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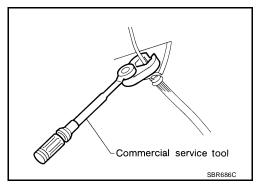
PRECAUTIONS

PRECAUTIONS PFP:00001

Precautions

When installing rubber parts, final tightening must be carried out under unladen condition* with tires on ground.
 *: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

- After installing removed suspension parts, check wheel alignment and adjust if necessary.
- Use flare nut wrench when removing or installing brake tubes.
- Always torque brake lines when installing.



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PREPARATION

PREPARATION	PFP:00002
Special Service Tools The actual shapes of Kent-Moore tools may differ from thos	EDS00088
Tool number (Kent-Moore No.) Tool name	Description
HT72520000 (J25730-B) Ball joint remover	Removing tie-rod outer end and lower ball joint a: 33 mm (1.30 in) b: 50 mm (1.97 in) r: R11.5 mm (0.453 in)
KV38106800 (J34297-1) Differential side oil seal protector	Installing drive shaft
	NT147
Commercial Service Tools	EDS00089
Tool name	Description
A EL	

Tool name		Description
1 Flare nut crowfoot 2 Torque wrench		Removing and installing each brake piping a: 10 mm (0.39 in)
	NT360	

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FAX-3

NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING NVH Troubleshooting Chart

PFP:00003

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

Reference page				FAX-20, "Inspection"	Refer to MA-38, "WHEEL BALANCE"	FAX-9	FAX-5	FAX-5	Refer to DRIVE SHAFT in this chart.	Refer to AXLE in this chart.	Refer to FSU-4, "NVH Troubleshooting Chart"				
Possible cause and SUSPECTED PARTS			Excessive joint angle	Joint sliding resistance	Imbalance	Improper installation, looseness	Parts interference	Wheel bearing damage	DRIVE SHAFT	AXLE	SUSPENSION	TIRES	ROAD WHEEL	BRAKES	STEERING
	DDIVE OLIVET	Noise, Vibration	×	×						×	×	×	×	×	×
	DRIVE SHAFT	Shake	×		×					×	×	×	×	×	×
		Noise				×	×		×		×	×	×	×	×
		Shake				×	×		×		×	×	×	×	×
Symptom		Vibration				×	×		×		×	×			×
	AXLE	Shimmy				×	×				×	×	×	×	×
		Judder				×					×	×	×	×	×
A 5 11		Poor quality ride or handling				×	×	×			×	×	×		

^{×:} Applicable

ON-VEHICLE SERVICE

ON-VEHICLE SERVICE

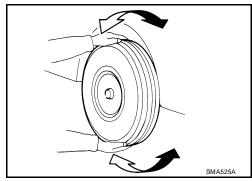
Front Axle Parts

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Check front axle and front suspension parts for excessive play, cracks, wear or other damage.

- Shake each front wheel to check for excessive play.
- Make sure that the cotter pin is properly installed.
- Retighten all axle and suspension nuts and bolts to the specified torque.

Tightening torque : Refer to FSU-5, "Components".



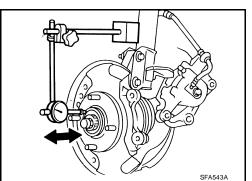
Front Wheel Bearing

- Rotate wheel hub to check that wheel bearings operate smoothly.
- Check axial end play.

Axial end play : 0.05 mm (0.0020 in) or less

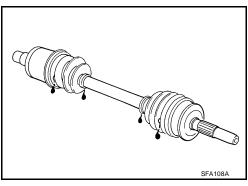
If out of specification or wheel bearing does not turn smoothly, replace wheel bearing assembly.

Refer to FAX-6, "WHEEL HUB AND KNUCKLE".



Drive Shaft

Check for grease leakage or other damage.



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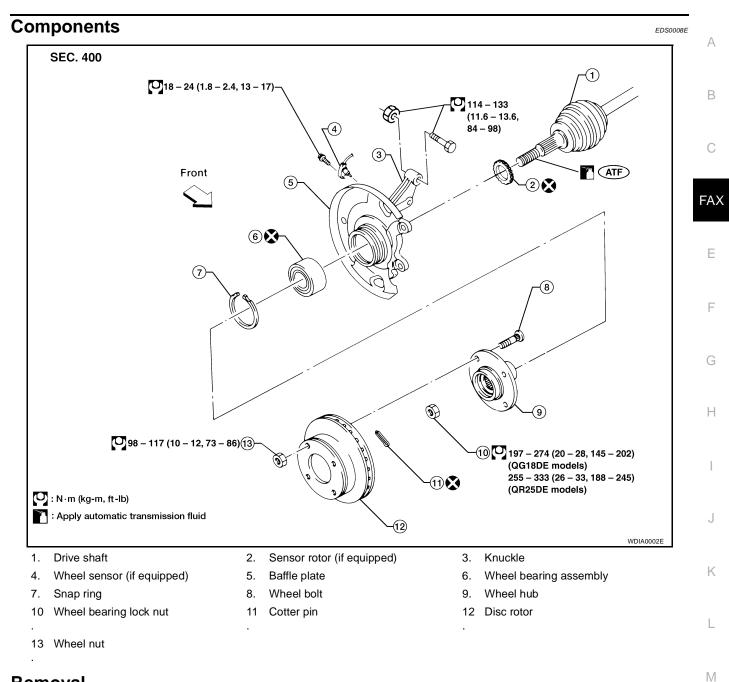
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WHEEL HUB AND KNUCKLE

PFP:40202



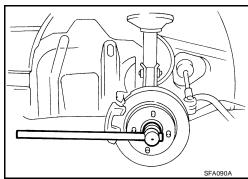
Removal

CAUTION:

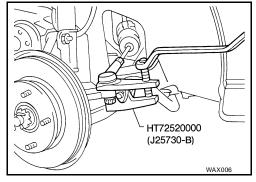
Before removing the front axle assembly, disconnect the wheel sensor from the assembly. Then move it away from the front axle assembly area.

Failure to do so may result in damage to the sensor wires and the wheel sensor becoming inoperative.

1. Remove cotter pin and wheel bearing lock nut.

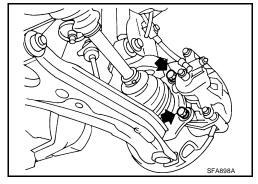


- 2. Separate tie-rod from knuckle with Tool.
 - Install stud nut on stud bolt to prevent damage to stud bolt.

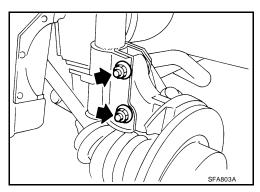


- 3. Remove brake caliper assembly, torque member and rotor.
 - Brake hose need not be disconnected from brake caliper. In this case, suspend caliper assembly with wire so as not to stretch brake hose. Be careful not to depress brake pedal, or piston will pop out.

Make sure brake hose is not twisted.

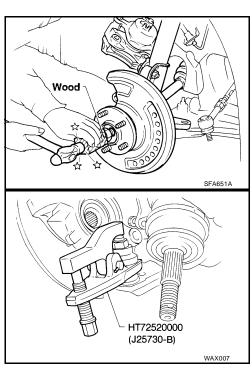


4. Remove strut lower mounting nuts and bolts.



- 5. Separate drive shaft from knuckle by lightly tapping it. If it is hard to remove, use a puller.
 - Cover boots with shop towel so as not to damage them when removing drive shaft.

- 6. Loosen lower ball joint nut.
- 7. Remove knuckle from lower ball joint stud with Tool.



Installation EDS0008G

- 1. Install in reverse order of removal.
 - Install knuckle with wheel hub.

When installing knuckle to strut, be sure to hold bolts and tighten nuts.

: 114 - 133 N·m (11.6 - 13.6 kg-m, 84 - 98 ft-lb) (0)

Before tightening, apply oil to threaded portion of drive shaft.

Tighten wheel bearing lock nut.

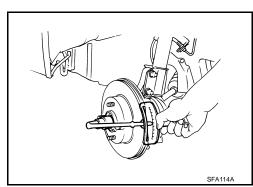
: 197 - 274 N·m (20 - 28 kg-m, 145 - 202 ft-lb) (QG18DE models)

: 255 - 333 N·m (26 - 33 kg-m, 188 - 245 ft-lb) 0 (QR25DE models)

Rotate wheel hub to check that wheel bearings operate smoothly.

Rotate wheel hub to check wheel bearing axial end play.

: 0.05 mm (0.0020 in) or less **Axial end play**



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Disassembly

CAUTION:

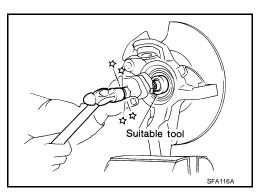
When removing wheel hub or wheel bearing from knuckle, replace wheel bearing assembly (outer race and inner race) with a new one.

Wheel bearing does not require maintenance. If any of the following symptoms are noted, replace wheel bearing assembly.

- Growling noise is emitted from wheel bearing during operation.
- Wheel bearing drags or turns roughly. This occurs when turning hub by hand after bearing lock nut is tightened to specified torque.

WHEEL HUB

Drive out hub and inner race from knuckle with a suitable tool.



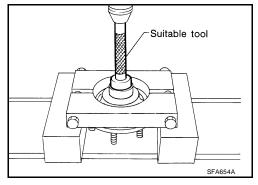
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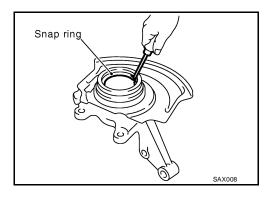
WHEEL BEARING

When replacing wheel bearing, replace complete wheel bearing assembly (inner race and outer race).

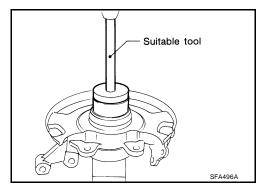
1. Remove bearing inner race.



2. Remove snap rings.



- 3. Press out bearing outer race.
- 4. Remove baffle plate, if required.



Inspection WHEEL HUB AND KNUCKLE

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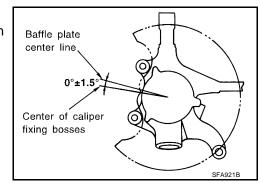
Check wheel hub and knuckle for cracks by using a magnetic exploration or dyeing test.

SNAP RING

Check snap ring for wear or cracks. Replace if necessary.

Assembly

- If baffle plate has been removed, replace it with a new one.
- When installing the baffle plate, press new plate so that it is in contact with knuckle wall. Refer to figure at right.



1. Press new wheel bearing assembly into knuckle until it seats against knuckle shoulder.

Maximum load P : 34 kN (3.5 ton, 3.9 US ton, 3.4 Imp ton)

CAUTION:

- Do not apply disassembly force in direction "R". There is a
 possibility of breaking the seal. In case of separation
 (except range of initial clearance) and disassembling of
 inner race, the wheel bearing must be replaced with a new
 part.
- Suitable tool

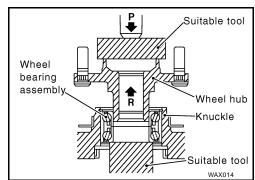
 Wheel bearing assembly

 Knuckle

 Suitable tool
- Do not press inner race of wheel bearing assembly or seal.
- Do not apply oil or grease to mating surfaces of wheel bearing outer race and knuckle.
- 2. Install outer snap ring into groove of knuckle.
- 3. Press wheel hub into knuckle until it stops when the end of the wheel bearing is hit.

Maximum load P : 49 kN (5.0 ton, 5.5 US ton, 4.9 Imp ton)

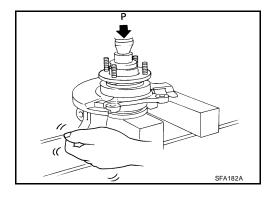
Do not move wheel hub in direction "R".



- 4. Check bearing operation.
- a. Add load P with press.

Load P : 34.3 - 49.0 kN (3.5 - 5.0 ton, 3.9 - 5.5 US ton, 3.44 - 4.92 Imp ton)

- Spin knuckle several turns in both directions.
- c. Make sure that wheel bearings operate smoothly.



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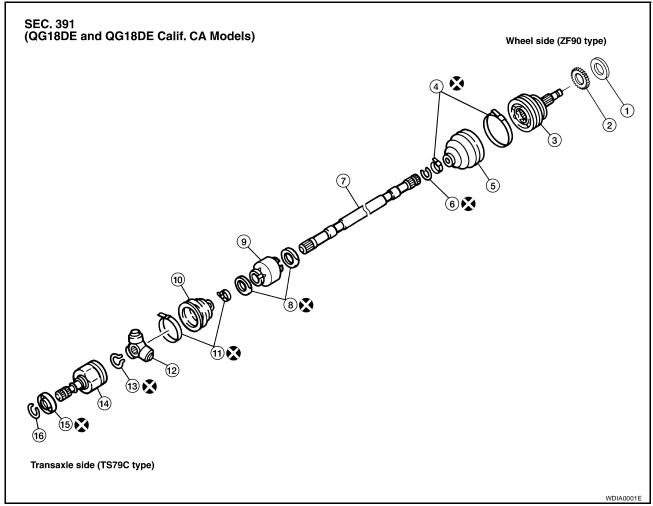
DRIVE SHAFT PFP:39100

Components

CAUTION:

 Circular clips should be properly meshed with differential side gear (transaxle side) and with joint assembly (wheel side). Make sure they will not come out.

• Be careful not to damage boots. Use suitable protector or cloth during removal and installation.



1.	Dust	shield

4. Boot band

7. Drive shaft

10 Boot

13 Snap ring

16 Circular clip

2. Sensor rotor, if equipped

5. Boo

8. Dynamic damper band

11 Boot band

4 Slide joint housing

3. Joint assembly

6. Circular clip

9. Dynamic damper

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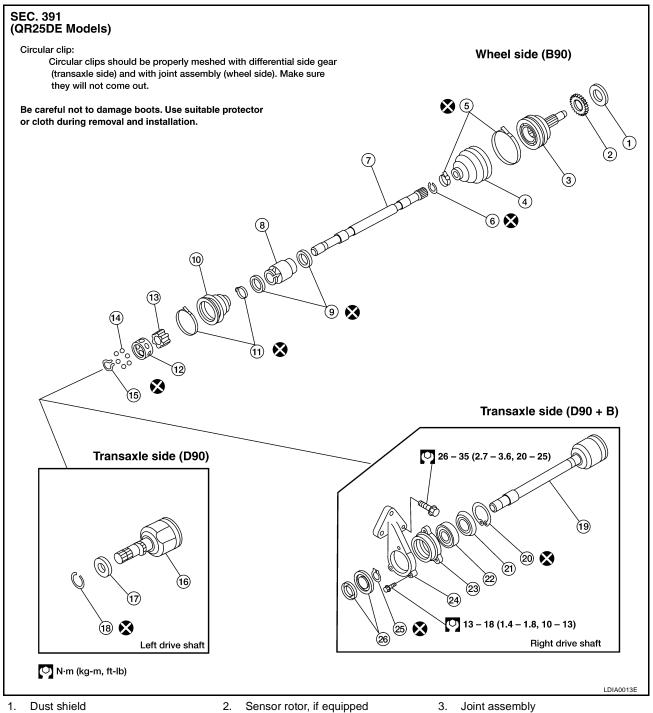
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12 Spider assembly

15 Dust shield

10



١.	Dust silicia
4.	Boot
7.	Drive shaft
10	Boot
13	Inner race
16	Slide joint assembly
19	Slide joint housing with extension shaft
22	Support bearing
25	Snap ring

5.	Boot band
8.	Dynamic damper
11	Boot band
14	Ball
17	Dust shield
20	Snap ring
23	Support bearing retainer

26 Dust shield

6.	Circular clip
9.	Dynamic damper band
12	Cage
15	Snap ring
18	Circular clip
21	Dust shield
24	Bracket

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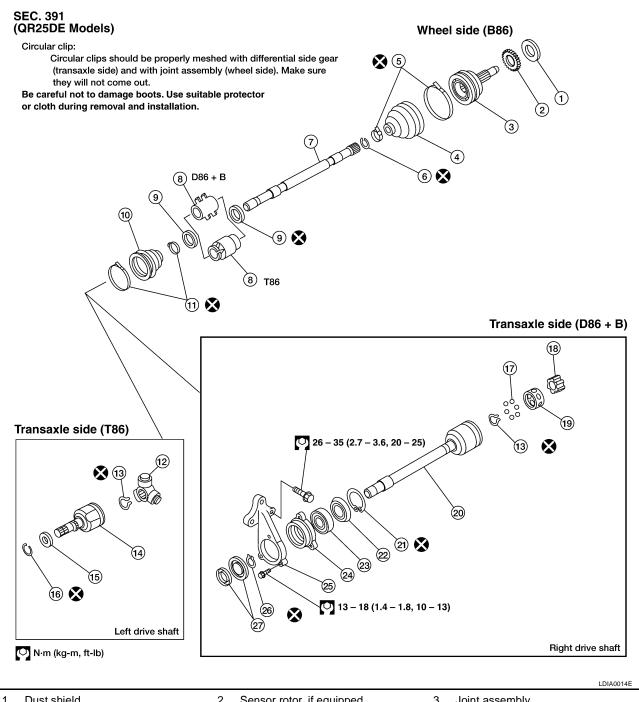
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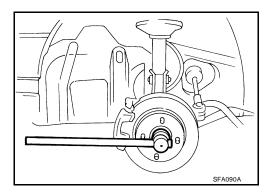
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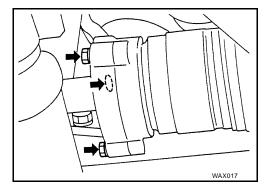
1.	Dust shield	2.	Sensor rotor, if equipped	3.	Joint assembly
4.	Boot	5.	Boot band	6.	Circular clip
7.	Drive shaft	8.	Dynamic damper	9.	Dynamic damper band
10	Boot	11	Boot band	12	Spider assembly
13	Snap ring	14	Slide joint assembly	15	Dust shield
16	Circular clip	17	Ball	18	Inner race
19	Cage	20	Slide joint housing with extension	21	Snap ring
			shaft		
22	Dust shield	23	Support bearing	24	Support bearing retainer
25	Bracket	26	Snap ring	27	Dust shield

Removal

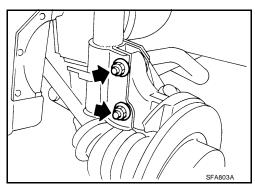
1. Remove cotter pin and wheel bearing lock nut.



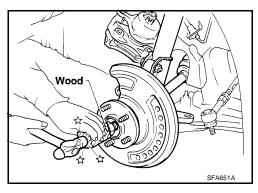
2. Remove drive shaft center support bearing bolts.



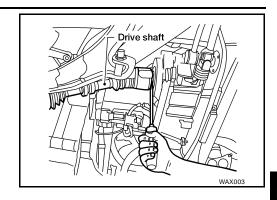
- 3. Remove strut lower mounting nuts and bolts.
- 4. Remove brake hose clip.



- 5. Separate drive shaft from knuckle by lightly tapping it. If it is hard to remove, use a puller.
 - Cover boots with shop towel so as not to damage them when removing drive shaft.



6. Remove left drive shaft from transaxle.



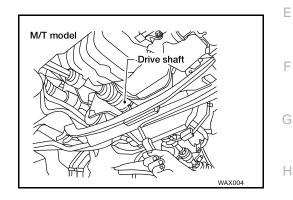
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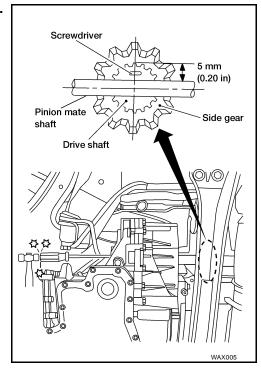
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- 7. Remove right drive shaft from transaxle.
 - For M/T models —
 - Pry off drive shaft from transaxle as shown at right.



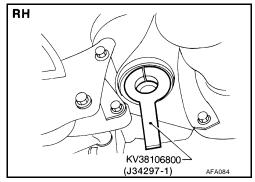
- For A/T models —
- Insert screwdriver into transaxle opening for right drive shaft and strike with a hammer.
- Be careful not to damage pinion mate shaft and side gear.



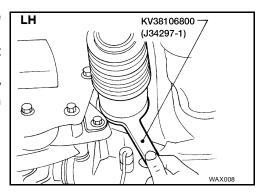
Installation
TRANSAXLE SIDE

Drive a new oil seal to transaxle. Refer to MT-12, "SIDE OIL SEAL", MT-76, "SIDE OIL SEAL", MT-135, "SIDE OIL SEAL", AT-265, "Differential Side Oil Seal Replacement" or AT-661, "Differential Side Oil Seal Replacement".

2. Set Tool along the inner circumference of oil seal.



- Insert drive shaft into transaxle. Be sure to properly align the serrations and then withdraw Tool.
- 4. Push drive shaft, then press-fit circular clip on the drive shaft into circular clip groove of side gear.
- 5. After its insertion, try to pull the flange out of the slide joint by hand. If it pulls out, the circular clip is not properly meshed with the side gear.

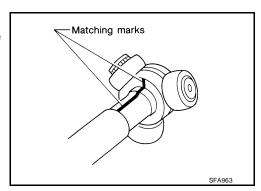


WHEEL SIDE

- 1. Install drive shaft into knuckle.
- 2. Tighten strut lower mounting nuts and wheel bearing lock nut.

Disassembly TRANSAXLE SIDE (TS79C AND T86 TYPE)

- 1. Remove boot bands.
- 2. Put matching marks on slide joint housing and drive shaft before separating joint assembly.
- 3. Put matching marks on spider assembly and drive shaft.

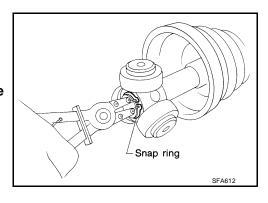


4. Remove snap ring, then remove spider assembly.

CAUTION:

Do not disassemble spider assembly.

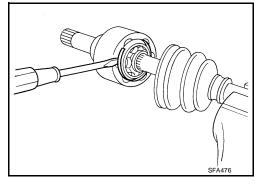
- 5. Draw out boot.
- Cover drive shaft serrations with tape so as not to damage the boot.



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TRANSAXLE SIDE (D90,D90+B AND D86+B TYPE)

- 1. Remove boot bands.
- 2. Put matching marks on slide joint housing and drive shaft before separating joint assembly.
- 3. Pry off snap ring with a screwdriver, and pull out slide joint housing.



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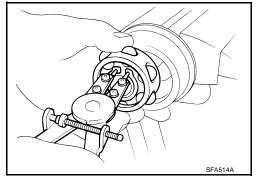
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- 4. Put matching marks on inner race and drive shaft.
- 5. Remove snap ring, then remove ball cage, inner race and balls as a unit.
- 6. Draw out boot.
- Cover drive shaft serrations with tape so as not to damage the boot.



WHEEL SIDE (ZF90, B90 AND B86 TYPE)

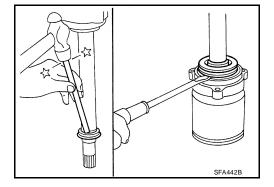
CAUTION:

The joint on the wheel side cannot be disassembled.

- 1. Before separating joint assembly, put matching marks on drive shaft and joint assembly.
- 2. Separate joint assembly with a suitable tool.
- Be careful not to damage threads on drive shaft.
- 3. Remove boot bands.

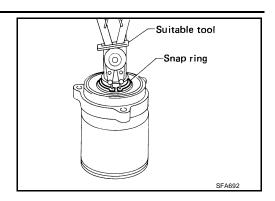
Suitable tool (Sliding hammer) Wheel bearing lock nut

SUPPORT BEARING1. Remove dust shield.

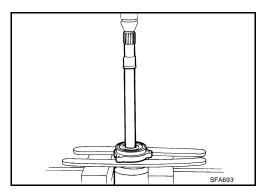


FAX-19

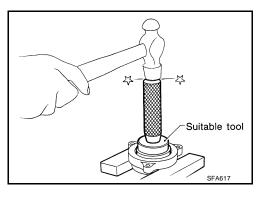
Remove snap ring.



3. Press support bearing assembly off drive shaft.



- 4. Remove snap ring.
- 5. Remove dust shield.
- 6. Separate support bearing from retainer.



Inspection

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Thoroughly clean all parts in cleaning solvent, then dry with compressed air. Check parts for evidence of deformation and other damage.

DRIVE SHAFT

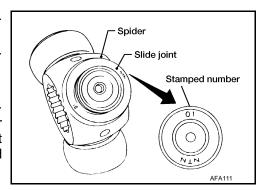
Replace drive shaft if it is twisted or cracked.

BOOT

Check boot for fatigue, cracks or wear. Replace with new boot and boot bands.

JOINT ASSEMBLY (TRANSAXLE SIDE) TS79C AND T86 TYPE

- Check spider assembly for needle bearing and washer damage.
 Replace if necessary.
- Check roller surfaces for scratches, wear and other damage.
 Replace if necessary.
- Check serration for deformation. Replace if necessary.
- Check slide joint housing for any damage. Replace if necessary.
- When replacing only spider assembly, select a new spider assembly from among those listed in table below. Ensure that the number stamped on slide joint is the same as that stamped on new part.



Housing alone cannot be replaced. It must be replaced together with spider assembly.

Stamped number	Part No.*
01	39720-61E01
02	39720-61E02
03	39720-61E03
04	39720-61E04
05	39720-61E05
06	39720-61E06
07	39720-61E07

^{*:} Always check with the Parts Department for the latest parts information.

D90+B TYPE

- Replace any parts of double offset joint which show signs of scorching, rust, wear or excessive play.
- Check serration for deformation. Replace if necessary.
- Check slide joint housing for any damage. Replace if necessary.

JOINT ASSEMBLY (WHEEL SIDE)

Replace joint assembly if it is deformed or damaged.

SUPPORT BEARING

Make sure support bearing rolls freely and is free from noise, cracks, pitting and wear.

SUPPORT BEARING BRACKET

Check support bearing bracket for cracks with a magnetic exploration or dyeing test.

Assembly

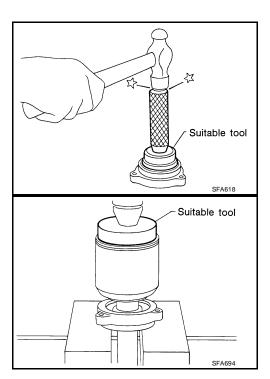
After drive chaft has been accombined ansure that it mayor amount by over its entire range without

- After drive shaft has been assembled, ensure that it moves smoothly over its entire range without binding.
- Use Genuine NISSAN grease or equivalent after every overhaul.

SUPPORT BEARING

1. Install bearing into retainer.

- 2. Install dust shield.
- 3. Install snap ring.
- 4. Press drive shaft into bearing.



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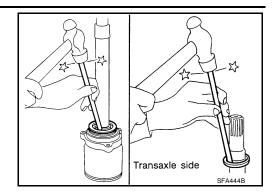
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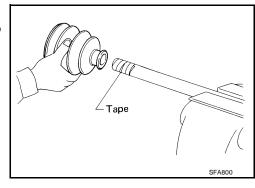
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- Install snap ring.
- 6. Install new dust shield.

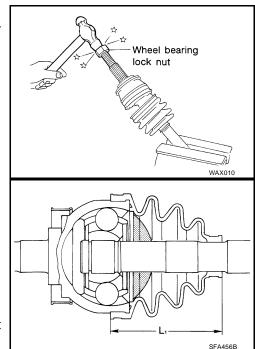


WHEEL SIDE (ZF90, B90 AND B86 TYPE)

- 1. Install boot and new small boot band on drive shaft.
- Cover drive shaft serration with tape to prevent damage to boot during installation.



- 2. Set joint assembly onto drive shaft by lightly tapping it.
 - Ensure that marks which were made during disassembly are properly aligned.



3. Pack drive shaft with specified amount of grease.

Specified amount of : QG18DE 115 - 125 g

grease (4.06 - 4.41 oz)

: QR25DE A/T 120 - 140 g

(4.23 - 4.94 oz)

: QR25DE M/T 115 - 135 g

(4.06 - 4.76 oz)

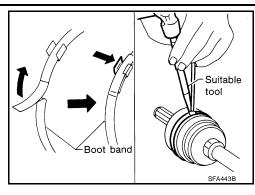
4. Make sure that boot is properly installed on the drive shaft groove.

Set boot so that it does not swell and deform when its length is "L1".

Length "L1"

QG18DE : 97 mm (3.82 in)
QR25DE A/T : 115.7 mm (4.56 in)
QR25DE M/T : 124.2 mm (4.89 in)

Lock new large and small boot bands securely with a suitable tool.



DYNAMIC DAMPER

- 1. Use a new damper band when reinstalling.
- 2. Install dynamic damper from stationary-joint side while holding it securely:

Length

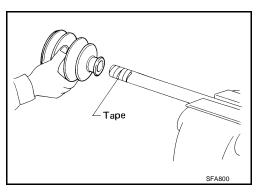
Unit: mm (in)

Applied model	QG18DE				
Applied model	LH	RH			
"A"	175-185 (6.89 - 7.28)	420-430 (16.54 - 16.93)			
"B"	70 (2.76)	64 (2.52)			
	QR2	25DE			
"A"	173 - 179 (6.81 - 7.05)	200 - 206 (7.87 - 8.11)			
"B"	50 (1.97)	68 (2.68)			

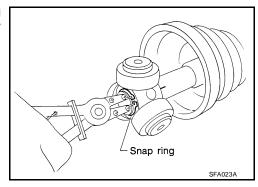
ZF90/TS79C (left side) AFA153

TRANSAXLE SIDE (TS79C AND T86)

- 1. Install boot and new small boot band on drive shaft.
- Cover drive shaft serration with tape to prevent damage to boot during installation.



- 2. Install spider assembly securely, making sure the matching marks which were made during disassembly are properly aligned.
- 3. Install new snap ring.



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4. Pack drive shaft with specified amount of grease.

Specified amount : QG18DE 155 - 165 g

of grease (5.47 - 5.82 oz)

: QR25DE A/T 145 - 165 g

(5.11 - 5.82 oz)

: QR25DE M/T D86+B 135 - 155

g (4.76 - 5.47 oz)

: QR25DE M/T T86 140 - 160 g

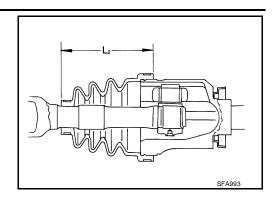
(4.94 - 5.64 oz)

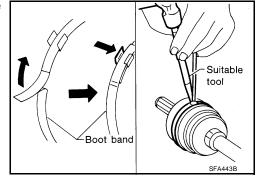
- 5. Install slide joint housing.
- 6. Set boot so that it does not swell and deform when its length is "L2".

Length "L2 "

QG18DE : 102.5 mm (4.035 in)
QR25DE A/T : 98 mm (3.86 in)
QR25DE M/T D86+B : 98 mm (3.86 in)
QR25DE M/T T86 : 98.5 mm (3.88 in)

- Make sure the boot is properly installed on the drive shaft groove.
- 7. Lock new large and small boot bands securely with a suitable tool.





SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

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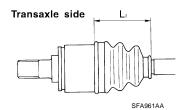
Н

Κ

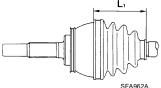
M

Drive Shaft

Applied model			QG18DE	QR25DE		
Transaxle side		е	TS79C	D90+B, D90, D86+B and T86		
Joint type	Wheel side		ZF90	B90 and B86		
	Quality		Genuine NISSAN	grease or equivalent		
				D90+B and D90 145 - 165 (5.115.82)		
Grease		Transaxle side	TS79C 155 - 165 (5.47 - 5.82)	D86+B 135 - 155 (4.76 - 5.47)		
Capacity (oz)	1			T86 140 - 160 (4.94 - 5.64)		
	(02)	Wheel side		B90 120 - 140 (4.23 - 4.94)		
			ZF90 115 - 125 (4.06 - 4.41)	B86 115135 (4.06 - 4.76)		
		I		D90+B and D90 98 (3.86)		
Boot length mm	Transaxle side "L2 "		TS79C 102.5 (4.035)	D86+B 98 (3.86)		
				T86 98.5 (3.88)		
(in)	Whool side "I	4 "	7500 07 (2 92)	B90 115.7 (4.56)		
	Wheel side "L1 "		ZF90 97 (3.82)	B86 124.2 (4.89)		







Wheel	Bearing	(Front)
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EDS0008R

Wheel bearing axial end play limit mm (in)	0.05 (0.0020 in) or less	
Wheel bearing lock nut tightening torque N·m (kg-m, ft-lb)	197 - 274 (20 - 28, 145 - 202)	
Knuckle to strut tightening torque N-m (kg-m, ft-lb)	114 - 133 (11.6 - 13.6, 84 - 98)	

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SERVICE DATA AND SPECIFICATIONS (SDS)