

<b>SERVICE MANUAL</b>	
Applies to: <a href="#">Hyundai Coupe/Tiburon 1998-2000</a>	
<b>GROUP</b>	
Drive Shaft & Axle	General

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## SPECIFICATIONS

### Drive shaft

Joint type	1.8M/T, A/F	2.0M/T, A/T
Outer	B.J	B.J
Inner	D.O.J/T.J	D.O.J/T.J
Length (Joint to joint) mm (in.)		
Left	399 (15.70)/ 398.1 (15.67)	397.5 (15.64)/ 396.2 (15.59)
Right	684 (26.92)/ 679.1 (26.73)	681.5 (26.e3)/ 677.2 (26.66)
Maximum permissible joint angle		
B.J	45.6° or more	46.5° or more
B.O.J	22° or more	22° or more
T.J	23° or more	23° or more

- D.J.: Birfield joint
- D.O.J.: Double offset joint
- T.J.: Tripod joint

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## SERVICE STANDARD

### Limit

Hub end play	mm (in.)	0.008 (0.0003)
Wheel bearing starting torque	Nm (kg.cm, lb.in.)	1.3 (13, 12)

### TIGHTENING TORQUE

	Nm	Kg.cm	lb.ft
Drive shaft nut	200-260	2000-2600	148-192
Knuckle to strut assembly	110-130	1100-1300	81-95
Lower arm ball joint to knuckle	60-72	600-720	44-53
Tie rod end to knuckle	15-34	150-340	11-25
Hub to brake disc	50-60	500-600	37-44
Caliper to knuckle	65-75	650-750	48-55

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## LUBRICANTS

### D.O.J.- B.J. type drive shaft (For 1.8 M/T)

	Recommended lubricants	Quantity
B.J. boot grease	CENTOPLEX 278M/136K	110 ± 6 gr. (Joint: 55 ± 3 gr., Boot: 55 ± 3 gr.)
D.O.J. boot grease	AMBCYGON TA10/2A	100 ± 6 gr. (Joint: 60 ± 3 gr., Boot: 40 ± 3 gr.)

### T.J. - B.J. type drive shaft (For 1.8 A/T)

	Recommended lubricants	Quantity
B.J. boot grease	CENTOPLEX 278M/136K	110±6gr. (Joint: 55 ± 3 gr., Boot: 55 ± 3 gr.)
T.J. boot grease	KLK TJ 41-182 (MSS511-50, KOREA KLUBER)	120 ± 6 gr. (Joint: 75 ± 3 gr., Boot: 45 ± 3 gr.)

### D.O.J.-B.J. type drive shaft (For 2.0 M/T)

	Recommended lubricants	Quantity
B.J. boot grease	CENTOPLEX 278M/136K	115 ± 6gr. (Joint: 60 ± 3 gr., Boot: 55 ± 3 gr.)
D.O.J. boot grease	AMBCYGON TA10/2A	100 ± 6 gr (Joint: 60 ± 3 gr., Boot: 40 ± 3 gr.)





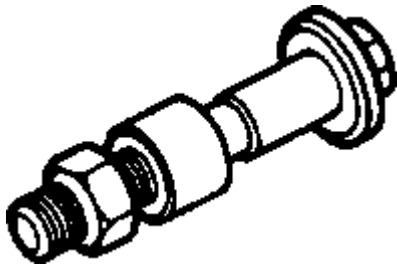
### T.J. - B.J. type drive shaft (For 2.0 A/T)

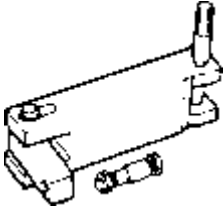


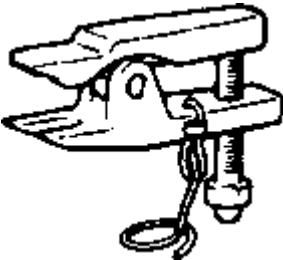
	Recommended lubricants	Quantity
B.J. boot grease	CENTOPLEX 278M/136K	105 ± 6 gr. (Joint: 60 ± 3 gr., Boot: 45 ± 3 gr.)
T.J. boot grease	ONE - LUBER MK	145 ± 6 gr. (Joint: 100 ± 3 gr., Boot: 45 ± 3gr.)

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## SPECIAL TOOLS

Tool (Number and Name)	Illustration	Use
09500-21000 Bar		Removal of front wheel bearing.
09517-21000 Hub bearing remover		Removal of front wheel bearing. (Use with 09500-21000.)
09216-21300 Hub bearing installer		Installation of front wheel bearing.
09495-33000 Puller		Removal of the front wheel bearing inner race.
09517-21500 Front hub remover and installer		Removal & installation of the front hub. (Use with 09517-29000.)

<p>09517-29000 Knuckle arm bridge</p>		<p>Removal of the front hub. (Use with 09517-21500.)</p>
<p>09532-11600 Pre-load socket</p>		<p>Measuring of front wheel bearing preload. (Use with 09517-21500, 30 mm socket and torque wrench.)</p>
<p>09526-11001 Axle shaft puller</p>		<p>Removal of the drive shaft from the front hub.</p>
<p>09568-34000 Ball joint remover</p>		<p>Removal of the front lower arm ball joint and tie rod end ball joint.</p>

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## TROUBLESHOOTING

Symptom	Probable cause	Remedy
Vehicle pulls to one side	Scoring of drive shaft ball joint	Replace
	Wear, rattle or scoring wheel bearing	Replace
	Defective front suspension and steering	Adjust or replace
Vibration	Wear, damage or bending of drive shaft	Replace
	Drive shaft rattle and hub serration	Replace
	Wear, rattle or sintering of wheel bearing	Replace
Shimmy	Defective wheel balance	Adjust or replace
	Defective front suspension and steering	Adjust or replace
Excessive noise	Wear, damage or bending of drive shaft	Replace
	Rattle of drive shaft and hub serration	Replace
	Rattle of drive shaft and side gear serration	Replace
	Wear, rattle or scoring of wheel bearing	Replace
	Loose hub nut	Adjust or replace
	Defective front suspension and steering	Adjust or replace
Bent cage	Cage damage due to improper handling or tool usage	Replace bearing
Galling	Metal smears on roller end due to overheating, lubricant problem or overloading	Check seals, check for proper lubrication
Cracked inner race	Race cracked due to improper fit, cooking or poor bearing seats	Replace bearing
Etching	Bearing surfaces appear gray or grayish black in color with related etching away of material usually at roller spacing	Replace bearing

Brinelling	Surface indentations on race surface caused by rollers either under impact loading or vibration while the bearing is not rotating	Check seals, check for proper lubrication
Heat discoloration	Heat discoloration is dark blue resulting from overload or no lubricant (Yellow or brown color is normal)	Replace bearing Check seals and other parts
Fatigue spalling	Flaking of surface metal resulting from fatigue	Replace bearing Clean all related parts

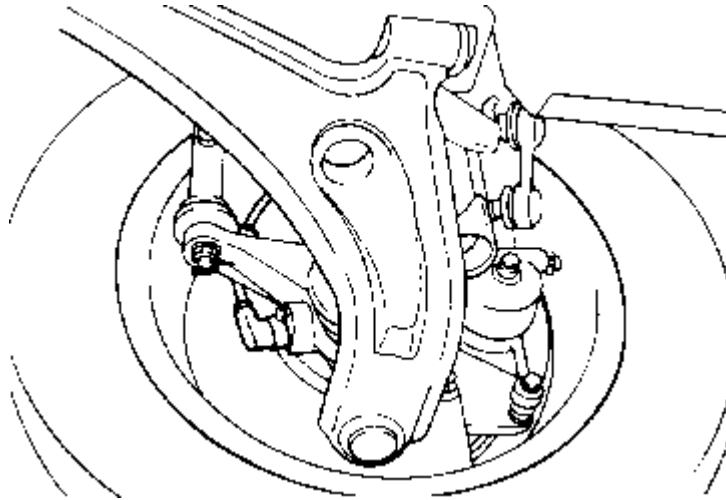
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## REMOVAL

### NOTE

**Before removing the front axle assembly, disconnect the ABS wheel sensor from the assembly and move it away from the front axle assembly area. Failure to do so may result in the sensor wires being damaged and the sensor becoming inoperative.**



Remove the drive shaft nut. Jack up the vehicle and support it with jack stands. Remove the wheel and tire.

Remove the front brake assembly from the knuckle and suspend with a wire.

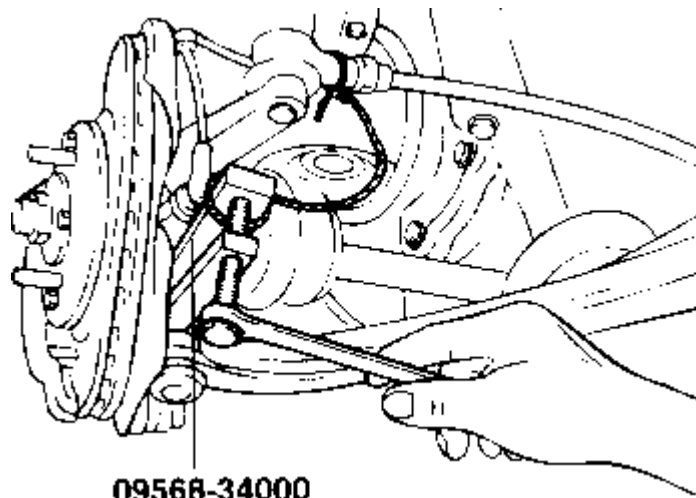
### NOTE

**Brake hose does not need to be disconnected from brake caliper. Be careful not to depress brake pedal, or piston will pop out.**

Disconnect the lower arm ball joint from the knuckle using the special tool.

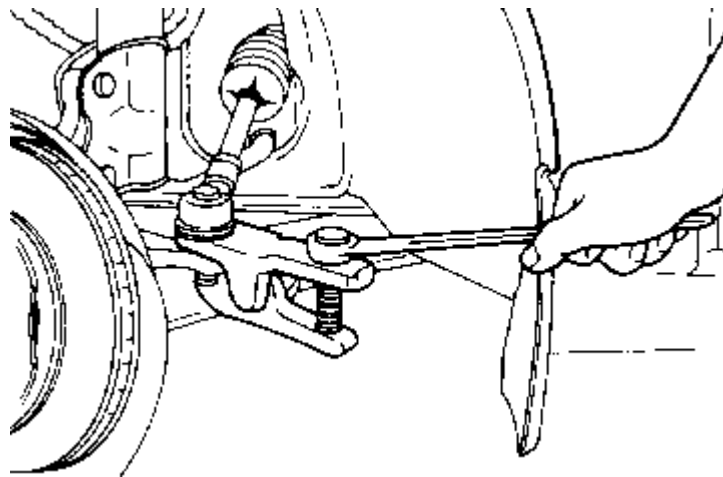
Using the special tool, remove the drive shaft nut.





**09568-34000**

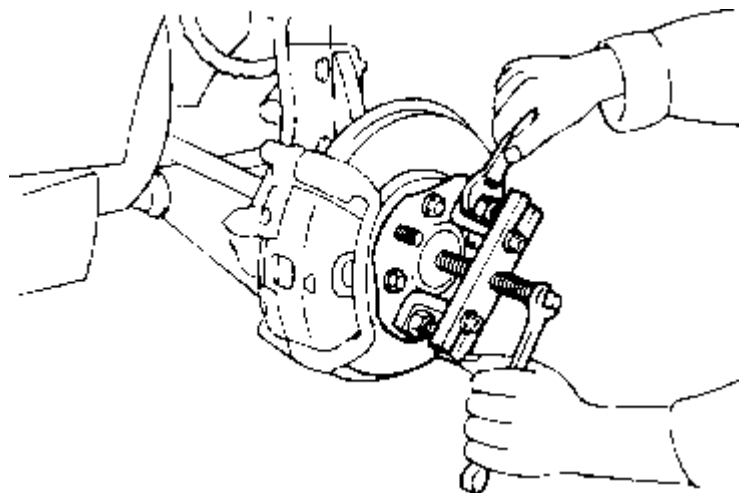
Disconnect the tie rod and ball joint from the knuckle using the special tool.



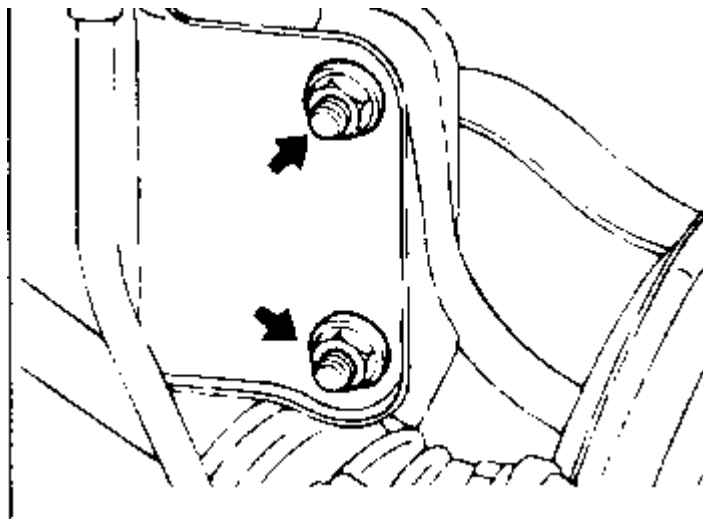
**NOTE**

1. Be sure to tie a cord to the special tool and to a nearby part.
2. Loosen the nut but do not remove it.

Disconnect the drive shaft from the hub using the special tool.



Remove the hub and knuckle as an assembly from the strut.



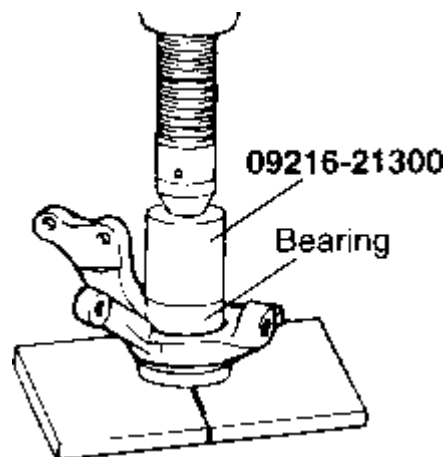
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## REASSEMBLY

Fill the wheel bearing with multipurpose grease.

Apply a thin coating of multipurpose grease to the knuckle and bearing contact surfaces.

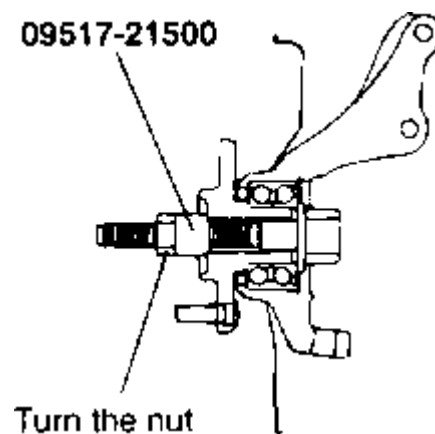
Press-in the bearing by using the special tool.



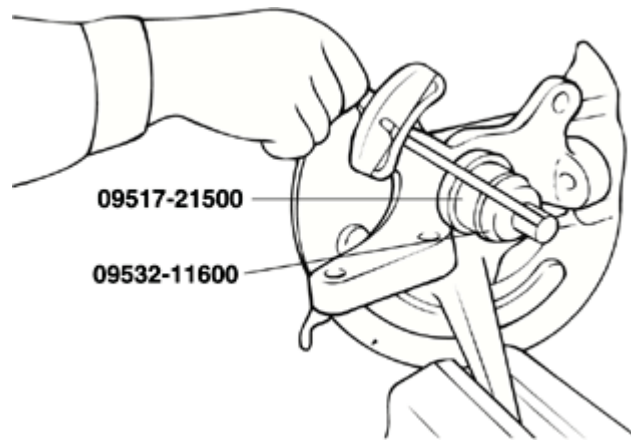
### NOTE

**Do not press inner race of wheel bearing assembly.**

Install snap ring into groove of knuckle.



Measure the hub bearing starting torque.

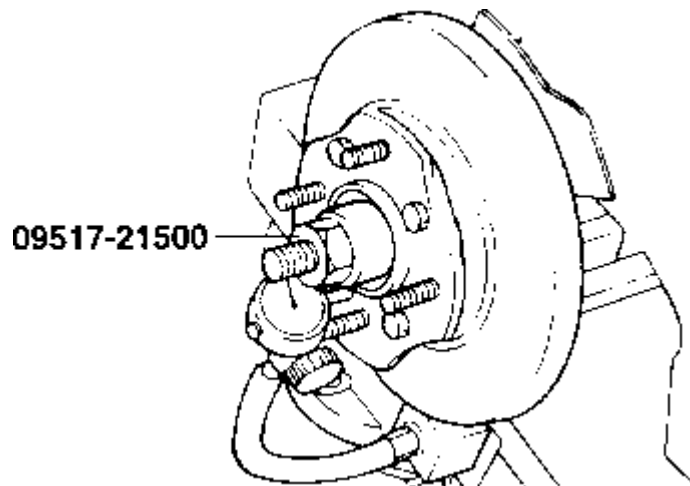


#### TORQUE SPECIFICATION

Hub bearing starting torque [Limit]	1.3 Nm ( 13 kg·cm, 12 lb·ft )
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If the starting torque is 0 Nm (0 lb.in), measure the hub bearing axial play.

If the hub axial play exceeds the limit while the nut is tightened to 200-260 Nm (2,000-2,600 kg.cm, 148-192 lb.ft), the bearing, hub and knuckle have not been installed correctly. Repeat the disassembly and assembly procedure.



#### MEASUREMENT SPECIFICATION

Hub bearing axial play [Limit]	0.008 mm ( 0.0003 in )
--------------------------------	------------------------

Remove the special tool

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## INSTALLATION

Install parts to the torque specifications.

Be sure to install the washer and wheel bearing nut in the specified direction.

After installing the wheel, lower the vehicle to the ground and tighten the wheel bearing nut.

If the position of the split pin holes do not match, tighten the nut up to 260 Nm (2600 kg.cm, 188 lb.ft) maximum.

Install the split pin in the first matching holes and bend it over.

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## INSPECTION

Check the hub for cracks and the splines for wear.

Check the snap ring for cracking or damage.

Check the steering knuckle for cracks

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## INSPECTION

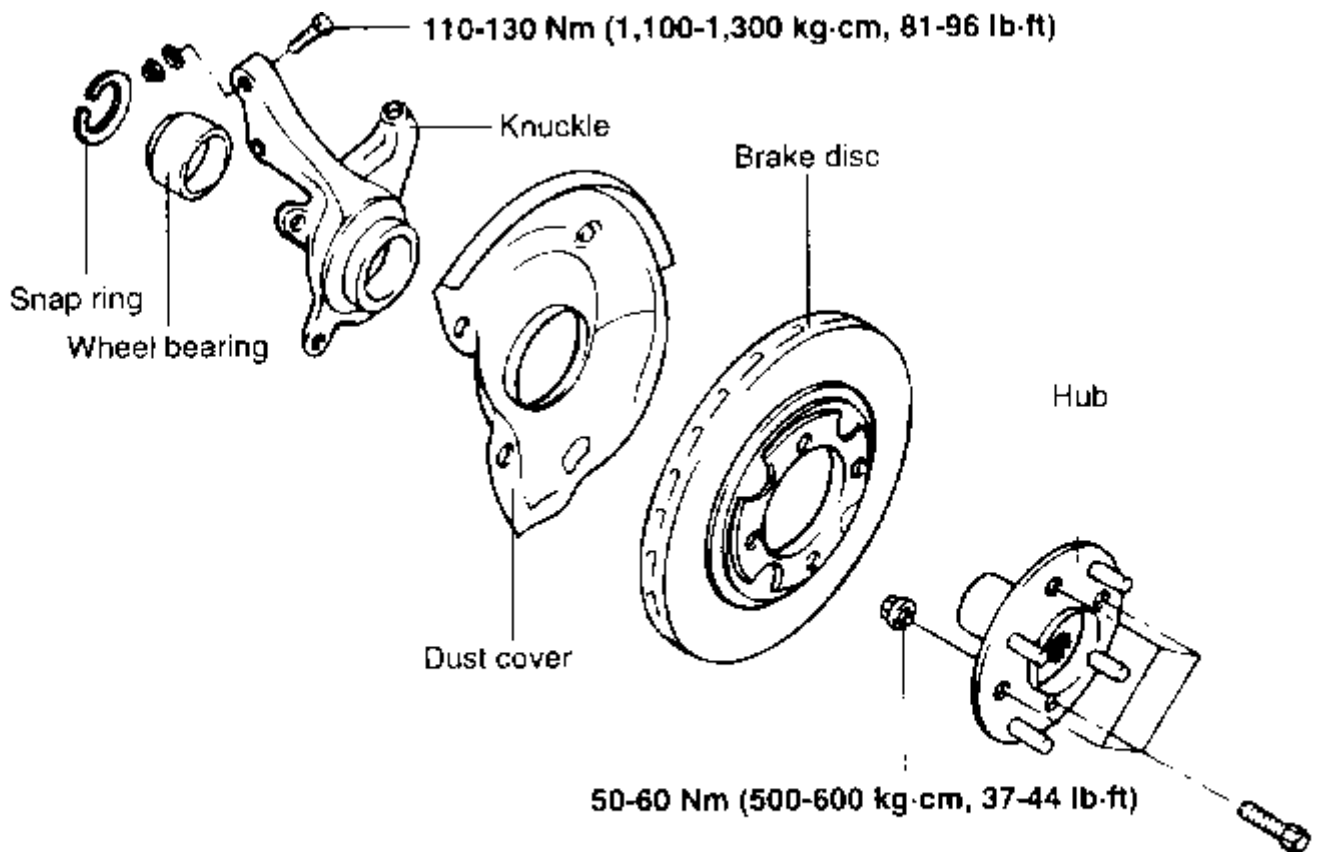
Check the hub and brake disc mounting surfaces for scoring and contamination.

Check the knuckle inner surface for scoring and cracks.

check for a defective bearing (Refer to "wheel bearing trouble shooting".)

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## COMPONENTS

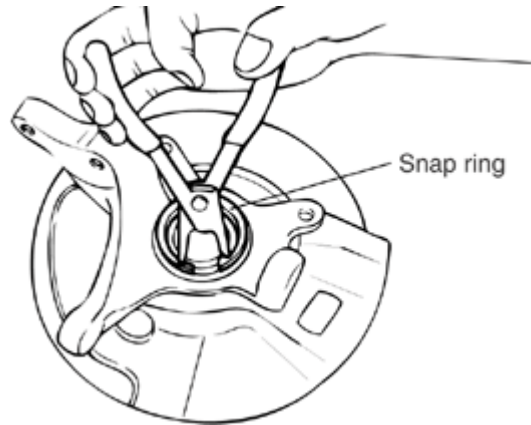


## TORQUE : Nm (kg·cm, lb·ft)

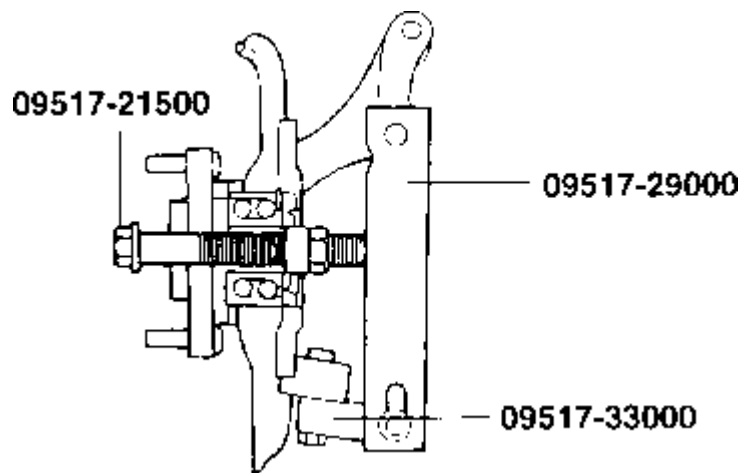
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## DISASSEMBLY

Remove the snap ring.



Attach the special tools to the knuckle and hub.



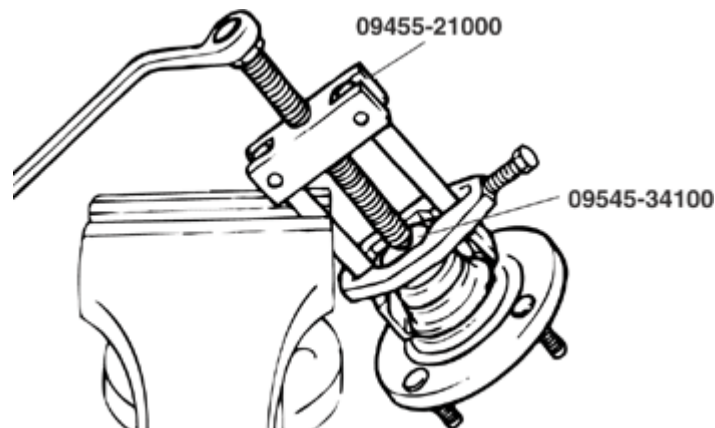
Secure the knuckle in a vise.

Tighten the nut of the special tool and remove the hub from the knuckle.

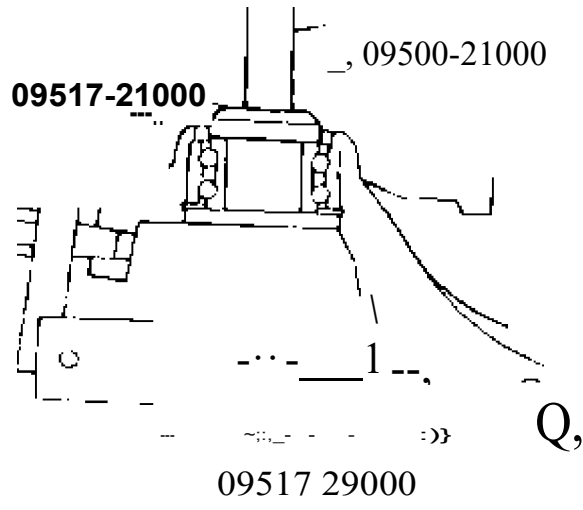
### NOTE

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

Using the special tool, remove the wheel bearing inner race (outside) from the front hub.



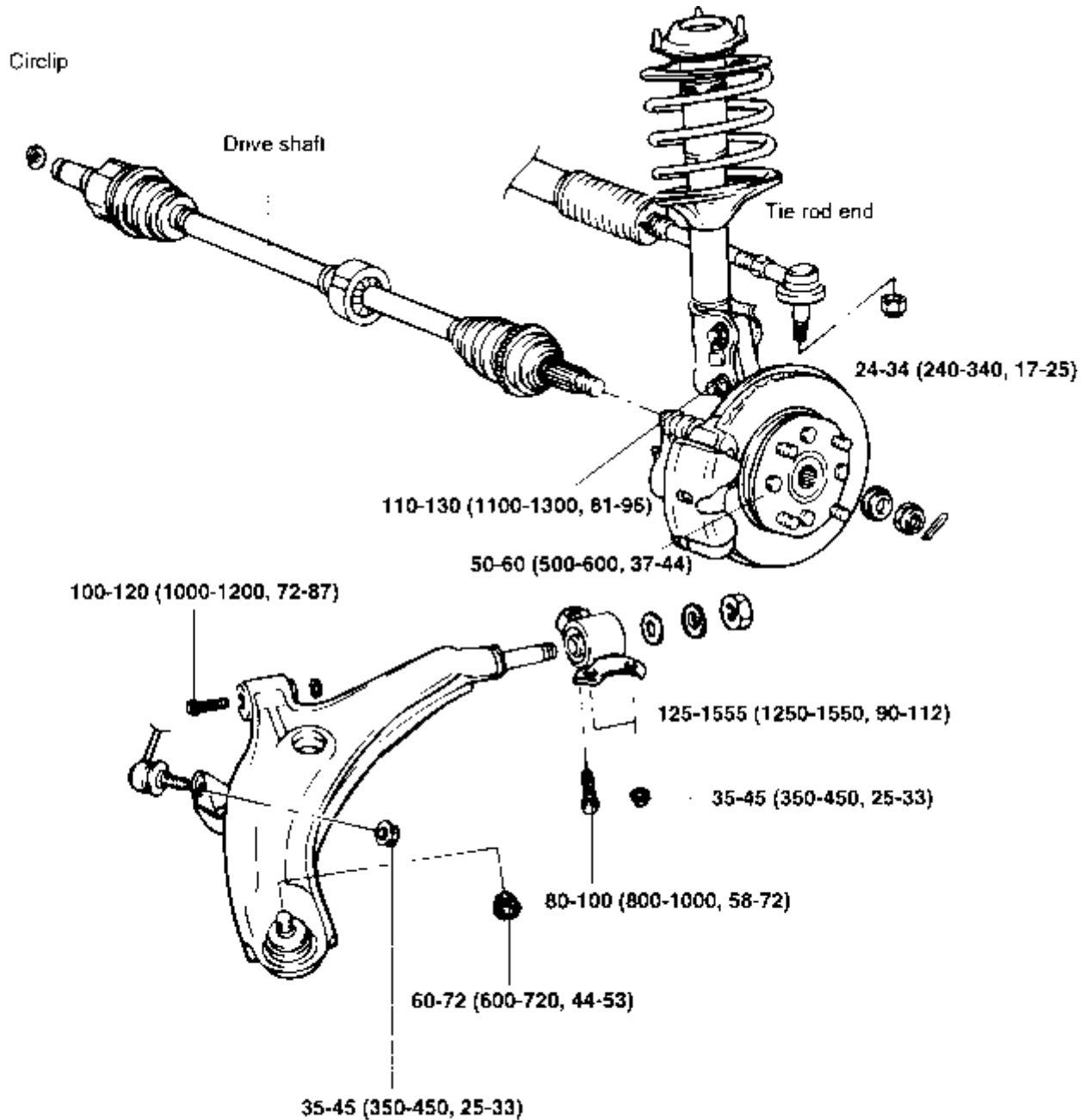
Install the inner race (outside) that was removed from the hub to the wheel bearing, and then use the special tool to remove the wheel bearing.



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## DRIVE SHAFT REMOVAL



**TORQUE : Nm (kg-cm, lb-ft)**

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## INSPECTION

Check the drive shaft boots for damage and deterioration.

Check the ball joints for wear and operating condition.

Check the splines for wear and damage.

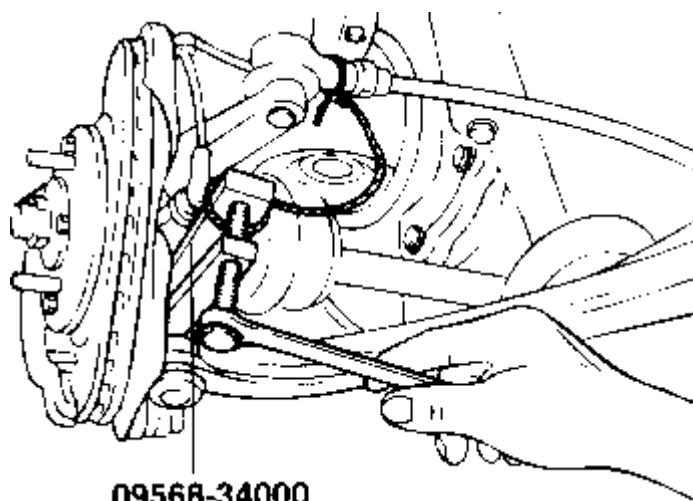


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## REMOVAL

Lift up the vehicle and remove the tires.

Remove the drive shaft nuts from the front hubs.



Remove the lower arm ball joint front the knuckle.

### NOTE

**Be sure to tie the cord of the special tool to a nearby part.**

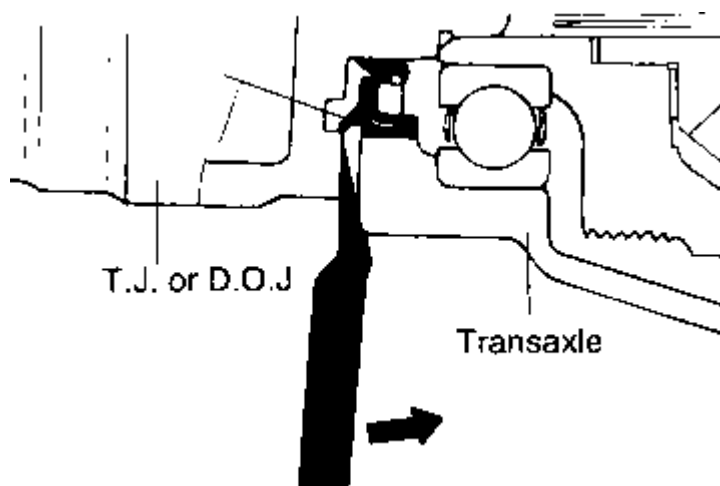
Detach the tie rod end ball joint connection.

Remove the stabilizer bar self locking nut and stabilizer bar connection.

Drain the transaxle fluid.

Insert a pry bar between the transaxle case and joint case (T.J. or D.O.J.), and pry the drive shaft from the transaxle case.



**NOTE**

1. Be sure to apply the pry bar to the rib of the transaxle case.
2. Do not insert the pry bar too deep, as this may cause damage to the oil seal. [max. depth: 7 mm (0.28 in.)].

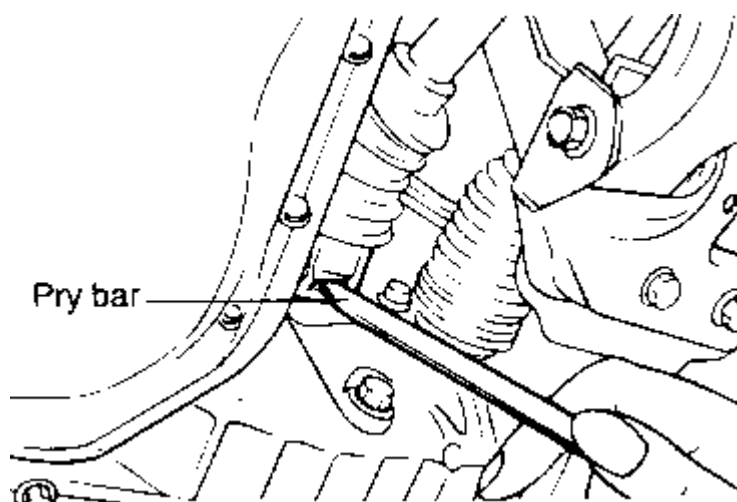
Pull out the drive shaft from the transaxle case.

**NOTE**

1. Place a shop towel in the hole of the transaxle case.
2. Support the drive shaft properly.
3. Replace the retainer ring each time the drive shaft is removed from the transaxle case.

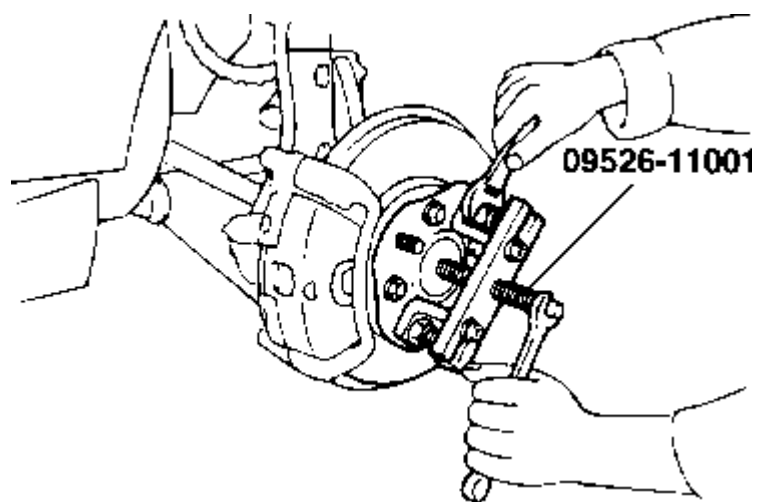
**(FOR AUTO TRANSAXLE TYPE)**

Insert a pry bar into the groove of the drive shaft to remove the drive shaft from the transaxle.

**NOTE**

**Do not pull on the drive shaft, doing so will damage the D.O.J., be sure to use the pry bar.**

Using special tool (09526-11001), force the drive shaft out of the hub.



**NOTE**

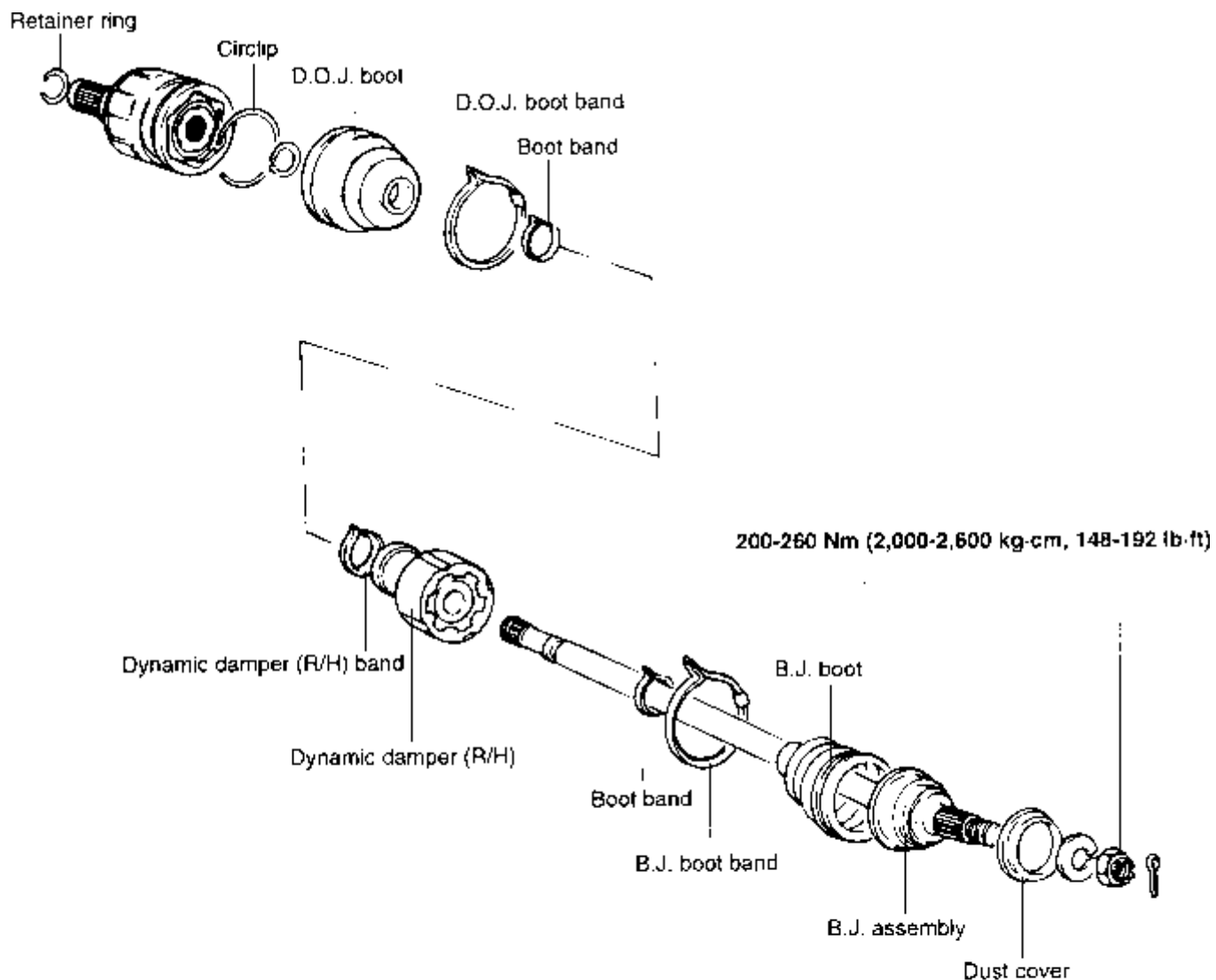
When the drive shaft is forced out, keep the spacer from falling out of place.

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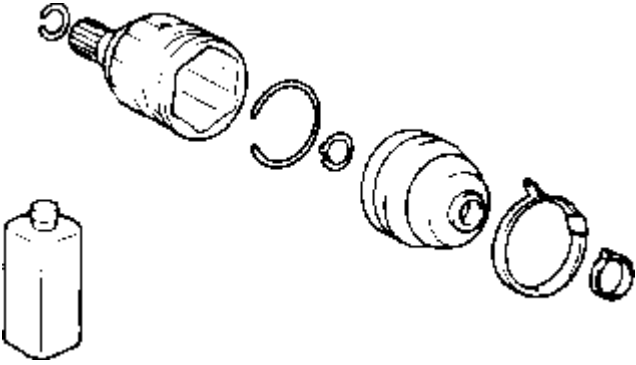
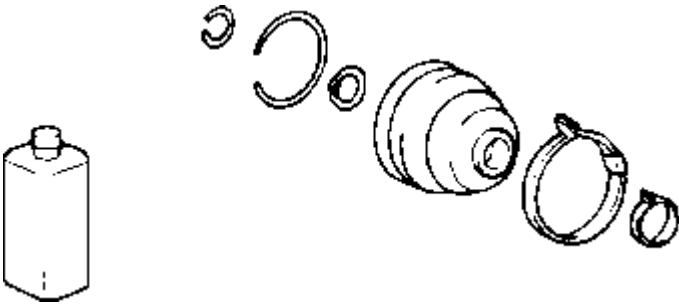
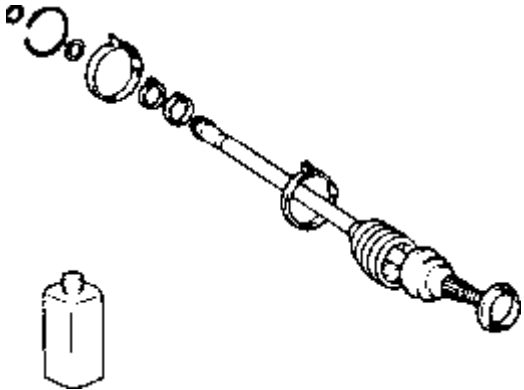
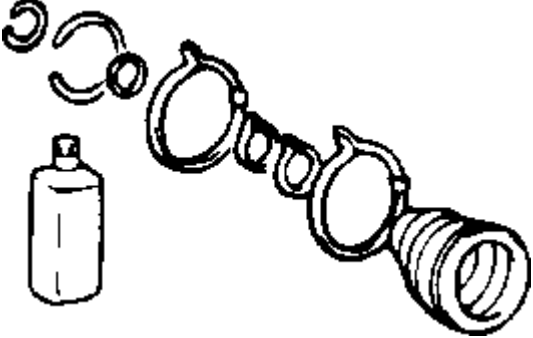

## DISASSEMBLY OF D.O.J. AND B.J.

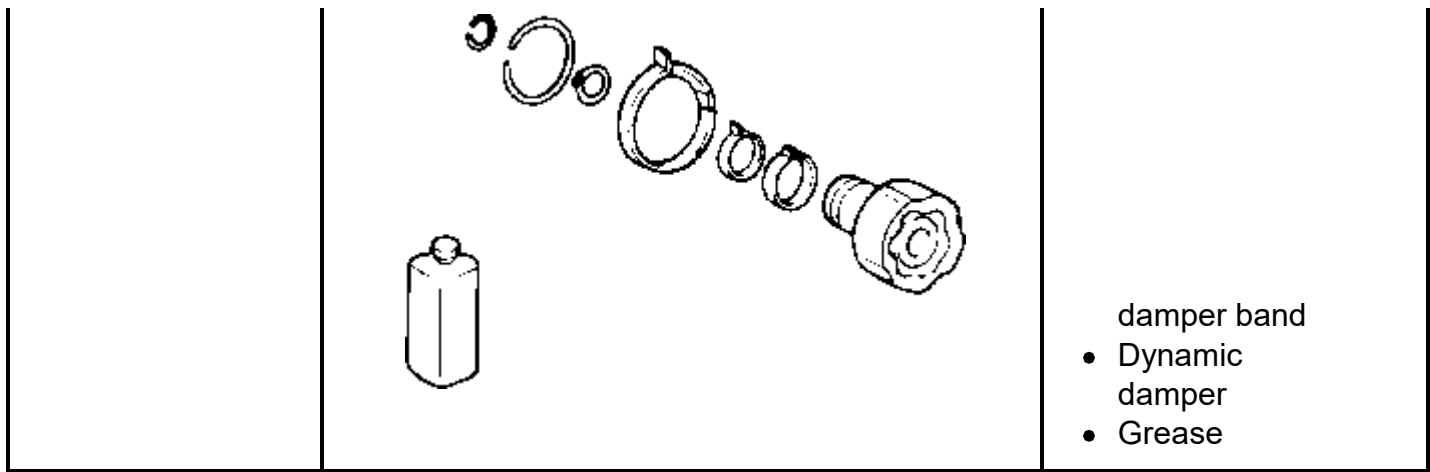
### DRIVE SHAFT (D.O.J.-B.J. TYPE)



### TORQUE : Nm (kg-cm, lb-ft)

Kit name	Illustration	Contents
		<ul style="list-style-type: none"> <li>Clip (Retainer ring)</li> </ul>

<p>Double offset joint kit</p>		<ul style="list-style-type: none"> <li>• D.O.J. assy</li> <li>• Circlip</li> <li>• D.O.J. boot</li> <li>• Snap ring</li> <li>• D.O.J. boot band</li> <li>• Boot band</li> <li>• Grease</li> </ul>
<p>Double offset joint boot kit</p>		<ul style="list-style-type: none"> <li>• Clip (Retainer ring)</li> <li>• Circlip</li> <li>• Snap ring</li> <li>• D.O.J. boot</li> <li>• D.O.J. boot band</li> <li>• Boot band</li> <li>• Grease</li> </ul>
<p>Birfield joint and shaft kit</p>		<ul style="list-style-type: none"> <li>• Clip (Retainer ring)</li> <li>• Circlip</li> <li>• Snap ring</li> <li>• D.O.J. boot band</li> <li>• Boot bands</li> <li>• B.J. boot band</li> <li>• B.J. boot</li> <li>• B.J. assy</li> <li>• Dust cover</li> <li>• Grease</li> </ul>
<p>Birfield joint boot kit</p>		<ul style="list-style-type: none"> <li>• Clip (Retainer ring)</li> <li>• Circlip</li> <li>• Snap ring</li> <li>• D.O.J. boot band</li> <li>• Boot bands</li> <li>• B.J. boot band</li> <li>• B.J. boot</li> <li>• Grease</li> </ul>
<p>Damper kit</p>		<ul style="list-style-type: none"> <li>• Clip (Retainer ring)</li> <li>• Circlip</li> <li>• Snap ring</li> <li>• D.O.J. boot band</li> <li>• Boot band</li> <li>• Dynamic</li> </ul>



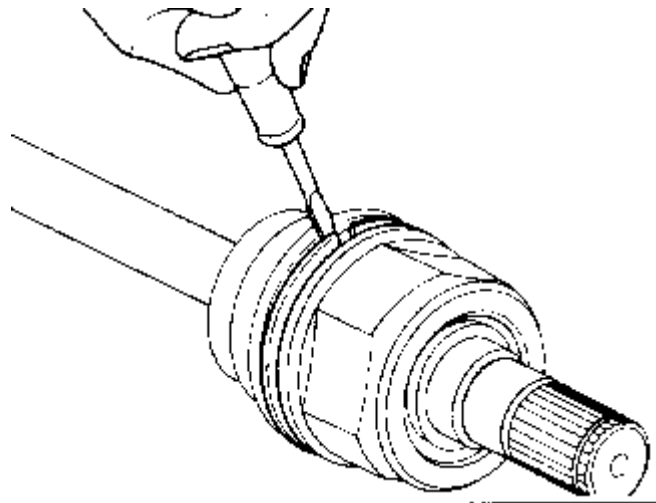
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## DISASSEMBLY

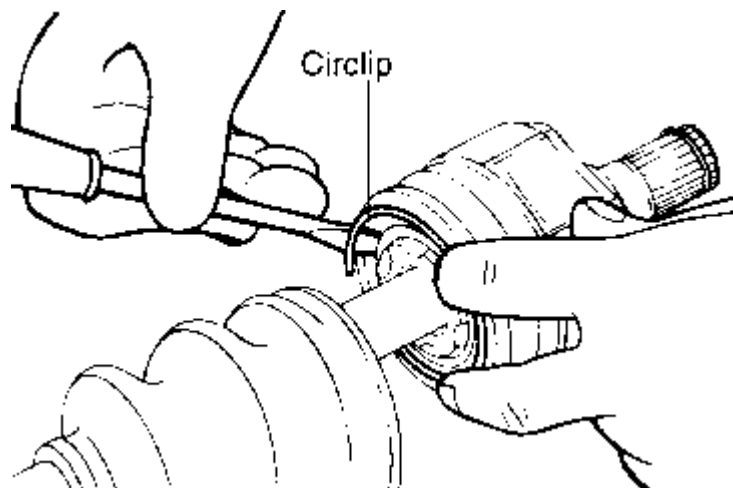
Do not disassemble the B.J. assembly. The drive shaft joint uses special grease. Do not substitute with another type of grease. The boot band should be replaced with a new one. Remove the D.O.J. boot bands and pull the D.O.J. boot from the D.O.J. outer race.

### NOTE

**Be careful not to damage the boot.**

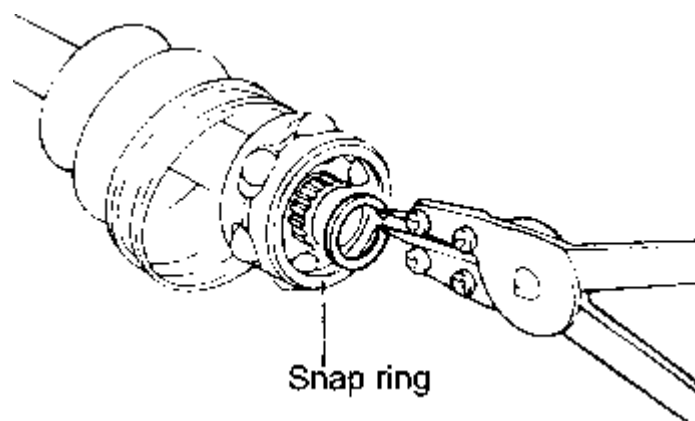


Remove the circlip with a flat-blade screwdriver.



Pull out the drive shaft from the D.O.J. outer race.

Remove the snap ring and take out the inner race, cage and balls as an assembly.

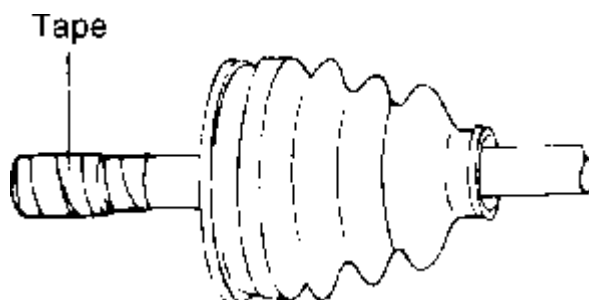


Clean the inner race, cage and balls without disassembling.

Remove the B.J. boot bands and pull out and D.O.J. boot and B.J. boot.

**NOTE**

**If the boot is to be reused, wrap tape around the D.O.J. boot and B.J. boot.**



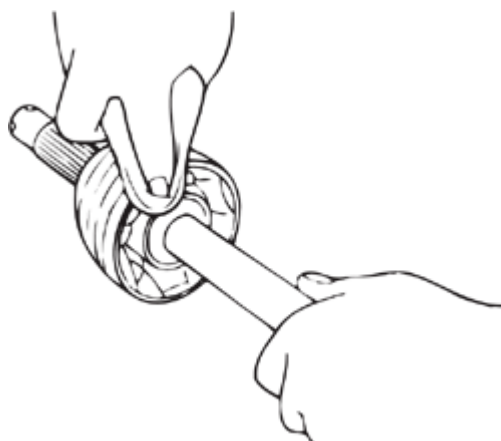
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## INSPECTION

Inspect the drive shaft and drive shaft splines for wear, damage, bending or corrosion.

Inspect the birfield joint for entry of water and/or foreign material.

Check the double offset joint outer race, cage, balls and inner race for damage, corrosion or wear.

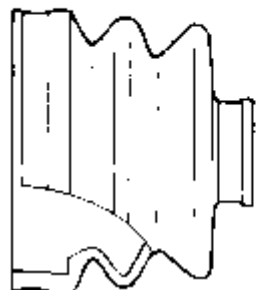


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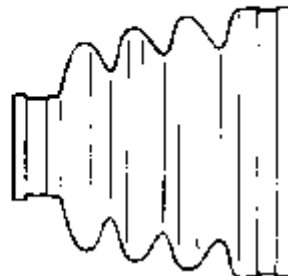
## ASSEMBLY

Wrap tape around the drive shaft splines (D.O.J. side) to prevent damage to the boots.

D.O.J. boot



B.J. boot

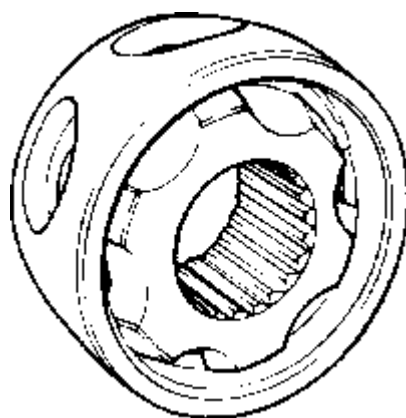


Apply grease to the drive shaft and install the boots.

### Recommended lubricant:

B.J. Boot grease	CENTOPLEX 278M/136K
D.O.J. Boot grease	AMBLYGON TA10/2A

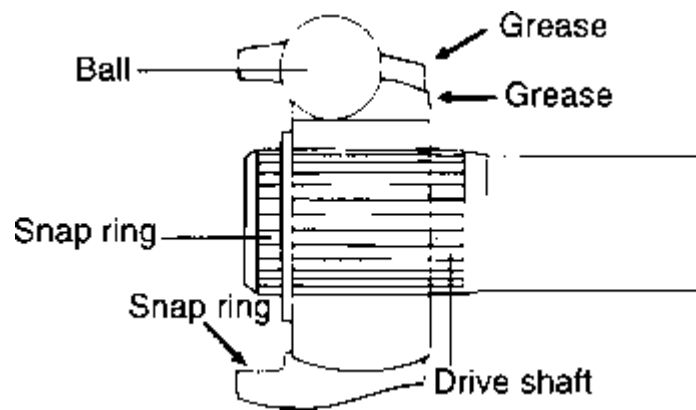
Apply the specified grease to the inner race and cage, install the cage so that it is offset on the race as shown.



### NOTE

Use the grease included in the repair kit.

Apply the specified grease to the cage and fit the balls into the cage.



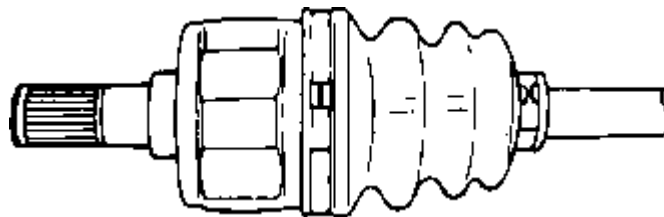
Install the chamfered side as shown, and then install the inner race onto the drive shaft, and install the snap ring.

Apply  $60 \pm 3$  gr. ( $2.1 \pm 0.1$  oz.) of specified grease to the outer race and install the outer race onto the drive shaft.

Apply  $40 \pm 3$  gr. ( $1.4 \pm 0.1$  oz.) of specified grease into the D.O.J. boot and install the boot.

### D.O.J. boot grease gr. (oz):

Total	$100 \pm 6$ ( $3.5 \pm 0.2$ )
In the joint	$60 \pm 3$ ( $2.1 \pm 0.1$ )
In the boot	$40 \pm 3$ ( $1.4 \pm 0.1$ )



Tighten the D.O.J. boot bands.

Add to the B.J. as much specified grease as was wiped away at the time of inspection.

Install the boots.

Tighten the B.J. boot bands.

To control the air in the D.O.J. boot, keep the specified distance between the boot bands when they are tightened.



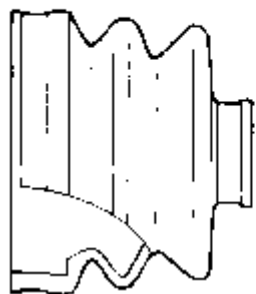
<b>SERVICE MANUAL</b>	
Applies to: <a href="#">Hyundai Coupe/Tiburon 1998-2000</a>	
<b>GROUP</b>	
Drive Shaft & Axle	Drive Shaft

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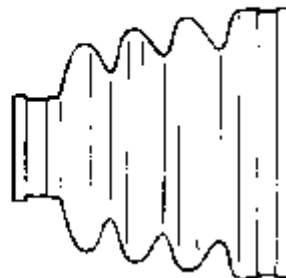
## ASSEMBLY

Wrap tape around the drive shaft splines (T.J. side) to prevent damage to the boots.

D.O.J. boot



B.J. boot

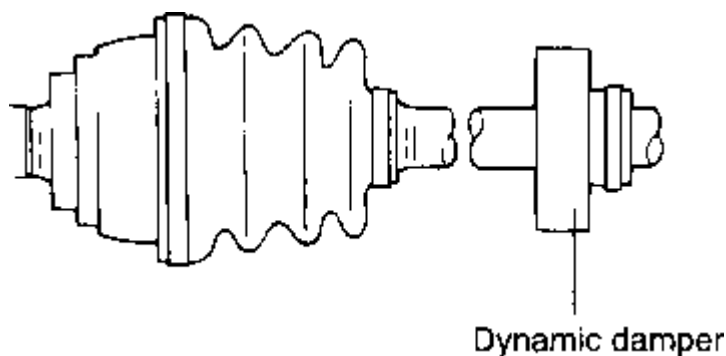


Apply grease to the drive shaft and install the boots.

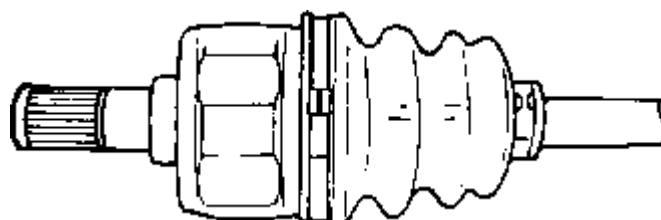
### Recommend lubricant:

B.J. Boot grease	CENTOPLEX 278M/136K
T.J. Boot grease (2.0 A/T)	ONE-LUBER MK
T.J. Boot grease (1.8 A/T)	KLK TJ41-182 (MSS511-50, KOREA KLUBER)

To install the dynamic damper, keep the B.J. and shaft in a straight line and secure the dynamic damper in the direction of illustration and install the small boot band.



Apply grease into the T.J. boot and install the boot.



**T.J. boot grease gr. (oz): [1.8 A/T]**

Total	120 ± 6 (4.3 ± 0.2)
In the joint	75 ± 3 (2.7 ± 0.1)
In the boot	45 ± 3 (1.6 ± 0.1)

**T.J. boot grease gr. (oz): [2.0 A/T]**

Total	145 ± 6 (5.1 ± 0.2)
In the joint	100 ± 3 (3.5 ± 0.1)
In the boot	45 ± 3 (1.6 ± 0.1)

Tighten the T.J. boot bands.

Add to the B.J. as much specified grease as was wiped away at the time of inspection.

Install the boots.

Tighten the B.J. boot bands.

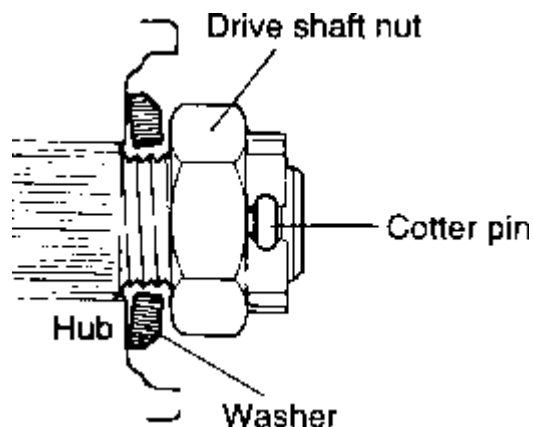
To control the air in the T.J. boot, keep the specified distance between the boot bands when they are tightened.

Tighten the following pads to the specified torque.

	Nm (kg.cm, lb.ft)
Drive shaft nut	200-260 (2000-2600, 148-192)
Knuckle to strut assembly	110-130 (1100-1300, 81-95)
Lower arm ball joint to knuckle	60-72 (600-720, 44-53)

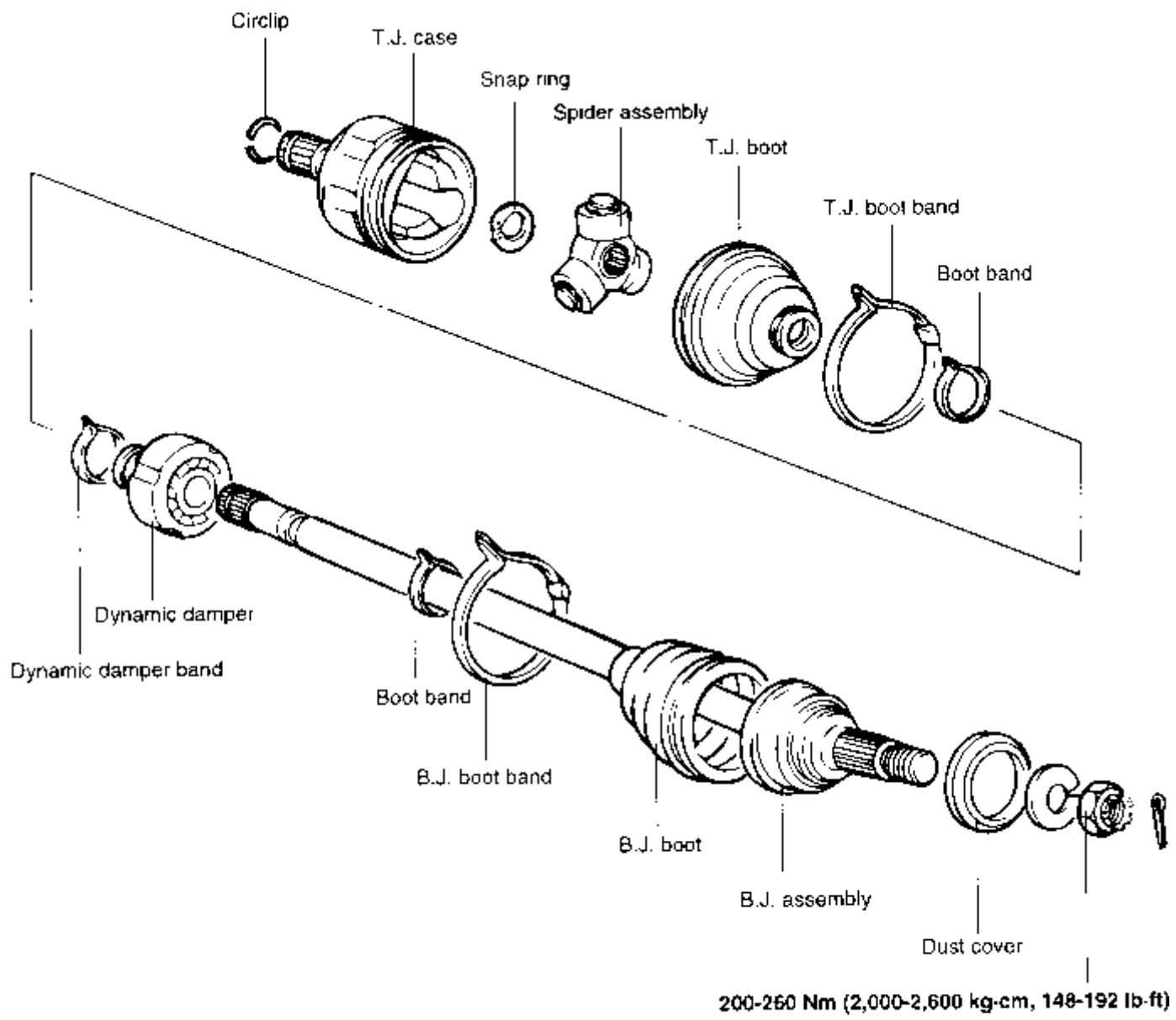
Install a new retainer ring each time the drive shaft is removed from the transaxle.

Install the washer under the drive shaft nut as shown in the illustration



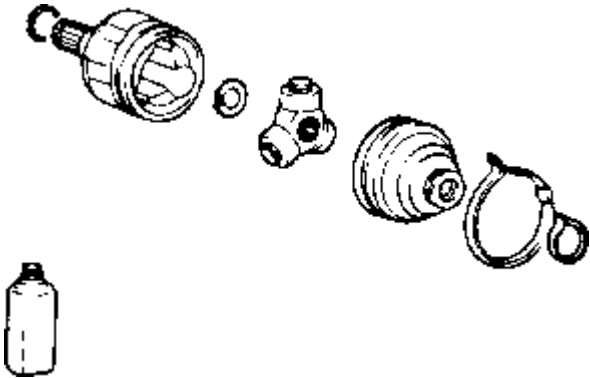
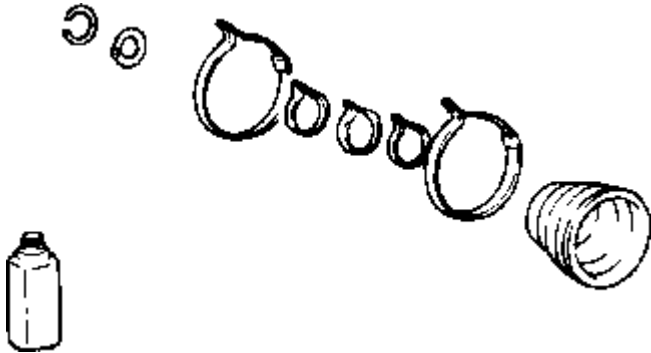
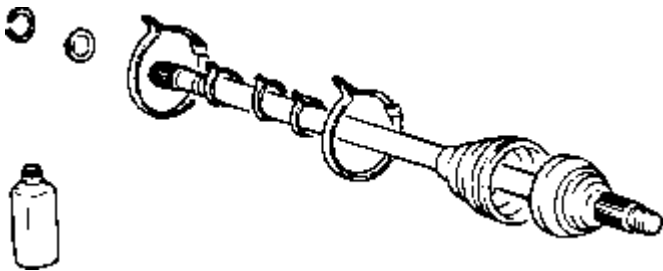

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## DISASSEMBLY OF T.J.



**TORQUE : Nm (kg-cm, lb-ft)**

Kit name	Illustration	Contents
T.J. boot kit		<ul style="list-style-type: none"> <li>• Circlip</li> <li>• Snap ring</li> <li>• T.J. boot band</li> <li>• Boot band</li> <li>• Grease</li> </ul>
		<ul style="list-style-type: none"> <li>• Circlip</li> <li>• Snap ring</li> </ul>

<p>T.J. joint kit</p>		<ul style="list-style-type: none"> <li>• T.J. boot band</li> <li>• Boot band</li> <li>• Dynamic damper band</li> <li>• Boot band</li> <li>• B.J. boot</li> <li>• Grease</li> </ul>
<p>B.J. boot kit</p>		<ul style="list-style-type: none"> <li>• Circlip</li> <li>• T.J. case</li> <li>• Spider assembly</li> <li>• T.J. boot</li> <li>• T.J. boot band</li> <li>• Boot band</li> <li>• Grease</li> </ul>
<p>B.J. joint and shaft kit</p>		<ul style="list-style-type: none"> <li>• Circlip</li> <li>• Snap ring</li> <li>• T.J. boot band</li> <li>• Boot band</li> <li>• Dynamic damper band</li> <li>• Boot band</li> <li>• B.J. boot</li> <li>• Grease</li> </ul>
<p>Damper kit</p>		<ul style="list-style-type: none"> <li>• Circlip</li> <li>• Snap ring</li> <li>• T.J. boot band</li> <li>• Boot bands</li> <li>• Dynamic damper band</li> <li>• Dynamic damper</li> <li>• Grease</li> </ul>

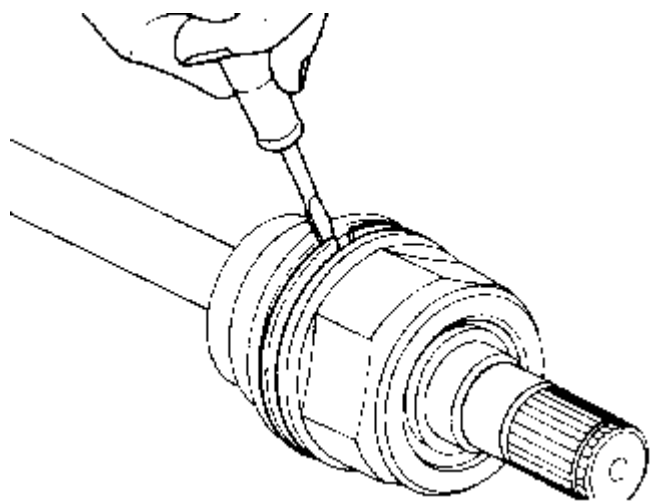
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## DISASSEMBLY

### NOTE

1. Do not disassemble the spider assembly.
2. The drive shaft joint uses special grease. Do not substitute with another type of grease.
3. The boot band should be replaced with a new one.

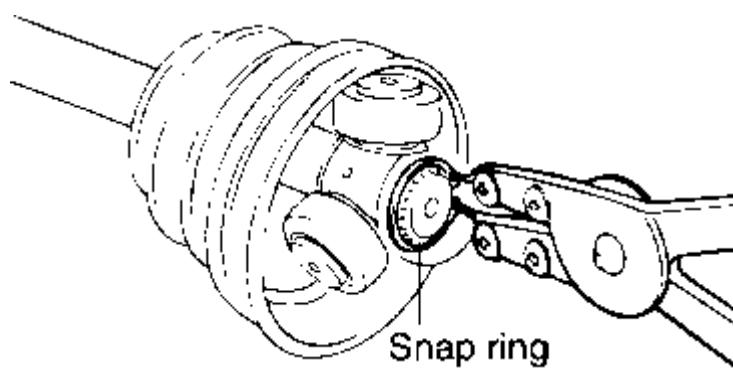
Remove the T.J. boot bands and pull the T.J. boot from the T.J. case.



**NOTE**

Be careful not to damage the boot.

Remove the snap ring and spider assembly from the drive shaft.

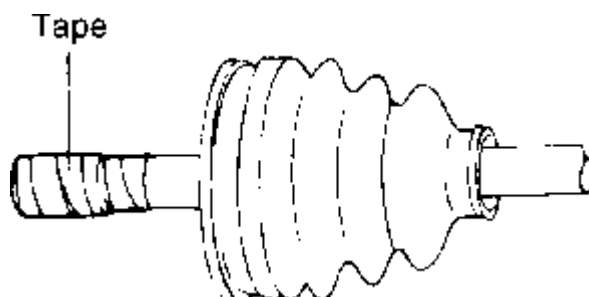


Clean the spider assembly.

Remove the B.J. boot bands and pull out the T.J. boot and B.J. boot.

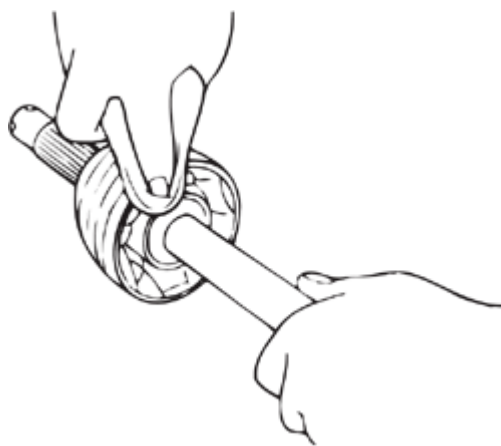
**NOTE**

If the boot is to be reused, wrap with tape around the drive shaft splines to protect the boot.



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## INSPECTION AFTER DISASSEMBLY



Check the drive shaft spline part for wear or damage.

Check for entry of water and/or foreign material into B.J.

Check the spider assembly for roller rotation, wear or corrosion.

Check the groove inside T.J. case for wear or corrosion.

Check the dynamic damper for damage or cracking.