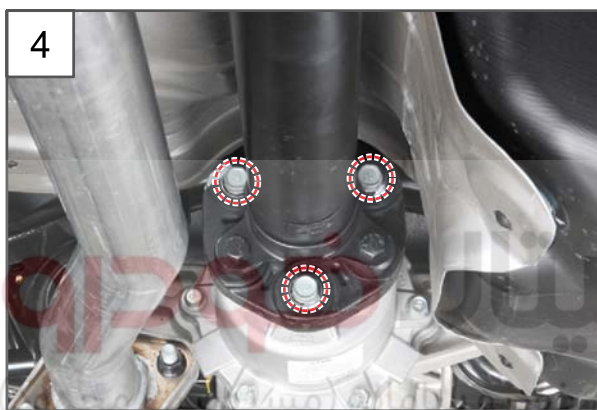
Modification basis	
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3. Make a paint mark on the rubber coupling at the rear and the yoke of the E-coupling side.



4. Unscrew the 3 mounting bolts/nuts (14 mm) on the rubber coupling.

Tightening torque 39.2 ~ 49Nm

CAUTION

Do not remove the rubber coupling when removing the propeller shaft. (vibration balance does not match when reassembling)

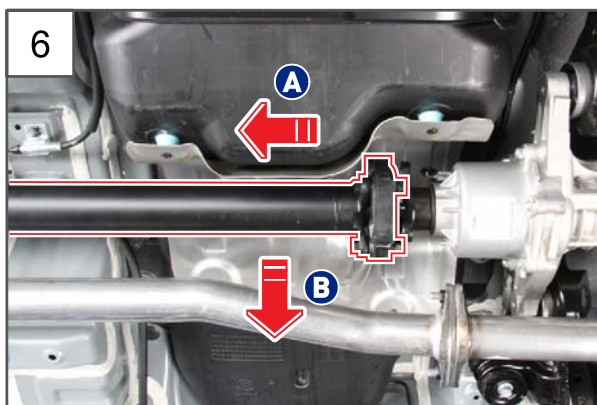


5. Unscrew the 2 mounting bolts (14 mm) on the center bearing.

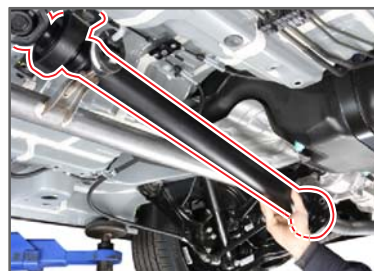
Tightening torque 58.8 ~ 68.6Nm

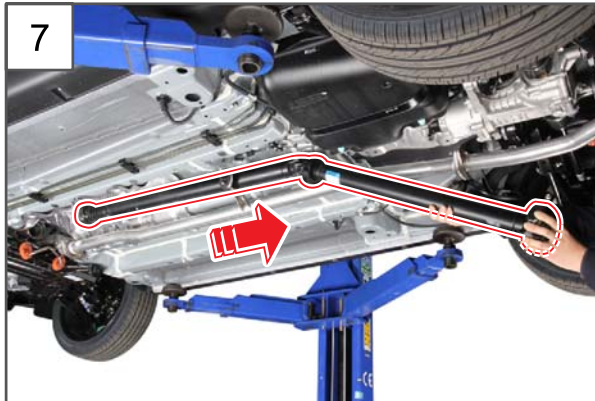
CAUTION

Support the propeller shaft with one hand in order not to drop it before unscrewing the mounting bolt completely.



6. Remove the rubber coupling from the E-coupling's yoke by pushing the propeller shaft to the arrow direction (A) and pulling to the arrow direction (B) at the same time.





7. Remove the propeller shaft to the arrow direction while paying attention to interference of the center muffler.

8. Install in the reverse order of removal.



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Memo

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