

SECTION **PR**
PROPELLER SHAFT

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PR

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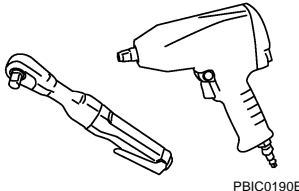
PREPARATION

PREPARATION

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Commercial Service Tools

NDS0005T

Tool name	Description
Power tool  PBIC0190E	Loosening bolts and nuts

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

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NVH Troubleshooting Chart

NDS0005U

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

Symptom		Possible cause and SUSPECTED PARTS													Reference page		
		Uneven rotating 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	
Noise	Noise	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	PR-4
	Shake		x			x											PR-7
	Vibration	x	x	x	x	x	x	x									PR-5
																	—
																	PR-4
																	PR-6
																	NVH in RFD section
																	NVH in FAX, RAX, FSU, and RSU section
																	NVH in WT section
																	NVH in WT section
																	NVH in RAX section
																	NVH in BR section
																	NVH in PS section

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REAR PROPELLER SHAFT

REAR PROPELLER SHAFT

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On-Vehicle Inspection

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APPEARANCE AND NOISE INSPECTION

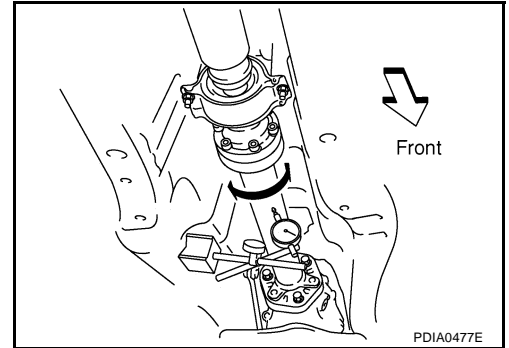
- Check the propeller shaft tube surface for dents or cracks. If damaged, replace propeller shaft assembly.
- If center bearing is noisy or damaged, replace propeller shaft assembly.

PROPELLER SHAFT VIBRATION

If vibration is present at high speed, inspect propeller shaft runout first.

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

Propeller shaft runout limit : 0.6 mm (0.024 in) or less



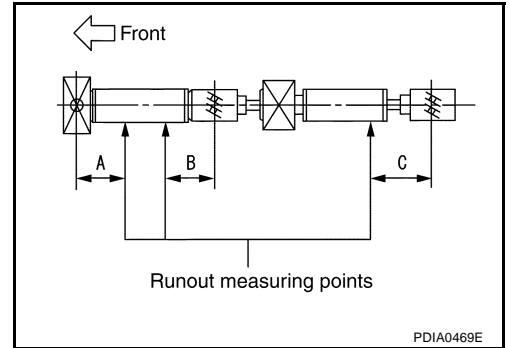
Propeller shaft runout measuring points

Dimension A: 162 mm (6.38 in)

B: 160 mm (6.30 in)

C: 185 mm (7.28 in)

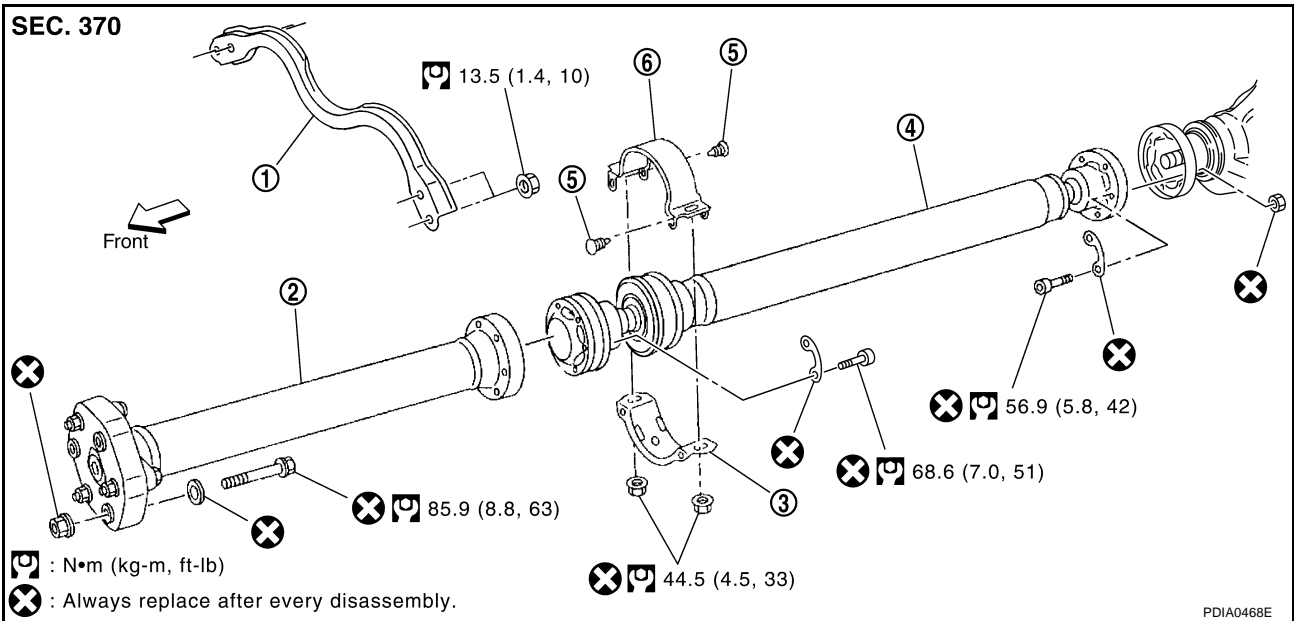
2. If runout still exceeds specifications, separate propeller shaft at final drive companion flange; then rotate companion flange 60, 120, 180, 240, 300 degrees and install propeller shaft.
3. Check runout again. If runout still exceeds specifications, replace propeller shaft assembly.
4. Check the vibration by driving vehicle.



REAR PROPELLER SHAFT

Components

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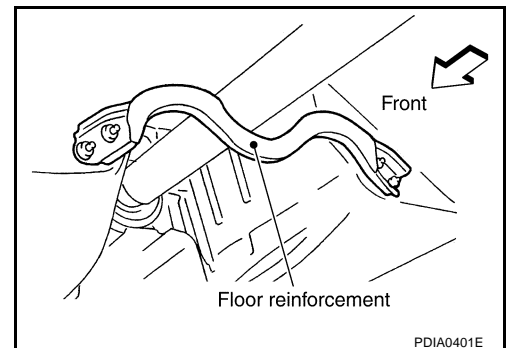
- | | | |
|--------------------------------|--------------------------------|--|
| 1. Floor reinforcement | 2. Propeller shaft (1st shaft) | 3. Center bearing mounting bracket (Lower) |
| 4. Propeller shaft (2nd shaft) | 5. Clip | 6. Center bearing mounting bracket (Upper) |

Removal and Installation

REMOVAL

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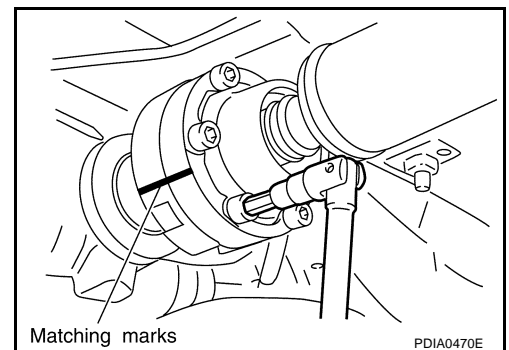
1. Move A/T selector lever to N range position.
2. Release parking brake.
3. Remove exhaust front tube and center muffler. Refer to [EX-3, "EXHAUST SYSTEM"](#).
4. Remove floor reinforcement.



5. Put matching marks on propeller shaft rubber coupling with transmission companion flange and on rebro joint with final drive companion flange.

CAUTION:

For matching mark, use paint. Do not damage rubber coupling, rebro joint and companion flanges.



REAR PROPELLER SHAFT

- Loosen mounting nuts of center bearing mounting brackets with power tool.

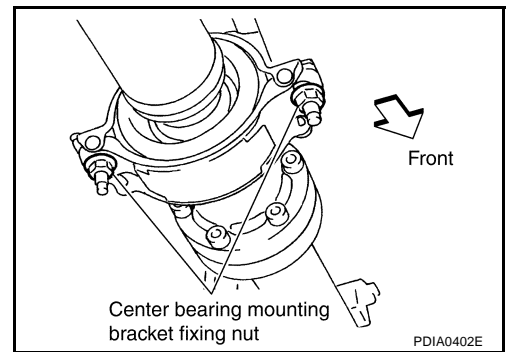
CAUTION:

Tighten mounting nuts temporarily.

- Remove propeller shaft fixing bolts and nuts.
- Remove center bearing mounting bracket fixing nuts.
- Remove propeller shaft.

CAUTION:

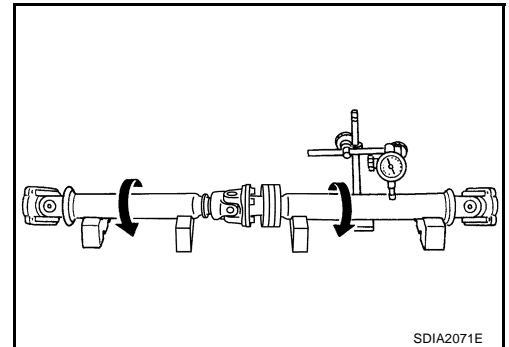
If constant velocity joint was bent during propeller shaft assembly removal, installation, or transportation, its boot may be damaged. Wrap boot interference area to metal part with shop cloth or rubber to protect boot from breakage.



INSPECTION

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

Propeller shaft runout limit : 0.6 mm (0.024 in) or less



Propeller shaft runout measuring points

Dimension A: 162 mm (6.38 in)

B: 160 mm (6.30 in)

C: 185 mm (7.28 in)

- Check propeller shaft for bend and damage. If damage is detected, replace propeller shaft assembly.

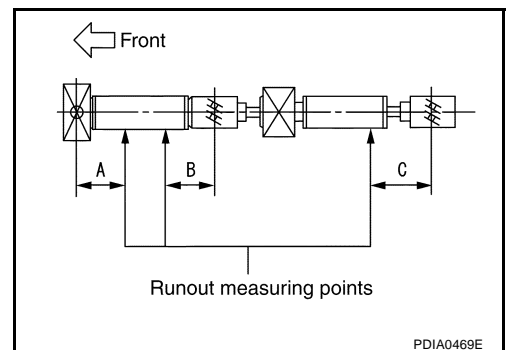
CAUTION:

Do not disassemble joints.

- Check center bearing for noise and damage. If noise or damage is detected, replace propeller shaft assembly.

CAUTION:

Do not disassemble center bearing.



REAR PROPELLER SHAFT

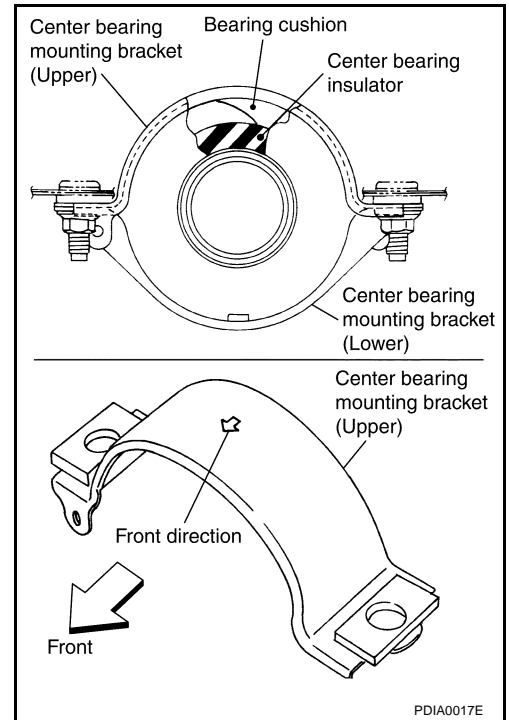
INSTALLATION

Note the following, and install in the reverse order of removal.

CAUTION:

Avoid damaging the rebro joint boot, protect it with a shop towel or equivalent.

- Align matching marks to install propeller shaft to final drive and transmission companion flanges, and then tighten to specified torque. Refer to [PR-5, "Components"](#).
- Install center bearing mounting bracket (Upper) with its arrow mark facing forward.
- Adjust position of mounting bracket sliding back and forth to prevent play in thrust direction of center bearing insulator. Install bracket to vehicle.
- After assembly, perform a driving test to check propeller shaft vibration. If vibration occurred, separate propeller shaft from final drive. Reinstall companion flange after rotating it by 60, 120, 180, 240, 300 degrees. Then perform driving test and check propeller shaft vibration again at each point.

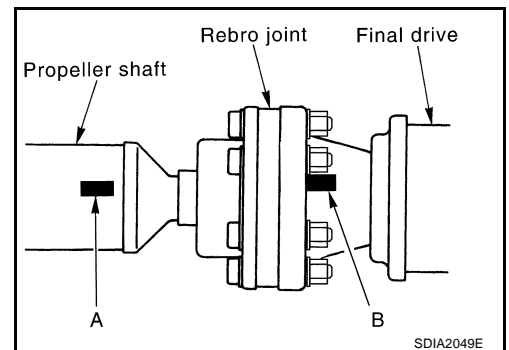


- If propeller shaft or final drive has been replaced, connect them as follows:

1. Install the propeller shaft while aligning its matching mark A with the matching mark B on the joint as close as possible.
2. Tighten the joint bolts to the specified torque. Refer to [PR-5, "Components"](#).

CAUTION:

Do not reuse the bolts, nut and washers.



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SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

General Specifications

NDS0005Y

Applied model		VK45DE
Propeller shaft model		3F-R-2VL107
Number of joints		3
Type of joint (Non-disassembly type)	1st joint	Rubber coupling type
	2nd joint	CVJ type (Constant velocity universal joint type)
	3rd joint	CVJ type (Constant velocity universal joint type)
Coupling method with transmission		Flange type
Coupling method with rear final drive		Flange type
Shaft length	1st (1st joint center to 2nd joint center)	553 mm (21.77 in)
	2nd (2nd joint center to 3rd joint center)	966 mm (38.03 in)
Shaft outer diameter	1st	63.5 mm (2.50 in)
	2nd	75.0 mm (2.95 in)

Propeller Shaft Runout

NDS0005Z

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