

# PROPELLER SHAFT & DIFFERENTIAL CARRIER

## SECTION PD

GI

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### MODIFICATION NOTICE:

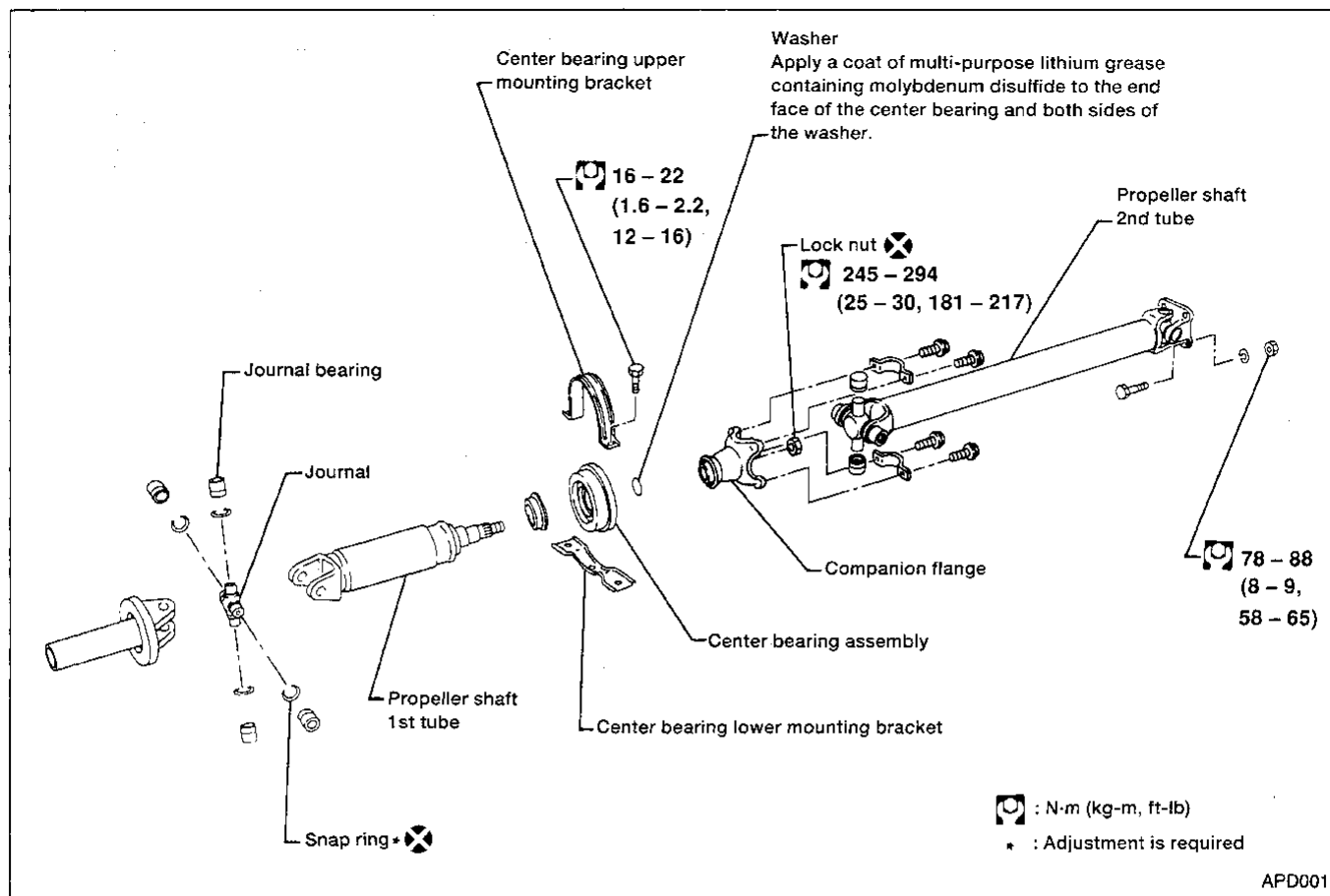
- The companion flange on rear propeller shafts have been changed.
- All rear final drives include an ABS sensor unit.
- The differential torque specification has changed.

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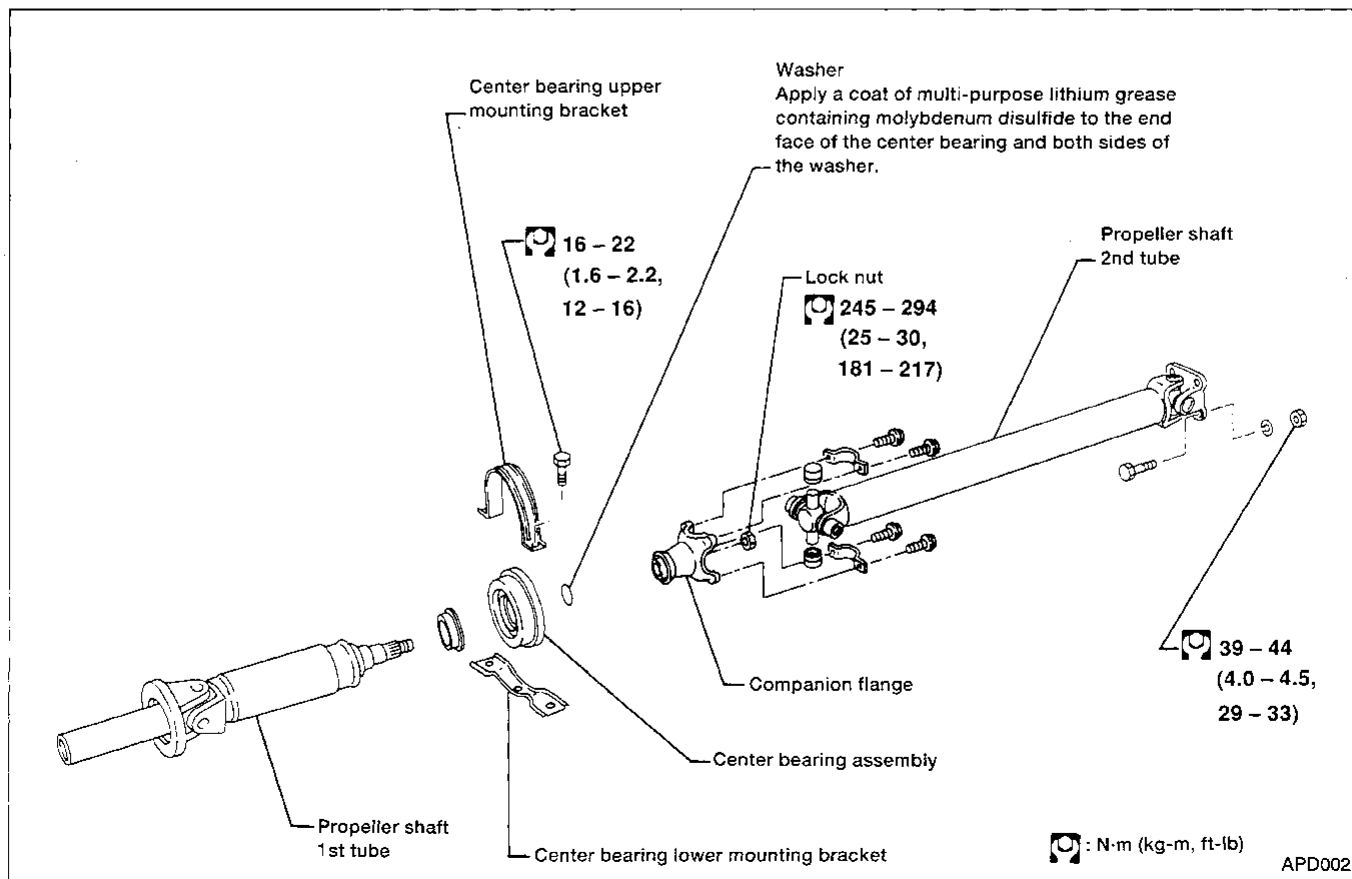
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# PROPELLER SHAFT

## Rear propeller shaft (Model 3S80B)



## Rear propeller shaft (Model 3S71A)



## Removal

- Remove propeller shaft.

### Plug front end of transfer.

- Remove axle shaft.  
Refer to "REAR AXLE" in RA section.

### CAUTION:

- Be careful not to damage spline, sleeve yoke and front oil seal when removing propeller shaft.
- Before removing the final drive assembly or rear axle assembly, disconnect the ABS sensor harness connector from the assembly and move it away from the final drive/rear axle assembly area. Failure to do so may result in the sensor wires being damaged and the sensor becoming inoperative.

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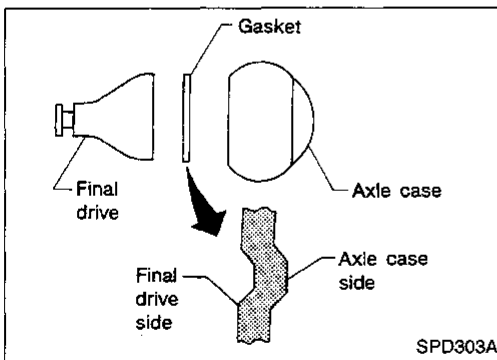
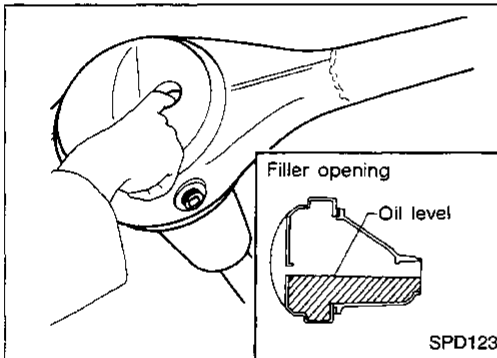
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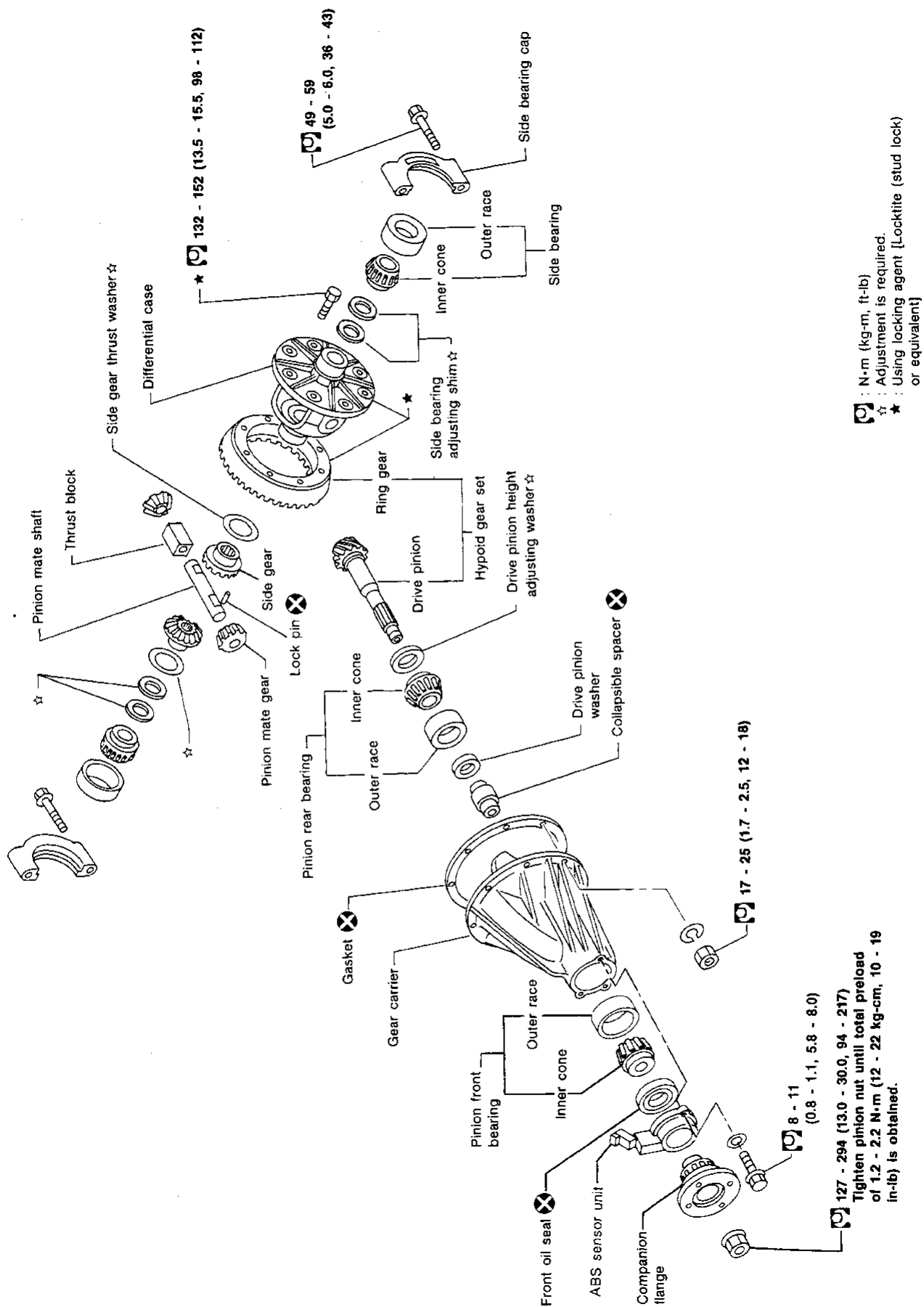
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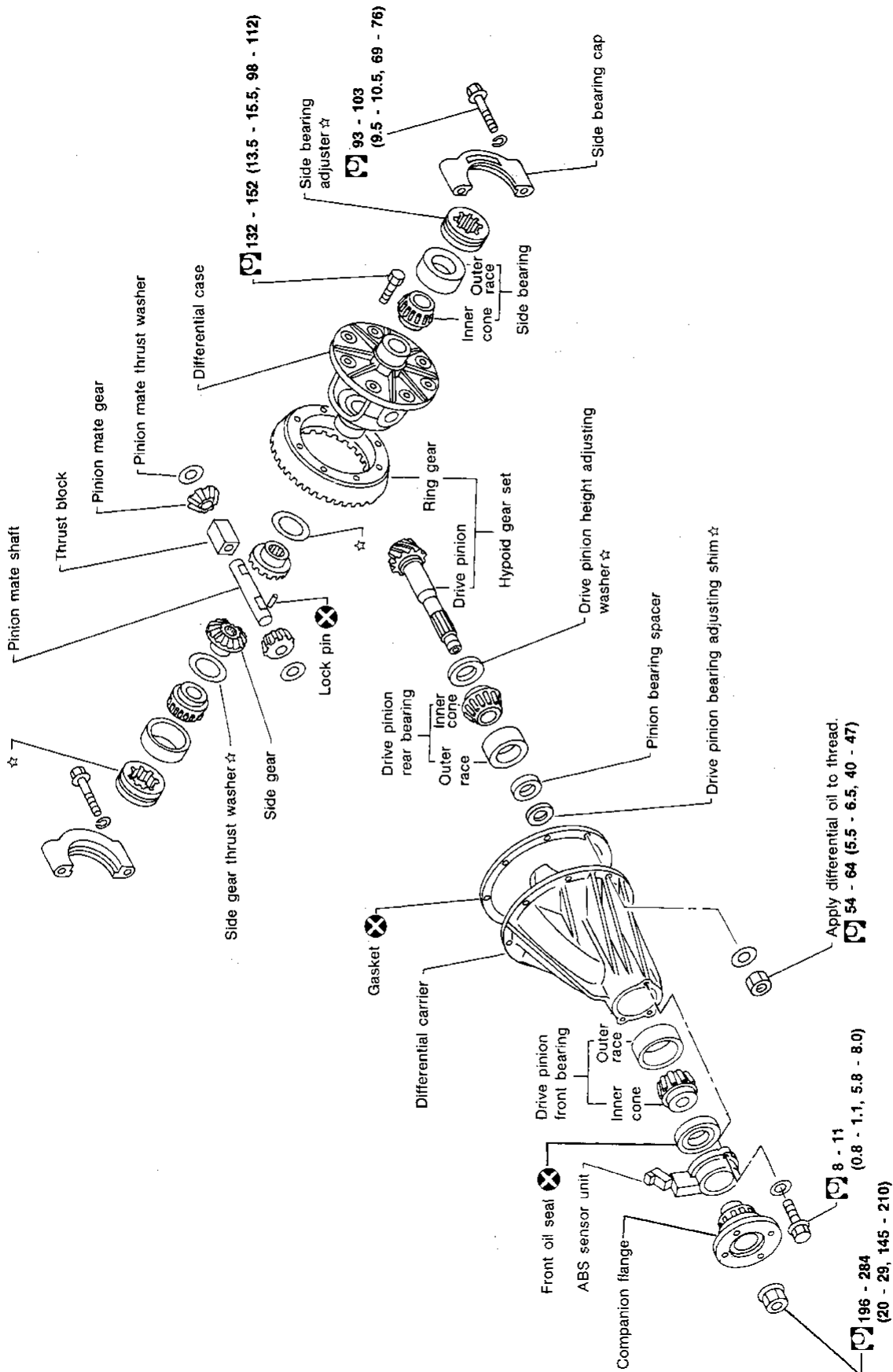
## Installation

- Fill final drive with recommended gear oil.

- Pay attention to the direction of gasket (H233B only).

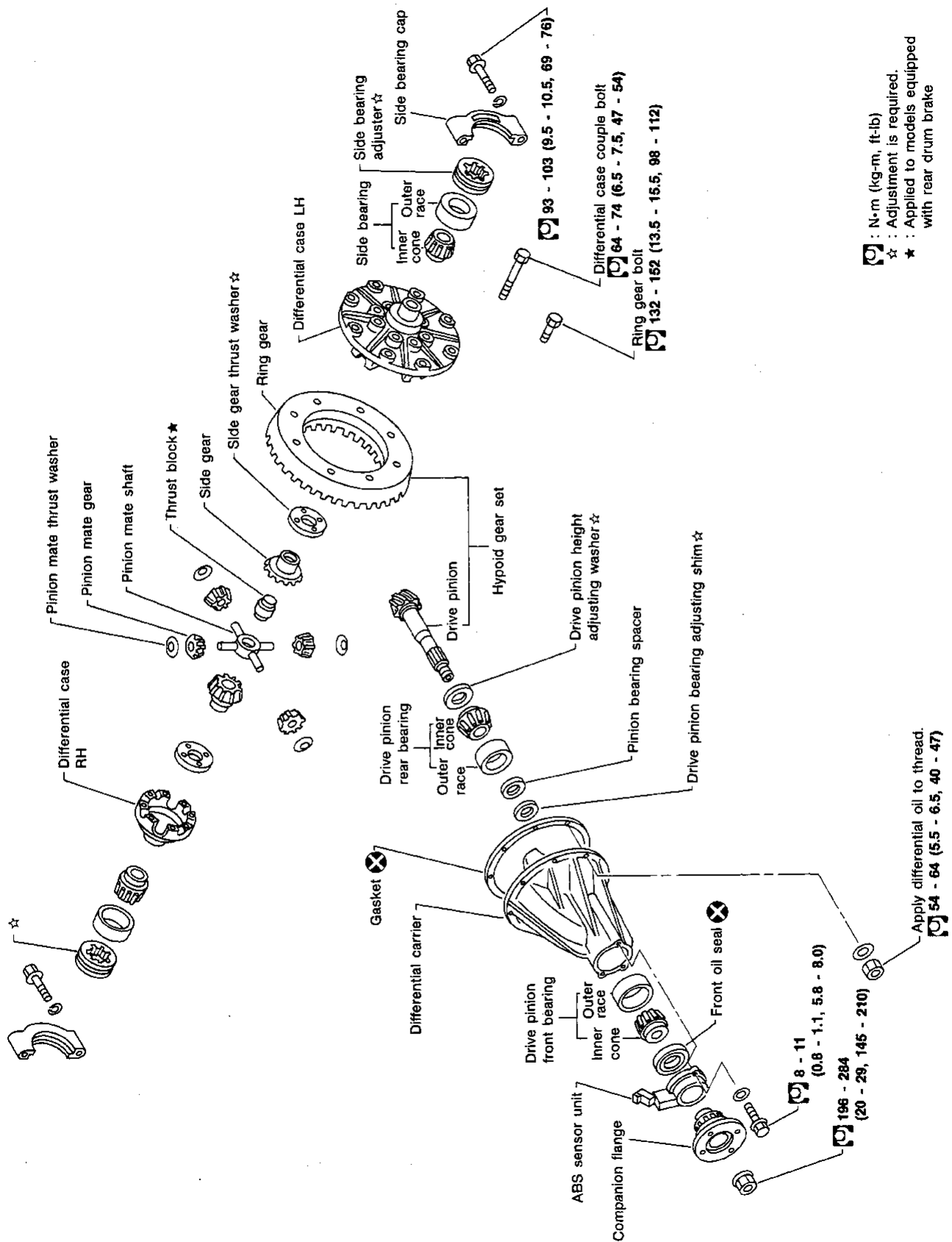


## 2-pinion type



☆ : N·m (kg·m, ft·lb)  
☆ : Adjustment is required.

## 4-pinion type



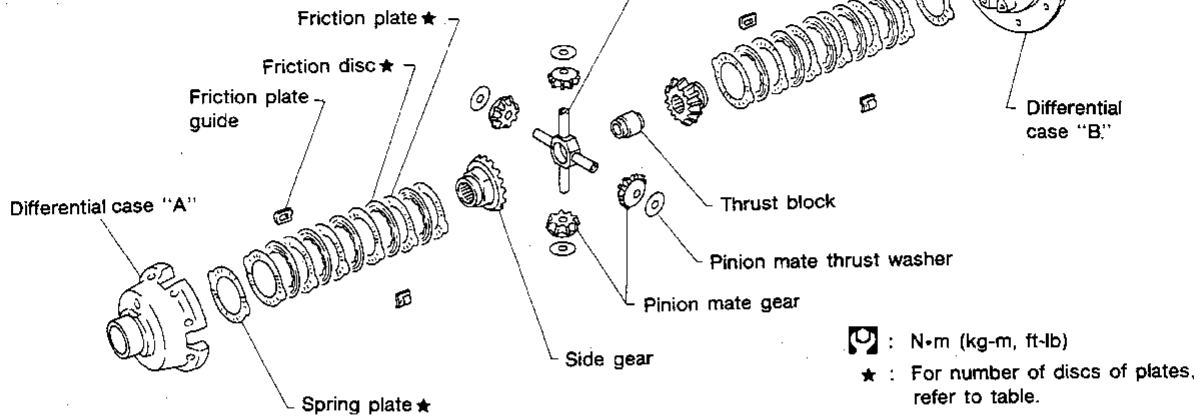
No. of discs and plates (One side)

Model	H233B
Friction disc	5
Friction plate	6
Spring disc	1
Spring plate	1

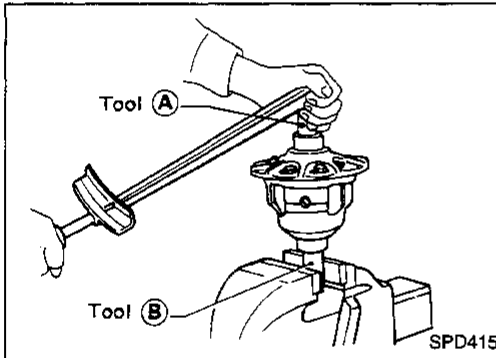
Differential case  
couple bolt

54 - 64 (5.5 - 6.5, 40 - 47)

Lock strap



SPD252A



SPD415

### CAUTION:

Do not run engine when one wheel (rear) is off the ground.

### Preparation for Disassembly

### CHECKING DIFFERENTIAL TORQUE

Measure differential torque with Tool.

If it is not within the specifications, inspect components of limited slip differential.

#### Differential torque:

294 - 392 N·m

(30 - 40 kg-m, 217 - 289 ft-lb)

#### Tool number:

(A) KV38105210 ( — )

(B) KV38105220 ( — )

# SERVICE DATA AND SPECIFICATIONS (SDS)

## Propeller Shaft

### GENERAL SPECIFICATIONS

#### 2WD models

Engine	KA24E				VG30E	
Wheelbase	Standard		Long		Long	
Transmission	M/T	A/T	M/T	A/T	M/T	A/T
Propeller shaft model	3S71A				3S80B	
Number of joints	3					
Coupling method with transmission	Sleeve type					
Type of journal bearings	Shell type (non-disassembly type)				Solid type (disassembly type)	
Distance between yokes mm (in)	71 (2.80)				80 (3.15)	
Shaft length mm (in) (Spider to spider)						
1st	651.5 (25.65)	549.5 (21.63)	651.5 (25.65)	549.5 (21.63)	658.0 (25.91)	558.0 (21.97)
2nd	675.2 (26.58)		975.2 (38.39)		980.3 (38.59)	
Shaft outer diameter mm (in)						
1st	63.5 (2.500)					
2nd	63.5 (2.500)					

#### 4WD models

Location	Front		Rear			
Wheelbase	—		Standard		Long	
Engine	—		KA24E	VG30E	KA24E	VG30E
Transmission	M/T	A/T	—			
Propeller shaft model	2F71H		2S80B		3S80B	
Number of joints	2				3	
Coupling method with transmission	Flange type		Sleeve type			
Type of journal bearings	Solid type (disassembly type)					
Distance between yokes    mm (in)	71 (2.80)		80 (3.15)			
Shaft length                      mm (in)						
(Spider to spider)						
1st	513.6 (20.22)	513.8 (20.23)	938.1 (36.93)		398.0 (15.67)	
2nd	—				840.3 (33.08)	
Shaft outer diameter        mm (in)						
1st	63.5 (2.500)	50.8 (2.000)	63.5 (2.500)	75 (2.95)	63.5 (2.500)	76.2 (3.000)
2nd	—				63.5 (2.500)	76.2 (3.000)



# SERVICE DATA AND SPECIFICATIONS (SDS)

## Final Drive

### GENERAL SPECIFICATIONS

#### 2WD models

Engine	KA24E		VG30E				
Vehicle type	—		Truck			Wagon	
Transmission	M/T	A/T	M/T	A/T	M/T	M/T	A/T
Body type	—		Except Heavy duty		Heavy duty	—	
Final drive model							
Rear	H190A		H233B				
Number of pinions	2				4		
Gear ratio	3.545	3.700	3.900	4.625	4.375	4.375	4.375 4.625*1
Number of teeth (Ring gear/drive pinion)	39/11	37/10	39/10	37/8	35/8	35/8	35/8 37/8*1
Oil capacity (Approx.) ℓ (US pt, Imp pt)	1.5 (3-1/8, 2-5/8)		2.8 (5-7/8, 4-7/8)				

\*1: Optional tire (P235/75R15) equipped models

#### 4WD models

Engine	KA24E	VG30E				
Vehicle type	—	Truck		Wagon		
Transmission	—	M/T	A/T	M/T	A/T	
Vehicle grade	—	—		—	SE	Except SE
Final drive model						
Front	R180A	R200A				
Rear	H233B					
Gear ratio	4.375		4.625	4.375	4.625	4.375 4.625*1
Number of pinions						
Front	4					
Rear	4					
Number of teeth (Ring gear/drive pinion)	35/8		37/8	35/8	37/8	35/8 37/8*1
Oil capacity (Approx.) ℓ (US pt, Imp pt)						
Front	1.3 (2-3/4, 2-1/4)	1.5 (3-1/8, 2-5/8)				
Rear	2.8 (5-7/8, 4-7/8)					

\*1: Optional tire (31 x 10.5R15LT and P235/75R15) equipped models.

## SERVICE DATA AND SPECIFICATIONS (SDS)

### Final Drive (Cont'd)

#### INSPECTION AND ADJUSTMENT (R180A)

##### Side gear adjustment

Side gear backlash (Clearance between side gear and differential case) mm (in)	Less than 0.15 (0.0059)
Available side gear thrust washers	
Thickness mm (in)	Part number
0.75 (0.0295)	38424-W2010
0.78 (0.0307)	38424-W2011
0.81 (0.0319)	38424-W2012
0.84 (0.0331)	38424-W2013
0.87 (0.0343)	38424-W2014
0.90 (0.0354)	38424-W2015
0.93 (0.0366)	38424-W2016
0.96 (0.0378)	38424-W2017

#### INSPECTION AND ADJUSTMENT (R200A)

##### Side gear adjustment

Side gear backlash (Clearance between side gear and differential case) mm (in)	0.10 - 0.20 (0.0039 - 0.0079)
Available side gear thrust washers	
Thickness mm (in)	Part number
0.75 (0.0295)	38424-E3000
0.80 (0.0315)	38424-E3001
0.85 (0.0335)	38424-E3002
0.90 (0.0354)	38424-E3003

##### Drive pinion height adjustment

Available pinion height adjusting washers

Thickness mm (in)	Part number
3.09 (0.1217)	38154-P6017
3.12 (0.1228)	38154-P6018
3.15 (0.1240)	38154-P6019
3.18 (0.1252)	38154-P6020
3.21 (0.1264)	38154-P6021
3.24 (0.1276)	38154-P6022
3.27 (0.1287)	38154-P6023
3.30 (0.1299)	38154-P6024
3.33 (0.1311)	38154-P6025
3.36 (0.1323)	38154-P6026
3.39 (0.1335)	38154-P6027
3.42 (0.1346)	38154-P6028
3.45 (0.1358)	38154-P6029
3.48 (0.1370)	38154-P6030
3.51 (0.1382)	38154-P6031
3.54 (0.1394)	38154-P6032
3.57 (0.1406)	38154-P6033
3.60 (0.1417)	38154-P6034
3.63 (0.1429)	38154-P6035
3.66 (0.1441)	38154-P6036

# SERVICE DATA AND SPECIFICATIONS (SDS)

## Final Drive (Cont'd)

### INSPECTION AND ADJUSTMENT (H190A)

#### Side gear adjustment

Side gear backlash (Clearance between side gear and differential case) mm (in)	Less than 0.15 (0.0059)
Available side gear thrust washers	
Conventional models	
Thickness mm (in)	Part number
0.75 (0.0295)	38424-E3000
0.80 (0.0315)	38424-E3001
0.85 (0.0335)	38424-E3002
0.90 (0.0354)	38424-E3003

#### Side bearing adjustment

Differential carrier assembly turn- ing resistance N (kg, lb)	34.3 - 39.2 (3.5 - 4.0, 7.7 - 8.8)
Available side bearing adjusting shims	
Thickness mm (in)	Part number
0.10 (0.0039)	38455-61200
0.12 (0.0047)	38453-61201
0.15 (0.0059)	38453-61202
0.17 (0.0067)	38453-61203
0.20 (0.0079)	38456-61200
0.25 (0.0098)	38453-61204
0.30 (0.0118)	38453-61205
0.40 (0.0157)	38453-61206
0.50 (0.0197)	38457-61200

### INSPECTION AND ADJUSTMENT (H233B)

#### Side gear adjustment

Side gear backlash (Clearance between side gear and differential case) mm (in)	Less than 0.15 (0.0059)
Available side gear thrust washers	
Thickness mm (in)	Part number
1.75 (0.0689)	38424-T5000
1.80 (0.0709)	38424-T5001
1.85 (0.0728)	38424-T5002

#### — Additional service for limited slip differential model —

#### Differential torque adjustment

Differential torque N-m (kg-m, ft-lb)	294 - 392 (30 - 40, 217 - 289)
Number of discs and plates (One side)	
Friction disc	5
Friction plate	6
Spring disc	1
Spring plate	1
Wear limit of plate and disc mm (in)	0.1 (0.004)
Allowable warp of friction disc and plate mm (in)	0.08 (0.0031)

#### Available discs and plates

Plate name	Thickness mm (in)	Part number
Friction disc	1.48 - 1.52 (0.0583 - 0.0598)	38433-C6000 (Standard type)
	1.58 - 1.62 (0.0622 - 0.0638)	38433-C6001 (Adjusting type)
Friction plate	1.48 - 1.52 (0.0583 - 0.0598)	38432-C6000
Spring disc	1.48 - 1.52 (0.0583 - 0.0598)	38436-C6000
Spring plate	1.48 - 1.52 (0.0583 - 0.0598)	38435-C6010