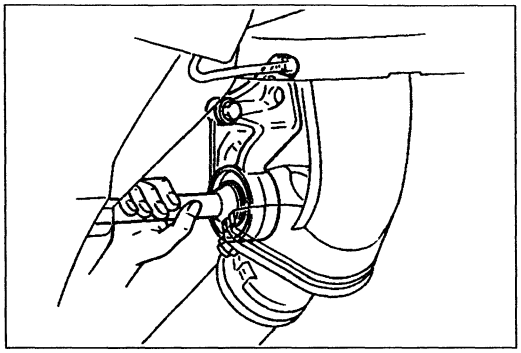


JOINT SHAFT

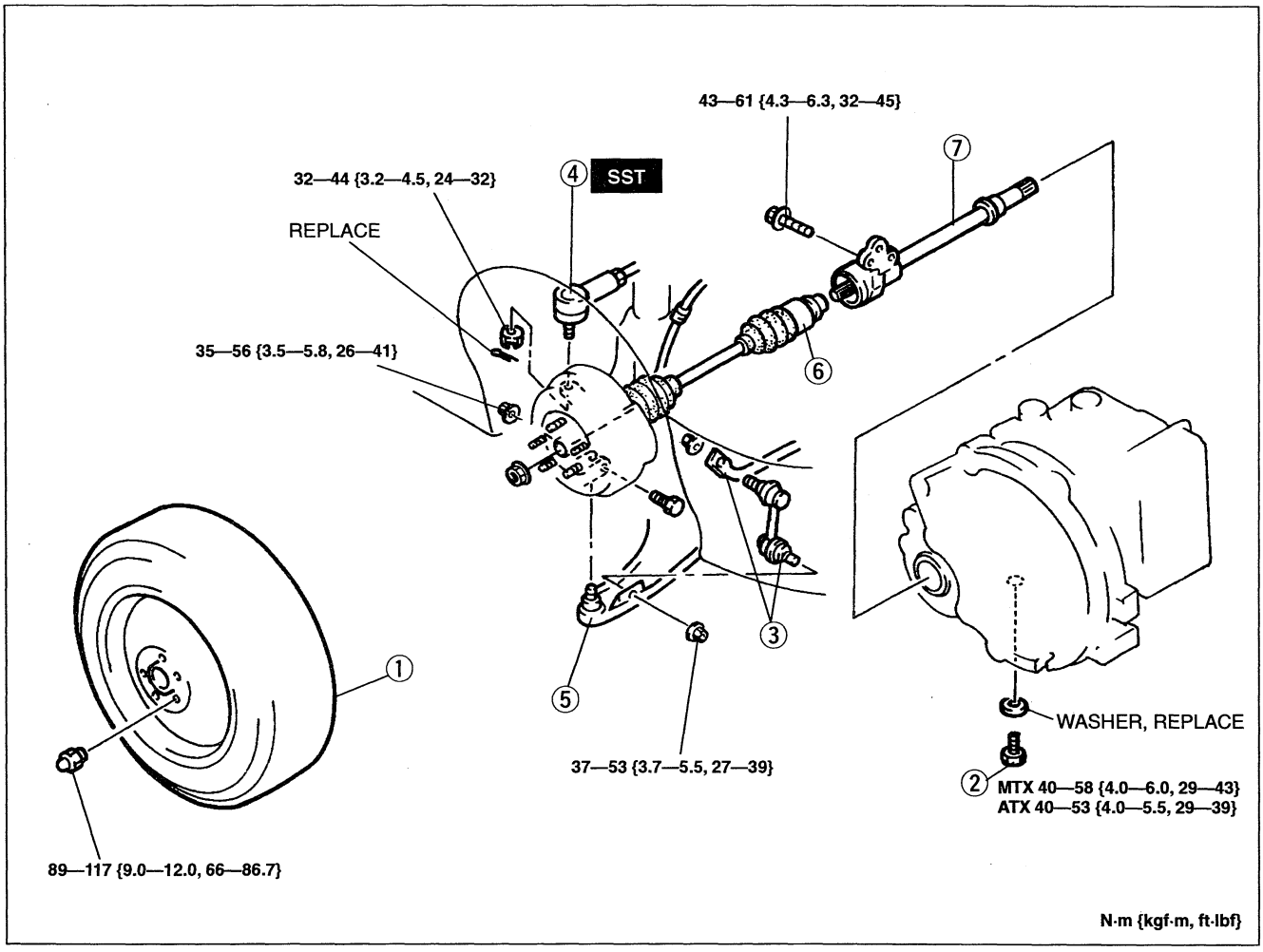
Preinspection

Joint shaft

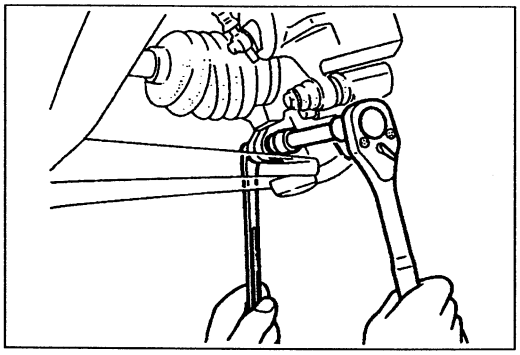
1. Verify that the joint shaft is not twisted or cracked. Replace it if necessary.
2. Turn the joint shaft by hand and verify that the bearing rotates smoothly and freely. Replace it if necessary.

Removal / Installation

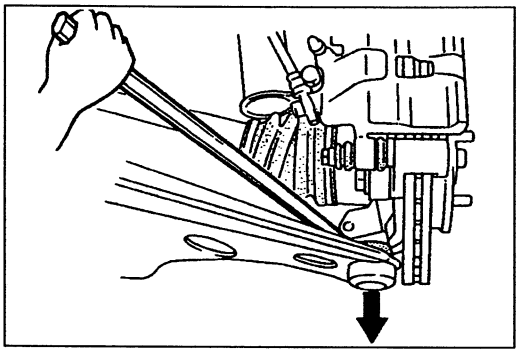
1. Drain the transaxle oil.
2. Remove in the order shown in the figure, referring to **Removal Note**.
3. Install in the reverse order of removal, referring to **Installation Note**.
4. After installation, fill the transaxle with the specified amount of the specified transaxle oil or ATF and inspect for oil leakage.



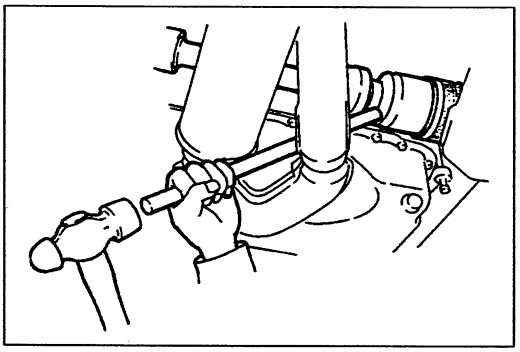
1. Wheel and tire
2. Drain plug
3. Stabilizer control link
4. Tie-rod end
   Service ..... section N
5. Lower arm ball joint
6. Right drive shaft and axle
   Removal Note ..... page M–20
   Installation Note ..... page M–21
7. Joint shaft
   Removal Note ..... page M–20
   Installation Note ..... page M–20
   Overhaul ..... page M–21



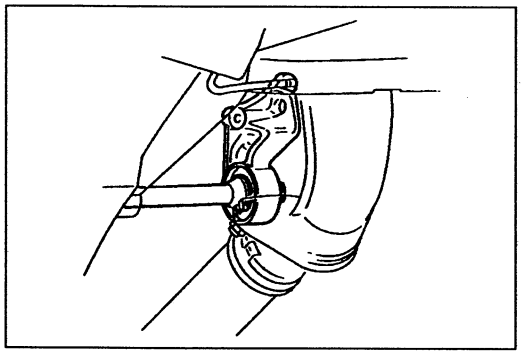
Removal Note
Right drive shaft and axle
1. Remove the clinch bolt and nut.



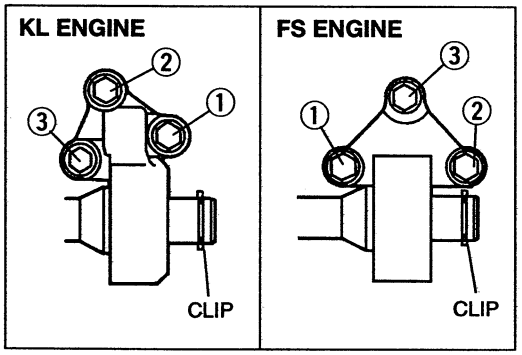
2. Wrap a rag around the ball joint dust boot.
3. Pry the lower arm out of the knuckle.



4. As shown in the figure, insert a pry bar between the right drive shaft and the joint shaft and tap on the bar to uncouple them.

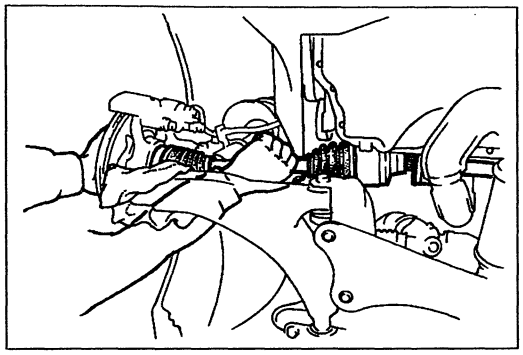


Joint shaft
Pull the joint shaft straight out.



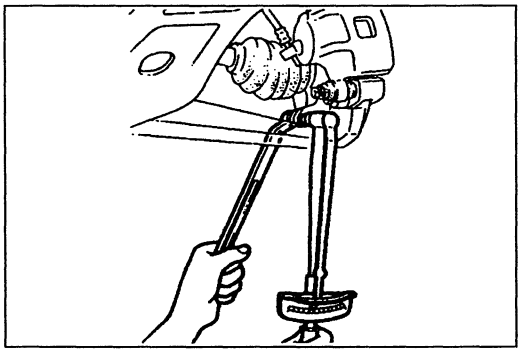
Installation Note
Joint shaft
1. Install the joint shaft with the end-gap of a new clip facing upward.
2. Tighten the bolts in the order shown.

Tightening torque:
43—61 N·m {4.3—6.3 kgf·m, 32—45 ft·lbf}



Right drive shaft and axle

1. Push the drive shaft into the joint shaft.
2. After installation, pull the front hub outward to verify that the drive shaft is securely held by the clip.

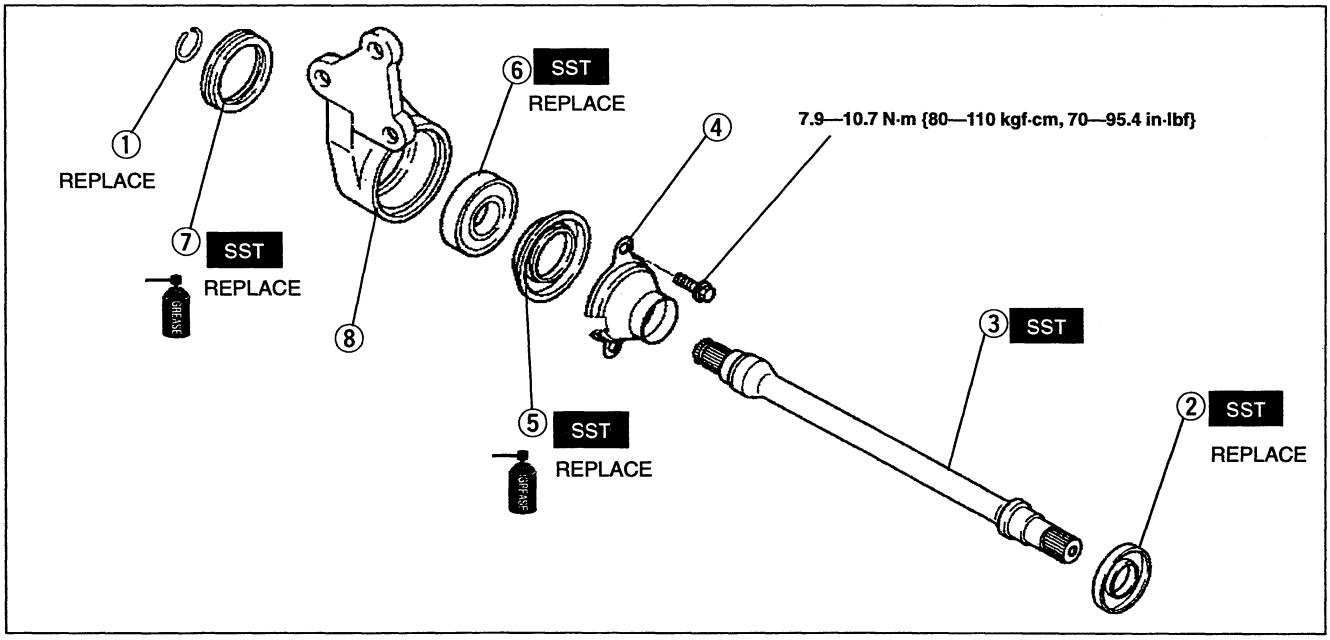


3. Install the lower arm ball joint to the knuckle and tighten the through bolt.

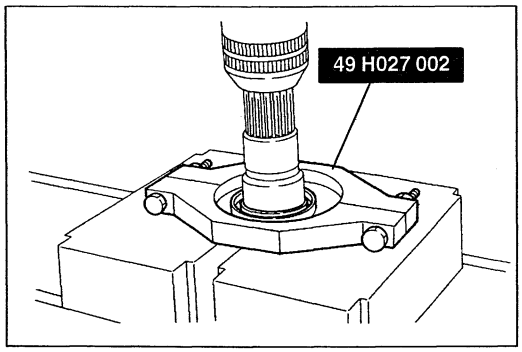
Tightening torque:
35—56 N·m {3.5—5.8 kgf·m, 26—41 ft·lbf}

Overhaul

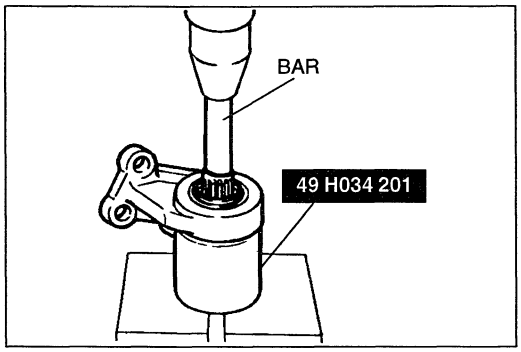
1. Disassemble in the order shown in the figure, referring to **Disassembly Note**.
2. Inspect all parts and repair or replace as necessary.
3. Assemble in the reverse order of disassembly, referring to **Assembly Note**.



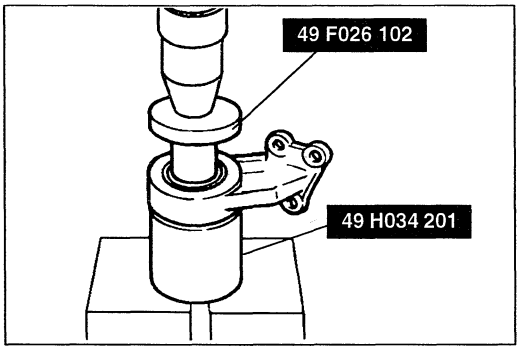
1. Clip
2. Dust cover (KL engine)
   Disassembly Note ..... page M–22
   Assembly Note ..... page M–23
3. Joint shaft
   Inspect splines for damage and wear
   Disassembly Note ..... page M–22
   Assembly Note ..... page M–23
4. Dust cover (KL engine)
5. Dust seal (left)
   Disassembly Note ..... page M–22
   Assembly Note ..... page M–23
6. Bearing
   Disassembly Note ..... page M–22
   Assembly Note ..... page M–22
7. Dust seal (right)
   Assembly Note ..... page M–22
8. Bracket



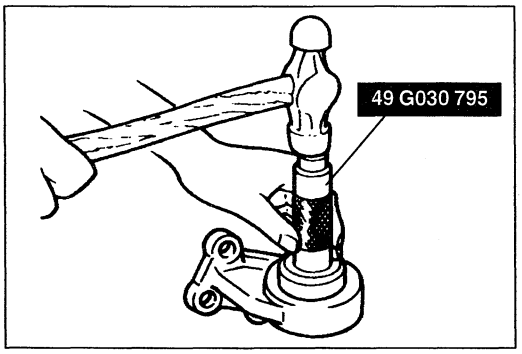
Disassembly Note
Dust cover (KL engine)
While holding the joint shaft, press out the dust cover by using the **SST**.



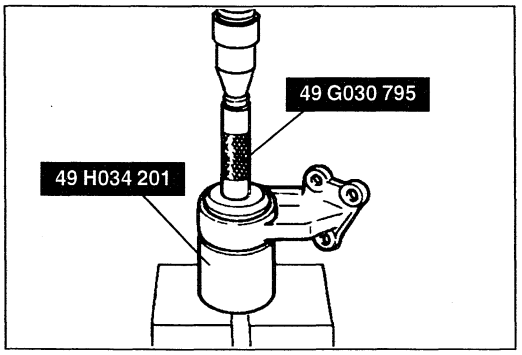
Joint shaft
Remove the joint shaft by using the **SST**.



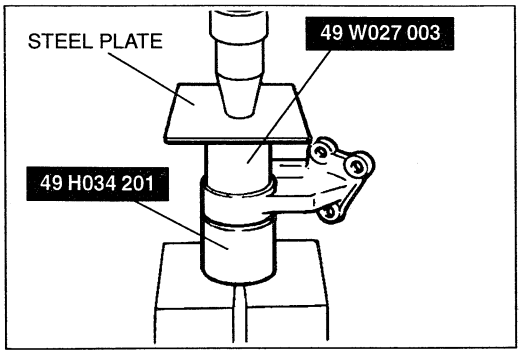
Dust seal (left)/Bearing
Remove the left side dust seal and bearing by using the **SSTs**.



Assembly Note
Dust seal (right)
Using the **SST**, install the new right side dust seal.

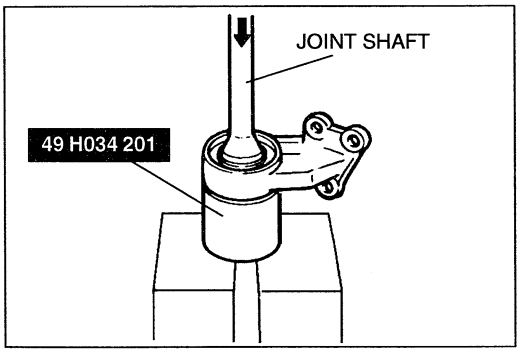


Bearing
Using the **SSTs**, install the new bearing.



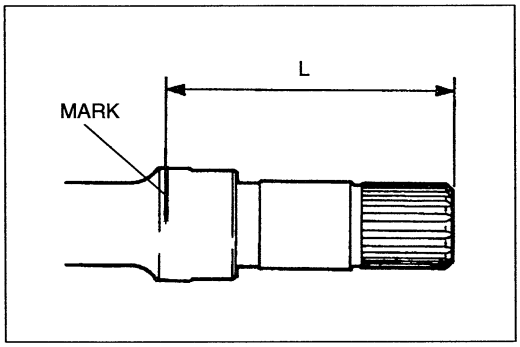
Dust seal (left)

Using a steel plate and the **SSTs**, install the new left side dust seal.



Joint shaft

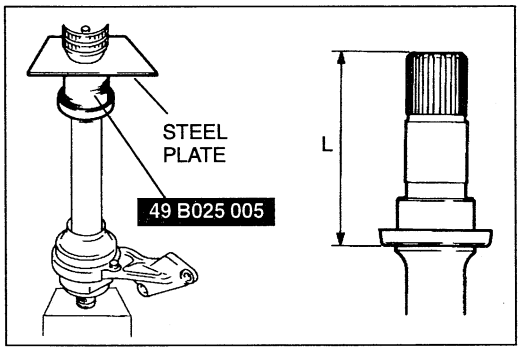
Using a press and the **SST**, install the joint shaft.



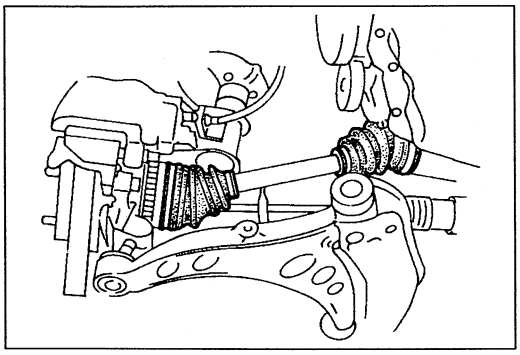
Dust cover (KL engine)

1. Mark the shaft as shown in the figure.

   Length L: 89.0 ± 0.5 mm {3.50 ± 0.02 in}



2. Press in the dust cover to the marked position by using a steel plate and the **SST**.
3. Verify that length L is within specification.

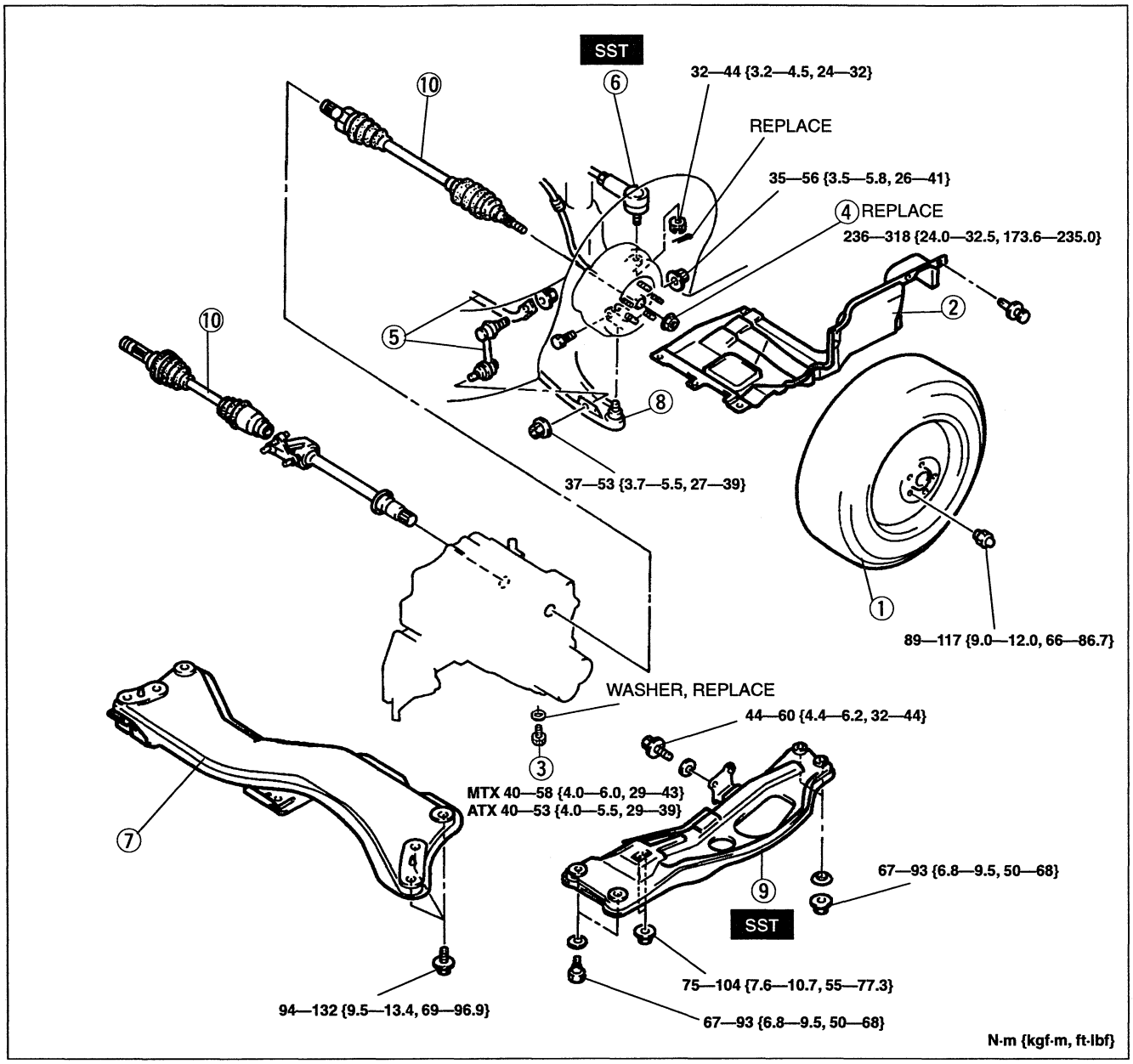


DRIVE SHAFT
Preinspection
Drive shaft

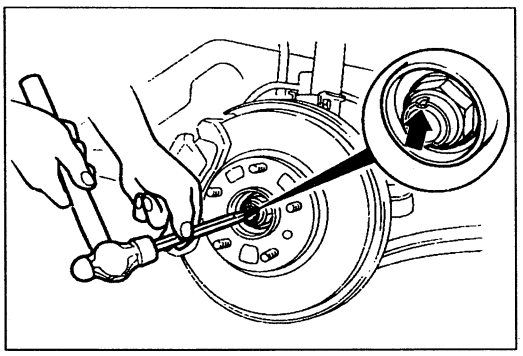
1. Check the dust boot on the drive shaft for cracks, damage, leaking grease, and a loose boot band.
2. Check the drive shaft for bending, cracks, and wear of joints or splines.
3. Repair or replace the drive shaft if necessary.

Removal / Installation

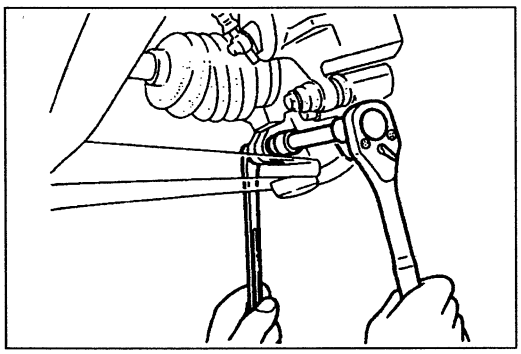
1. Drain the transaxle oil.
2. Remove in the order shown in the figure, referring to **Removal Note**.
3. Install in the reverse order of removal, referring to **Installation Note**.
4. After installation, fill the transaxle with the specified amount of the specified transaxle oil or ATF and inspect for oil leakage.
5. Check the front wheel alignment. (Refer to section R.)



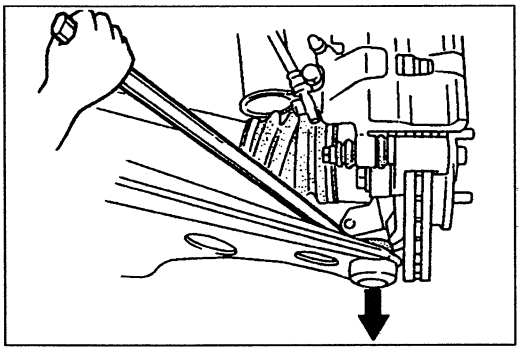
1. Wheel and tire
2. Splash shield
3. Drain plug
4. Locknut
   - Removal Note ..... page M–25
   - Installation Note ..... page M–27
5. Stabilizer and control link
6. Tie-rod end
   - Service ..... section N
7. Transverse member
8. Lower arm ball joint
   - Removal Note ..... page M–25
9. Engine mount member
   (Only for ATX at left side drive shaft)
   - Removal Note ..... page M–25
10. Drive shaft
    - Removal Note ..... page M–25
    - Installation Note ..... page M–26
    - Overhaul ..... pages M–28, 33



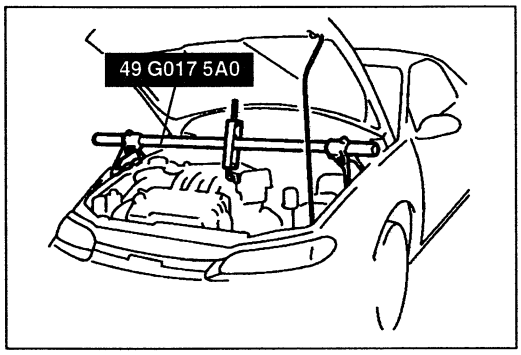
Removal Note
Locknut
1. Knock the crimped portion of the locknut outward by using a chisel and a hammer.
2. Lock the hub by applying the brakes.
3. Remove the locknut.



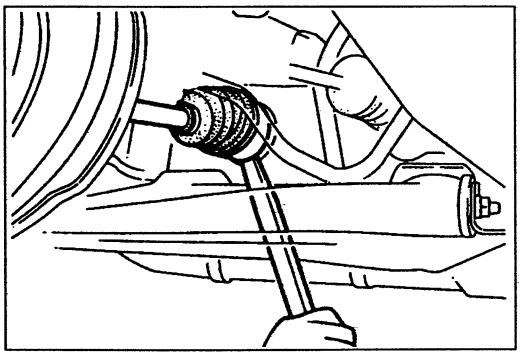
Lower arm ball joint
1. Remove the clinch bolt and nut.



2. Wrap a rag around the ball joint dust boot.
3. Pry the lower arm out of the knuckle.



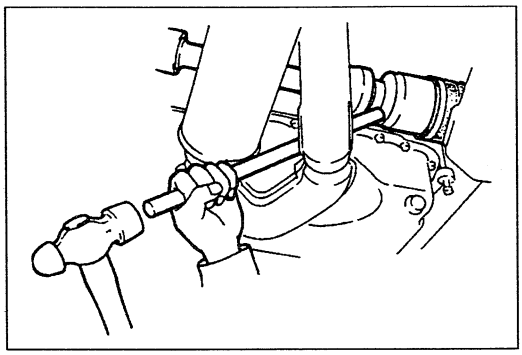
Engine mount member
Suspend the engine by using the **SST** and remove the engine mount member.



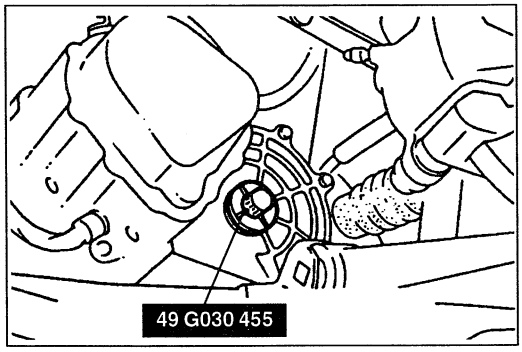
Drive shaft

Caution
- **The sharp edges of the drive shaft can slice or puncture the oil seal. Be careful when removing the drive shaft from the transaxle.**

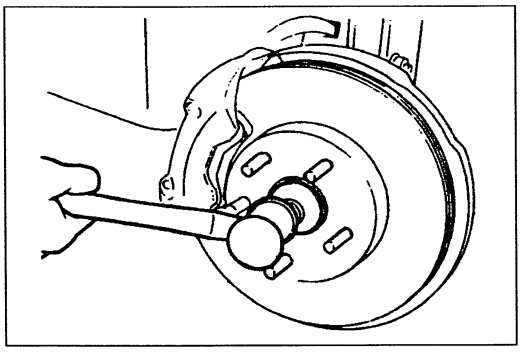
1. Separate the left-side drive shaft from the transaxle by prying with a bar inserted between the outer ring and the transaxle, as shown in the figure.



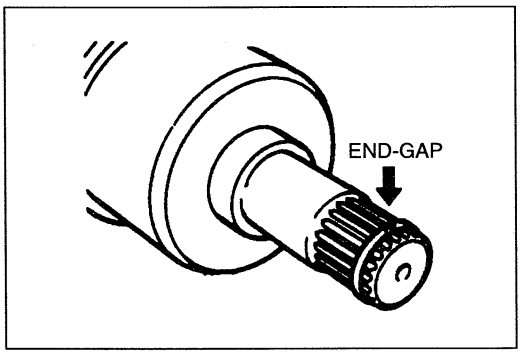
2. Separate the right-side drive shaft from the joint shaft by hammering on a bar inserted between them.



3. Install the **SST** into the transaxle to hold the side gears.



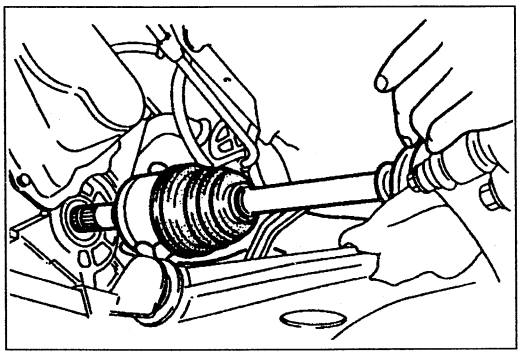
Note
- If the drive shaft will not come out of the front wheel hub easily, install an already discarded nut onto the drive shaft so that the nut is flush with the end of the drive shaft. Tap the nut with a copper hammer to loosen the drive shaft from the front wheel hub.



Installation Note
Drive shaft

Caution
- **The sharp edges of the drive shaft can slice or puncture the oil seal. Be careful when installing the drive shaft to the transaxle.**

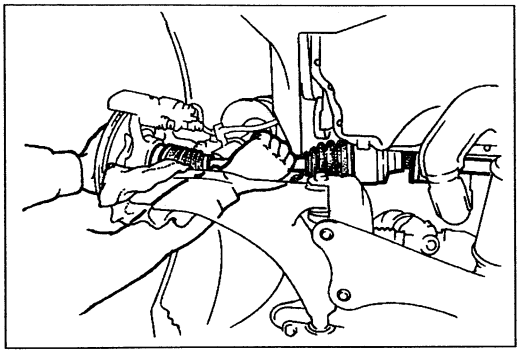
1. Turn the clip with the opening facing upward.



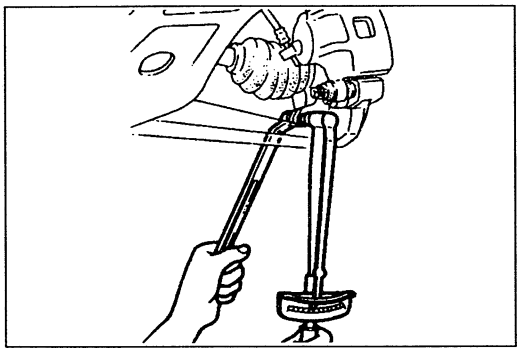
2. Apply grease to the ends of the drive shafts.

Caution
- **The oil seals are damaged easily if this procedure is not done correctly.**

3. Push the drive shaft into the transaxle (left side) or joint shaft (right side).

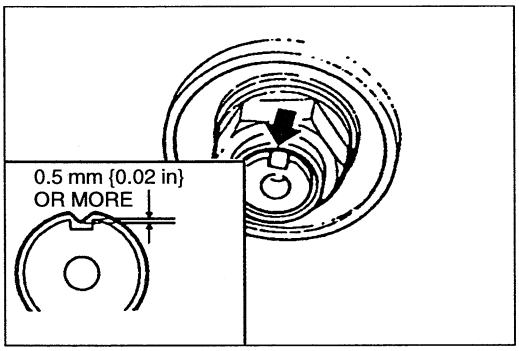


4. After installation, pull the front hub outward to confirm that the drive shaft is securely held by the clip.



5. Install the lower arm ball joint to the knuckle and tighten the through bolt.

Tightening torque:
35—56 N·m {3.5—5.8 kgf·m, 26—41 ft·lbf}



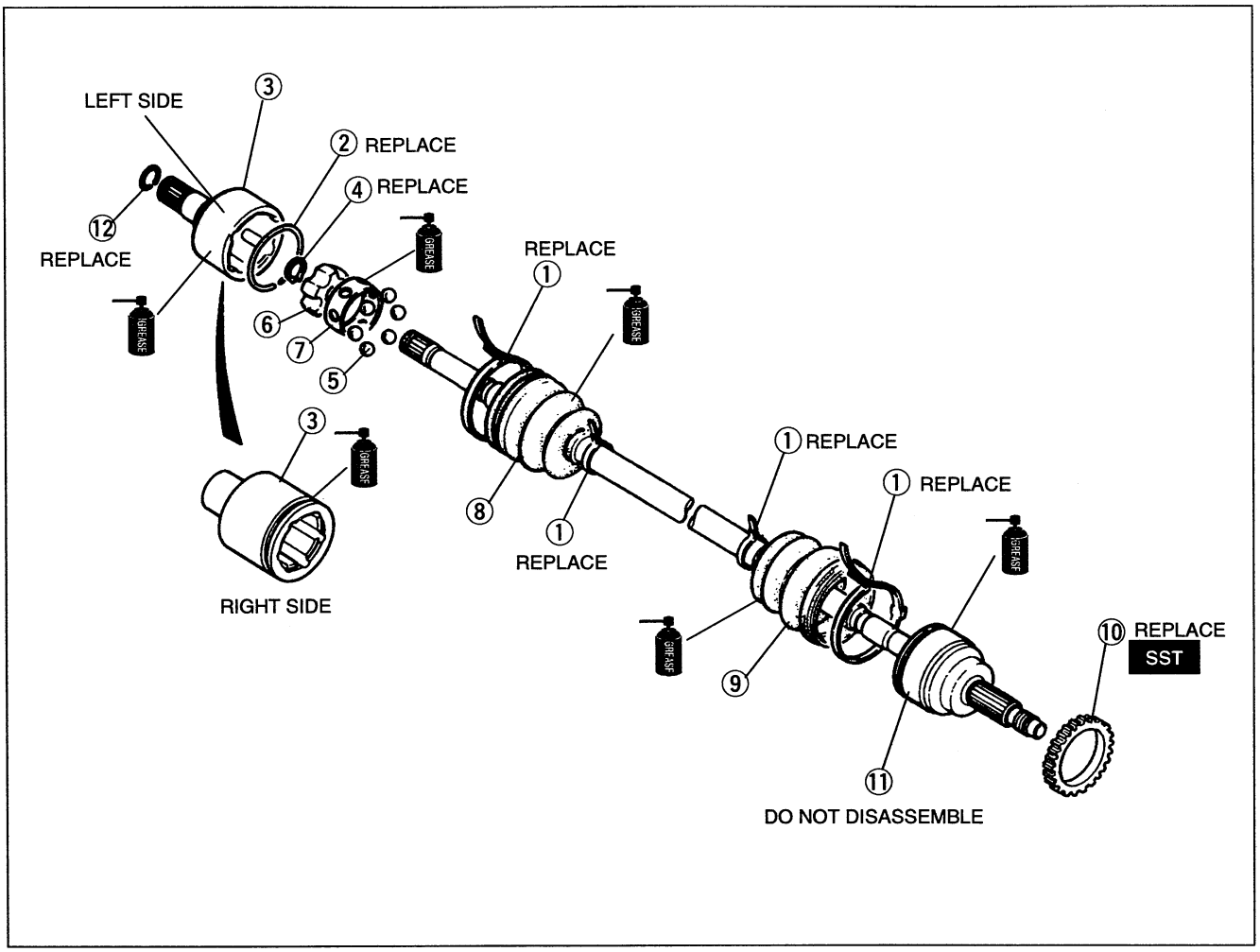
Locknut
Install a new locknut and stake it as shown.

Tightening torque: 236—318 N·m
{24.0—32.5 kgf·m, 173.6—235.0 ft·lbf}

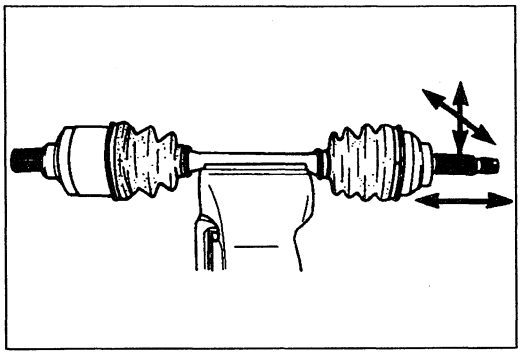
DOUBLE OFFSET TYPE (MTX)

Overhaul

1. Disassemble in the order shown in the figure, referring to **Disassembly Note**.
2. Inspect all parts and repair or replace as necessary.
3. Verify that all parts are free of dust, dirt and other foreign material immediately before reassembly.
4. Assemble in the reverse order of disassembly, referring to **Assembly Note**.

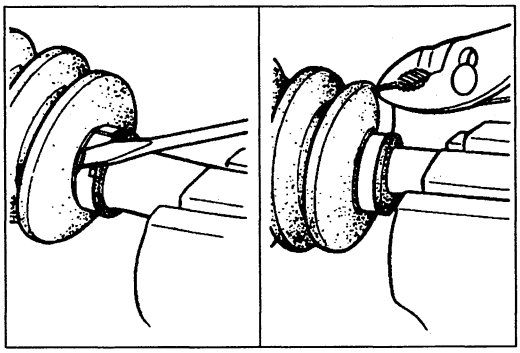


1. Boot band
   - Disassembly Note ..... page M–29
   - Assembly Note ..... page M–32
2. Clip
   - Disassembly Note ..... page M–29
   - Assembly Note ..... page M–31
3. Outer ring
   - Inspect inside bore for wear, corrosion, and scoring
   - Assembly Note ..... page M–31
4. Snap ring
   - Disassembly Note ..... page M–29
   - Assembly Note ..... page M–31
5. Balls
   - Disassembly Note ..... page M–29
   - Assembly Note ..... page M–31
6. Inner ring
   - Disassembly Note ..... page M–29
   - Assembly Note ..... page M–31
7. Cage
   - Disassembly Note ..... page M–29
   - Assembly Note ..... page M–31
8. Boot (transaxle side)
   - Disassembly Note ..... page M–30
   - Inspect for cracks and damage
   - Assembly Note ..... pages M–30, 31
9. Boot (wheel side)
   - Disassembly ..... page M–30
   - Inspect for cracks and damage
   - Assembly Note ..... page M–31
10. ABS sensor rotor
    - Disassembly Note ..... page M–30
    - Assembly Note ..... page M–30
11. Shaft and ball joint assembly
    - Inspect splines for damage and wear
    - Inspect wheel side joint for excessive play and rough rotation
12. Clip



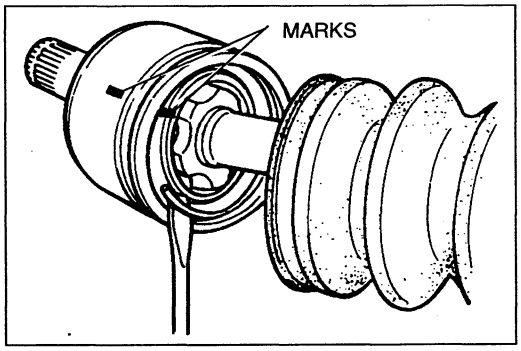
Disassembly Note

Rotate the joint by hands as shown. If the joint does not move smoothly or if a problem is found, repair the necessary parts or replace the drive shaft.



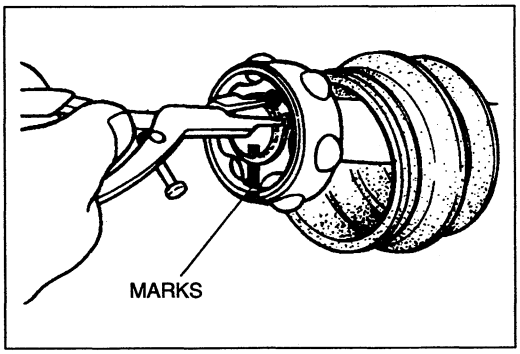
Boot band

1. Pry up the locking clips by using a screwdriver.
2. Pull back the end of the band.



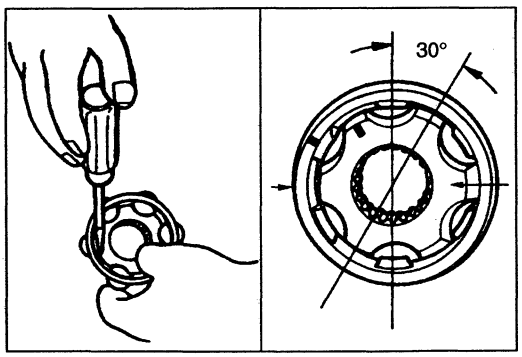
Clip

1. Use paint to mark the drive shaft and outer ring for proper reassembly.
2. Remove the clip.



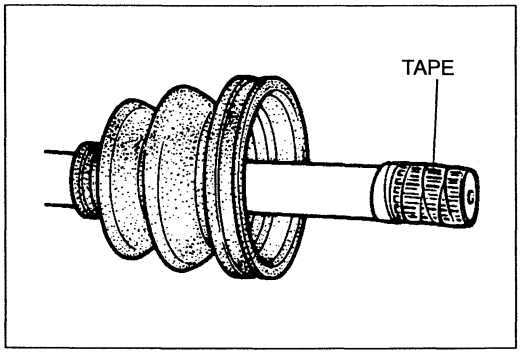
Snap ring

1. Use paint to mark the drive shaft and inner ring for proper reassembly.
2. Remove the snap ring by using snap ring pliers.

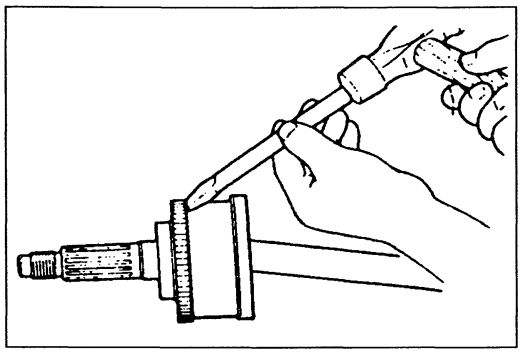


Cage, inner ring, and balls

1. Use paint to mark the inner ring and cage for proper reassembly.
2. Turn the cage approximately 30 degrees and pull the cage and balls away from the inner ring.



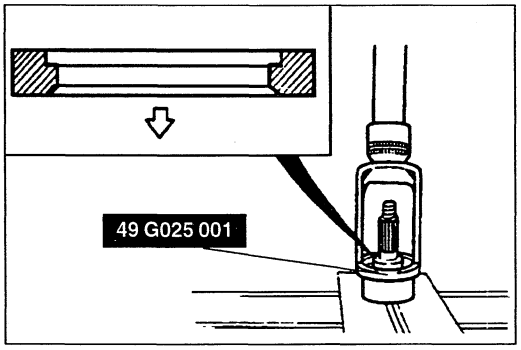
Boot
1. Wrap the shaft splines with tape to protect the boot.
2. Remove the boot.



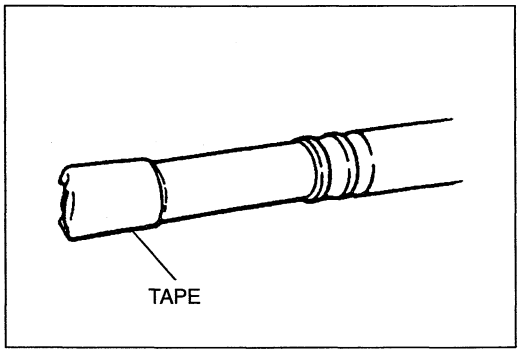
ABS sensor rotor

Note
- The sensor rotor does not need to be removed unless you are replacing it.

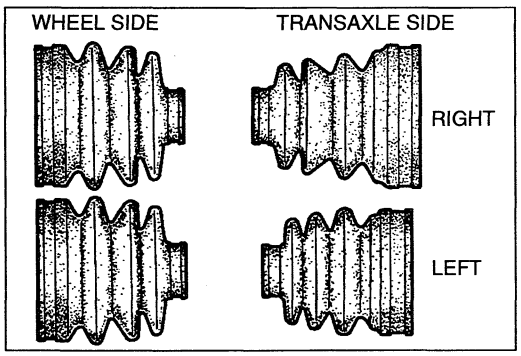
Tap the ABS sensor rotor off the drive shaft with a chisel.



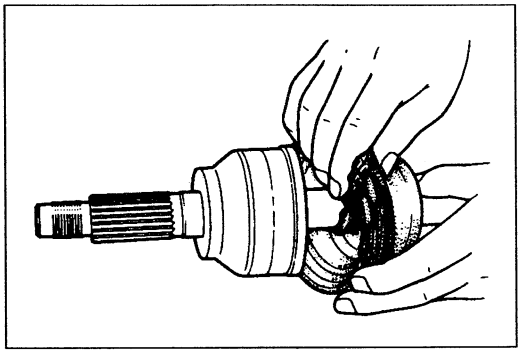
Assembly Note
ABS sensor rotor
Set a new ABS sensor rotor on the drive shaft in the direction as shown, and press it onto the shaft assembly by using the **SST**.



Boot
1. Wrap the shaft splines with tape.



2. Install the wheel-side and transaxle-side boots, noting the shape and size of each one in the figure.

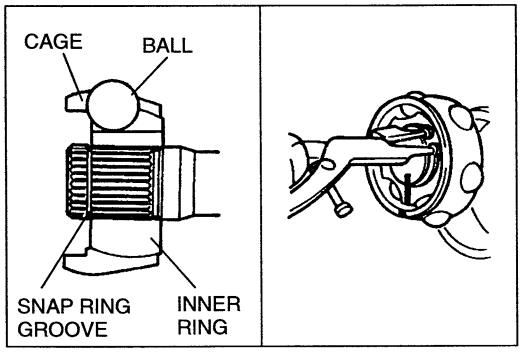


Boot (wheel side)

1. Fill the boot with the grease supplied in the boot kit.

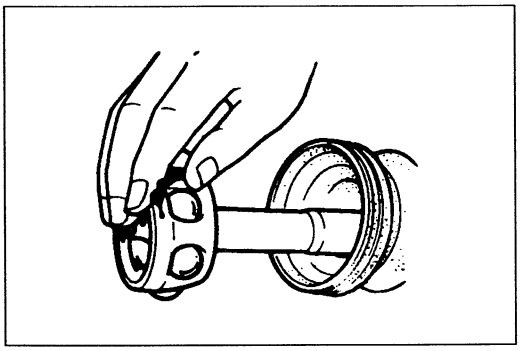
   Grease amount
   FS engine: 90—110 g {3.18—3.88 oz}
   KL engine: 130—150 g {4.59—5.29 oz}

2. Slide the boot onto the shaft.



Cage, inner ring and balls/Snap ring

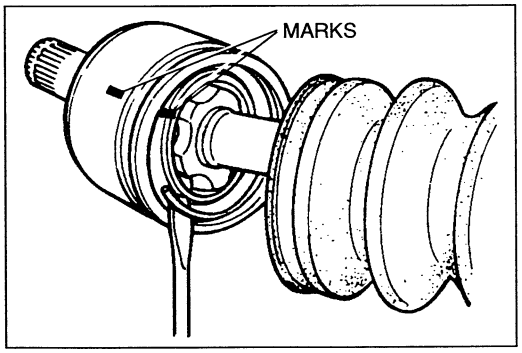
1. Align the marks and install the balls and cage to the inner ring in the direction shown in the figure.
2. Install a new snap ring.



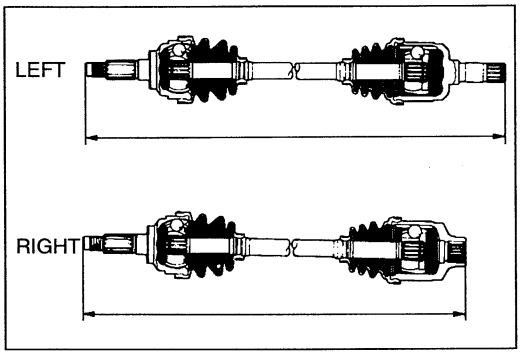
Boot (differential side), outer ring, clip

1. Fill the boot and outer ring with the grease supplied in the boot kit and joint kit.

   Grease amount
   FS engine: 120—140 g {4.24—4.94 oz}
   KL engine: 140—160 g {4.94—5.64 oz}



2. Align the marks, and install the outer ring onto the shaft.
3. Install a new clip.
4. Install the boot.

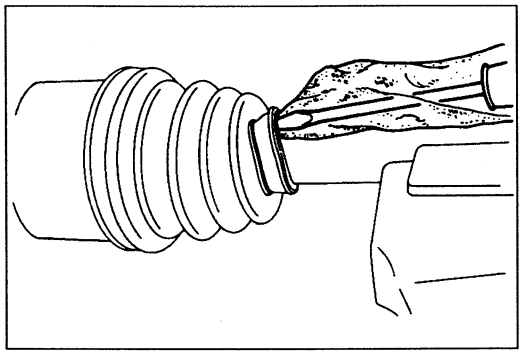


5. Set the drive shaft to the standard length.

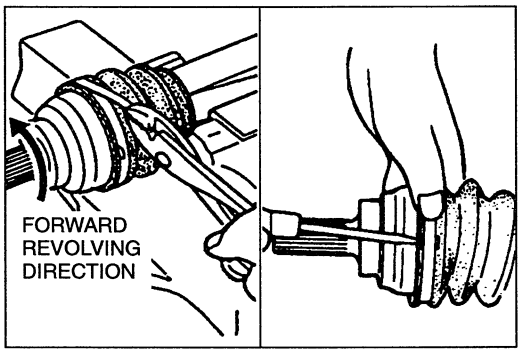
Standard length

mm {in}

Engine	Left side	Right side
FS	649.2—659.2 {25.56—25.95}	600.2—610.2 {23.63—24.02}
KL	650.7—660.7 {25.62—26.01}	600.7—610.7 {23.65—24.04}



6. Release trapped air from inside the boot (differential side) by using a screwdriver covered with a rag.
7. Verify the drive shaft length.
8. If not within specification, return to Step 5.



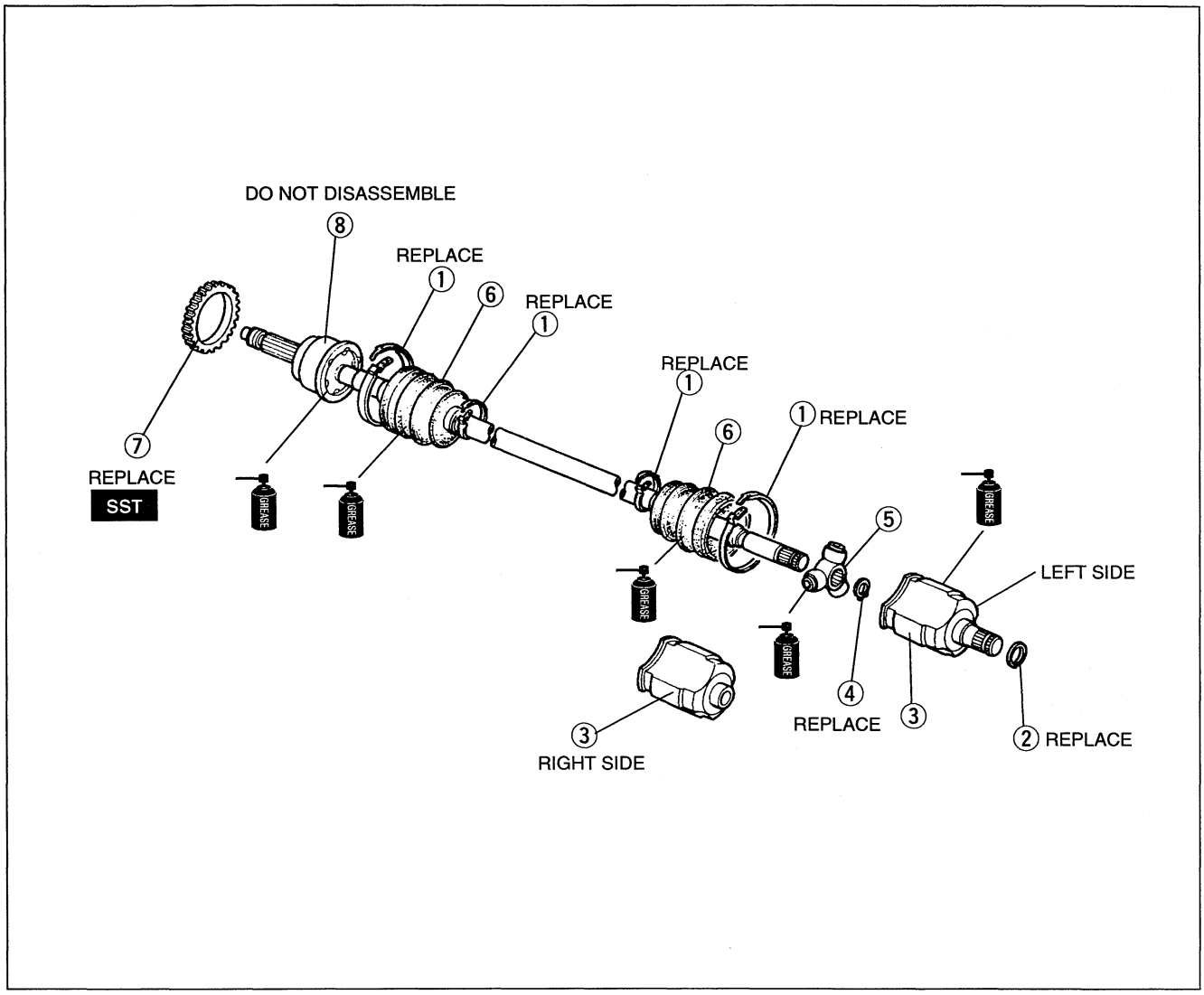
Boot band

1. Fold the band back in the direction opposite the forward revolving direction of the drive shaft and use pliers to pull it tight.
2. Lock the end of the band by bending the locking clips.

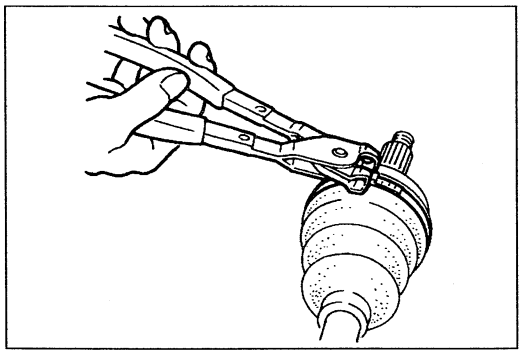
TRIPOD TYPE (ATX)

Overhaul

1. Disassemble in the order shown in the figure, referring to **Disassembly Note**.
2. Inspect all parts and repair or replace as necessary.
3. Verify that all parts are free of dust, dirt, and other foreign material immediately before reassembly.
4. Assemble in the reverse order of disassembly, referring to **Assembly Note**.



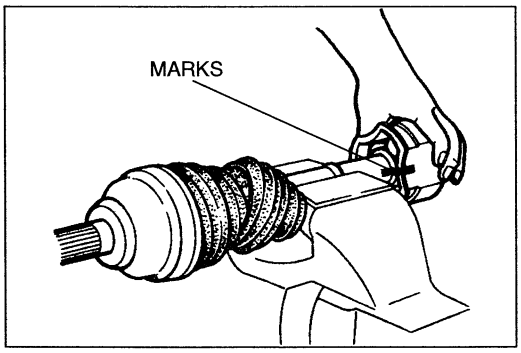
1. Boot band
   - Disassembly Note ..... page M–34
   - Assembly Note ..... page M–36
2. Clip
3. Outer ring
   - Disassembly Note ..... page M–34
   - Inspect inside bore for wear, corrosion, and scoring
   - Assembly Note ..... page M–35
4. Snap ring
   - Disassembly Note ..... page M–34
   - Assembly Note ..... page M–35
5. Tripod joint
   - Disassembly Note ..... page M–34
   - Inspect for damage and wear
   - Assembly Note ..... page M–35
6. Boot
   - Inspect for damage
   - Assembly Note ..... page M–35
7. ABS sensor rotor
   - Disassembly Note ..... page M–34
   - Assembly Note ..... page M–35
8. Shaft and ball joint assembly
   - Inspect splines for damage and wear
   - Inspect wheel-side joint for excessive play and rough rotation



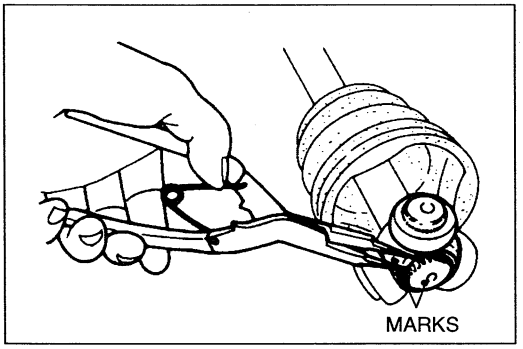
Disassembly Note
Boot band

Note
- The boot band does not need to be removed unless you are replacing it.

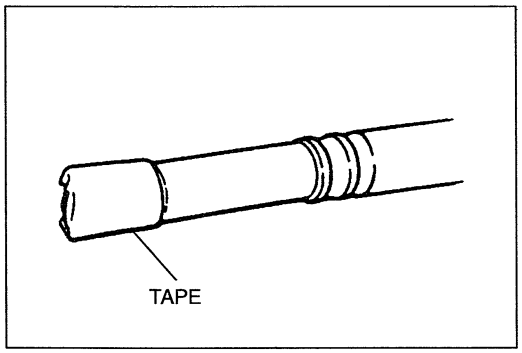
Remove the boot clamp with end clamp pliers as shown and discard the clamp.



Outer ring
Mark the outer ring and the shaft for proper reassembly.

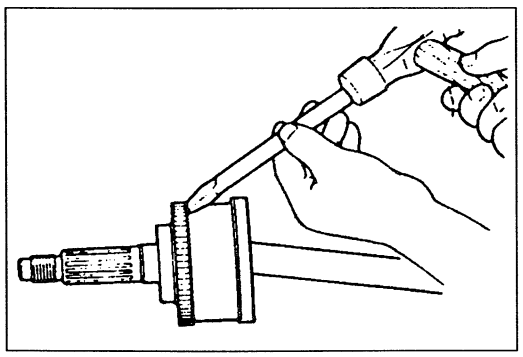


Snap ring/tripod joint
1. Mark the shaft and tripod joint for proper reassembly.
2. Remove the snap ring with snap ring pliers.
3. Remove the tripod joint from the shaft with a bar and a hammer.



Note
- The wheel-side boot does not need to be removed unless you are replacing it.

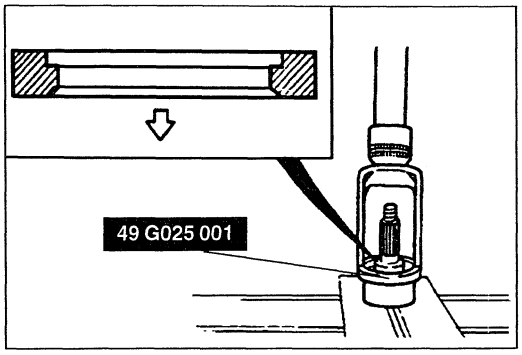
Wrap the splines of the shaft with tape to prevent damaging the boot.



ABS sensor rotor

Note
- The sensor rotor does not need to be removed unless you are replacing it.

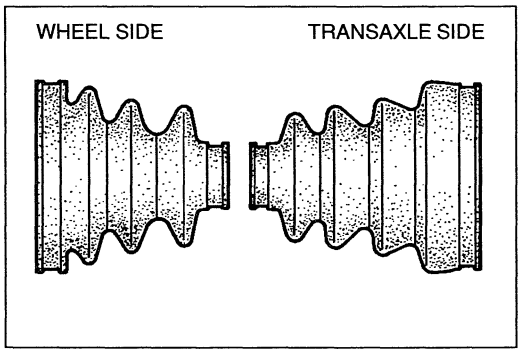
Tap the ABS sensor rotor off the drive shaft by using a chisel.



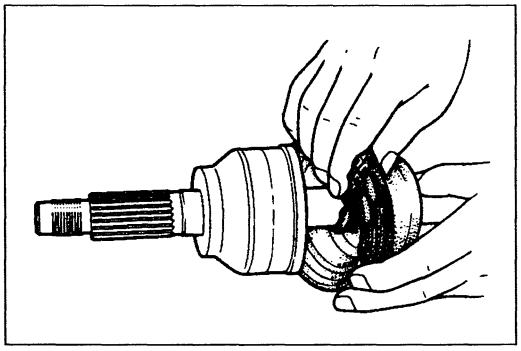
Assembly Note
ABS sensor rotor

Caution
- **Verify the direction of the sensor rotor.**

Set a new ABS sensor rotor on the drive shaft in the direction shown, and press it onto the shaft assembly by using the **SST**.

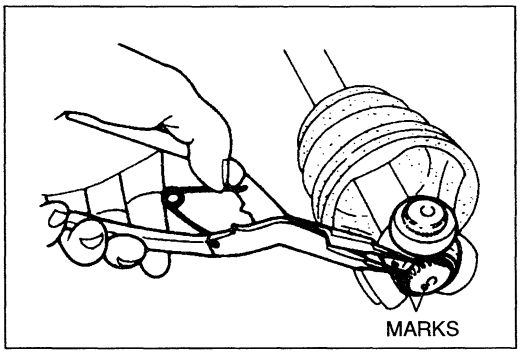


Boot
1. Wrap the splines of the transaxle side shaft, and install the wheel-side and transaxle side boots, noting the shape and size of each one in the figure.

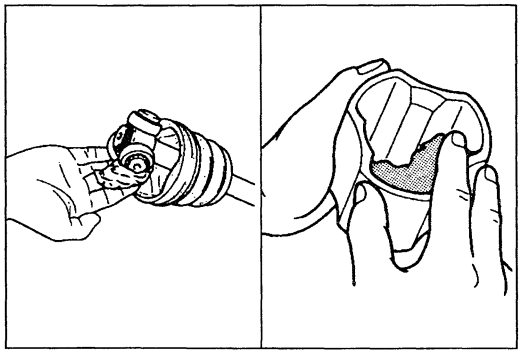


2. Fill the wheel side boot with the grease supplied in the boot kit.

Grease amount: 125—145 g {4.41—5.11 oz}

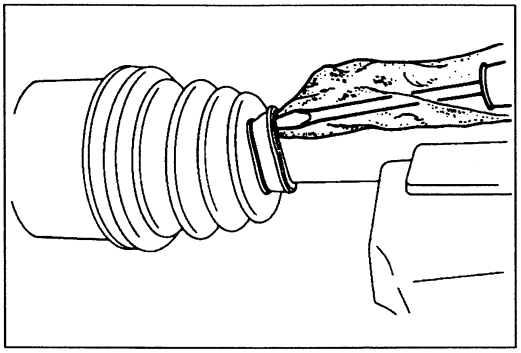


Snap ring/tripod joint
1. Align the marks and install the tripod joint.
2. Install the new snap ring with snap-ring pliers.



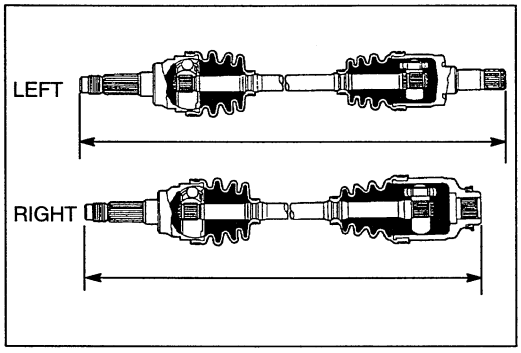
Outer ring
Fill the outer ring and transaxle-side boot with the grease supplied in the boot kit.

Grease amount: 185—215 g {6.52—7.58 oz}



Boot band

1. Verify that the boots are not dented or twisted.

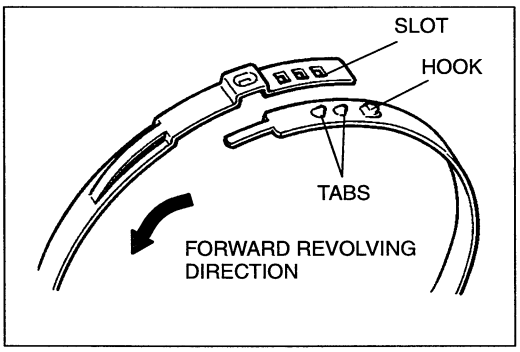


2. Set the drive shaft to the standard length.

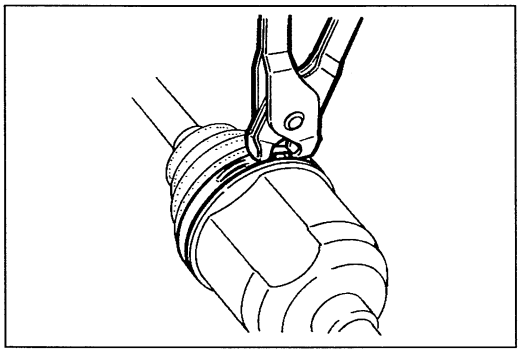
Standard length

mm {in}

	FS engine	KL engine
Left side	695.5—705.5 {27.39—27.77}	653.6—663.6 {25.74—26.12}
Right side	603.1—613.1 {23.75—24.13}	603.1—613.1 {23.75—24.13}



3. Release any trapped air from inside the boot by using a rag-covered screwdriver.
4. Verify that the drive shaft length is within the standard.
5. If the drive shaft length is not within the standard, return to step 1.
6. Install a new boot band on the boot so that the end of the boot band with solts is pointing opposite the forward revolving direction of the drive shaft.
7. Slide the hook into the end slot, and fit the tabs into the remaining two slots.



8. Crimp the clamp securely by using clamp pliers.

Caution

- **Do not overcrimp the boot band clamp. Overcrimping could damage the clamp bridge.**