

# Rear Suspension

## Rear Suspension Unit

### Removal

#### Warning

If the engine has recently been running, the exhaust system will be hot. Before working on or near the exhaust system, allow sufficient time for the exhaust system to cool as touching any part of a hot exhaust system could cause burn injuries.

#### Warning

Ensure the motorcycle is stabilised and adequately supported, to prevent it falling and causing damage or injury.

#### Note:

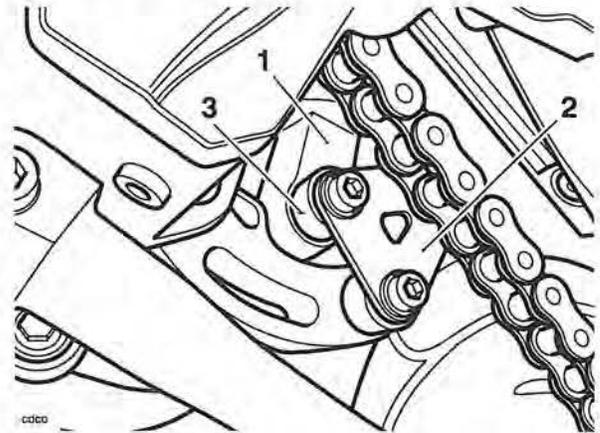
- **A stand that supports the rear wheel or swinging arm will not support the motorcycle when the suspension linkage is removed.**
1. Raise and support the rear of the motorcycle under the frame or engine. Position a block to support the rear wheel.
  2. Remove the seat (see page 16-8).
  3. Disconnect the battery, negative (black) lead first.
  4. Remove the fuel tank (see page 10-117).

#### Warning

Observe the warning advice given in the general information section on the safe handling of fuel and fuel containers.

A fire, causing personal injury and damage to property could result from spilled fuel or fuel not handled or stored correctly.

5. Remove the nut and bolt securing the rear suspension unit lower mounting to the drop link. Collect the spacers from the back side of the suspension unit.



#### 1. Rear suspension unit

#### 2. Drop link

#### 3. Spacers

6. Remove the rear suspension unit upper mounting nut and bolt.
7. Withdraw the rear suspension unit upwards through the frame.

### Inspection

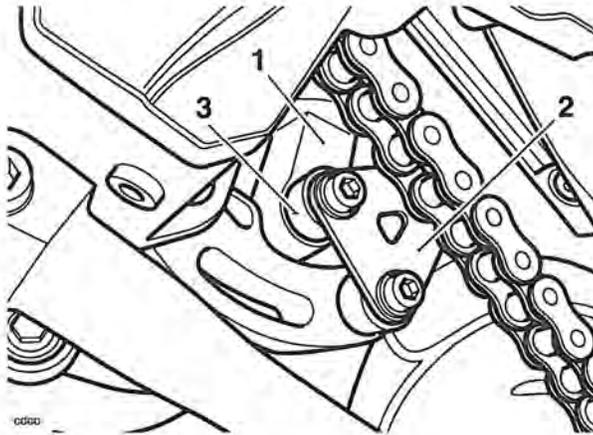
1. Clean all components and inspect for damage and wear to:
  - rear suspension unit upper and lower mountings,
  - lower mounting sleeve.
2. Renew parts as necessary.

## Installation

1. Locate the rear suspension unit and loosely fit the upper mounting bolt / nut and sleeve (if detached during renewal).

### Note:

- The unit must be fitted such that the preload adjuster faces to the left of the motorcycle.
2. Align the spacers to each side of the lower suspension unit mounting.



1. Rear suspension unit
2. Drop link
3. Spacers

3. Align the rear suspension unit and spacers to the drop link. Loosely fit the bolt / nut (from the right).
4. Tighten the rear suspension unit upper mounting to **48 Nm**.
5. Tighten the rear suspension unit lower mounting to **48 Nm**.
6. Refit the fuel tank (see page 10-118).
7. Connect the battery, red (positive) lead first.
8. Refit the seat (see page 16-8).
9. Remove the support.

## Drag Link

### Removal

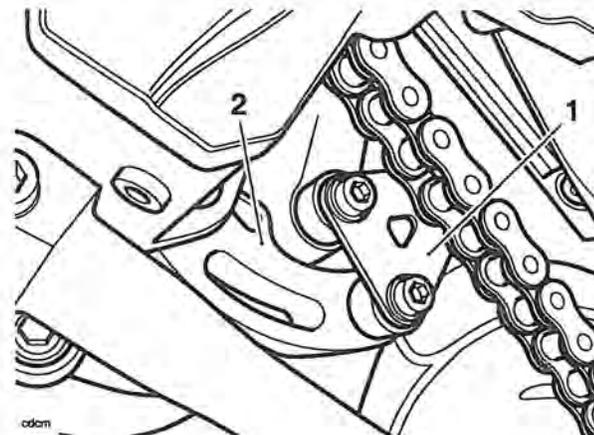
**Warning**

Ensure the motorcycle is stabilised and adequately supported, to prevent it falling and causing damage or injury.

**Warning**

A stand that supports the rear wheel or swinging arm will not support the motorcycle when the suspension linkage is removed.

1. Raise and support the rear of the motorcycle under the frame or engine. Position a block to support the rear wheel.



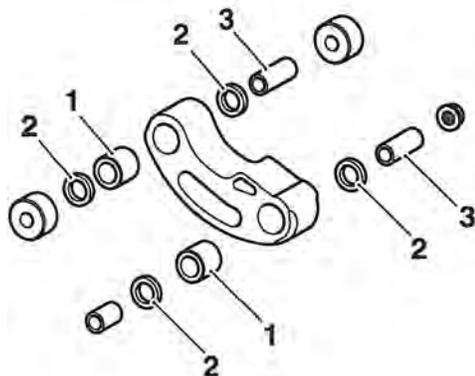
1. Drop link
2. Drag link

2. Remove the section of exhaust between the header system and the silencer (see page 10-136).
3. Remove the nut and bolt securing the drag link to the drop link.
4. Remove the bolt and nut securing the drag link to the frame.
5. Detach the drag link from the frame and drop link.
6. Collect the spacers from either side of the link.

# Rear Suspension

## Inspection

1. Clean all components and inspect for damage / wear to:
  - drag link bearing, sleeve and seals
  - fixing bolts
  - spacers
2. Renew as necessary.



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1. Drag link bearing
2. Drag link seals
3. Drag link sleeve

## Installation

1. Pack the drag link bearings with grease.
2. Fit the drag link sleeves and seals.
3. Position the drag link in the correct orientation to the frame and drop link and refit the spacers and bolts. Ensure that the sleeves are fitted to the drag to drop link bolt.
4. Refit both nuts and tighten both bolts to **48 Nm**.
5. Remove the support block from the rear wheel and lower the motorcycle to the ground, parking it on either the side or centre stand.

## Drop Link

### Removal

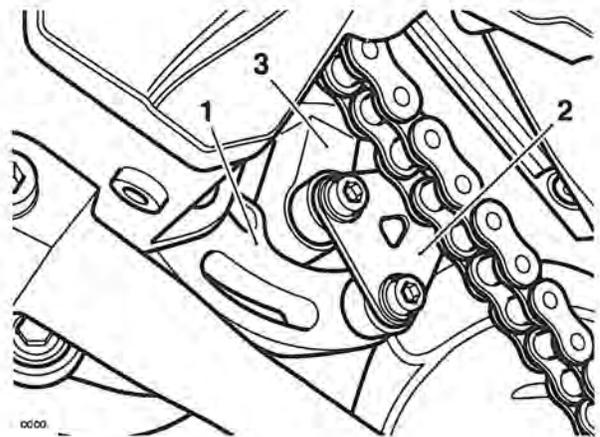
#### **Warning**

Ensure the motorcycle is stabilised and adequately supported, to prevent it falling and causing damage or injury.

#### **Warning**

A stand that supports the rear wheel or swinging arm will not support the motorcycle when the suspension linkage is removed.

1. Raise and support the rear of the motorcycle beneath the frame or engine. Position a block to support the rear wheel.



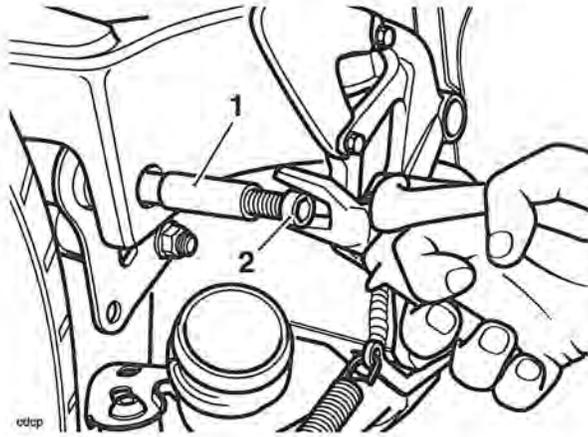
1. Drag link
2. Drop link
3. Rear suspension unit

2. Remove the section of exhaust between the header system and the silencer (see page 10-136).
3. Remove the nut and bolt securing the drag link to the drop link.
4. Detach the drag link from the drop link.
5. Remove the nut and bolt securing the rear suspension unit to the drop link.
6. Ease the suspension unit and spacer forward to clear the drop link. Collect the spacers.
7. Remove the bolt securing the drop link to the swinging arm.

- Withdraw the drop link spindle from the swinging arm.

**Note:**

- If tight, an M14 (1.5 mm thread pitch) bolt can be threaded into the spindle to assist extraction.



- Drop link spindle
- M14 bolt

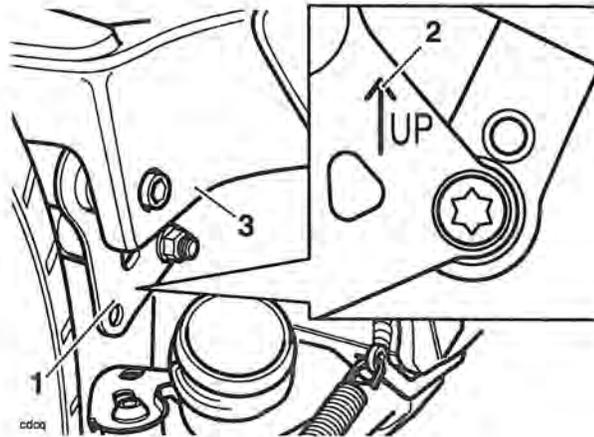
- Remove the drop link from the swinging arm.

**Inspection**

- Clean all components and inspect for damage / wear to:
  - drag link bearings,
  - drag link sleeve and bolt,
  - rear suspension unit lower mounting,
  - drop link bearings and seals.
- Renew as necessary.
- Check the drop link upper bearings for wear.

**Installation**

- Apply grease to the drop and drag link bearings. Also apply grease to the bearing at the lower end of the rear suspension unit.
- Locate the drop link to the swinging arm with the 'up' arrow pointing upwards.



- Drop link
- 'Up' arrow
- Swinging arm

- Refit the drop link spindle.
- Refit the drop link spindle bolt and tighten to **48 Nm**.
- Align the rear suspension unit and spacers to the drop link. Fit the spacers, bolt (from the right) and nut. Tighten to **48 Nm**.
- If removed, fit the sleeve to the drag link and align the drag link to the drop link.
- Fit the spacers, retaining bolt (from the right hand side) and nut. Tighten to **48 Nm**.
- Remove the support block from the rear wheel and lower the motorcycle to the ground, parking it on either the side or centre stand.

# Rear Suspension

## Drive Chain

The drive chain must be checked, adjusted, and lubricated in accordance with the scheduled maintenance chart. For reasons of safety, and to prevent excessive wear, never neglect any part of the drive chain maintenance. If the chain is badly worn, or incorrectly adjusted - either too loose or too tight - the chain could jump off the sprockets or break. Checking of the adjustment and lubrication should be carried out more frequently where the machine is regularly used in dirty or dusty conditions or where large amounts of road salt are used.

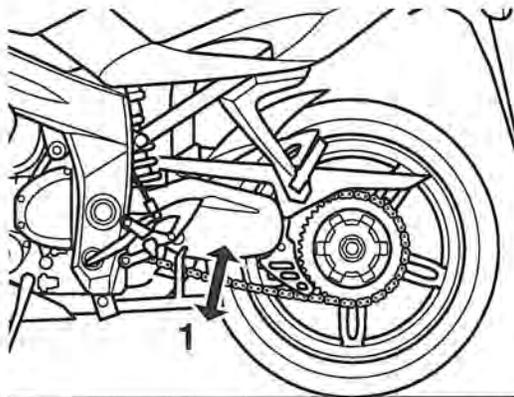


### Warning

A chain that breaks or jumps off the sprockets could snag on the engine drive sprocket or the rear wheel severely damaging the motorcycle and causing an accident. Never neglect chain maintenance.

## Chain Slack Inspection

1. Set the motorcycle up on the side or centre stand.
2. Rotate the rear wheel to find the position where the chain has least slack. Measure the chain's vertical movement, mid-way between sprockets.
3. If correct, the vertical movement of the drive chain midway between the sprockets should be 35-40 mm.



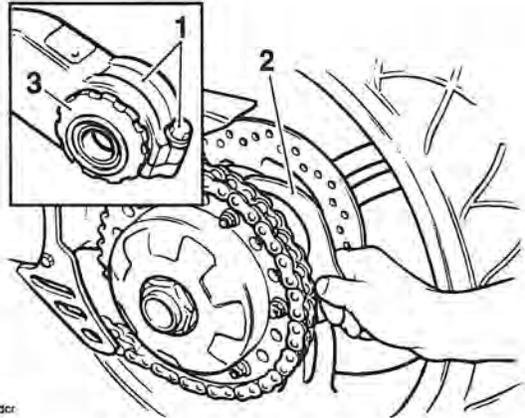
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1. Vertical movement 35-40mm

## Drive Chain Adjustment

1. Slacken the swinging arm/hub pinch bolt.
2. Using the 'C' spanner from the motorcycle tool kit, turn the eccentric adjuster clockwise to increase vertical movement, anticlockwise to

take out vertical movement. The eccentric adjuster should be held in towards the swinging arm.



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1. Pinch bolt
2. 'C' spanner
3. Eccentric adjuster

3. Once the correct chain setting has been achieved, tighten the swinging arm/eccentric adjuster pinch bolt to **55 Nm**.

## Chain Lubrication

Lubrication is necessary every 500 miles and also after riding in wet weather, on wet roads, or any time that the chain appears dry.

Use the special chain lubricant as recommended in the specification section.

Correct application method is critical for chain lubricant. Apply the lubricant for one full chain revolution only, then leave for eight hours before riding. This allows the lubricant's solvent (used to thin the oil) to evaporate and the oil to 'soak' into all parts of the chain. If the lubricant is applied and the motorcycle is ridden shortly afterwards, the lubricant is unlikely to reach all parts and the majority will be flung off and wasted. Applying excessive amounts is not helpful under any circumstances.

It should be noted that the lubricant is applied to the chain to lubricate its action across the sprockets. In an 'O' ring chain, external lubrication does not penetrate to the bushes and rollers as the 'O' ring seal prevents this from happening.

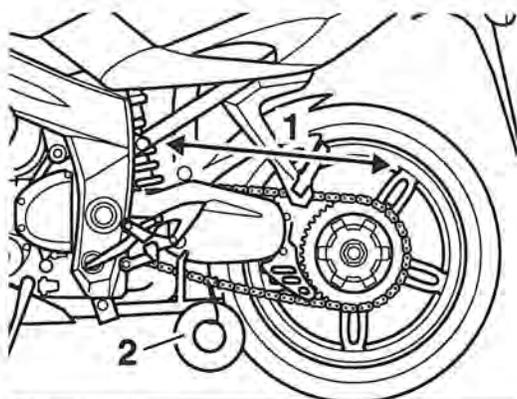


### Caution

Do not use a power 'jet' wash to clean the chain as this may cause damage to the chain components.

## Chain Wear Inspection

1. Remove the rear brake hose cover from the upper chain guard.
2. Remove the chain guard from the swinging arm.
3. Stretch the chain taut by hanging a 10-20 kg (20-40 lb) weight on the chain.
4. Measure a length of 20 links on the straight part of the chain from pin centre of the 1st pin to pin centre of the 21st pin. Repeat the test at various sections of the chain to establish an average reading. This is because the chain may wear unevenly.



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### 1. Measurement position

### 2. 10-20kg weight

5. If the length exceeds the service limit of 321 mm, the chain must be replaced.



## Warning

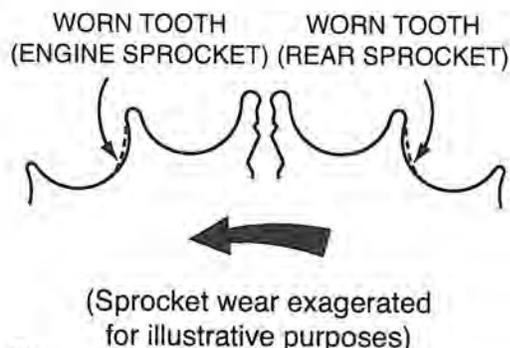
Use a genuine Triumph supplied chain as specified in the Triumph Parts Catalogue. The use of non-approved chains may result in a broken chain or may cause the chain to jump off the sprockets.

A chain that breaks or jumps off the sprockets could snag on the engine sprocket or lock the rear wheel, severely damaging the motorcycle and causing loss of motorcycle control and an accident.

Never neglect chain maintenance and always have chains installed by an authorised Triumph Dealer.

6. Examine the whole length of the chain. If there are any excessively tight or loose sections, loose pins or damaged rollers, the chain should be replaced.

7. Inspect sprockets for unevenly or excessively worn teeth. Also examine the sprockets for damaged teeth.



ccmw

### (Wear exaggerated for clarity of information)

8. If there is any irregularity found in any of the components, replace the drive chain and/or any other damaged components.
9. Refit the chain guard. Tighten the fixings to **9 Nm**.
10. Refit the rear brake hose cover, ensuring the hose and, if fitted, the ABS sensor lead are correctly routed. Tighten the fixings to **2 Nm**.

# Rear Suspension

## Swinging Arm/Drive Chain

### Removal

1. Remove the seat (see page 16-8).
2. Disconnect the battery, negative (black) lead first.

### Warning

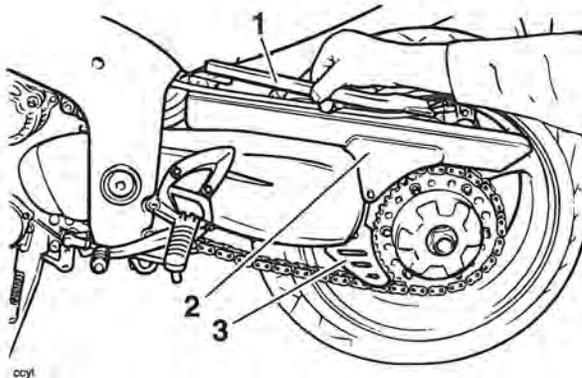
If the engine has recently been running, the exhaust system will be hot. Before working on or near the exhaust system, allow sufficient time for the exhaust system to cool as touching any part of a hot exhaust system could cause burn injuries.

3. Raise and support the rear of the motorcycle under the frame or engine.

### Warning

Ensure the motorcycle is stabilised and adequately supported, to prevent it falling and causing damage or injury.

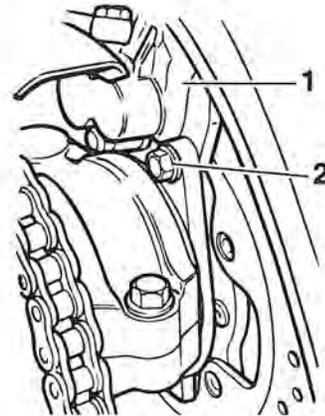
4. Remove the rear wheel (see page 15-10).
5. Remove the rear brake hose cover from the upper chain guard.
6. Models with ABS brakes: Remove the rear wheel speed sensor (see page 14-29).
7. Remove the chain guard from the swinging arm.



1. Brake hose cover
2. Upper chain guard
3. Lower chain guard

8. Remove the lower chain guard.
9. De-stake then slacken the nut securing the final drive unit to the axle shaft.

10. Without disconnecting the brake hose, detach then support the rear brake caliper.

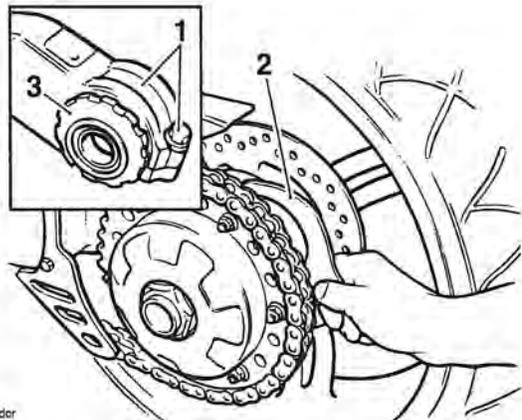


1. Rear brake caliper
2. Caliper mounting bolts (1 of 2)

### Caution

To prevent damage to the brake pipe and caliper, do not allow the caliper to hang on the brake pipe.

11. Slacken the swinging arm / hub pinch bolt.
12. Use the 'C' spanner from the motorcycle tool kit to turn the hub and slacken the drive chain.



1. 'C' spanner
2. Swinging arm/hub pinch bolt

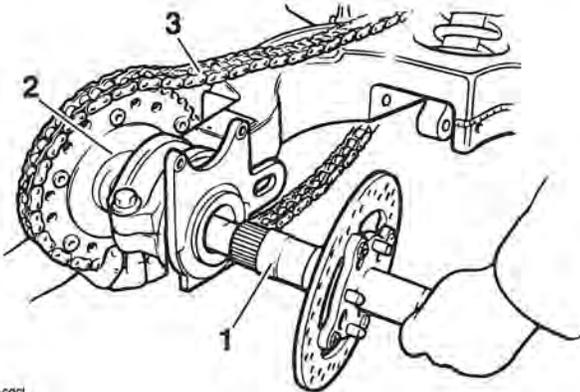
13. Remove the staked nut (discard the nut), Belleville washer and stepped washer from the axle shaft.

## Rear Suspension

- Pull the axle shaft through the hub to the right hand side such that the shaft clears the final drive assembly. Remove the final drive unit disconnecting the chain at the same time.

### Note:

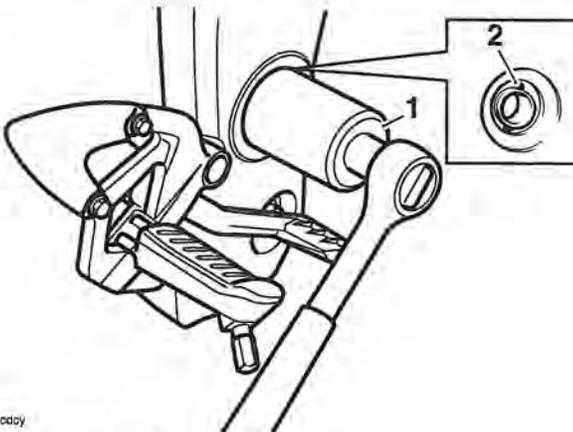
- Collect the spacer fitted between the final drive and the hub.
- Support the chain while the final drive is being removed to prevent it from contamination.



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- Axle shaft
- Final drive
- Chain

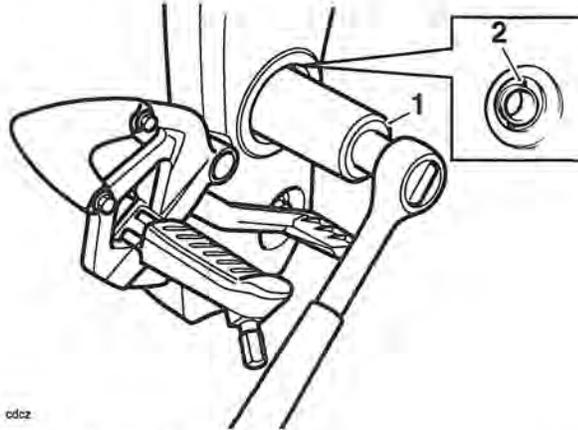
- Place the axle shaft/brake disc assembly to one side.
- Support the swinging arm and remove the rear suspension unit (see page 12-6).
- Remove the drop link (see page 12-8).
- Release the swinging arm spindle bolt.
- Using tool T3880295, remove the locking ring from the right hand side of the swinging arm spindle.



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- Tool T3880295
- Locking ring

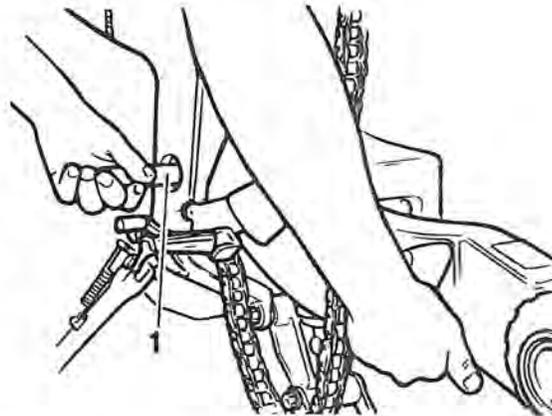
- Using tool T3880290, slacken the swinging arm clamping ring from the right hand side of the swinging arm spindle.



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- Tool T3880290
- Clamping ring

- Support the swinging arm and remove the swinging arm spindle.

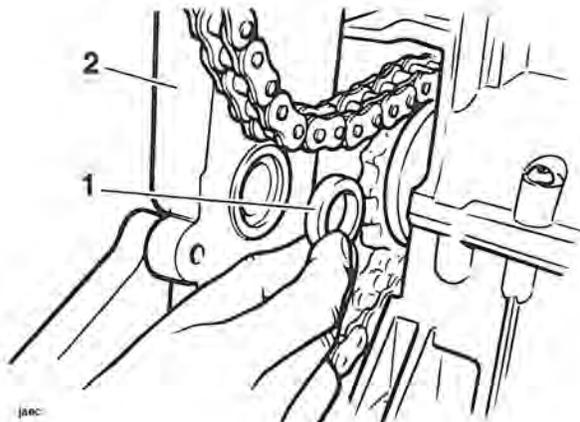


- Swinging arm spindle

- Carefully detach the arm from the frame.

## Rear Suspension

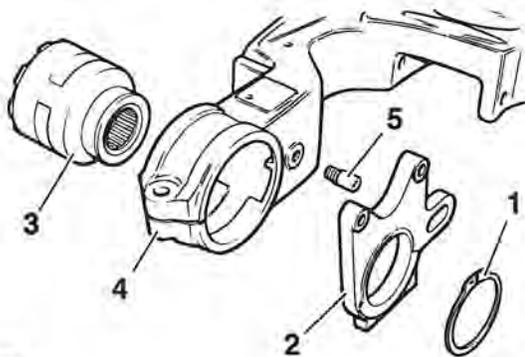
23. Collect the spacer from the recess inside the left hand frame outrigger.



1. Spacer  
2. Frame outrigger

### Note:

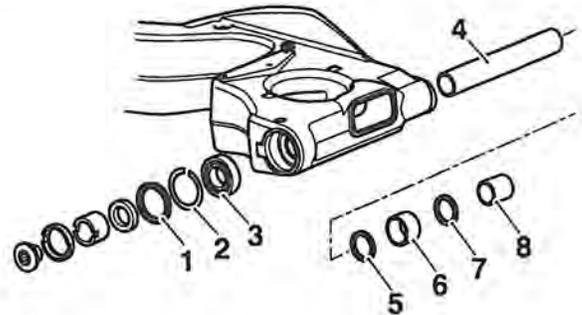
- If the swinging arm is to be replaced continue through this section.
  - If the drive chain is being replaced, but not the swinging arm (see page 12-20).
24. Remove the large circlip securing the caliper carrier to the hub and detach the carrier.



1. Circlip  
2. Caliper carrier  
3. Hub  
4. Swinging arm  
5. Caliper carrier positioning stud

25. Remove the hub from the left hand side of the swinging arm.  
26. Remove the caliper carrier positioning stud.  
27. Remove the chain rubbing strip.  
28. Remove the rubber blanking grommet from the front of the arm.

29. Remove the thread blanking plates from the machined top face of the swing arm.  
30. Remove the bearing sleeves from both sides.  
31. Remove the right hand bearing by drifting through from the left.  
32. Collect the spacer tube.



1. Seal  
2. Circlip  
3. Bearing sleeve  
4. Sleeve  
5. Seal  
6. Needle roller bearing  
7. Seal  
8. Bearing sleeve

### Note:

- The needle roller bearing in the left hand side of the arm cannot be removed undamaged.
  - If the drive chain is being replaced, see page 12-20.
33. Remove the sprocket cover.  
34. Detach the chain from the output sprocket and remove the chain.

## Inspection

1. Check all swinging arm bearings for damage, pitting, and cracks. Replace as necessary.
2. Check the swinging arm for damage. Replace as necessary.
3. Check the axle bearings for damage, pitting, and cracks. Replace as necessary.
4. Check all bearing seals for damage, splits etc. Replace as necessary.
5. Check the chain for wear, damage etc. Replace as necessary.
6. Check both sprockets for wear, damage etc. Replace as necessary.