FRONT AXLE

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SPECIFICATIONS

GENERAL SPECIFICATIONS

E26CA--

Items		M/T	A/T
Wheel bearing			
Туре		Double-row angular contact ball bearing	Double-row angular contact ball bearing
O.D.× I.D.	mm (in.)	84×45 (3.31×1.77)	84×45 (3.31×1.77)
Drive shaft			
Joint type			
Outer		B.J.	B.J.
Inner		T.J.	T.J.
Length	mm (in.)		
L.H. shaft		405 (16.1)	405 (16.1)
R.H. shaft		393 (15.5)	381 (15.0)

SERVICE SPECIFICATIONS

E26CB---

Items		Specifications
Standard value Setting of T.J. boot length Limit	mm (in.)	75±3 (2.95±0.12)
Hub end play Wheel bearing starting torque		0.05 (0.0020) 1.8 (18, 16) or less

LUBRICANTS E28CD-

Items	Specifications
B.J. boot grease g (oz.)	145 (5.11)
T.J. boot grease g (oz.)	160 (5.64)
Dust seal inner g (oz.)	14–20 (0.49–0.71)
Dust seal outer g (oz.)	8-12 (0.28-0.42)

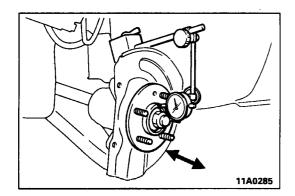
SPECIAL TOOLS

E26DA--

Tool	Number	Name	Use
	MB991113 or MB990635	Steering linkage puller	Removal of the lower arm ball joint and tie rod
	MB990998	Front hub remov- er and installer	Removal or press-in the hub
	MB991355	Knuckle arm bridge	Removal of the hub
	MB990685	Torque wrench	Measurement of the wheel bearing starting torque
	MB990326	Preload socket	
	MB990810	Side bearing puller	Removal of the wheel bearing inner race
	MB990955	Oil seal installer	Press-fitting of the oil seal
	MB990947	Lower arm bush- ing arbor	

Tool	Number	Name	Use
	MB990890	Rear suspension bushing base	Press-fitting of the wheel bearing, oil seal and dust seals
	MB990883	Rear suspension arbor	•
	MB990767	End yoke holder	Removal of the drive shaft NOTE Three puller bars (MB990244) are used
Puller shaft Puller bar	MB990241 (MB990244 (MB990242	Axle shaft puller Puller bar Puller shaft	
(B)	MB991354	Puller body	
	MB991172	Adapter	Press-fitting of the inner shaft
	MB991248 or MD998801	Inner shaft remover	Press-out of the inner shaft and press-fitting seal plate.
	MB990925	Bearing and oil seal installer set	Removal of wheel bearing Press-fitting of center bearing MB990932 MB990938 Press-out of center bearing MB990930 MB990938 Press-fitting of dust seal outer MB990934

MB9	990925 A Installer adapter	C Brass	9,		ool box
Туре	Tool number	O.D. mm (in.)	Туре	Tool number	O.D. mm (in.)
	MB990926	39 (1.54)		MB990933	63.5 (2.50)
	MB990927	45 (1.77)		MB990934	67.5 (2.66)
	MB990928	49.5 (1.95)	А	MB990935	71.5 (2.81)
Α	MB990929	51 (2.01)		MB990936	75.5 (2.97)
	MB990930	54 (2.13)		MB990937	79 (3.11)
	MB990931	57 (2.24)	В	MB990938	_
	MB990932	61 (2.40)	С	MB990939	_



SERVICE ADJUSTMENT PROCEDURES

EZEFEAD

HUB END PLAY INSPECTION

- 1. Jack up the vehicle and remove the front wheels.
- 2. Remove the disc brake caliper and suspend it with a wire. (Refer to GROUP 35 Service Adjustment Procedures.)
- 3. Remove the brake disc from the front hub.
- 4. Attach a dial indicator as shown in the illustration, and then measure the end play while moving the hub back and forth.

Limit: 0.05 mm (0.0020 in.)

NOTE

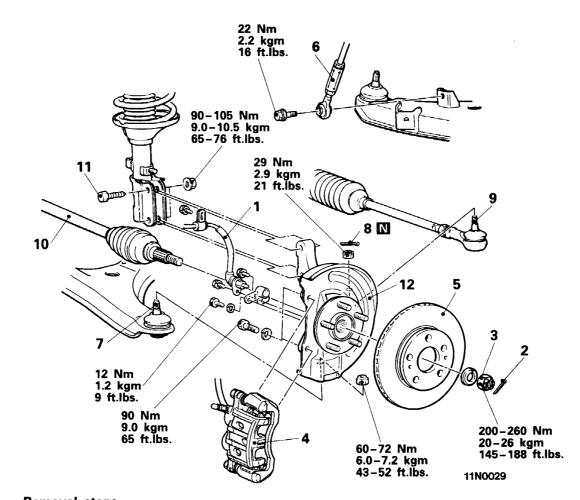
Secure the brake disc and hub by the wheel nut so that the brake disc won't come off the hub.

5. If end play exceeds the limit, disassemble and check parts.

AXLE HUB

REMOVAL AND INSTALLATION

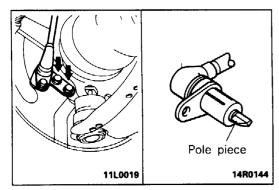
E26HA--



Removal steps

- 1. Front speed sensor <Vehicles with ABS>
 - 2. Split pin
- ♣★ ◆ 4 3. Drive shaft nut4. Caliper assembly
 - 5. Brake disc
 - ♦ 6. Front height sensor <Vehicles with ACTIVE-ECS>

- **7.** Connection for lower arm ball joint
 - 8. Split pin
 - 9. Connection for tie rod end
 - 10. Drive shaft
 - 11. Front strut mounting bolt
 - 12. Hub and knuckle



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SERVICE POINTS OF REMOVAL

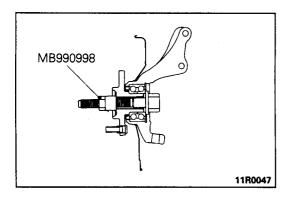
E26HBAH

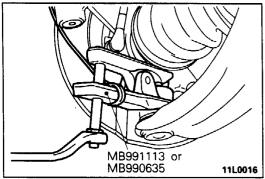
1. DISCONNECTION OF FRONT SPEED SENSOR <VEHICLES WITH ABS>

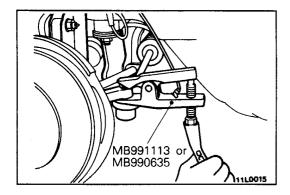
Remove the mounting bolts which hold the speed sensor bracket to the knuckle, and then remove the speed sensor.

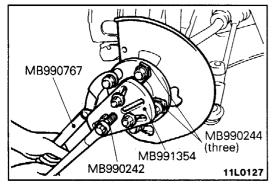
Caution

Be careful when handling the pole piece at the tip of the speed sensor and the toothed edge of the rotor so as not to damage them by striking against other parts.









3. REMOVAL OF DRIVE SHAFT NUT

With brake pressure applied, remove the drive shaft nut.

Caution

Do not apply the vehicle weight to the wheel bearing while loosening the drive shaft nut. If, however, the vehicle weight must be applied to the bearing (because of moving the vehicle), temporarily secure the wheel bearing by using the special tool, MB990998, etc.

4. REMOVAL OF CALIPER ASSEMBLY

Secure the removed caliper assembly with wire, etc.

7. DISCONNECTION OF LOWER ARM BALL JOINT Caution

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

9. DISCONNECTION OF TIE ROD END

Caution

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

10. REMOVAL OF DRIVE SHAFT

INSPECTION

E26HCAD

- Check the hub for cracks and spline for wear.
- Check the oil seal for damage.
- Check the knuckle for cracks.
- Check for defective bearing.

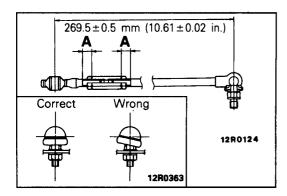
NOTE

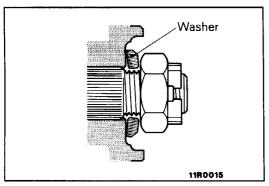
If the meshing of the wheel bearing outer race and the knuckle, or of the wheel bearing inner race and the hub, is loose, replace the bearing or damaged parts.

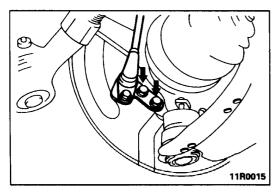
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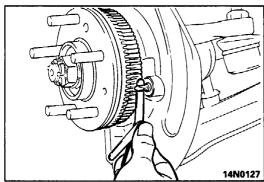
PWGE9004-A

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SERVICE POINTS OF INSTALLATION

E26HDAG

6. INSTALLATION OF FRONT HEIGHT SENSOR <VEHICLES WITH ACTIVE ECS>

Install so that the dimensions of the rod assembly are equal to the reference values in the diagram.

Caution

- 1. When adjusting the length of the rod, adjust so that dimension A is uniform.
- 2. Height sensors must be installed so that the ball joint at the rod end is at rocking centre.

3. INSTALLATION OF DRIVE SHAFT NUT

- (1) Be sure to install the washer and drive shaft nut in the specified direction.
- (2) With brake pressure applied, tighten the drive shaft nut.
- (3) If the position of the split pin holes does not match, tighten the nut up to 260 Nm (26 kgm, 188 ft.lbs.) in maximum.
- (4) Install the split pin in the first matching holes and bend it securely.

Caution

Before securely tightening the drive shaft nuts, make sure there is no load on the wheel bearings.

1. INSTALLATION OF FRONT SPEED SENSOR <VEHICLES WITH ABS>

(1) Temporarily install the speed sensor to the knuckle.

Caution

Be careful when handling the pole piece at the tip of the speed sensor and the toothed edge of the rotor so as not to damage them by striking against other parts.

(2) Insert a thickness gauge into the space between the speed sensor's pole piece and the rotor's toothed surface, and then tighten the speed sensor at the position where the clearance is the standard value all around.

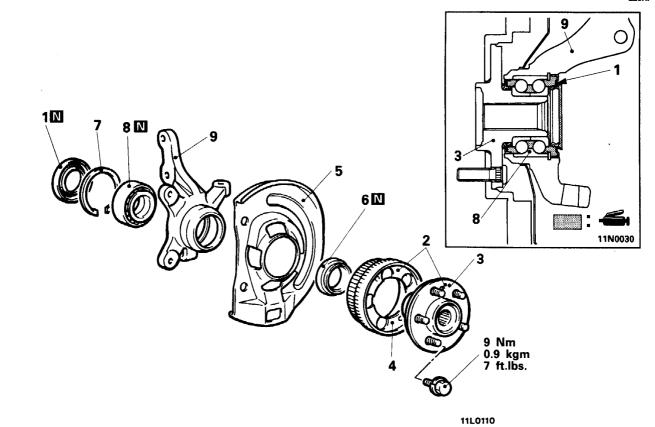
Standard value: 0.3-0.9 mm (0.012-0.035 in.)

NOTE

If the clearance between the speed sensor's pole piece and the rotor's toothed surface is not within the standard value range, it is probable that the rotor is incorrectly installed, recheck installation.

DISASSEMBLY AND REASSEMBLY

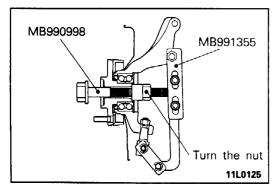
E26HI-

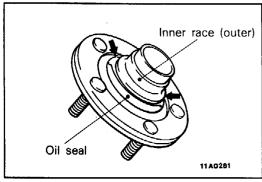


Disassembly steps

- 1. Oil seal (drive shaft side)Adjustment of wheel bearing starting torqueAdjustment of hub end play
- 2. Hub and rotor < Vehicles with ABS>
 - 3. Hub

- 4. Rotor < Vehicles with ABS>
- 5. Dust shield
- 6. Oil seal (hub side)
 - Snap ring
- 8. Wheel bearing
 - 9. Knuckle





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SERVICE POINTS OF DISASSEMBLY

E26HJAG

2. REMOVAL OF HUB AND ROTOR <VEHICLES WITH ABS>

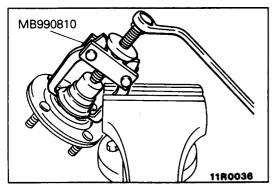
- (1) Attach the special tools to the knuckle and hub.
- (2) Secure the knuckle in a vise.
- (3) Tighten the nut of the special tool and remove the hub from the knuckle.

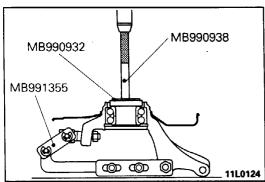
Caution

- 1. Be sure to use the special tools.
- 2. If the hub and knuckle are disassembled by striking them with a hammer, the bearing will be damaged.

8. REMOVAL OF WHEEL BEARING

(1) Crush the oil seal in two places so that the tabs of the special tool will be caught on the wheel bearing inner race.





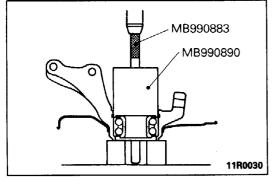
(2) Remove the wheel bearing inner race from the front hub by using the special tool.

(3) Drive the wheel bearing out by using the special tools.

INSPECTION

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- Check the front hub and brake disc mounting surfaces for galling and contamination.
- Check the knuckle inner surface for galling and cracks.
- Check for defective bearing.



MB990947 MB990955

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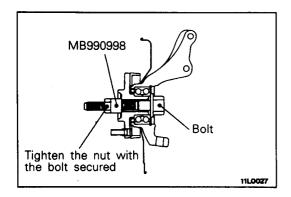
SERVICE POINTS OF REASSEMBLY

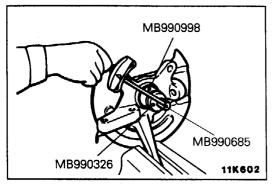
E26HOAE

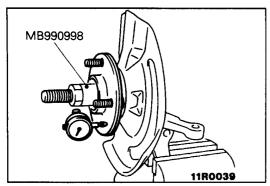
- 9. INSTALLATION OF KNUCKLE/8. WHEEL BEARING
 - (1) Fill the wheel bearing with multipurpose grease.
 - (2) Apply a thin coating of multipurpose grease to the knuckle and bearing contact surfaces.
 - (3) Press-in the bearing by using the special tools.

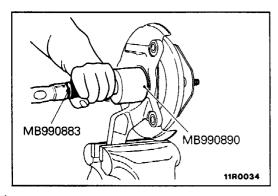
6. INSTALLATION OF OIL SEAL (HUB SIDE)

- (1) Drive the oil seal (hub side) into the knuckle by using the special tools until it is flush with the knuckle end surface.
- (2) Apply multipurpose grease to the lip of the oil seal and to the surfaces of the oil seal which contact the front hub.









2. INSTALLATION OF HUB AND ROTOR <VEHICLES WITH ABS>

- (1) Use the special tool to mount the hub and rotor onto the knuckle.
- (2) Tighten the nut of the special tool to 200–260 Nm (20 –26 kgm, 145–188 ft.lbs.).
- (3) Rotate the hub in order to seat the bearing.
- (4) Leave the special tool in place and take the measurements described below.

ADJUSTMENT OF WHEEL BEARING STARTING TORQUE

Measure the wheel bearing starting torque (hub starting torque) by using the special tools.

Limit: 1.8 Nm (18 kgcm, 16 in.lbs.) or less NOTF

The starting torque must be within the limit and, in addition, the bearing must not feel rough when rotated.

ADJUSTMENT OF HUB END PLAY

(1) Measure to determine whether the end play of the hub is within the specified limit or not.

Limit: 0.05 mm (0.0020 in.)

(2) If the starting torque and hub end play are not within the limit range while the nut is tightened to 200–260 Nm (20–26 kgm, 144–188 ft.lbs.), the bearing, hub and/or knuckle have probably not been installed correctly. Repeat the disassembly and assembly procedure.

1. INSTALLATION OF OIL SEAL (DRIVE SHAFT SIDE)

Drive the oil seal (drive shaft side) into the knuckle until it contacts the snap ring.

Apply multipurpose grease to the lip of the oil seal.

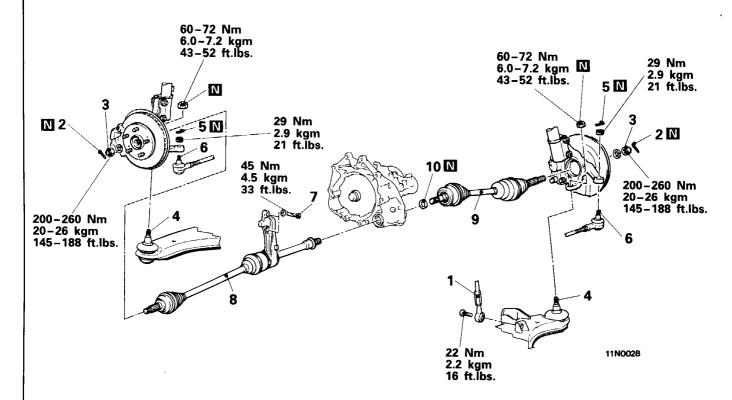
DRIVE SHAFT

REMOVAL AND INSTALLATION

E26QA--

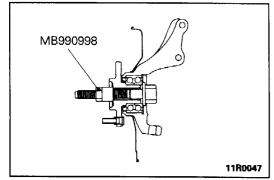
Pre-removal and Post-installation Operation

Removal and Installation of Under Cover



Removal steps

- ◆ 1. Front height sensor <Vehicles with ACTIVE-ECS>
 - 2. Split pin
- ◆◆ ◆◆ 3. Drive shaft nut
- 4. Connection for lower arm ball joint
 - 5. Split pin
- ♠♠ 6. Connection for tie rod end
 - 7. Center bearing bracket installation bolt
- 8. Drive shaft and inner shaft assembly (LH)
- ♦ 9. Drive shaft (RH)
 - 10. Circlip



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SERVICE POINTS OF REMOVAL

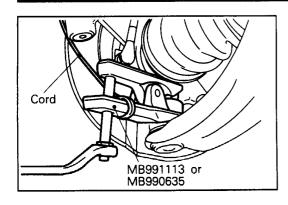
E26QBCB

3. REMOVAL OF DRIVE SHAFT NUT

With brake pressure applied, remove the drive shaft nut.

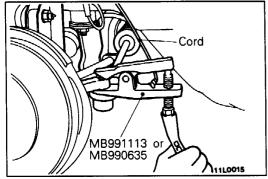
Caution

Do not apply the vehicle weight to the wheel bearing while loosening the drive shaft nut. If, however, the vehicle weight must be applied to the bearing (because of moving the vehicle), temporarily secure the wheel bearing by using the special tool, MB990998, etc.



4. DISCONNECTION OF LOWER ARM BALL JOINT Caution

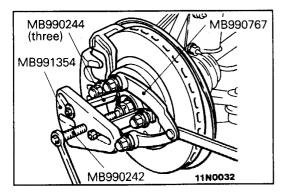
- 1. Be sure to tie the cord of the special tool to the nearby part.
- 2. Loosen the nut but do not remove it.



6. DISCONNECTION OF TIE ROD END

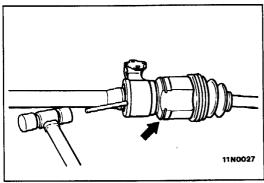
Caution

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

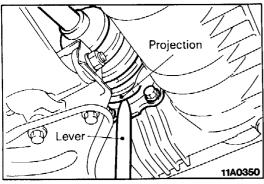


8. REMOVAL OF DRIVE SHAFT AND INNER SHAFT (LH)/9. DRIVE SHAFT (RH)

(1) Use the special tools to push out the drive shaft from the front hub.



(2) If the inner shaft and transmission are tightly joined, tap the center bearing bracket lightly with a plastic hammer, etc. to remove the drive shaft and inner shaft (LH) from the transmission.



(3) Apply a lever to the projecting part of the drive shaft to remove the drive shaft from the transmission.

Caution

Do not pull on the drive shaft; doing so will damage the T.J.; be sure to use the pry bar.

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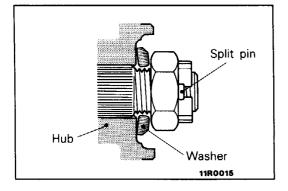
Apr. 1991

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INSPECTION

E26QCBD

- Check the drive shaft boot for damage or deterioration.
- Check the ball joints for wear or operating condition.
- Check the spline part for wear or damage.



SERVICE POINTS OF INSTALLATION

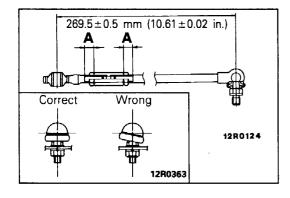
E26ODAH

3. INSTALLATION OF DRIVE SHAFT NUT

- (1) Be sure to install the washer and drive shaft nut in the specified direction.
- (2) With brake pressure applied, tighten the drive shaft
- (3) If the position of the split pin holes does not match, tighten the nut up to 260 Nm (26 kgm, 188 ft.lbs.) in maximum.
- (4) Install the split pin in the first matching holes and bend it securely.

Caution

Before securely tightening the drive shaft nuts, make sure there is no load on the wheel bearings.



1. INSTALLATION OF FRONT HEIGHT SENSOR <VEHICLES WITH ACTIVE-ECS>

Install so that the dimensions of the rod assembly are equal to the reference values in the diagram.

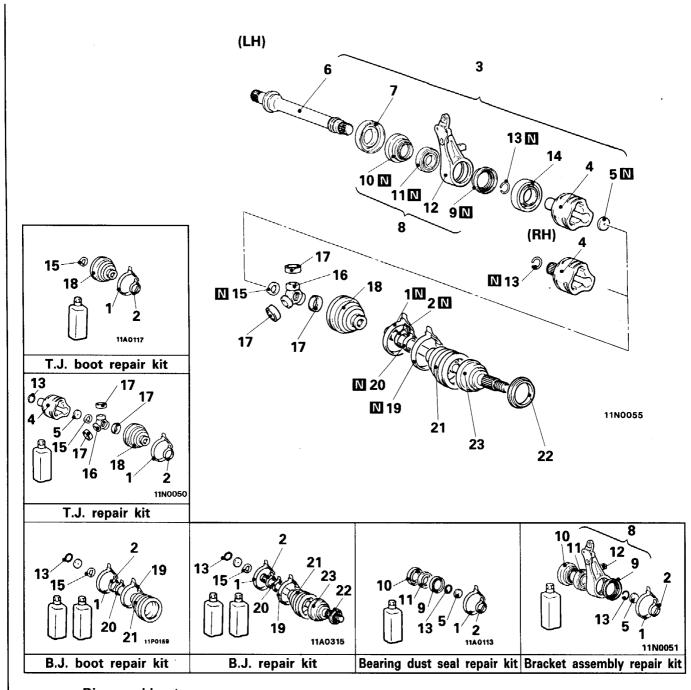
Caution

- 1. When adjusting the length of the rod, adjust so that dimension A is uniform.
- 2. Height sensors must be installed so that the ball joint at the rod end is at rocking centre.

DISASSEMBLY AND REASSEMBLY

<Vehicles built up to October, 1991>

E26QE-



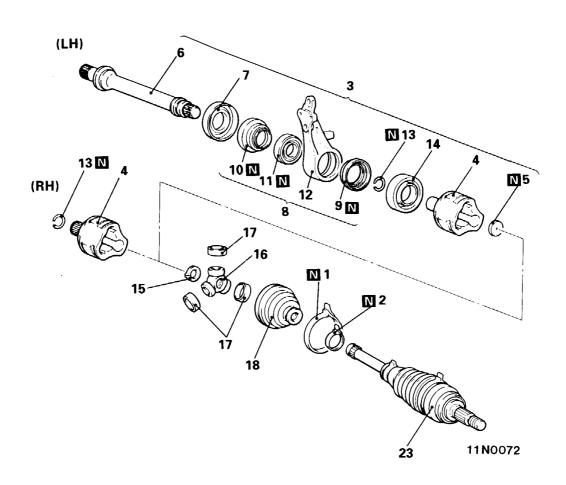
Disassembly steps

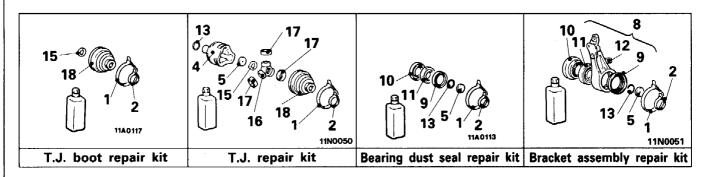
- 1. T.J. boot band (large)
- 2. T.J. boot band (small)3. T.J. case and inner shaft assembly
 - 4. T.J. case
 - 5. Seal plate
- 6. Inner shaft
 - Dust cover
 - 8. Bracket assembly
 - 9. Dust seal outer
- 10. Dust seal inner
- 11. Center bearing 12. Center bearing bracket

- 13. Circlip14. Dust cover
- 15. Snap ring
- 16. Spider assembly
- 17. Free ring
 - 18. T.J. boot
 - 19. B.J. boot band (large)
 - 20. B.J. boot band (small)
- 21. B.J. boot
 - 22. Dust cover

23. B.J.

< Vehicles built from November, 1991 >





Disassembly steps

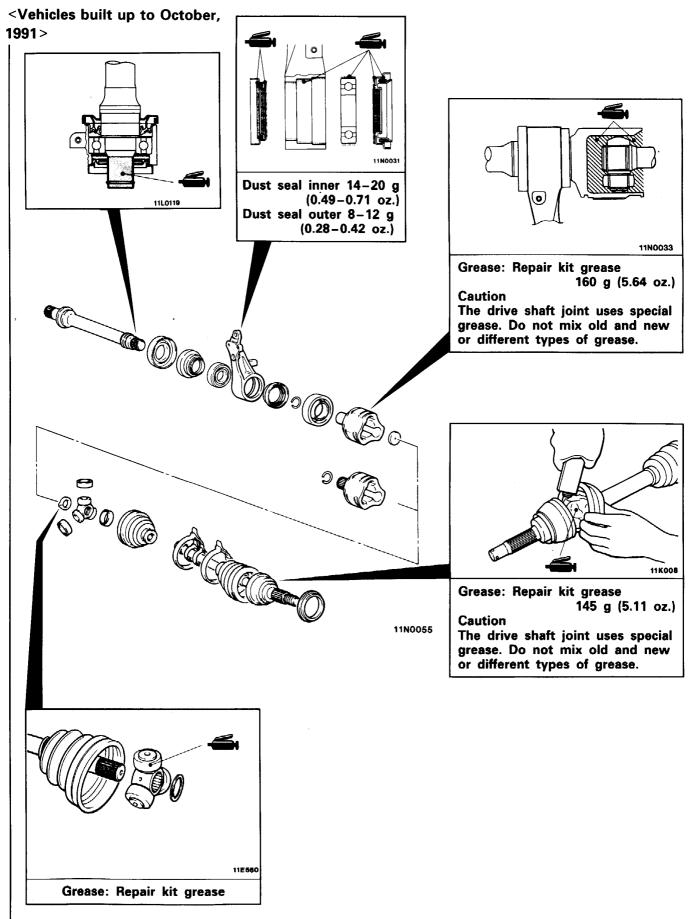
- 1. T.J. boot band (large)
- 2. T.J. boot band (small)
 3. T.J. case and inner shaft assembly
 4. T.J. case
- 5. Seal plate
 - 6. Inner shaft
 - 7. Dust cover 8. Bracket assembly
 - 9. Dust seal outer
- 10. Dust seal inner
- 11. Center bearing
 - 12. Center bearing bracket

- 13. Circlip14. Dust cover
- 15. Snap ring
- 16. Spider assembly
- 17. Free ring 18. T.J. boot
 - 23. B.J.

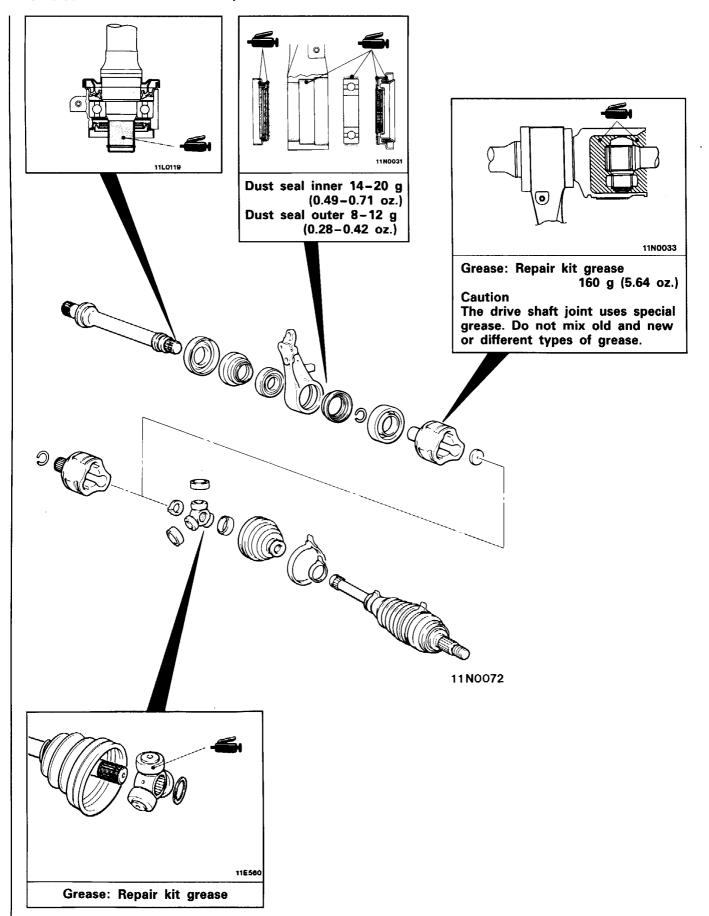
Caution

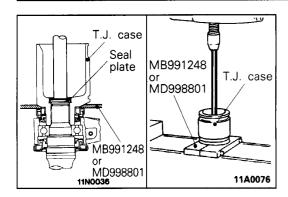
The B.J. is a type that cannot be disassembled.

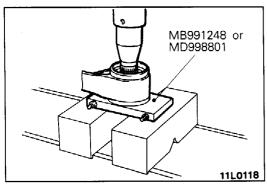
LUBRICANT POINTS

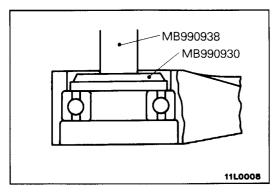


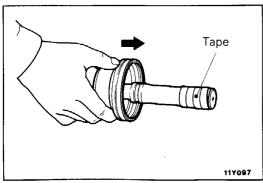
<Vehicles built from November, 1991>











SERVICE POINTS OF DISASSEMBLY

E26QFCGa

6. REMOVAL OF INNER SHAFT

(1) Using the special tool, remove the inner shaft assembly, together with the seal plate, from the T.J. case.

Press the tool directly against the seal plate. The tool under pressure will puncture and deform the seal plate, and push out the inner shaft underneath.

(2) Use the special tool to remove the inner shaft from the center bearing bracket.

11. REMOVAL OF CENTER BEARING

18. REMOVAL OF T.J. BOOT / 21. B.J. BOOT

<Vehicles built up to October, 1991>

- (1) Wrap vinyl tape around the spline part on the T.J. side of the drive shaft so that the T.J. and B.J. boots are not damaged when they are removed.
- (2) Withdraw the T.J. and B.J. boots from the drive shaft.

18. REMOVAL OF T.J. BOOT

<Vehicles built from November, 1991>

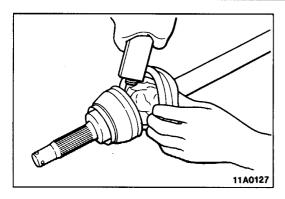
- (1) Wrap vinyl tape around the spline part on the T.J. side of the drive shaft so that the T.J. boot is not damaged when it is removed.
- (2) Withdraw the T.J. boot from the drive shaft.

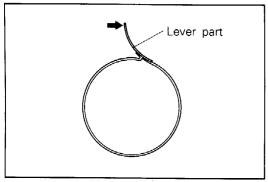
INSPECTION

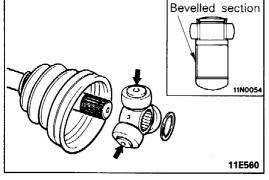
E26QGCE

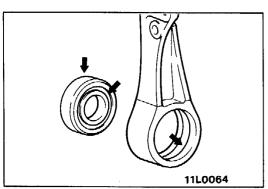
- Check the drive shaft for damage, bending or corrosion.
- Check the inner shaft for damage, bending or corrosion.
- Check the drive shaft splines for wear or damage.
- Check the inner shaft splines for wear or damage.
- Check for entry of water and/or foreign material into B.J..
- Check the spider assembly for roller rotation, wear or corrosion.
- Check the groove inside T.J. case for wear or corrosion.
- Check the boots for deterioration, damage or cracking.
- Check the center bearing for seizure, discoloration or roughness of rolling surface.
- Check the dust cover for damage or deterioration.

PWGE9004-B REVISED









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SERVICE POINTS OF REASSEMBLY

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21. INSTALLATION OF B.J. BOOT /18, T.J. BOOT

<Vehicles built up to October, 1991>

- (1) Wrap vinyl tape around the spline part on the drive shaft, and then install the B.J. boot and T.J. boot, in that order.
- (2) Fill the inside of the B.J. and B.J. boot with the specified grease.

Specified grease: Repair kit grease 145 g (5.11 oz)

The grease in the repair kit should be divided in half for use, respectively, at the joint and inside the boot.

Caution

The drive shaft joint use special grease. Do not mix old and new or different types of grease.

(3) Secure the boot bands.

Also, to identify the boot bands, a product number is engraved on lever part of each band.

B.J. boot band (large): 20-22#B.J.104
B.J. boot band (small): 20-15#B.J.104
T.J. boot band (large): 20-75#B.J.95
T.J. boot band (small): 20-72#B.J.100

Caution

The boot bands should be tightened with the drive shaft at a 0° break angle.

18. INSTALLATION OF T.J. BOOT

<Vehicles built from November, 1991>

Wrap vinyl tape around the spline part on the drive shaft, and then install T.J. boot.

16. INSTALLATION OF SPIDER ASSEMBLY

(1) Apply the specified grease furnished in the repair kit to the spider assembly between the spider axle and the roller

Specified grease: Repair kit grease

Caution

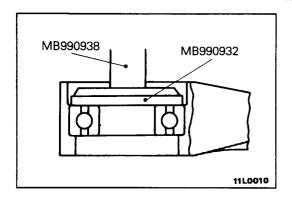
The drive shaft joint uses special grease. Do not mix old and new or different types of grease.

(2) Install the spider assembly to the shaft from the direction of the spline bevelled section.

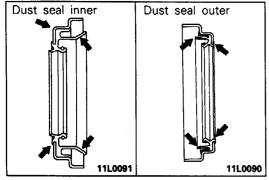
11. INSTALLATION OF CENTER BEARING

(1) Apply multipurpose grease to the center bearing and inside the center bearing bracket.

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(2) Use the special tools to press-fit the center bearing into the center bearing bracket.

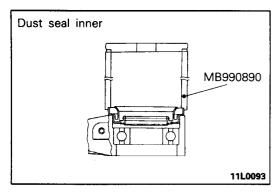


10/9. INSTALLATION OF DUST SEALS

(1) Apply multipurpose grease to the rear surfaces of all dust seals.

Dust seal inner
Dust seal outer

14-20 g (0.49-0.71 oz.) 8-12 g (0.28-0.42 oz.)



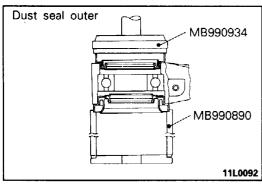
(2) Use the special tool to install the dust seal so that its surface runs even with that of the center bearing bracket.

Caution

Do not damage the rubber section on the outside of the dust seal.

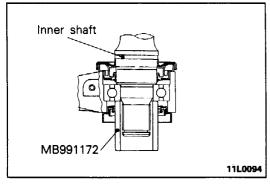
(3) Apply multipurpose grease to the lip of each dust seal.

When applying grease, make sure that it does not adhere to anything outside the lip.

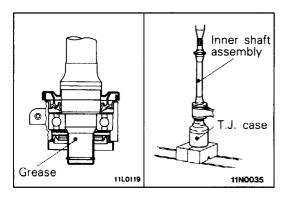


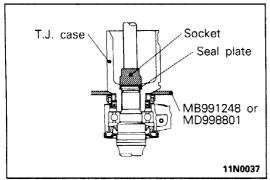
6. INSTALLATION OF INNER SHAFT

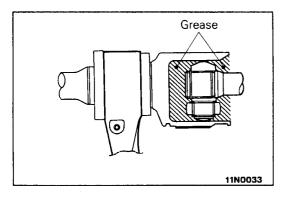
Use the special tool to hold the inner race of the center bearing and force the inner shaft into place.

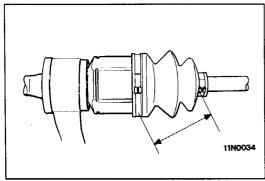


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3. INSTALLATION OF T.J. CASE AND INNER SHAFT ASSEMBLY

(1) Apply multipurpose grease to the inner shaft spline, then press fit it into the T.J. case.

(2) Using the special tool and socket (width across flats 22 mm [0.87 in.]), press the seal plate into the T.J. case.

(3) Fill the specified grease furnished in the repair kit to the T.J. case.

Specified grease: Repair kit grease 160 g (5.64 oz.)

The grease in the repair kit should be divided in half for use, respectively, at the joint and inside the boot.

Caution

The drive shaft joint uses special grease. Do not mix old and new or different types of grease.

2. INSTALLATION OF BOOT BAND (SMALL)/1. T.J. BOOT BAND (LARGE)

Set the T.J. boot bands at the specified distance in order to adjust the amount of air inside the T.J. boot, and then tighten the T.J. boot band securely.

Standard value: 75 ± 3 mm (2.95 ±0.12 in.)