SECTION PR
PROPELLER SHAFT

CONTENTS

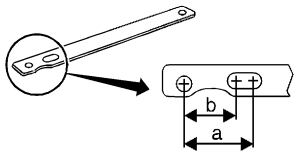
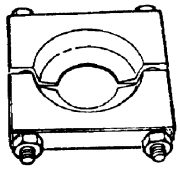
PREPARATION

PFP:00002

Special Service Tools

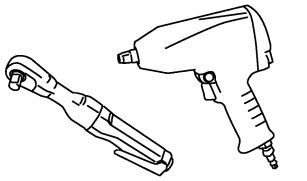
ADS000KI

The actual shapes of Kent-Moore tool may differ from those service tools illustrated here.

Tool name Tool number (Kent-Moore No.)		Description
Puller ST30031000(J29912-01) a: 90 mm (3.54 in) b: 80 mm (3.15 in) c: 50 mm (1.97 in)	 NT659	Removing the rear propeller shaft center bearing
Drive pinion flange wrench KV40104000 (–)	 ZZA0700D	Removing and installing center flange lock nut

Commercial Service Tools

ADS000AV

Power tool	 PBIC0190E

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

PFP:00003

NVH Troubleshooting Chart

ADS0001V

Use the chart below to help you find the cause of the symptom. If necessary, repair or replace these parts.

Reference page			—	Refer to PR-4 for details.	—	—	—	Refer to PR-4 for details.	—	Refer to NVH in RFD section for details.	Refer to NVH in FAX, RAX, FSU, and RSU section for details.	NVH in to WT section for details.	NVH in WT section for details.			
Possible cause and SUSPECTED PARTS			Uneven rotation torque	Center bearing improper installation	Excessive center bearing axial end play	Center bearing mounting (insulator) cracks, damage or deterioration	Excessive joint angle	Rotation imbalance	Excessive runout	DIFFERENTIAL	AXLE AND SUSPENSION	TIRES	ROAD WHEEL	DRIVE SHAFT	BRAKES	STEERING
Symptom	PROPELLER SHAFT	Noise	×	×	×	×	×	×	×	×	×	×	×	×	×	×
		Shake		×			×				×	×	×	×	×	×
		Vibration	×	×	×	×	×	×	×		×	×		×		×

×: Applicable

REAR PROPELLER SHAFT

PFP:37000

On-Vehicle Service

ADS0001W

PROPELLER SHAFT VIBRATION

CAUTION:

If vibration is present at high speed, check mounting between propeller shaft and companion flange.
If vibration is present at high speed, inspect propeller shaft runout first.

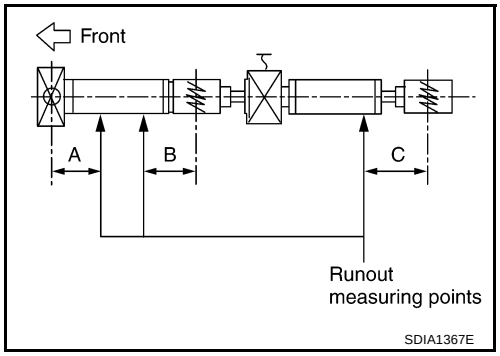
1. Measure propeller shaft runout at several points by rotating final drive companion flange with hands.

Runout limit :0.6 mm (0.024 in) or less

Propeller shaft runout measuring points:

Unit: mm (in)

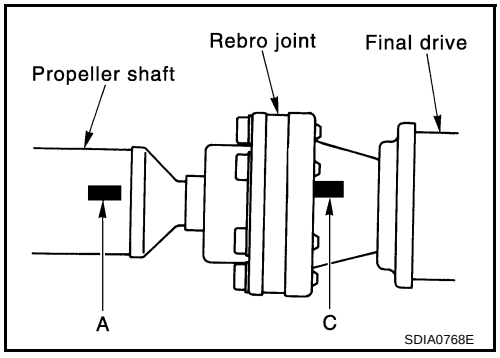
Distance	A	B	C
A/T	162 (6.38)	160 (6.30)	185 (7.28)



2. Make sure alignment marks A and C are located as close to each other as possible. If not, change mounting as indicated in “Installation”.

NOTE:

- Mark A is the minimum limit of imbalance for propeller shaft (minimum light position).
- Mark C is the maximum outer limit of rear final drive companion flange in low runout to outside.

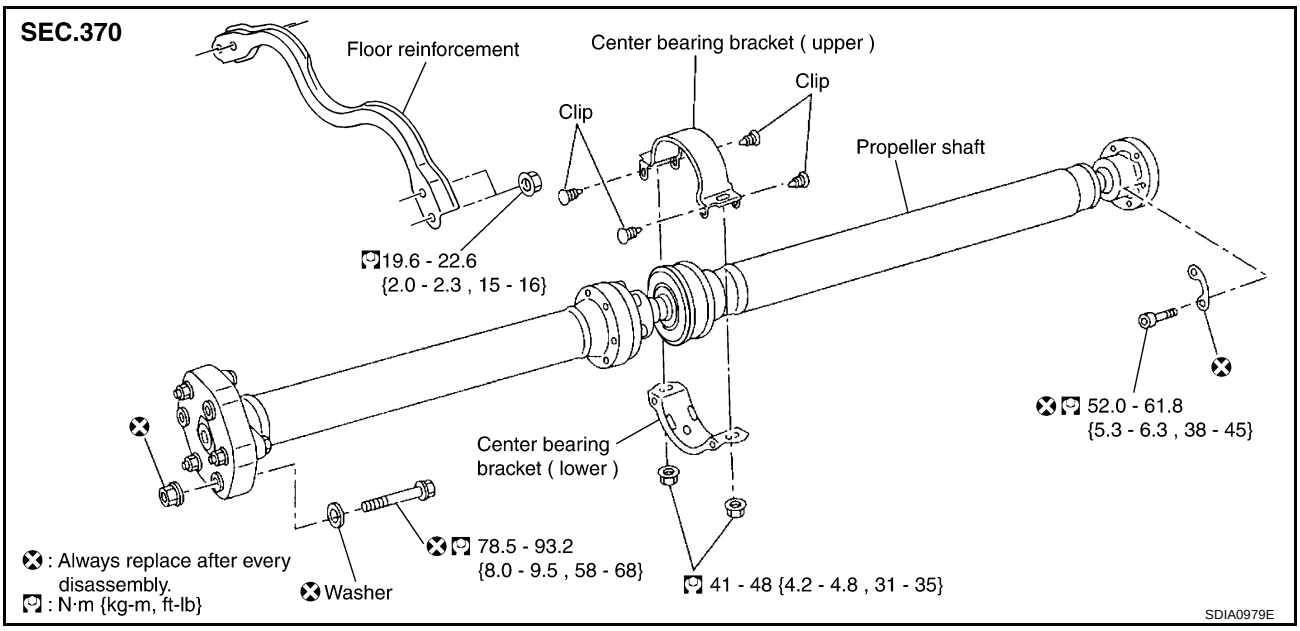


APPEARANCE CHECKING

- Inspect propeller shaft tube surface for dents or cracks. If damaged, replace propeller shaft assembly.
- If center bearing is noisy or damaged, replace propeller shaft assembly.

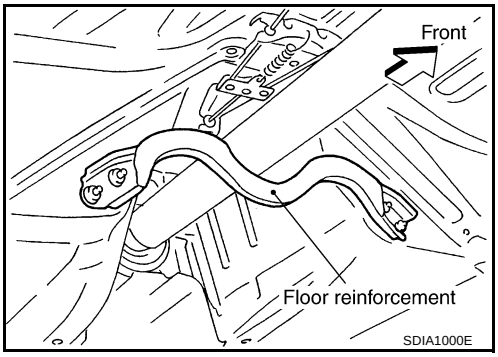
Removal and Installation

ADS0001X



REMOVAL

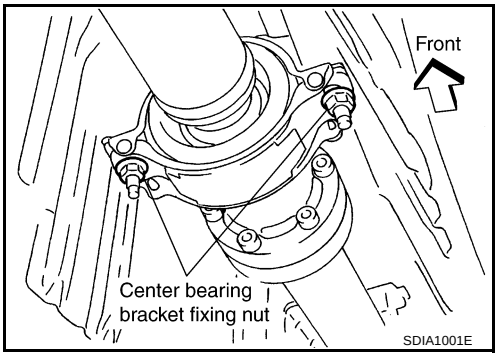
1. Move A/T select lever to N range position and release the parking brake.
2. Remove exhaust front tube and center muffler. Refer to EX-3, "EXHAUST SYSTEM" for details.
3. Remove floor reinforcement.



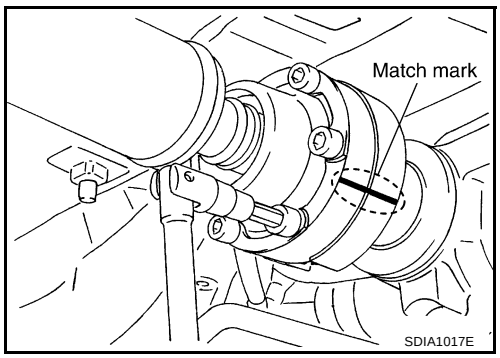
4. Loosen center bearing bracket fixing nuts with power tool.

CAUTION:

Do not remove center bearing bracket fixing nuts.



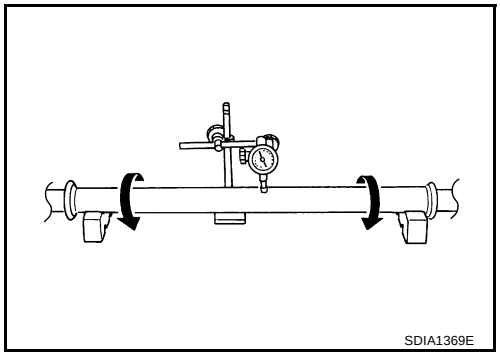
5. Put match marks on flange and rear propeller shaft. (A/T side and final drive side)
6. Remove propeller shaft fixing bolts. (A/T side and final drive side)
7. Remove center bearing bracket fixing nuts.
8. Remove propeller shaft from vehicle.



INSPECTION

- Inspect propeller shaft runout. If runout exceeds specifications, replace propeller shaft assembly.

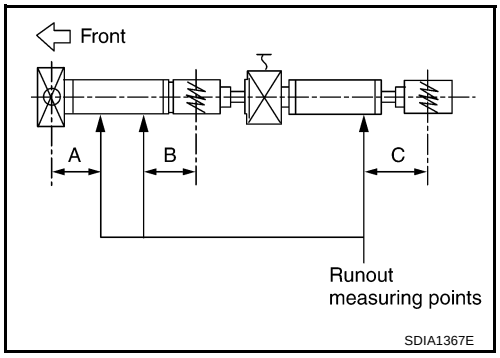
Runout limit : 0.6 mm (0.024 in) or less



Propeller shaft runout measuring points:

Unit: mm (in)

Distance	A	B	C
A/T	162 (6.38)	160 (6.30)	185 (7.28)

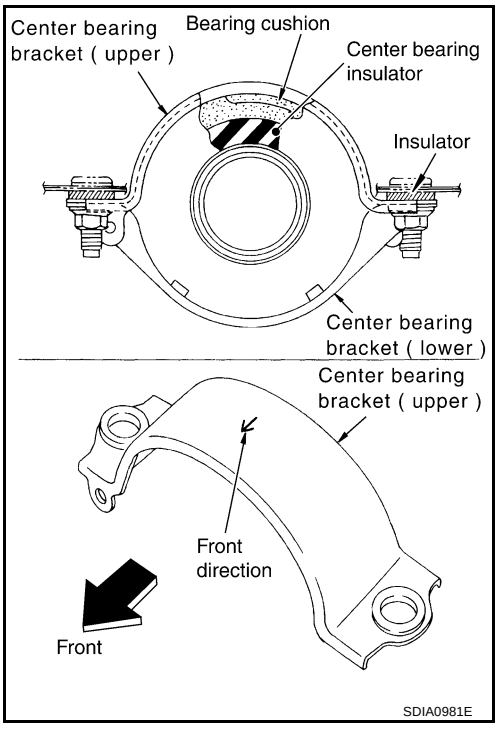


INSTALLATION

Paying attention to following items, install in the reverse order of removal.

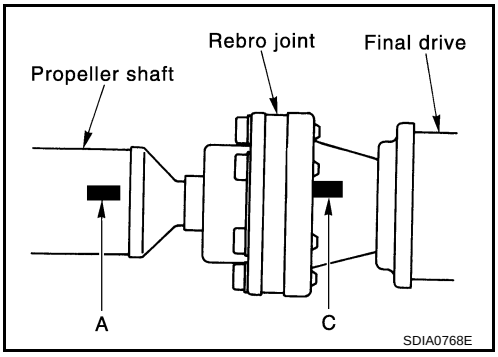
Center Bearing Bracket Installation

- Position the bearing cushion overlap as illustrated.

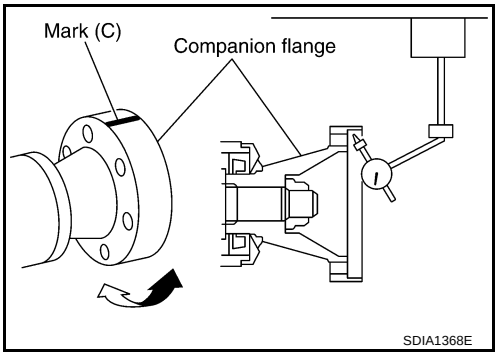


CAUTION:

- **If companion flange has been removed, put new alignment marks C on it. Then, reassemble using the following procedure. (Perform step 2 when final drive and propeller shaft are separated from each other. Also perform step 2 when either of these parts is replaced with a new one.)**



1. Erase original marks C from companion flange with suitable solvent.
2. Measure companion flange vertical runout.
3. Determine the position where maximum runout is read on dial gauge. Put mark (shown by C in figure) on flange perimeter corresponding to maximum runout position.
4. Tighten remaining nuts to specified torque.



SERVICE DATA

PFP:00030

General Specifications

ADS000CC

Applied model		VK45DE
		A/T
Propeller shaft model		3F-R-2VL107
Number of joints		3
Coupling method with transmission		Flange type
Type of journal bearings		Shell type (Non-disassembly type)
Distance between yokes	1st	115 mm (4.53 in)
	2nd	94 mm (3.70 in)
Shaft length (Joint to joint)	1st	553 mm (21.77 in)
	2nd	896 mm (35.28 in)
Shaft outer diameter	1st	63.5 mm (2.50 in)
	2nd	63.5 mm (2.50 in)

Propeller Shaft Runout Limit

ADS0001Z

Model	3F-R-2VL107
Propeller shaft runout limit	0.6 mm (0.024 in) or less