GROUP 26

FRONT AXLE

CONTENTS

GENERAL INFORMATION

M1261000100336

The front axle consists of front hubs, knuckles, wheel bearings and drive shafts, and it has the following features:

- The wheel bearing is a double-row angular contact ball bearing which incorporates the oil seals and is highly resistant to a thrust load.
- The driveshaft incorporates BJ-PTJ type constant velocity joints with high transmission efficiency for low vibration and noise.
- The dynamic damper has been mounted on the left drive shaft to reduce differential gear noise.
- Due to the use of the inner shaft and bracket assembly, the right and left drive shafts are approximately the same in length. This reduces noise, vibration and torque steer.<2WD>
- Due to the use of the output shaft, the right and left drive shafts are approximately the same in length. This reduces noise, vibration and torque steer.<4WD>
- ABS rotors for detecting the wheel speed are press-fitted to the BJ outer wheels.

NOTE:

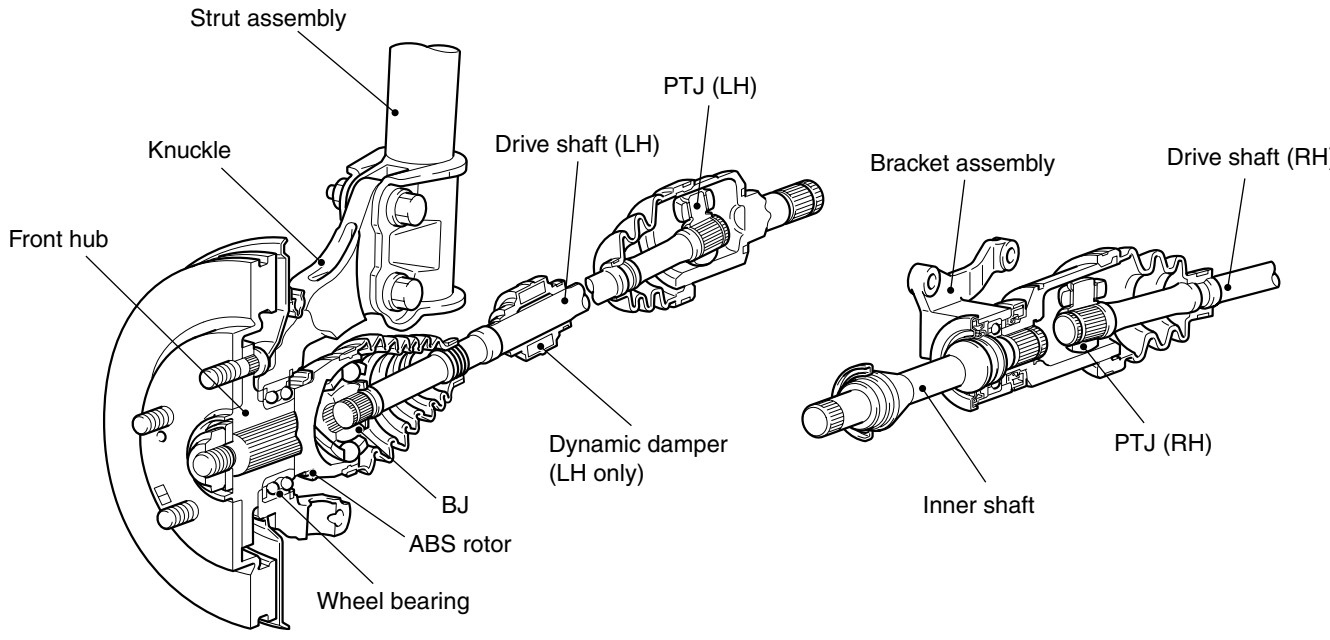
- *PTJ: Pillow Tripod Joint*
- *BJ: Birfield Joint*

SPECIFICATIONS

Item			**2WD**	**4WD**
Wheel bearing	Type		Double-row angular contact ball bearing	
	Bearing (OD x ID) mm		80 x 40	80 x 40
Driveshaft	Joint type	Outer	BJ	BJ
		Inner	PTJ	PTJ
	Length (joint to joint) × diameter mm	LH	383.5 × 24	361 × 22
		RH	474.5 × 24	455 × 22

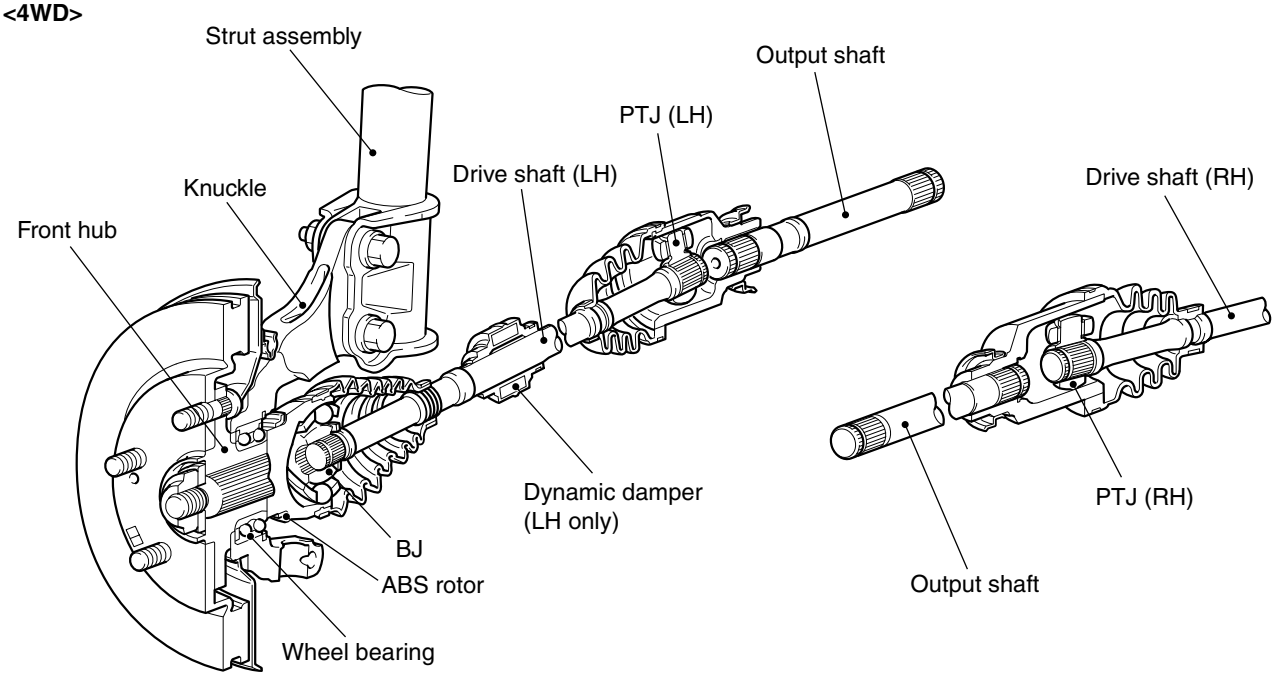
CONSTRUCTION DIAGRAM

<2WD>



AC106952 AD

<4WD>



AC106953 AD

SERVICE SPECIFICATIONS

M1261000300352

Item		Standard value	Limit
Wheel bearing axial play mm		–	0.05
Hub starting torque N·m		–	1.8
Protruding length of stabilizer link mm		9.4 ± 0.4	–
Setting of PTJ boot length mm	2WD	90 ± 3	–
	4WD	85 ± 3	–
Opening dimension of the special tool (MB991561) mm	When the BJ boot band (small) is crimped	2.9	–
	When the BJ boot band (large) is crimped	2.9	–
Crimped width of the BJ boot band mm		2.4 – 2.8	–

LUBRICANTS

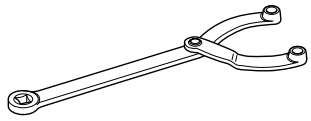
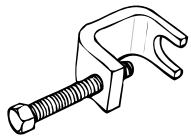
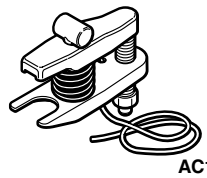
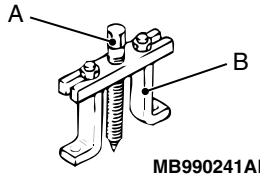
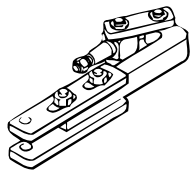
M1261000400359

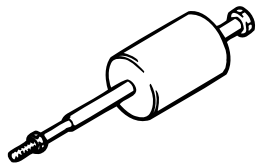
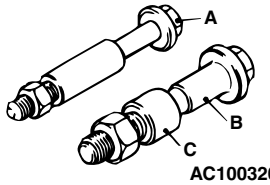
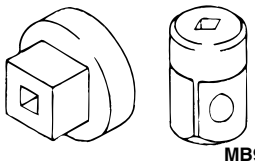
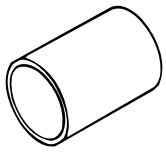
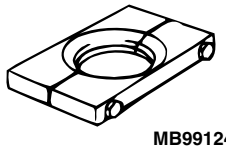
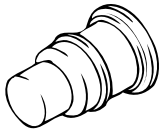
Item	Specified lubricant		Quantity
PTJ boot grease	Repair kit grease	2WD	210 ± 10 g
		4WD	150 ± 10 g

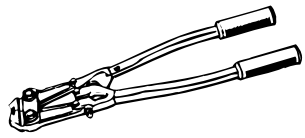
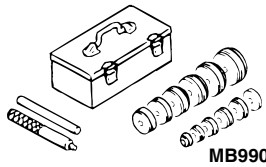
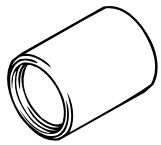
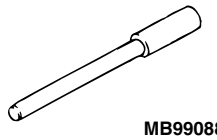
Item	Specified lubricant		Quantity
BJ boot grease	Repair kit grease	2WD	120 ± 10 g
		4WD	85 ± 10 g
Dust seal inner grease	Repair kit grease		14 – 20 g
Dust seal outer grease	Repair kit grease		8 – 12 g

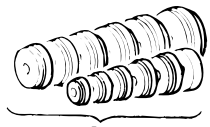
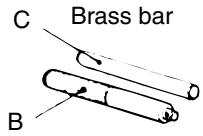
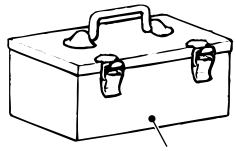
SPECIAL TOOLS

M1261000600353

Tool	Number	Name	Use
 B990767	MB990767	End yoke holder	Fixing of the hub
 MB991618	MB991618	Hub bolt remover	Removal of the hub bolt
 AC106827	MB991897	Ball joint remover	Knuckle and tie rod end ball joint disconnection *NOTE: Steering linkage puller (MB990635 or MB991113)is also used to disconnect knuckle and tie rod end ball joint.*
 MB990241AB	MB990241 A: MB990242 B: MB990244	Axle shaft puller A: Puller shaft B: Puller bar	Removal of the drive shaft
 MB991354	MB991354	Puller body	
	MB991056 or MB991355	Knuckle arm bridge	• Removal of the hub • Removal of the wheel bearing

Tool	Number	Name	Use
	MB991721	Sliding hammer	Removal of the output shaft <4WD>
 AC100320AB	A: MB991017 B: MB990998 C: MB991000	A, B: Front hub remover and installer C: Spacer	• Removal of the hub • Provisional holding of the wheel bearing • Measurement of hub starting torque • Measurement of wheel bearing axial play *NOTE: MB991000, which belongs to MB990998, should be used as a spacer.*
	MB990685	Torque wrench	Measurement of hub starting torque
 MB990326	MB990326	Preload socket	
 MB990810	MB990810	Side bearing puller	• Removal of the centre bearing bracket • Removal of the wheel bearing inner race (outside)
	MB991172	Inner shaft installer base	Press-fitting of the inner shaft
 MB991248	MB991248 or MB998801	Inner shaft remover	Removal of the inner shaft
	MB991460	Plug	Prevention of transmission fluid drain and of entry of foreign objects

Tool	Number	Name	Use
 MB991561	MB991561	Boot band crimping tool	BJ boot (resin boot) band installation
 MB990925	MB990925	Bearing and oil seal installer set	• Removal of the wheel bearing • Removal and installation of the centre bearing • Press-fitting of the dust seal outer, inner
 MB990890	MB990890	Rear suspension bushing base	• Installation of the wheel bearing • Press-fitting of the dust seal outer, inner
 MB990883	MB990883	Rear suspension bushing arbor	Installation of the wheel bearing

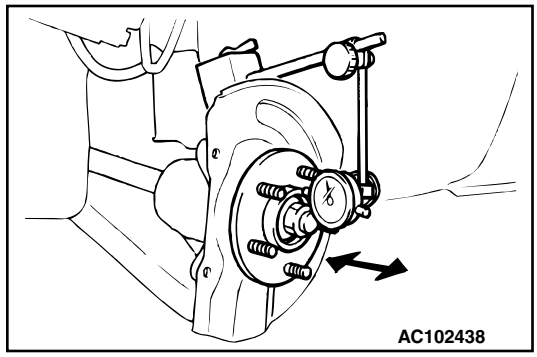
Tool	Type	Tool number	O D mm
MB990925  A Installer adapter  C Brass bar B Bar (snap-in type)  Tool box ACX02372 AC	A	MB990926	39.0
		MB990927	45.0
		MB990928	49.5
		MB990929	51.0
		MB990930	54.0
		MB990931	57.0
		MB990932	61.0
		MB990933	63.5
		MB990934	67.5
		MB990935	71.5
		MB990936	75.5
		MB990937	79.0
	B	MB990938	–
	C	MB990939	–

ON-VEHICLE SERVICE

WHEEL BEARING AXIAL PLAY CHECK

M1261000900213

1. Remove the caliper assembly and suspend it with a wire.
2. Remove the brake disc from the front hub.



3. Attach a dial gauge as shown in the illustration, and then measure the axial play while moving the hub in the axial direction.

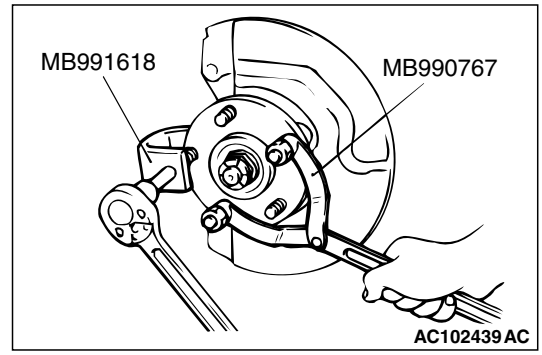
   Limit: 0.05 mm

4. If axial play exceeds the limit, disassemble the front hub assembly and check the parts.
5. Install the brake disc, caliper assembly and tighten the caliper assembly mounting bolts to the specified torque 100 ± 10 N·m.

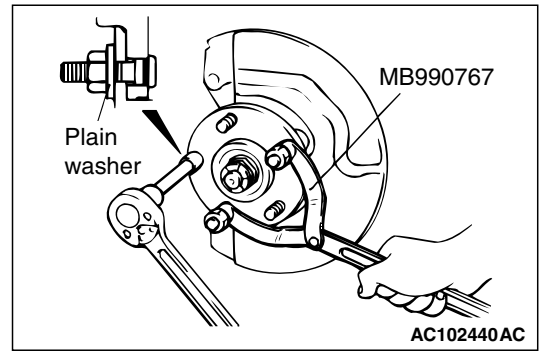
HUB BOLT REPLACEMENT

M1261001000279

1. Remove the caliper assembly and suspend it with wire so that it does not fall.
2. Remove the brake disc.



3. Use the following special tools to remove the hub bolts.
   - End yoke holder (MB990767)
   - Hub bolt remover (MB991618)



4. Install the plain washer to the new hub bolt, and install the bolt with a nut.
5. Install the brake disc, caliper assembly and tighten the caliper assembly mounting bolts to the specified torque 100 ± 10 N·m.

FRONT AXLE HUB ASSEMBLY

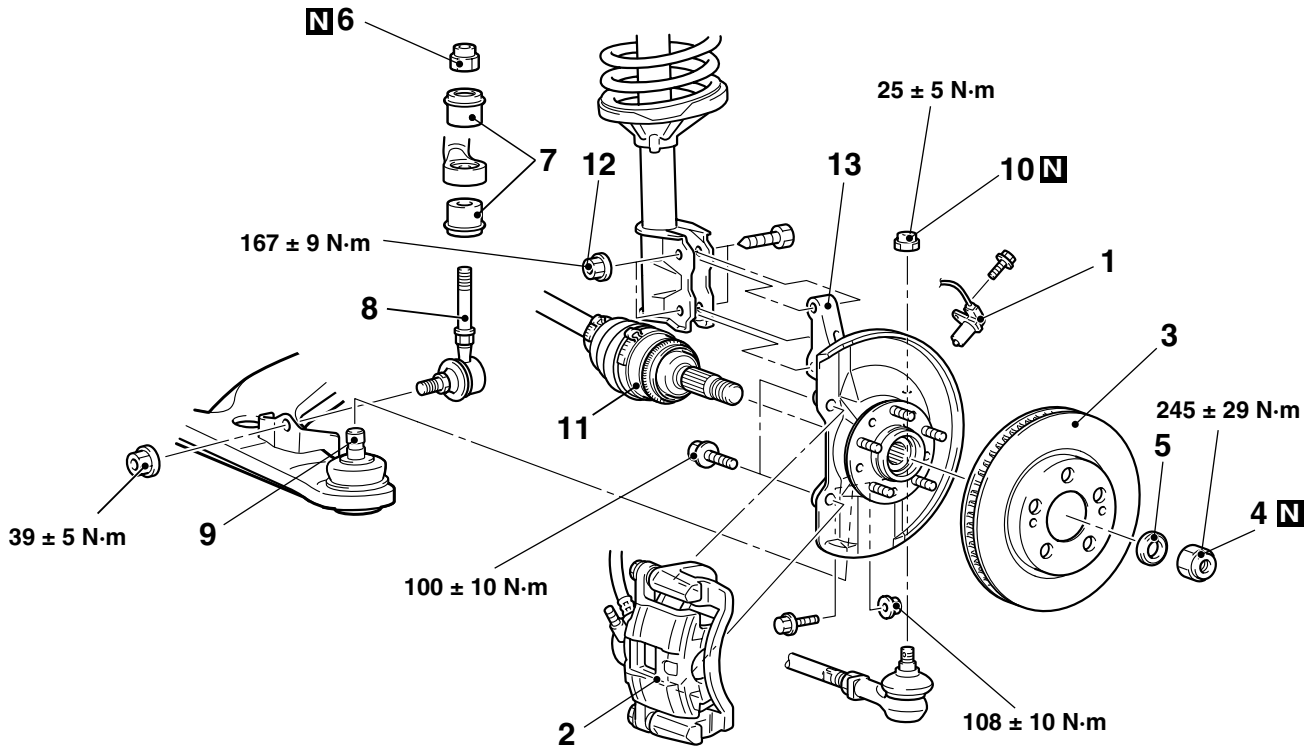
REMOVAL AND INSTALLATION

M1261001700331

⚠ CAUTION

- **Do not strike the ABS rotors installed to the BJ outer race of drive shaft against other parts when removing or installing the drive shaft. Otherwise the ABS rotors will be damaged.**
- **Be careful not to strike the pole piece at the tip of the front ABS sensor with tools during servicing work.**

Post-installation Operation
- Check the dust cover for cracks or damage by pushing it with your finger.



AC107173 AB

Removal steps

1. Front ABS sensor
<<A>> 2. Caliper assembly
3. Brake disc
<<B>> >>B<< 4. Drive shaft nut
>>B<< 5. Washer
>>A<< 6. Self-locking nut (stabilizer bar connection)
>>A<< 7. Stabilizer rubber

Removal steps (Continued)

8. Stabilizer link assembly
9. Lower arm ball joint connection
<<C>> 10. Self-locking nut (tie rod end connection)
<<D>> 11. Drive shaft
12. Nut (hub and knuckle to strut connection)
13. Hub and knuckle

REMOVAL SERVICE POINTS

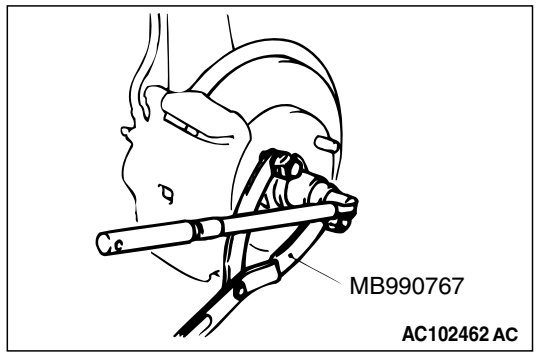
<<A>> CALIPER ASSEMBLY REMOVAL

Secure the removed caliper assembly with wire, etc.

<<B>> DRIVE SHAFT NUT REMOVAL

⚠ CAUTION

Do not apply pressure to wheel bearing by the vehicle weight to avoid possible damage when drive shaft nut is loosened.

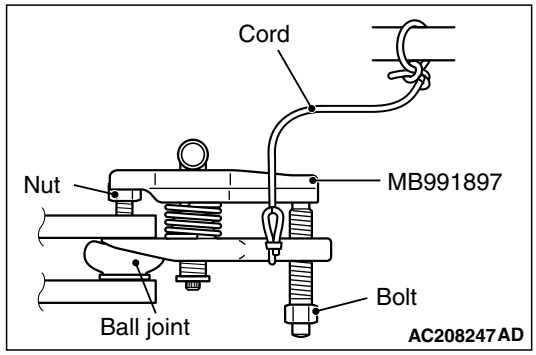


Use special tool end yoke holder (MB990767) to fix the hub and remove the drive shaft nut.

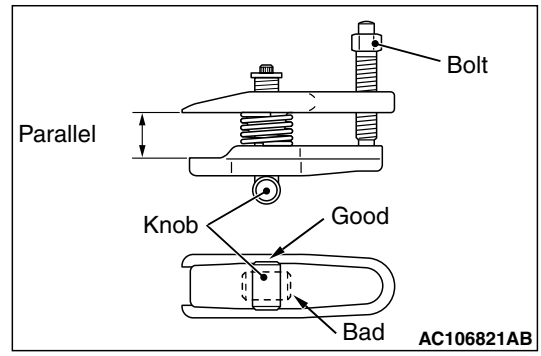
<<C>> SELF-LOCKING NUT (TIE ROD END CONNECTION) REMOVAL

⚠ CAUTION

- **Do not remove the nut from ball joint. Loosen it and use the special tool to avoid possible damage to ball joint threads.**
- **Hang the special tool with cord to prevent it from falling.**



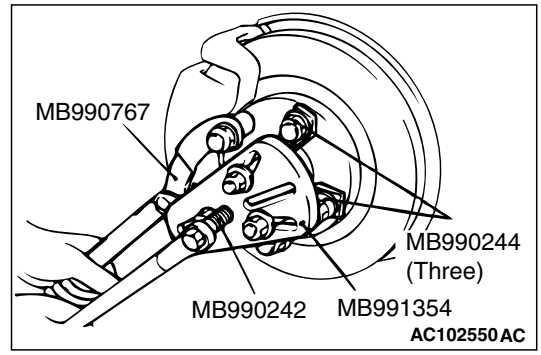
1. Install special tool ball joint remover (MB991897) as shown in the figure.



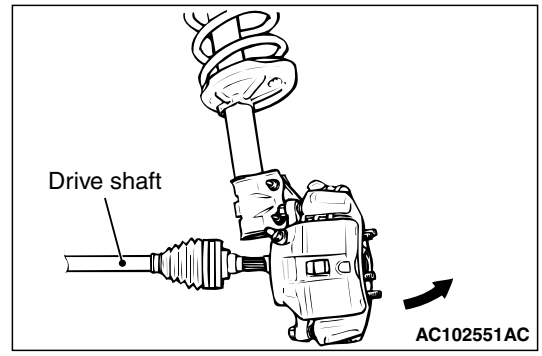
2. Turn the bolt and knob as necessary to make the jaws of special tool parallel, tighten the bolt by hand and confirm that the jaws are still parallel.

   NOTE: When adjusting the jaws in parallel, make sure the knob is in the position shown in the figure.
3. Tighten the bolt with a wrench to disconnect the tie rod end.

<<D>> DRIVE SHAFT REMOVAL



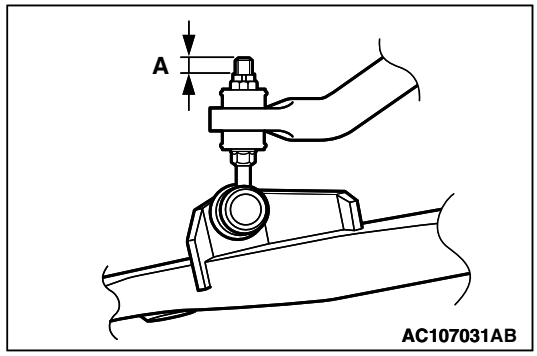
1. Use the following special tools to push out the drive shaft from the hub and knuckle.
   - Puller shaft (MB990242)
   - Puller bar (MB990244)
   - Puller body (MB991354)
   - End yoke holder (MB990767)



2. Withdraw the drive shaft from the hub by pulling the bottom of the hub and knuckle towards you.
3. Hang the drive shaft on the vehicle body with a rope.

INSTALLATION SERVICE POINT

>>A<< SELF-LOCKING NUT (STABILIZER BAR CONNECTION) INSTALLATION



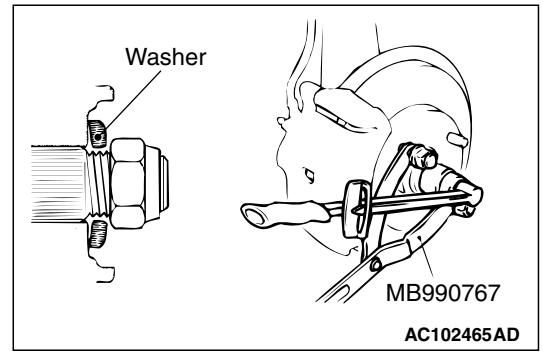
Tighten the self-locking nut so that the protruding length of the stabilizer link protruding part meets its standard value (A).

Standard value (A): 9.4 ± 0.4 mm

>>B<< WASHER/ DRIVE SHAFT NUT INSTALLATION

⚠ CAUTION

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



1. Be sure to install the drive shaft washer in the specified direction.
2. Using special tool end yoke holder (MB990767), tighten the drive shaft nut to the specified torque.

Tightening torque: 245 ± 29 N·m

INSPECTION

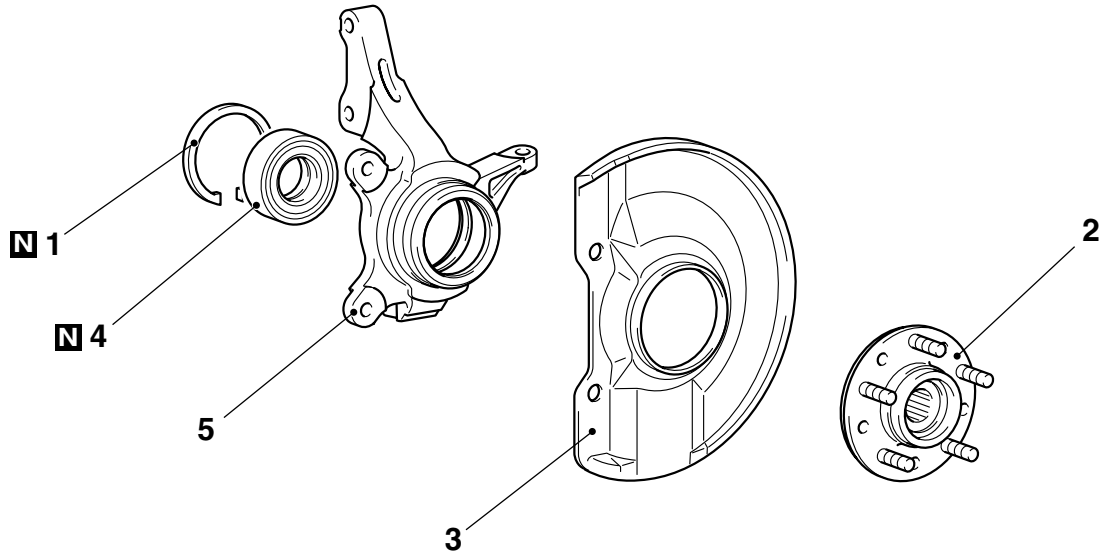
M1261001800220

- Check the hub for cracks and spline for wear.
- 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.

DISASSEMBLY AND REASSEMBLY

M1261001900186



AC101684 AD

	Disassembly steps
	1. Snap ring
<<A>>	2. Hub
	3. Dust cover
<<B>>	4. Wheel bearing
	5. Knuckle

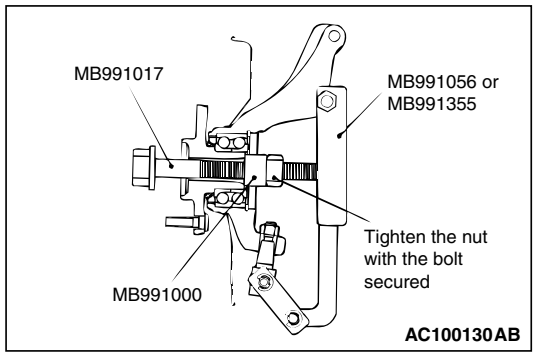
	Assembly steps
	5. Knuckle
>>A<<	4. Wheel bearing
	1. Snap ring
	3. Dust cover
	2. Hub
>>B<<	• Hub starting torque check
>>C<<	• Wheel bearing axial play check

DISASSEMBLY SERVICE POINTS

<<A>> HUB REMOVAL

⚠ CAUTION

When the hub has been removed, always replace the wheel bearing with a new part because wheel bearing frictional surface will be damaged when removing the hub.

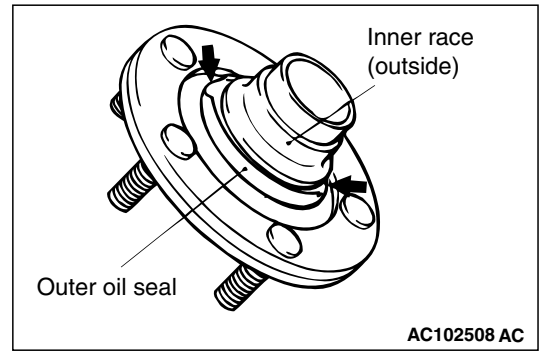


AC100130 AB

Use the following special tools to pull out the hub from the knuckle.

- Knuckle arm bridge (MB991056 or MB991355)
- Front hub remover and Installer (MB991017)
- Spacer (MB991000)

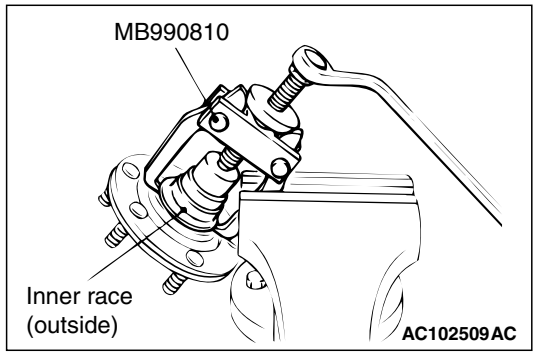
<<B>> WHEEL BEARING REMOVAL



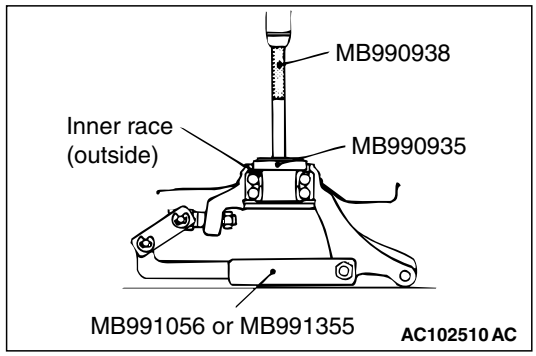
AC102508 AC

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 (outside).

⚠ CAUTION
When removing the inner race (outside) from the hub, be careful not to let the hub drop.



2. Remove the wheel bearing inner race (outside) from the front hub by using special tool side bearing puller (MB990810).



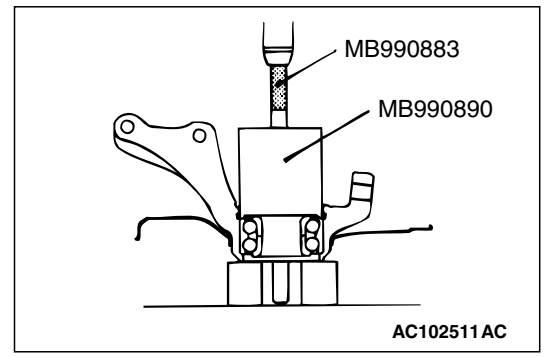
3. Install the inner race (outside) that was removed from the hub to the wheel bearing, and then use the following special tools to remove the wheel bearing.
   - Installer bar (MB990938)
   - Installer adapter (MB990935)
   - Knuckle arm bridge (MB991056 or MB991355)

REASSEMBLY SERVICE POINTS

>>A<< WHEEL BEARING INSTALLATION

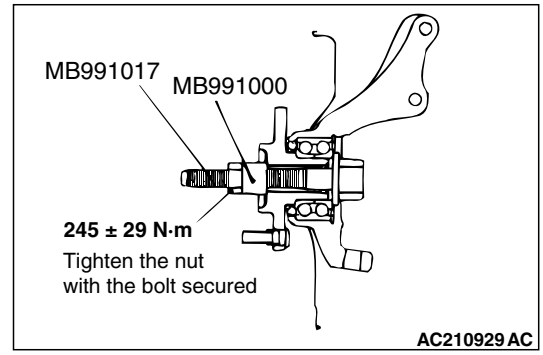
1. Fill the wheel bearing with multipurpose grease.
2. Apply a thin coating of multipurpose grease to the knuckle and bearing contact surfaces.

⚠ CAUTION
Press the outer race when pressing-in the wheel bearing. Otherwise the wheel bearing will be damaged.

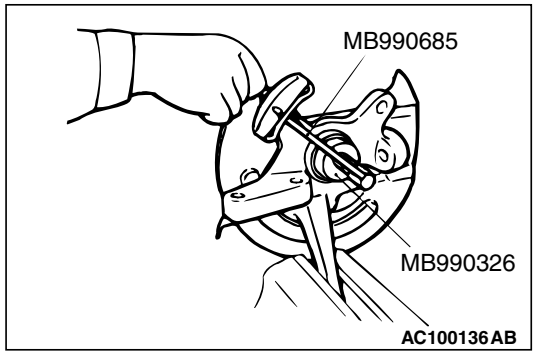


3. Press-in the bearing by using the following special tools.
   - Rear suspension bushing arbor (MB990833)
   - Rear suspension bushing base (MB990890)

>>B<< HUB STARTING TORQUE CHECK



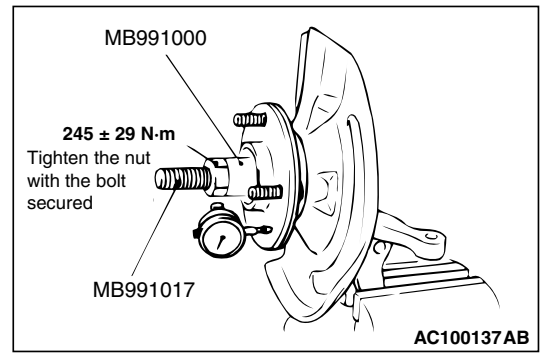
1. Tighten the following special tools to the specified torque, and then press-in the hub into the knuckle.
   - Front hub remover and installer (MB991017)
   - Spacer (MB991000)
2. Rotate the hub in order to seat the bearing.



3. Measure the hub starting torque by using the following special tools.
   - Torque wrench (MB990685)
   - Preload socket (MB990326)

   Limit: 1.8 N·m
4. The starting torque must be within the limit and the hub rotation must be smooth.

>>C<< WHEEL BEARING AXIAL PLAY CHECK



1. Measure to determine whether the wheel bearing axial play is within the limit or not by using the following special tools.
   - Front hub remover and installer (MB991017)
   - Spacer (MB991000)

   Limit: 0.05 mm
2. If the play is not within the limit range while the nut is tightened to 245 ± 29 N·m, the bearing, hub and/or knuckle have probably not been installed correctly. Replace the bearing and re-install.

INSPECTION

M1261002000067

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

DRIVE SHAFT ASSEMBLY

REMOVAL AND INSTALLATION

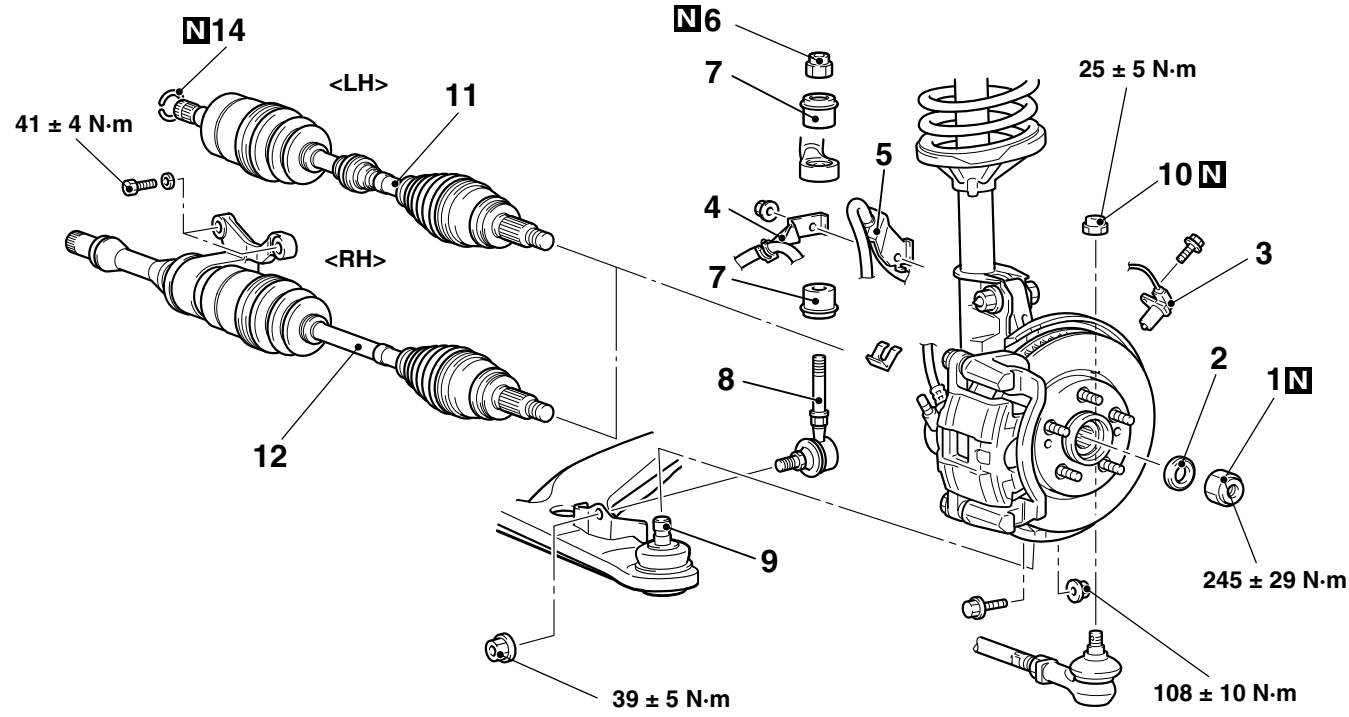
M1261003500366

⚠ CAUTION

- **Do not strike the ABS rotors installed to the BJ outer race of drive shaft against other parts when removing or installing the drive shaft. Otherwise the ABS rotors will be damaged.**
- **Be careful not to strike the pole piece at the tip of the front ABS sensor with tools during servicing work.**

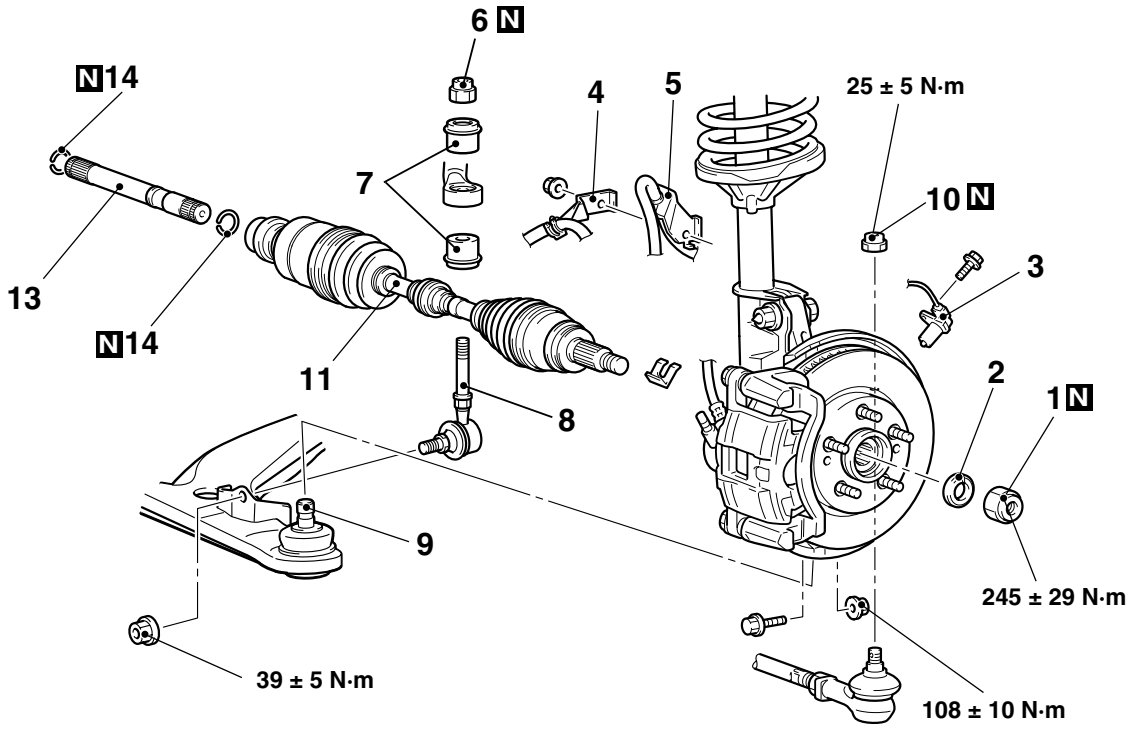
Pre-installation Operation	Post-installation Operation
• Transmission Fluid Draining (Refer to GROUP 22A, On-vehicle Service – Transmission Oil Replacement P.22A-4). • Transfer Oil Draining <4WD> (Refer to GROUP 22A, On-vehicle Service – Transfer Oil Replacement P.22A-4). • Front Exhaust Pipe Removal (Refer to GROUP 15, Exhaust Pipe and Muffler P.15-8).	• Front Exhaust Pipe Installation (Refer to GROUP 15, Exhaust Pipe and Muffler P.15-8). • Check the Ball Joint Dust Cover for cracks or damage by pushing it with your finger. • Transfer Oil Filling<4WD> (Refer to GROUP 22A, On-vehicle Service – Transfer Oil Replacement P.22A-4). • Transmission Fluid Filling (Refer to GROUP 22A, On-vehicle Service – Transmission Oil Replacement P.22A-4).

<2WD>



AC107141AB

<4WD>



AC107142 AB

Removal steps

<<A>>	>>C<<	1.	Drive shaft nut
	>>C<<	2.	Washer
		3.	Front ABS sensor
		4.	Front ABS sensor bracket
		5.	Brake hose bracket
	>>B<<	6.	Self-locking nut
		7.	Stabilizer rubber
		8.	Stabilizer link assembly

Removal steps (Continued)

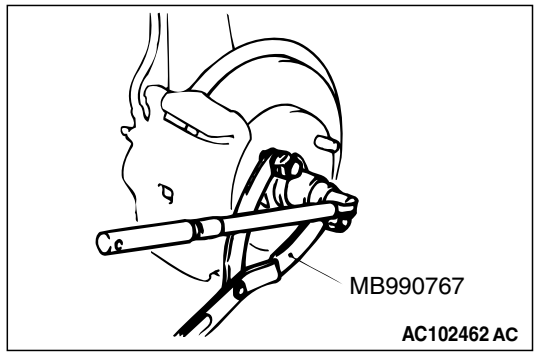
		9.	Lower arm ball joint connection
<<B>>		10.	Self-locking nut (tie rod end connection)
<<C>>	>>A<<	11.	Drive shaft
<<C>>	>>A<<	12.	Drive shaft and inner shaft assembly <2WD-RH>
<<D>>	>>A<<	13.	Output shaft <4WD>
		14.	Circlip

REMOVAL SERVICE POINTS

<<A>> DRIVE SHAFT NUT REMOVAL

⚠ CAUTION

Do not apply pressure to the wheel bearing by the vehicle weight to avoid possible damage when the drive shaft nut is loosened.

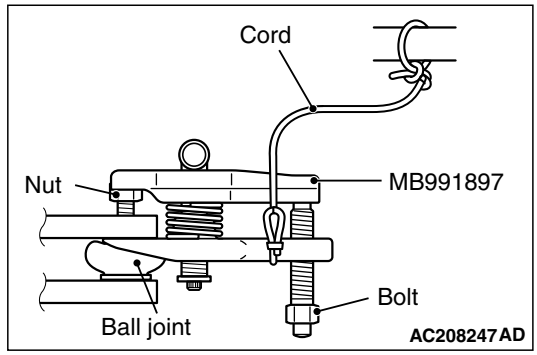


AC102462 AC

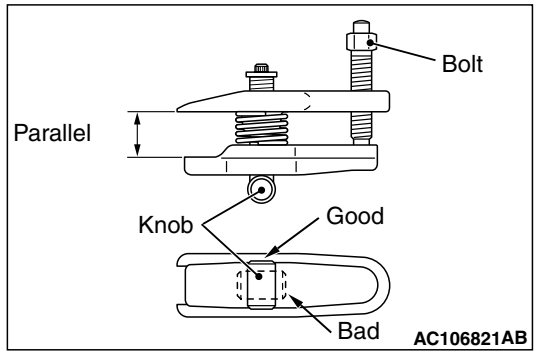
Use special tool end yoke holder (MB990767) to fix the hub and remove the drive shaft nut.

<<B>> SELF-LOCKING NUT (TIE ROD END CONNECTION) REMOVAL

⚠ CAUTION
- **Do not remove the nut from ball joint. Loosen it and use special tool to avoid possible damage to ball joint threads.**
- **Hang special tool with cord to prevent it from falling.**



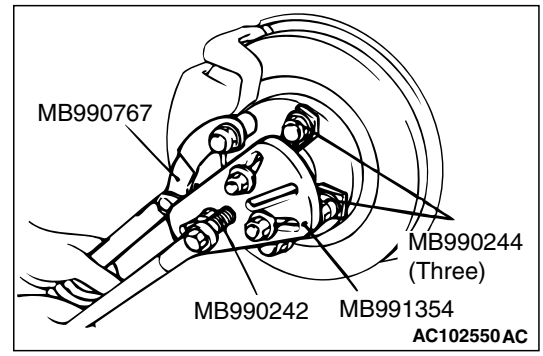
1. Install special tool ball joint remover (MB991897) as shown in the figure.



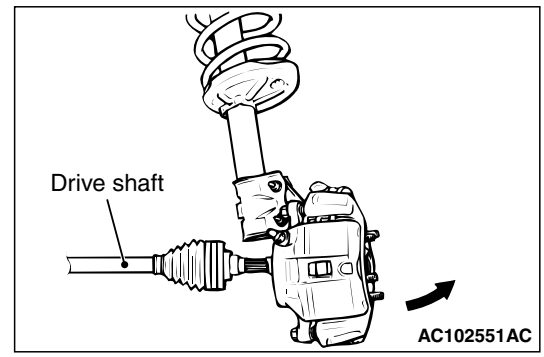
2. Turn the bolt and knob as necessary to make the jaws of special tool parallel, tighten the bolt by hand and confirm that the jaws are still parallel.

   NOTE: When adjusting the jaws in parallel, make sure the knob is in the position shown in the figure.
3. Tighten the bolt with a wrench to disconnect the tie rod end.

<<C>> DRIVE SHAFT/DRIVE SHAFT AND INNER SHAFT ASSEMBLY <2WD-RH> REMOVAL

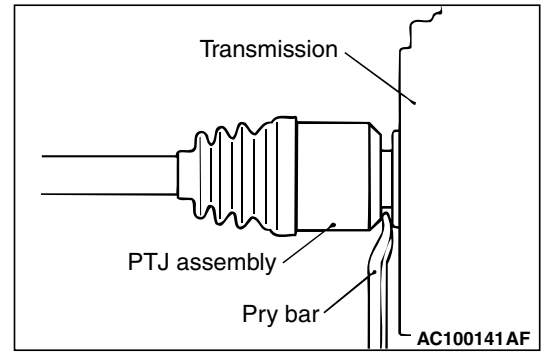


1. Use the following special tools to push out the drive shaft or the drive shaft and inner shaft assembly from the hub.
   - Puller shaft (MB990242)
   - Puller bar (MB990244)
   - Puller body (MB991354)
   - End yoke holder (MB990767)

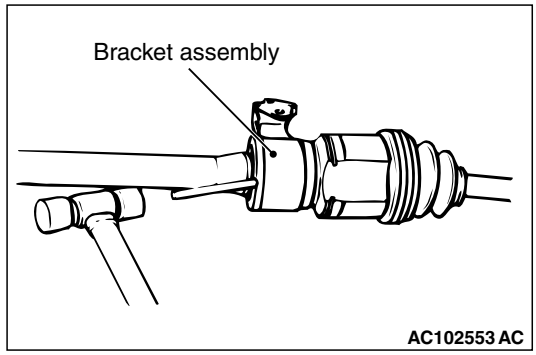


2. Remove the drive shaft from the hub by pulling the bottom of the brake disc towards you.

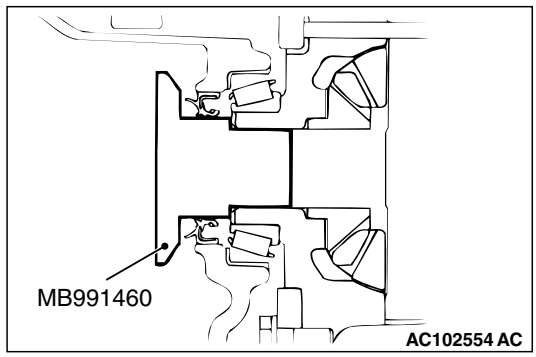
⚠ CAUTION
- **Do not pull on the drive shaft; doing so will damage the PTJ; be sure to use the pry bar.**
- **When pulling the drive shaft out from the transmission, be careful that the spline part of the drive shaft does not damage the oil seal.**



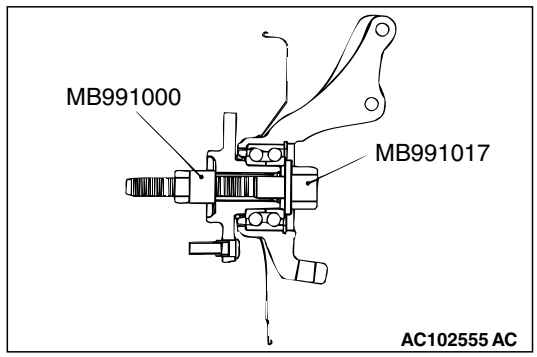
3. Insert a pry bar between the transmission case and the drive shaft, and then pry and remove the drive shaft from the transmission.



4. If the inner shaft is hard to remove from the transmission, strike the bracket assembly lightly with a plastic hammer and remove the inner shaft.



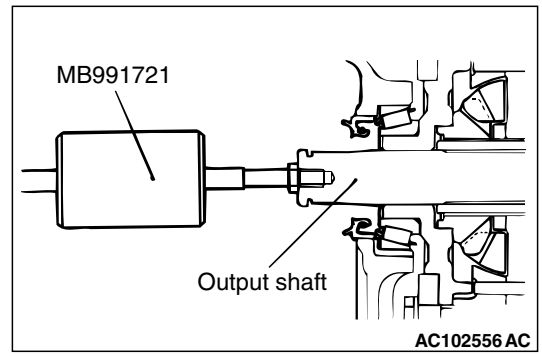
5. Use special tool plug (MB991460) to prevent the entry of foreign material into the transmission case.



⚠ CAUTION
Do not apply pressure to the wheel bearing by the vehicle weight to avoid possible damage when the drive shaft is removed. If, however, vehicle weight must be applied to the bearing in moving the vehicle, temporarily secure the wheel bearing by using the following special tools.
- **Spacer (MB991000)**
- **Front hub remover and installer (MB991017)**

<<D>> OUTPUT SHAFT <4WD> REMOVAL

⚠ CAUTION
When pulling the output shaft out from the transmission, be careful that the spline part of the output shaft does not damage the oil seal.



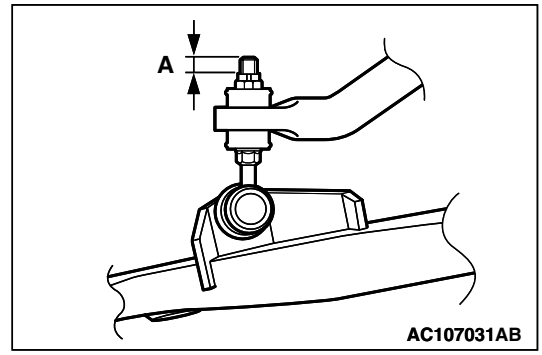
Use special tool sliding hammer (MB991721) to remove the output shaft.

INSTALLATION SERVICE POINTS

>>A<< OUTPUT SHAFT <4WD>/DRIVE SHAFT/ DRIVE SHAFT AND INNER SHAFT ASSEMBLY <2WD-RH> INSTALLATION

⚠ CAUTION
When installing the output shaft, the drive shaft or the drive shaft and inner shaft assembly, be careful that the spline part of the output shaft, the drive shaft or the drive shaft and inner shaft assembly do not damage the oil seal.

>>B<< SELF-LOCKING NUT INSTALLATION



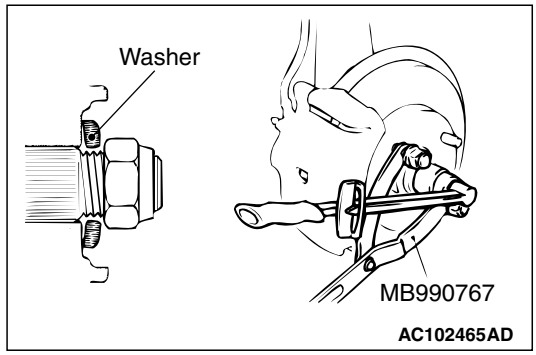
Tighten the self-locking nut so that the protruding length of the stabilizer link protruding part meets its standard value (A).

Standard value (A): 9.4 ± 0.4 mm

>>C<< WASHER/DRIVE SHAFT NUT INSTALLATION

⚠ CAUTION

Before securely tightening the drive shaft nuts, make sure there is no load on the wheel bearings. Otherwise the wheel bearing will be damaged.



1. Be sure to install the drive shaft washer in the specified direction.
2. Using special tool end yoke holder (MB990767), tighten the drive shaft nut to the specified torque.

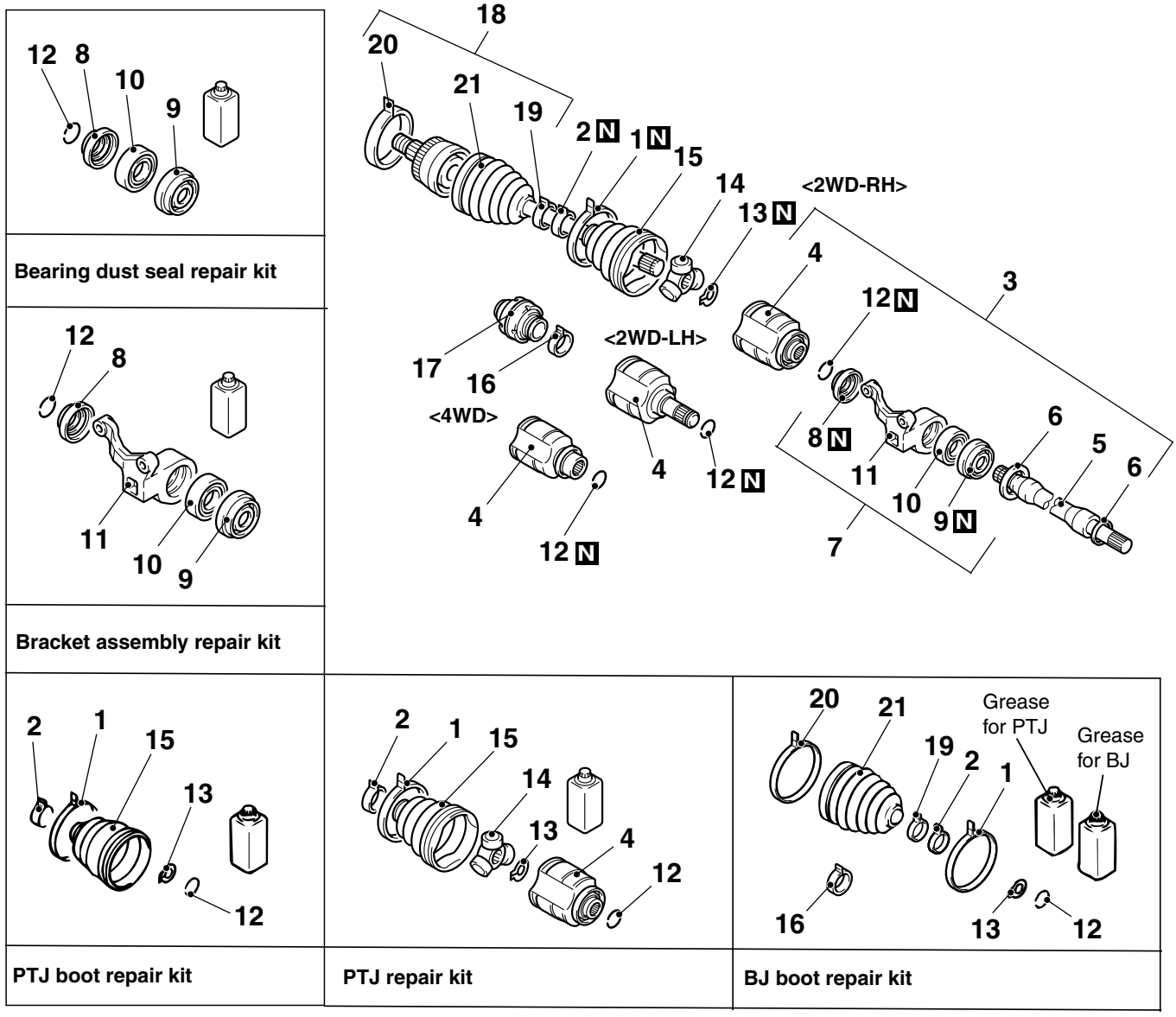
   Tightening torque: 245 ± 29 N·m

DISASSEMBLY AND REASSEMBLY

M1261003700412

⚠ CAUTION

- **Be careful not to damage the ABS rotor, which is attached to the BJ outer race during disassembly and reassembly.**
- **Never disassemble the BJ assembly except when replacing the BJ boot.**



AC101959 AD

Disassembly steps

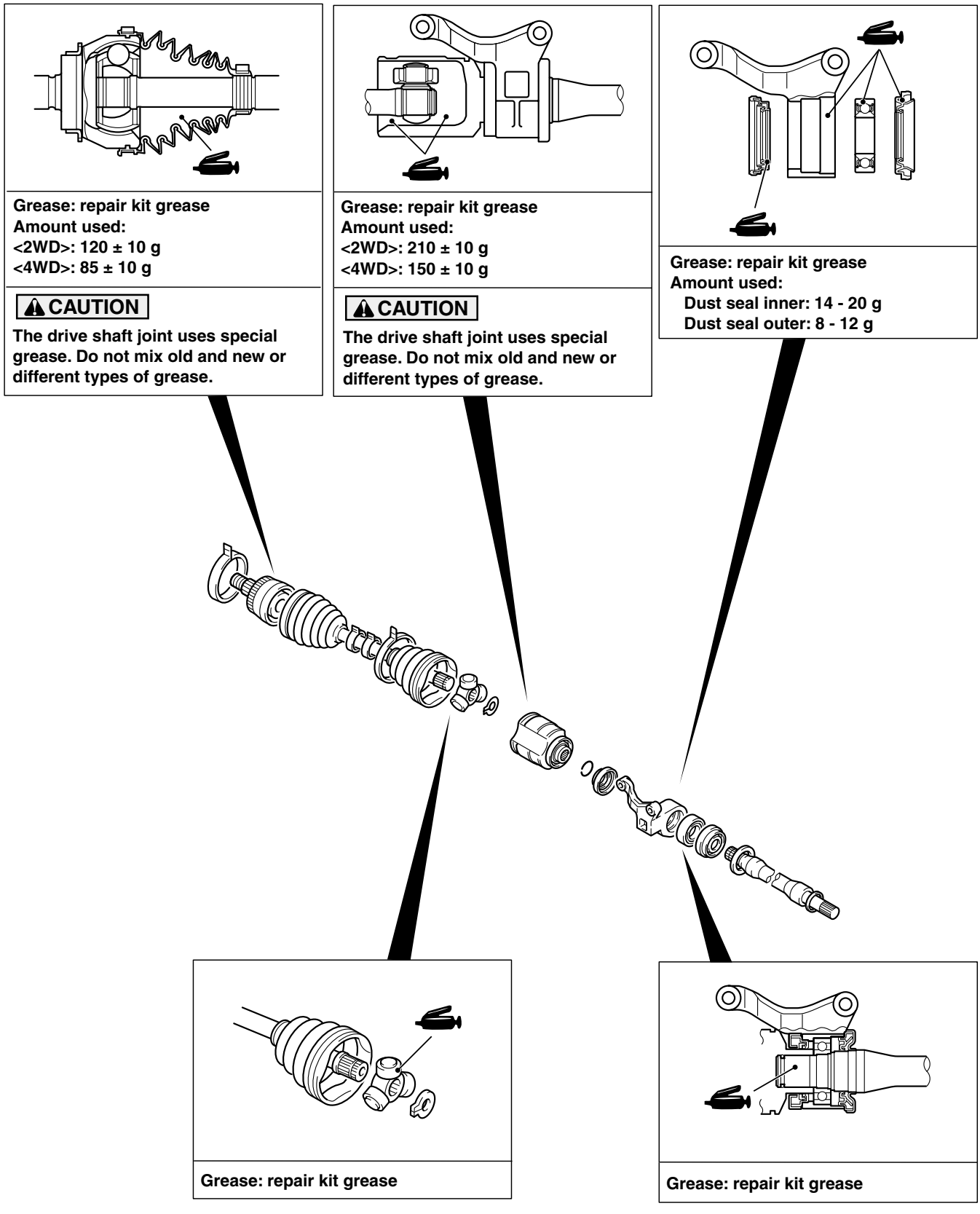
	>>G<<	1.	PTJ boot band (large)
	>>G<<	2.	PTJ boot band (small)
		3.	PTJ case and inner shaft assembly <2WD-RH>
<<A>>	>>F<<	4.	PTJ case
<<B>>	>>E<<	5.	Inner shaft <2WD-RH>
		6.	Dust cover <2WD-RH>
		7.	Bracket assembly <2WD-RH>
	>>D<<	8.	Dust sear outer <2WD-RH>
	>>D<<	9.	Dust seal inner <2WD-RH>
<<C>>	>>C<<	10.	Centre bearing <2WD-RH>

Disassembly steps (Continued)

		11.	Centre bearing bracket <2WD-RH>
		12.	Circlip
		13.	Snap ring
<<A>>	>>B<<	14.	Spider assembly
<<D>>	>>A<<	15.	PTJ boot
	>>A<<	16.	Damper band <LH>
	>>A<<	17.	Dynamic damper <LH>
		18.	BJ assembly
		19.	BJ boot band (small)
		20.	BJ boot band (large)
		21.	BJ boot

NOTE:
- *PTJ: Pillow Tripod Joint*
- *BJ: Birfield Joint*

LUBRICATION POINTS



AC107123 AC

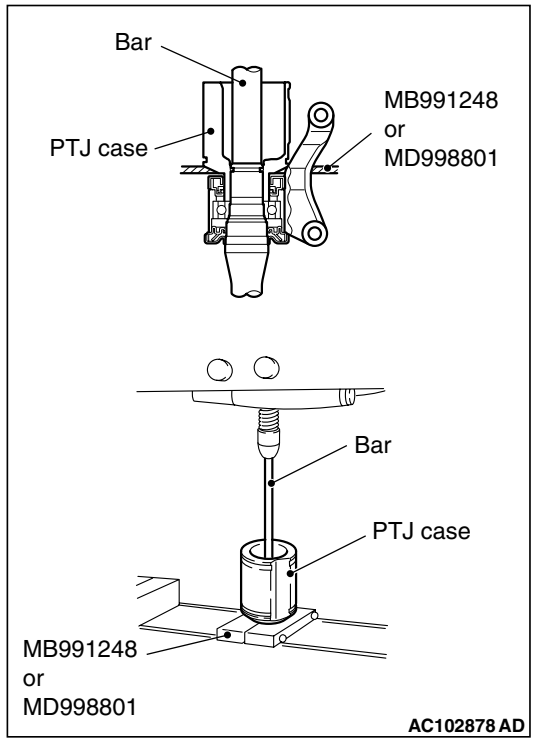
DISASSEMBLY SERVICE POINTS

<<A>> PTJ CASE/SPIDER ASSEMBLY REMOVAL

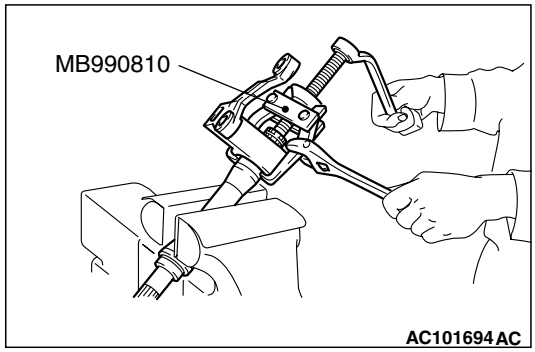
⚠ CAUTION
Do not disassemble the spider assembly.

1. Wipe off grease from the spider assembly and the inside of the PTJ case.
2. Always clean the spider assembly when the grease contains water or foreign material.

<<B>> INNER SHAFT <2WD-RH> REMOVAL

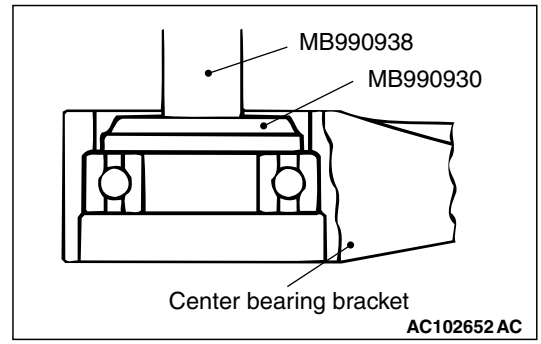


1. Use special tool inner shaft remover (MB991248 or MD998801) to remove the inner shaft assembly from the PTJ case.



2. Use special tool side bearing puller (MB990810) to remove the centre bearing bracket from the inner shaft.

<<C>> CENTRE BEARING <2WD-RH> REMOVAL



Use the following special tools to remove the centre bearing from the centre bearing bracket.

- Bar (MB990938)
- Installer adapter (MB990930)

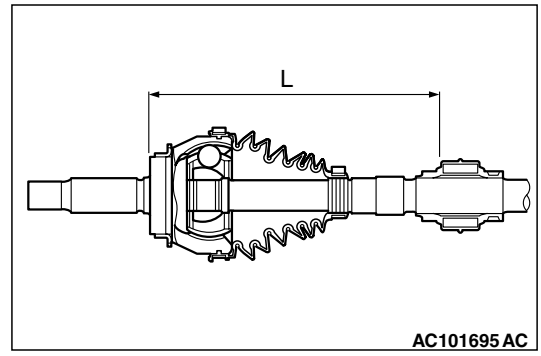
<<D>> PTJ BOOT REMOVAL

1. Wipe off grease from the shaft spline.
2. When reusing the PTJ boot, wrap plastic tape around the shaft spline to avoid damaging the boot.

REASSEMBLY SERVICE POINTS

>>A<< DYNAMIC DAMPER <LH> /DAMPER BAND <LH> /PTJ BOOT INSTALLATION

⚠ CAUTION
There should be no grease adhered to the rubber part of the dynamic damper.



1. Install the dynamic damper in the position (L) shown in the figure .

   L: 237 ± 3 mm <2WD>, 231 ± 3 mm <4WD>

2. Secure the damper bands.
3. Wrap plastic tape around the shaft spline, and then install the PTJ boot band (small) and PTJ boot.

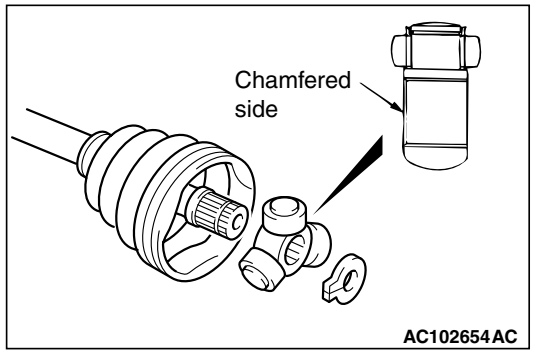
>>B<< SPIDER ASSEMBLY INSTALLATION

⚠ CAUTION

- **The drive shaft joint use special grease. Do not mix old and new or different types of grease.**
- **If the spider assembly has been cleaned, take special care to apply the specified grease.**

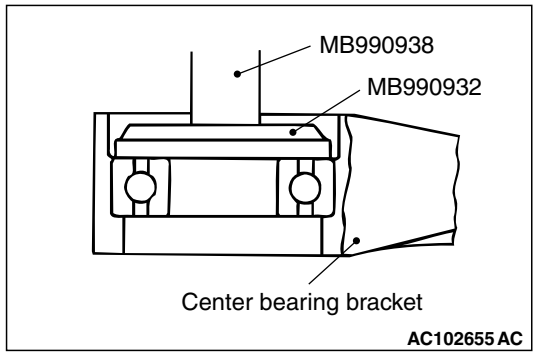
1. Apply the specified grease furnished in the repair kit to the spider assembly between the spider axle and the roller.

   Specified grease: Repair kit grease



2. Install the spider assembly to the shaft from the direction of the spline chamfered side.

>>C<< CENTRE BEARING <2WD-RH> INSTALLATION



Use the following special tools to press-fit the centre bearing into the centre bearing bracket.

- Bar (MB990938)
- Installer adapter (MB990932)

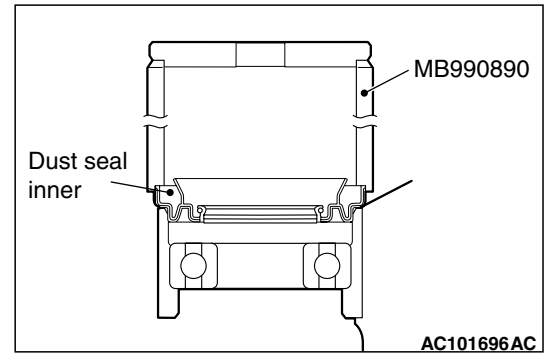
>>D<< DUST SEAL INNER <2WD-RH> /DUST SEAL OUTER <2WD-RH> INSTALLATION

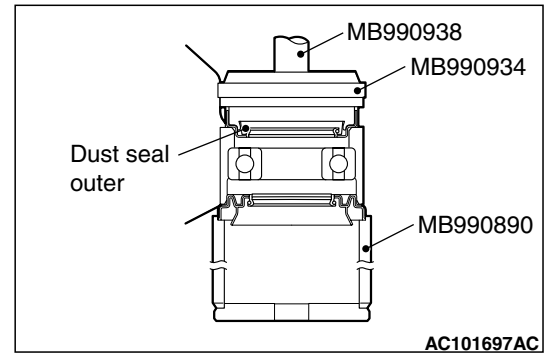
⚠ CAUTION

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

1. Apply the specified grease to the rear surface of all dust seals.

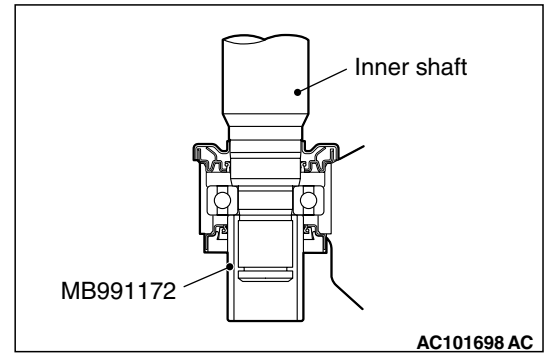
Specified grease: Repair kit grease
Amount used:
Dust seal inner: 14 – 20 g
Dust seal outer: 8 – 12 g



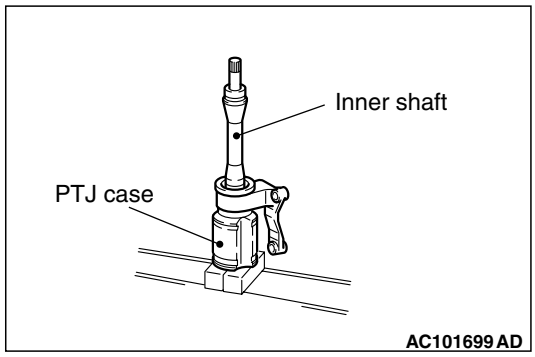


2. Use the following special tools to press the dust seals into the centre bearing bracket until they are flush with each other.
   - Rear suspension bushing base (MB990890)
   - Bar (MB990938)
   - Installer adapter (MB990934)
3. Apply repair kit grease to the lip of each dust seal.

>>E<< INNER SHAFT <2WD-RH> INSTALLATION



1. Use special tool inner shaft installer base (MB991172) to hold the centre bearing inner race, and then press-in the inner shaft.

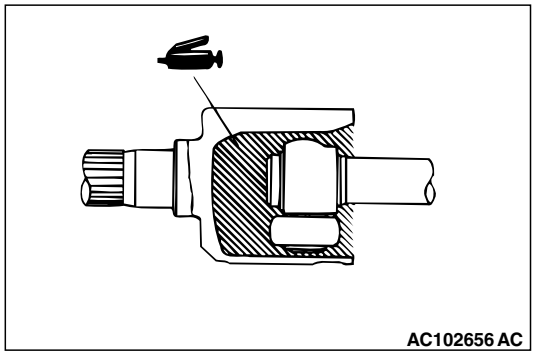


2. Apply repair kit grease to the inner shaft spline, then press fit it into the PTJ case.

   NOTE: When press-fitting the inner shaft into the PTJ case, apply a thin coat of repair kit grease to the dust seal outer lip part and the outside edge of the PTJ axial part.

>>F<< PTJ CASE INSTALLATION

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

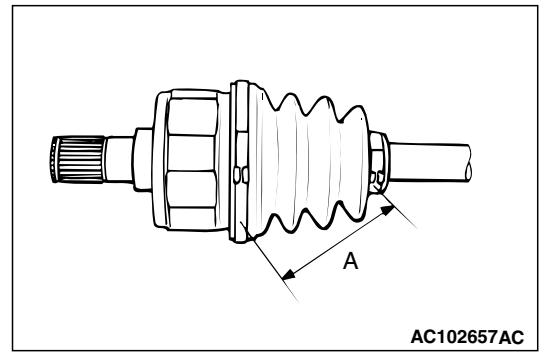


After applying the specified grease to the PTJ case, insert the drive shaft and apply grease one more time.

Specified grease: Repair kit grease
Amount to use:
<2WD>: 210 ± 10 g
<4WD>: 150 ± 10 g

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

>>G<< PTJ BOOT BAND (SMALL)/PTJ BOOT BAND (LARGE) INSTALLATION



Set the PTJ boot bands at the specified distance in order to adjust the amount of air inside the PTJ boot, and then tighten the PTJ boot band (small), PTJ boot band (large) securely.

Standard value (A):
<2WD>: 90 ± 3 mm
<4WD>: 85 ± 3 mm

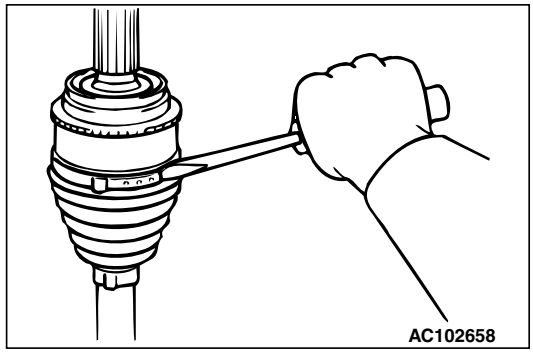
INSPECTION

M1261003800129

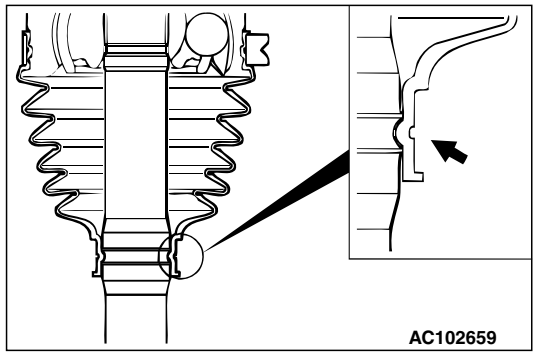
- Check the drive shaft for damage, bending or corrosion.
- Check the inner shaft for damage, bending or corrosion.
- Check the output shaft for damage, bending or corrosion.
- Check the drive shaft spline part for wear or damage.
- Check the inner shaft spline part for wear or damage.
- Check the output shaft spline part for wear or damage.
- Check the spider assembly for roller rotation, wear or corrosion.
- Check the groove inside PTJ case for wear or corrosion.
- Check the dynamic damper for damage or cracking.
- Check the boots for deterioration, damage or cracking.
- Check the centre bearing for seizure, discolouration or roughness of rolling surface.
- Check the dust cover for damage or deterioration.

BJ BOOT (RESIN BOOT) REPLACEMENT

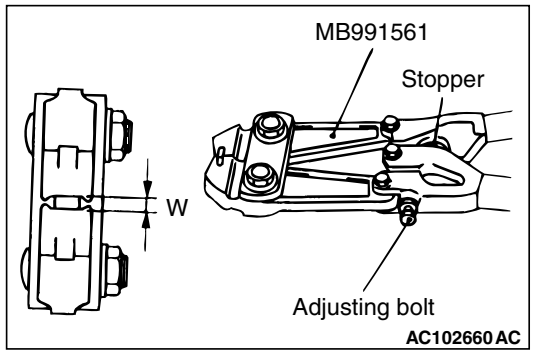
M1261005200338



1. Remove the boot bands (large and small).
   NOTE: The boot bands cannot be re-used.
2. Remove the BJ boot.
3. Wrap a plastic tape around the shaft spline, and assemble the boot band and BJ boot.



4. Align the centre groove on the BJ boot small end with the shaft groove.

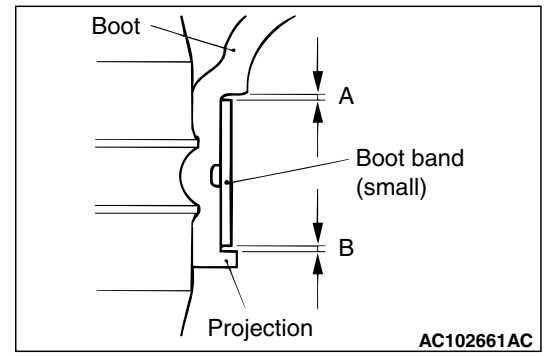


5. Turn the adjusting bolt on special tool boot band crimping tool (MB991561) so that the size of the opening (W) is at the standard value.

   Standard value (W): 2.9 mm
   <If it is larger than 2.9 mm>
   Tighten the adjusting bolt.
   <If it is smaller than 2.9 mm>
   Loosen the adjusting bolt.

   NOTE: The value of W will change by approximately 0.7 mm for each turn of the adjusting bolt.

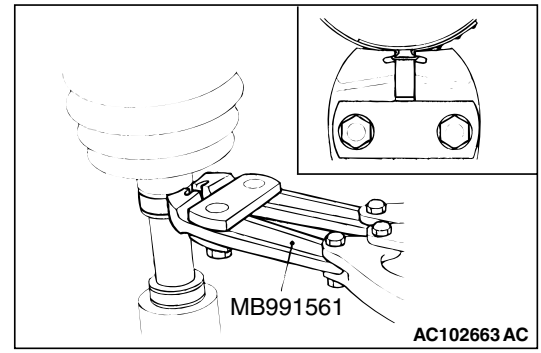
   NOTE: The adjusting bolt should not be turned more than once.



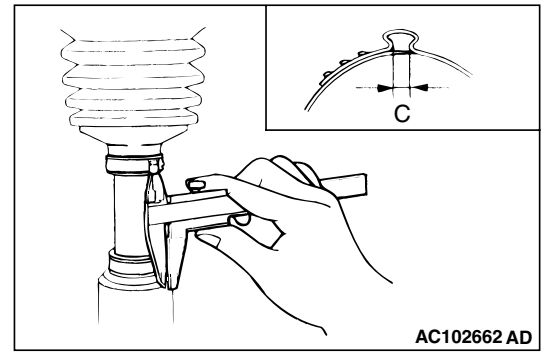
6. Position the BJ boot band (small) so that there is even clearance at either end (A and B).

⚠ CAUTION

- **Secure the drive shaft in an upright position and clamp part of the boot band to be crimped securely in the jaws of special tool.**
- **Crimp the boot band until special tool touches the stopper.**



7. Use the special tool to crimp the boot band (small).



8. Check that the crimping amount (C) of the boot band is at the standard value.

   Standard value (C): 2.4 – 2.8 mm
   <If the crimping amount is larger than 2.8 mm >
   Readjust the value of (W) in step 5 according to the following formula, and then repeat the operation in step 7.
   W = 5.5 mm – C

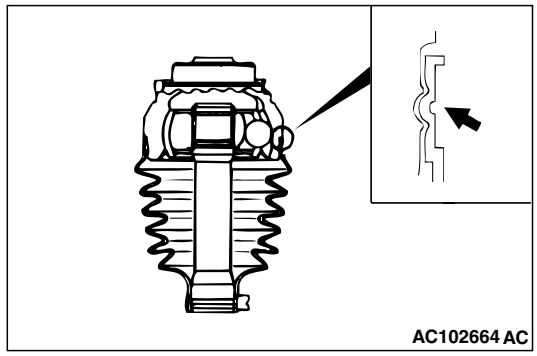
Example: If C = 2.9 mm, then W = 2.6 mm.
<If the crimping amount is smaller than 2.4 mm >
Remove the BJ boot band, readjust the value of (W) in step 5 according to the following formula, and then repeat the operations in steps 6 and 7 using a new BJ boot band.
W = 5.5 mm − C
Example: If C = 2.3 mm, then W = 3.2 mm.

9. Check that the boot band is not sticking out past the place where it has been installed. If the boot band is sticking out, remove it and then repeat steps 6 to 8, using a new boot band.

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

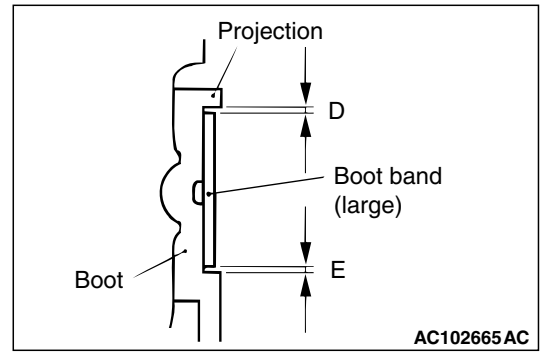
10. Fill the inside of the boot with the specified amount of the specified grease.

Specified grease: Repair kit grease
Amount to use:
<2WD>: 120 ± 10 g
<4WD>: 85 ± 10 g


AC102664 AC

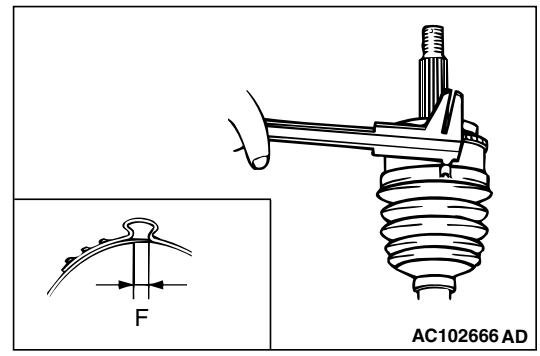
11. Align the centre groove on the BJ boot big end with the BJ case groove.
12. Follow the same procedure as in step 5 to adjust the size of the opening (W) on the special tool so that it is at the standard value.

Standard value (W): 2.9 mm



AC102665 AC

13. Position the BJ boot band (large) so that there is even clearance at either end (D and E).
14. Use the special tool to crimp the BJ boot band (large) in the same way as in step 7.



AC102666 AD

15. Check that the crimping amount (F) of the boot band is at the standard value.

Standard value (F): 2.4 − 2.8 mm
<If the crimping amount is larger than 2.8 mm >
Readjust the value of (W) in step 12 according to the following formula, and then repeat the operation in step 14.
W = 5.8 mm − F
Example: If F = 2.9 mm, then W = 2.9 mm.
<If the crimping amount is smaller than 2.4 mm >
Remove the BJ boot band, readjust the value of (W) in step 12 according to the following formula, and then repeat the operations in steps 13 and 14 using a new BJ boot band.
W = 5.8 mm − F
Example: If F = 2.3 mm, then W = 3.5 mm.

16. Check that the boot band is not sticking out past the place where it has been installed. If the boot band is sticking out, remove it and then repeat steps 13 to 15, using a new boot band.

NOTES