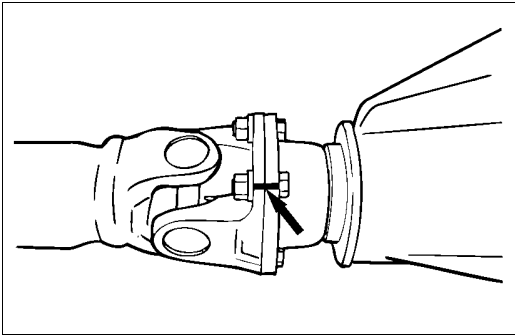


## Removal and Installation



401RS023

### Removal

1. Raise the vehicle on a hoist.

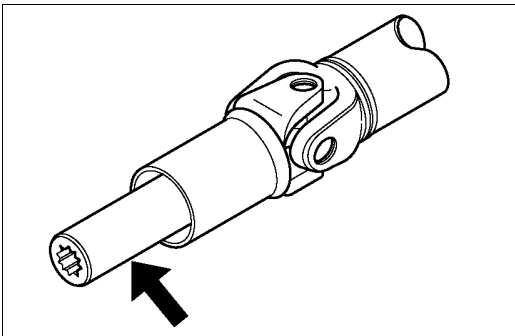
#### NOTE:

Apply alignment marks on the flange at the rear propeller shaft both front and rear side.

2. Remove center bearing fixing bolt.
3. Remove rear axle side bolt, nut and washer.
4. Remove rear propeller shaft.

#### NOTE:

Plug the hole of the transmission rear end to prevent oil leakage.



401L10007

### Installation

#### NOTE:

Cover the slip yoke with cloth to avoid damage to the oil seal contact surface, when removing propeller shaft from transmission. Do not damage the oil seal contact surface of slip yoke with other parts at removal and installation.

Completely remove the dust or foreign matter from the connecting surface of flange coupling on each end of the propeller shaft.

1. Align the mark which is applied at removal and insert the propeller shaft in the transmission.
2. Install rear propeller shaft and tighten the bolts to the specified torque.

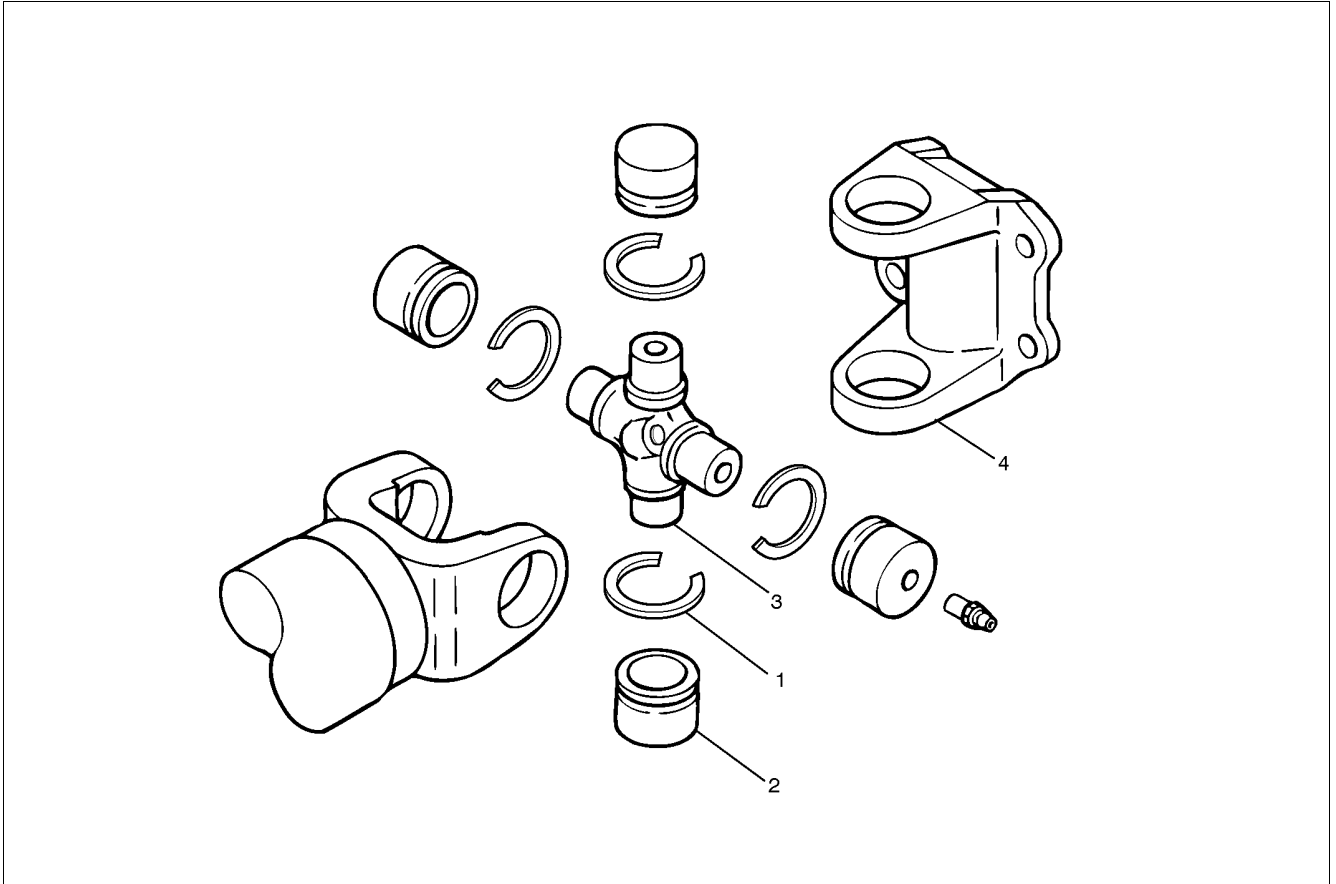
**Torque: 63 N·m(6.4kg·m/46 lb·ft)**

3. Install center bearing and tighten the bolts to the specified torque.

**Torque: 69 N·m(7.0kg·m/51 lb·ft)**

## 4A-12 PROPELLER SHAFT

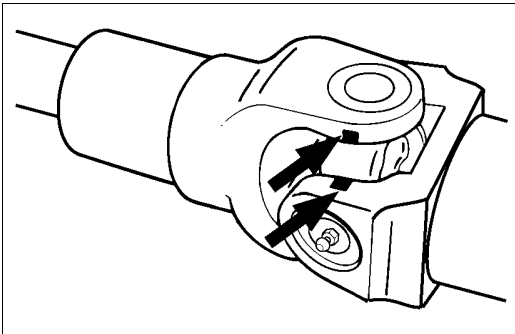
### Universal Joint Disassembly



401R300002

### Legend

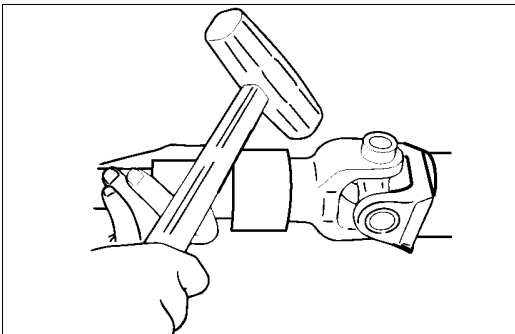
- (1). Snap Ring
- (2). Needle Roller Bearing
- (3). Spider
- (4). Propeller Shaft



401R300003

**1. Remove the snaprings.**

- Apply alignment marks on the yokes of the universal joint.



401R300004

**2. Remove the needle roller bearings.**

- Tap out the bearing by gently striking the shoulder of the yoke, using a mallet or a copper hammer.

**3. Remove the spider.**

- Make sure of proper position for reinstallation by applying setting marks.

**4. Remove the propeller shaft.**

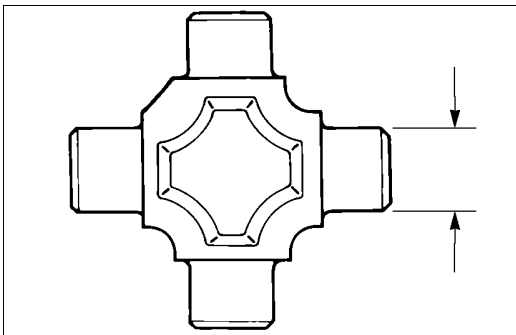
## INSPECTION AND REPAIR

Make all necessary adjustment, repairs, and part replacements if wear, damage, or other problems are discovered during inspection.

### Visual Check

Inspect following parts for wear, damage, or other abnormal conditions.

- Spider
- Needle roller bearing
- Yoke
- Flange
- Center bearing
- Cushioning rubber
- Bracket



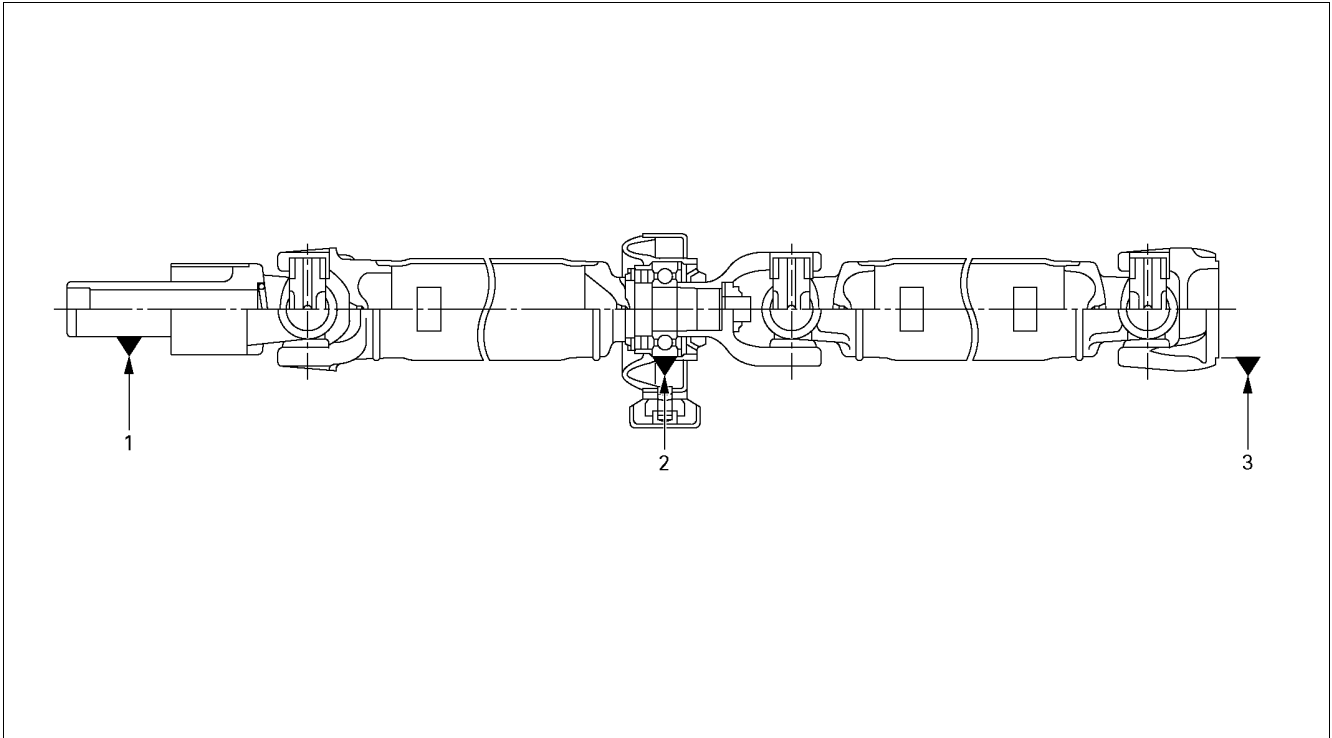
401RS007

### Outside Diameter of Spider Pins

mm(in)

| Standard  | Limit         |
|-----------|---------------|
| 17 (0.67) | 16.99 (0.669) |

## Propeller Shaft Run-Out



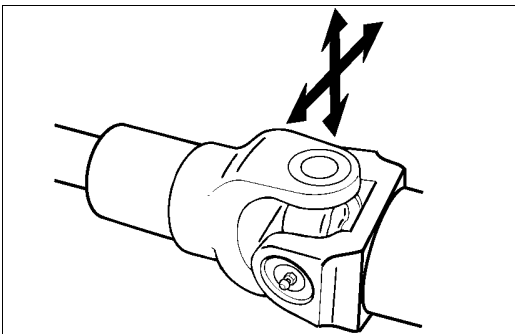
401R300005

Support 1 of splined yoke, 2 of center bearing and 3 of flange yoke and check for static run-out by holding the probe of a dial indicator in contact with the center part of the shaft and turning the propeller shaft.

If the amount of run-out is beyond the limit value, correct with a bench press or replace the shaft with a new one.

mm(in)

| Limit      |  |
|------------|--|
| 1.0 (0.04) |  |



401R300008

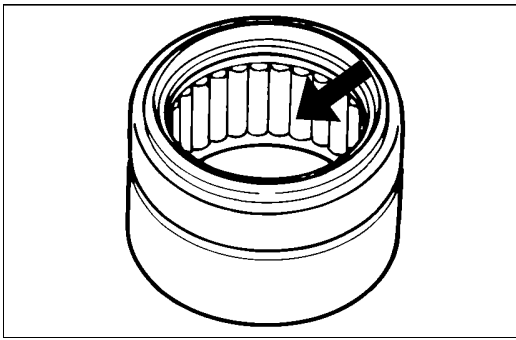
## Play in Spider Bearing

- (1) Check the spider bearings for wear or damage.
- (2) Check the amount of axial and radial play in spider bearing by moving the yoke back and forth on the spider axes and shaft axis.

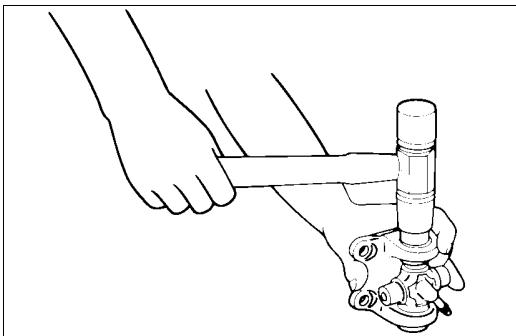
mm(in)

| Limit | 0.1(0.004) |
|-------|------------|
|       |            |

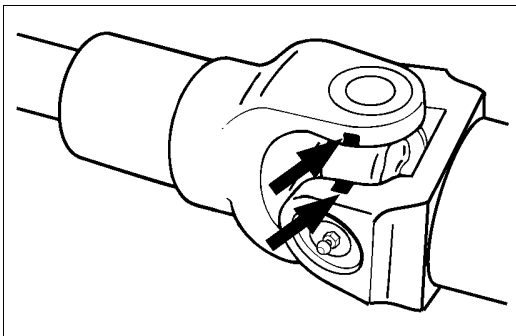
If the limit is exceeded, replace the shaft assembly.



401RS011



401RS012



401R30003

## Universal Joint Reassembly

### 1. Set the propeller shafts.

- Be sure to set the propeller shaft yoke by aligning the setting marks made during disassembly.

### 2. Spider

- Be sure to install the spider by aligning the setting marks made during disassembly.

### 3. Needle Roller Bearing

- 1) Apply a molybdenum-disulfide grease or a multi-purpose type grease NLGI No.2 to inside of the bearing cap.

|                     |       |
|---------------------|-------|
| Grease Amount       | g(oz) |
| Approx. 1.2 (0.042) |       |

- 2) Using either a mallet (or copper hammer) or a press, install the needle roller bearing into the yoke so that snap ring can be installed in its groove.

### CAUTION:

- The needle roller bearing cannot be installed smoothly if it is set at an incorrect angle with the flange.
- Excessive hammering will damage the needle roller bearing.

- 3) Align setting marks and join the yokes.

### NOTE:

Assemble the spider and spline yoke so that their grease fittings are arranged on the same side.(4 × 4)

### 4. Snap ring

### NOTE:

Discard used snap rings and install new ones.



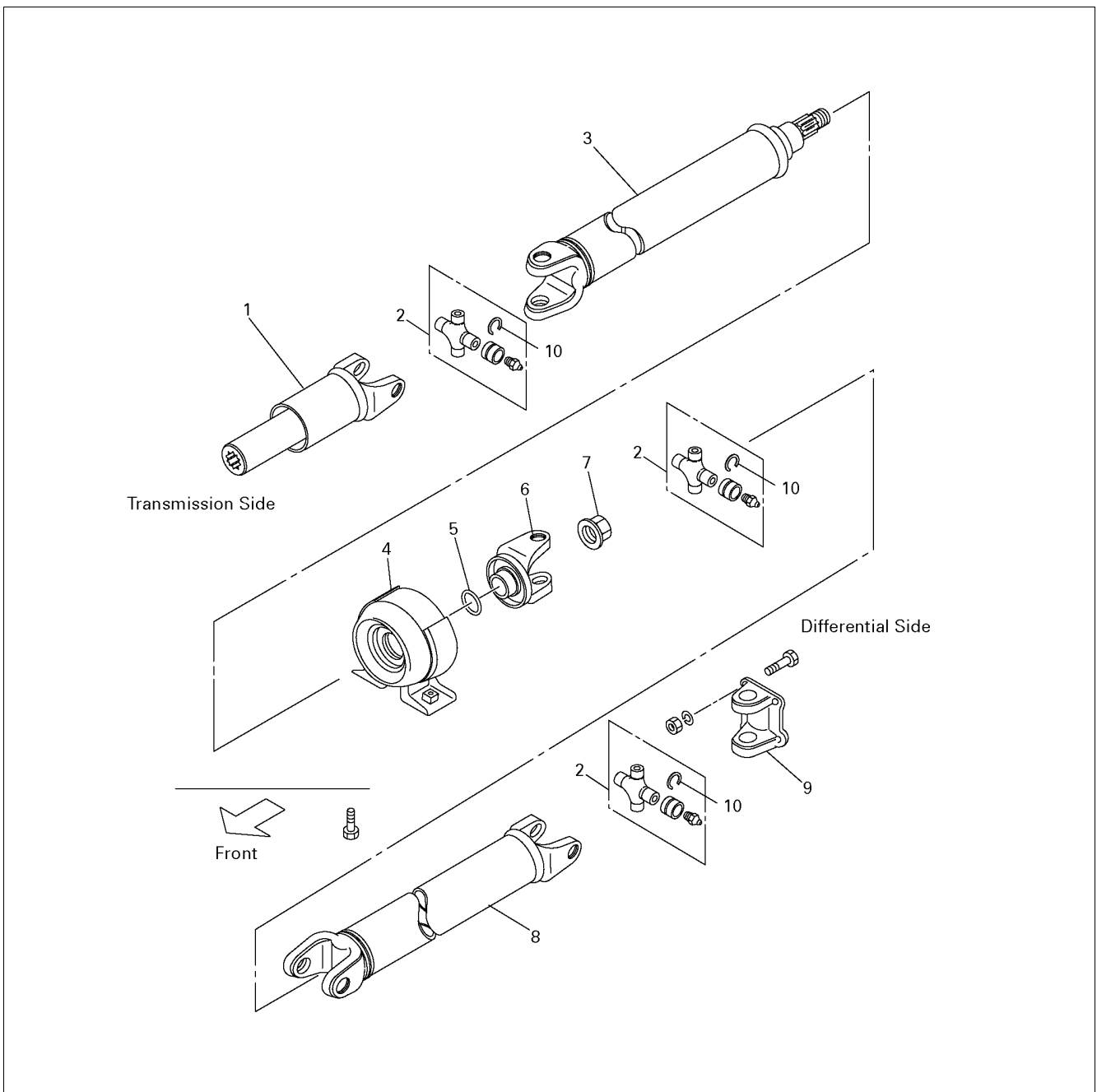
When the bearing cap is in position, select and attach a snap ring of suitable thickness so that the end play of the spider pin is held within 0.1mm (0.004in).

| Snap ring thickness |         | Identification color |
|---------------------|---------|----------------------|
| 1.50                | (0.059) | Light Blue           |
| 1.53                | (0.060) | White                |
| 1.56                | (0.061) | Pink                 |
| 1.59                | (0.063) | Yellow               |
| 1.62                | (0.064) | Green                |
| 1.65                | (0.065) | Brown                |
| 1.68                | (0.066) | Not colored          |

### NOTE:

Be sure to use snap rings of the same thickness on both sides.

## Rear Propeller Shaft Assembly



401R300009

### Legend

- |                        |                        |
|------------------------|------------------------|
| (1). Splined Yoke      | (6). Center Yoke       |
| (2). Journal Assembly  | (7). Lock Nut          |
| (3). 1st Tube Assembly | (8). 2nd Tube Assembly |
| (4). Center Bearing    | (9). Flange Yoke       |
| (5). Plain Washer      | (10). Snap Ring        |

### Disassembly

1. Disassembly the three portions of the journal assemblies.
2. Remove the splined yoke, the 1st tube assembly with center bearing, the 2nd tube assembly and the flange yoke.
3. Remove the lock nut.
4. Remove the center yoke, the plain washer the center bearing and the 1st tube assembly.

### Reassembly

1. Install the center bearing on the 1st tube assembly.  
Clean the bearing fitting face.

Repack the grease.

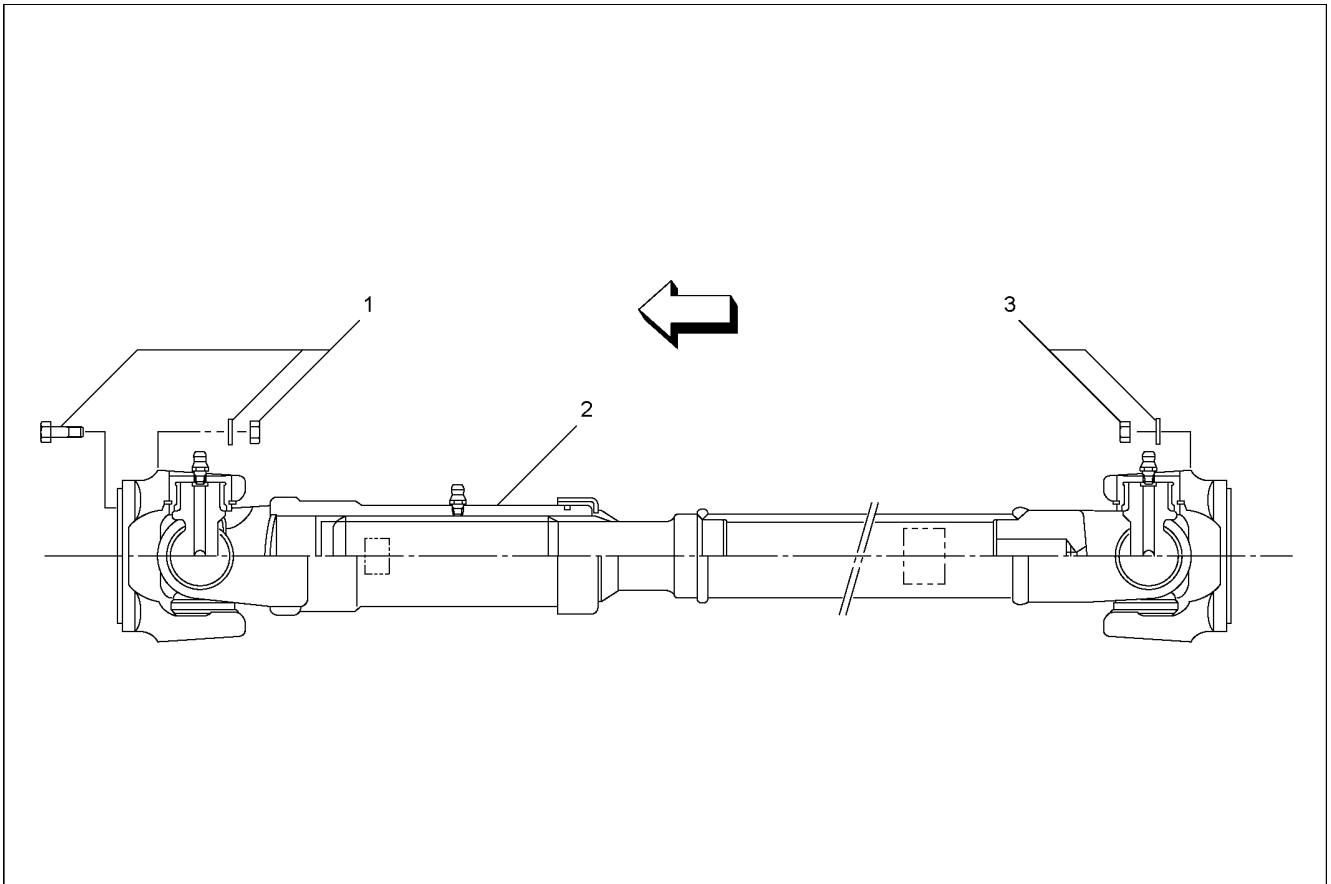
|                              |       |                   |
|------------------------------|-------|-------------------|
| Amount of grease<br>required | g(oz) | Approx. 12 (0.42) |
|------------------------------|-------|-------------------|

2. Install the plain washer and the center yoke.
3. Install the lock nut and tighten it to the specified torque.  
**Lock nut Torque : 118 N·m (12.0kg·m/87lb·ft)**
  - (1) Discard the flange nut and install a new one.
  - (2) Stake the outer face of the flange nut against the slot in the shaft.
4. Install the splined yoke, the 1st tube assembly with center bearing, the 2nd tube assembly and the flange yoke by assembling the universal joint.



## Front Propeller Shaft

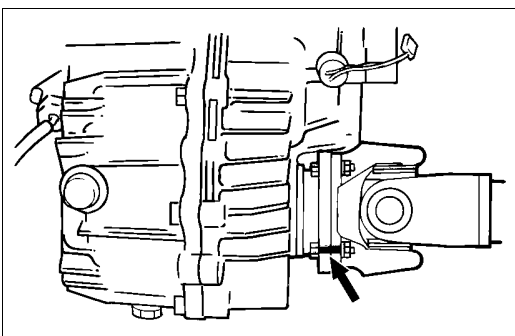
### Removal and Installation



RTW34AMF000301

#### Legend

- (1) Bolt, Nut and Washer (Front Axle Side)
- (2) Front Propeller Shaft
- (3) Nut and Washer (Transfer Side)



401RS020

#### Removal

1. Jack up the vehicle and support it on the chassis stands.
2. Gear shift lever should be placed in neutral position and parking brake released.
3. Remove the exhaust and transfer protectors.

#### NOTE:

Apply alignment marks on the flange at the front propeller shaft both front and rear side.

4. Remove bolt, nut and washer (Front axle side).
5. Remove bolt, nut and washer (Transfer side).
6. Remove front propeller shaft.

## Installation

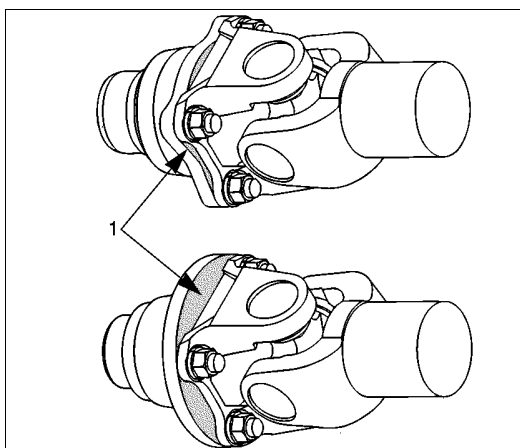
### NOTE:

Never install the shaft assembly backwards. Completely remove the black paint from the connecting surface of flange coupling on each end of propeller shaft. Clean so that no foreign matter will be caught in between.

1. Align the mark which was applied at removal. Install front propeller shaft and tighten the bolts and nuts to the specified torque.

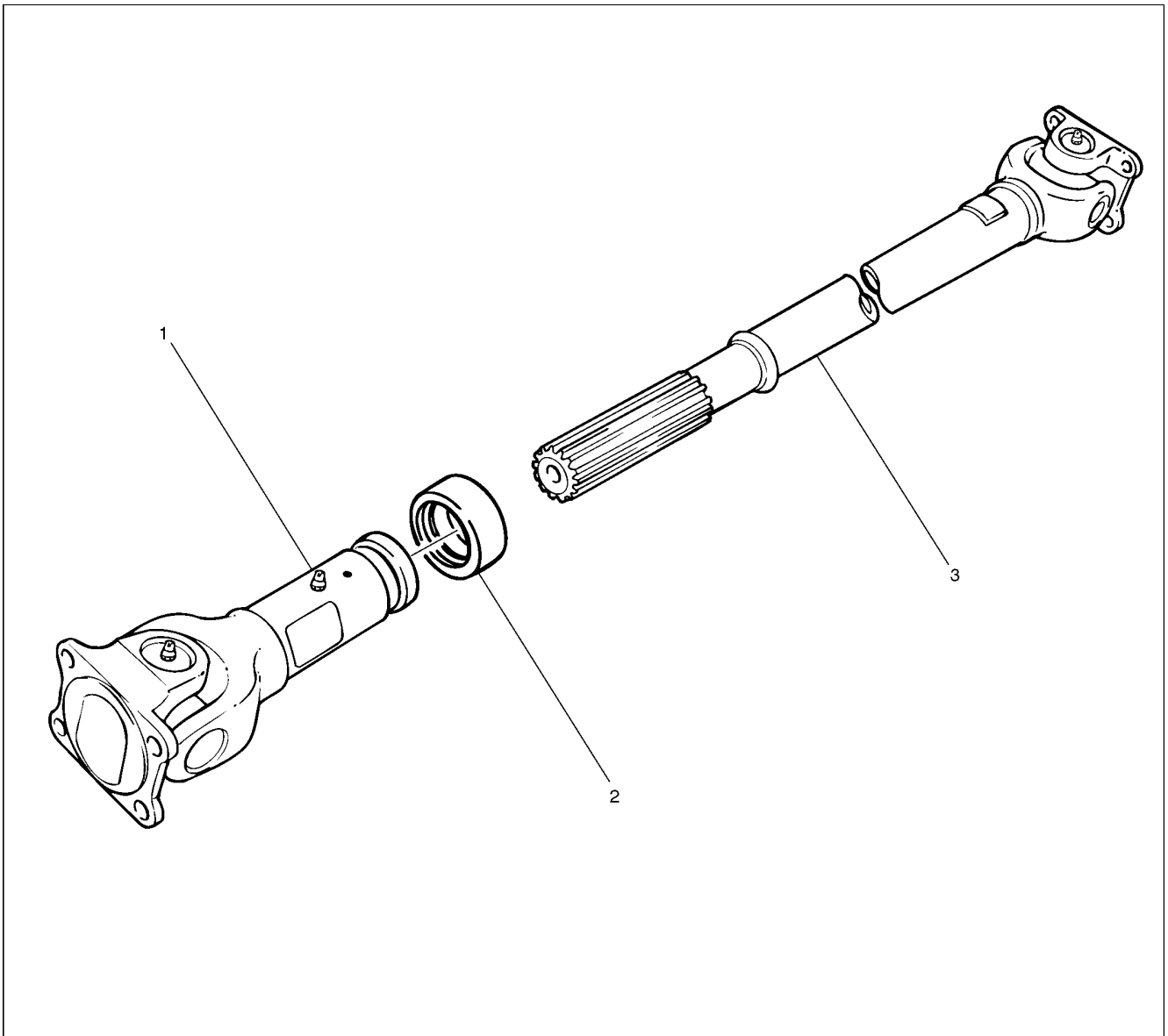
**Torque: 59 N·m (6.0 kg·m/43 lb ft)**

2. Install the exhaust and transfer protectors.
3. After installing the propeller shaft, be sure to apply black paint (1) to exposed area (other than connecting surface) of the entire surface of flange coupling.



401RS019

## Disassembly



401RW057

### Legend

- (1) Sleeve Yoke
- (2) Seal
- (3) Tube Assembly