

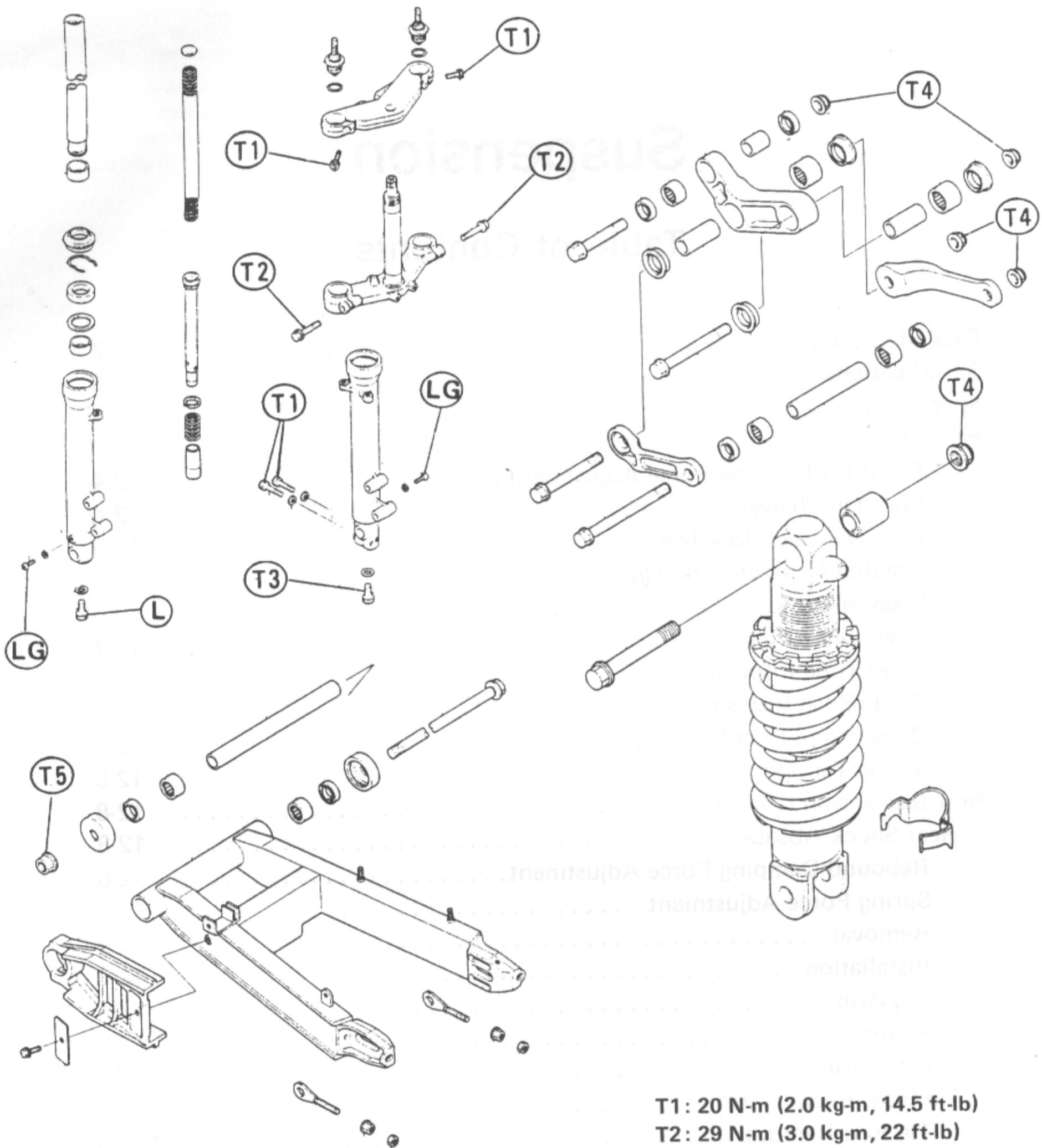
# Suspension

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# 12-2 SUSPENSION

## Exploded View



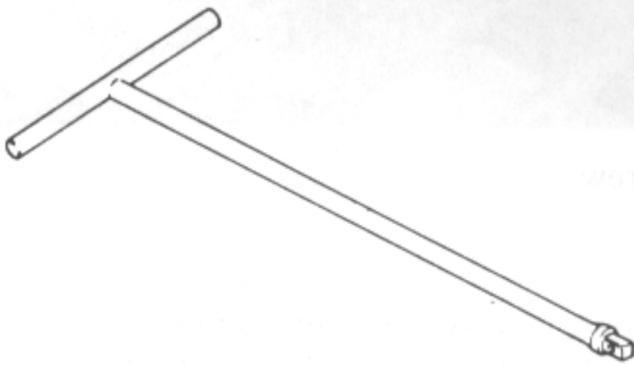
- T1: 20 N-m (2.0 kg-m, 14.5 ft-lb)
- T2: 29 N-m (3.0 kg-m, 22 ft-lb)
- T3: 61 N-m (6.2 kg-m, 45 ft-lb)
- T4: 49 N-m (5.0 kg-m, 36 ft-lb)
- T5: 93 N-m (9.5 kg-m, 69 ft-lb)

Specifications

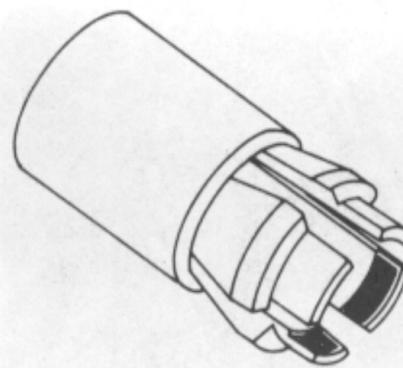
Item	Standard	Service Limit
<b>Front Fork:</b>		
Oil type	SAE10W20	---
Oil capacity	421 ±4 mL (when assembling) approx. 355 mL (when oil changing)	---
Oil level (full compressed, without main spring)	125 ±2 mm	---
Fork spring free length	450.7 mm	442 mm
Fork spring force	6th mark from the top	---
<b>Rear Shock Absorber:</b>		
Rebound damping force adjuster setting position	No. 2	---
Spring force	Spring free length minus 10 mm	Spring free length minus 0 to 25 mm

Special Tools

Front Fork Cylinder Handle: 57001-183



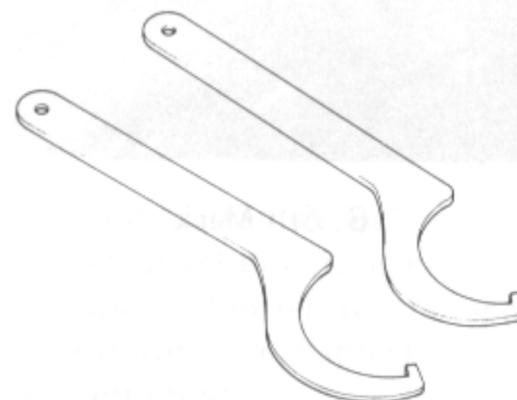
Fork Oil Seal Driver: 57001-1219



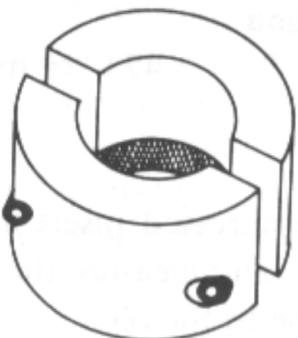
Adapter: 57001-1057



Hook Wrench: 57001-1101



Fork Outer Tube Weight: 57001-1218



WARNING

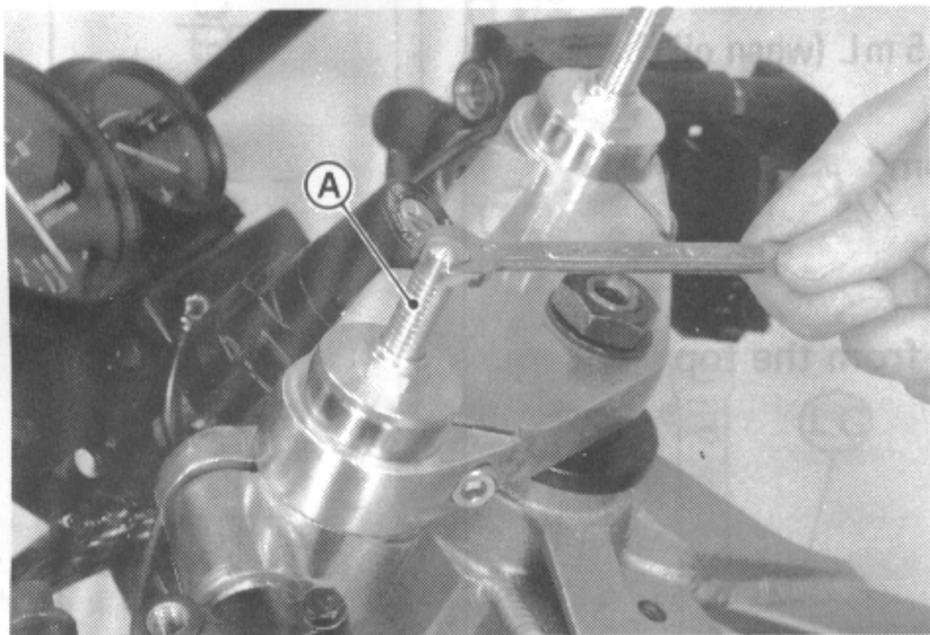
If both adjusters are not adjusted equally, handling may be impaired and a hazardous condition may result.

## 12-4 SUSPENSION

### Front Fork

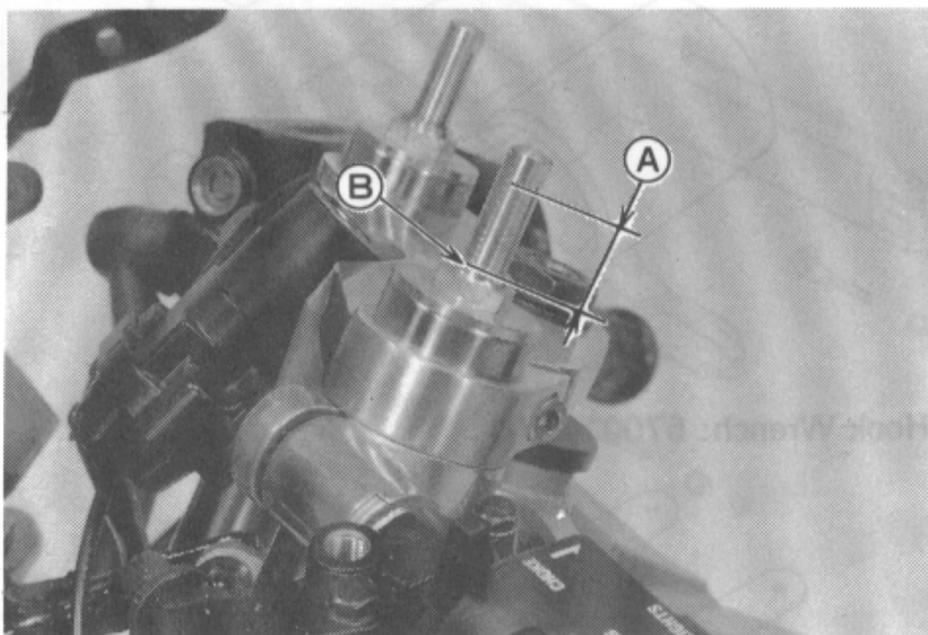
#### Front Fork Spring Force Adjustment

- Turn the adjuster in to increase spring force and out to decrease spring force.



A. Adjuster

- The standard setting position of the adjuster for the average-build rider with no passenger and no accessories is the 6th mark from the top.



A. Marks

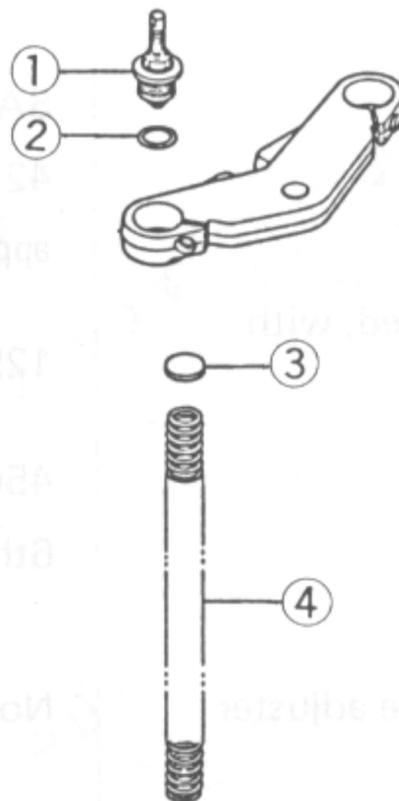
B. 6th Mark

#### WARNING

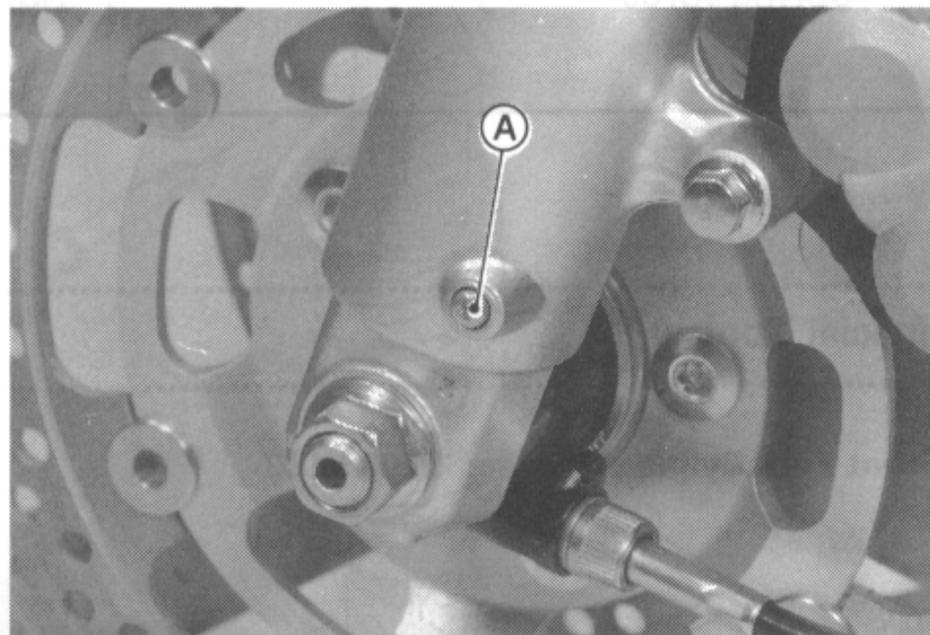
- If both adjusters are not adjusted equally, handling may be impaired and a hazardous condition may result.

#### Fork Oil Change

- Set the motorcycle on its side stand.
- Remove the following.



1. Fork Top Plug
2. O-ring
3. Spring Seat
4. Spring



A. Drain Screw

- Pump the fork legs to force out the oil.
- Apply liquid gasket—silver (Kawasaki Bond: 92104-002) to the threads of the drain screw and gasket.
- Pour in the specified type and amount of oil.

#### Front Fork Oil

Viscosity **SAE 10W20**

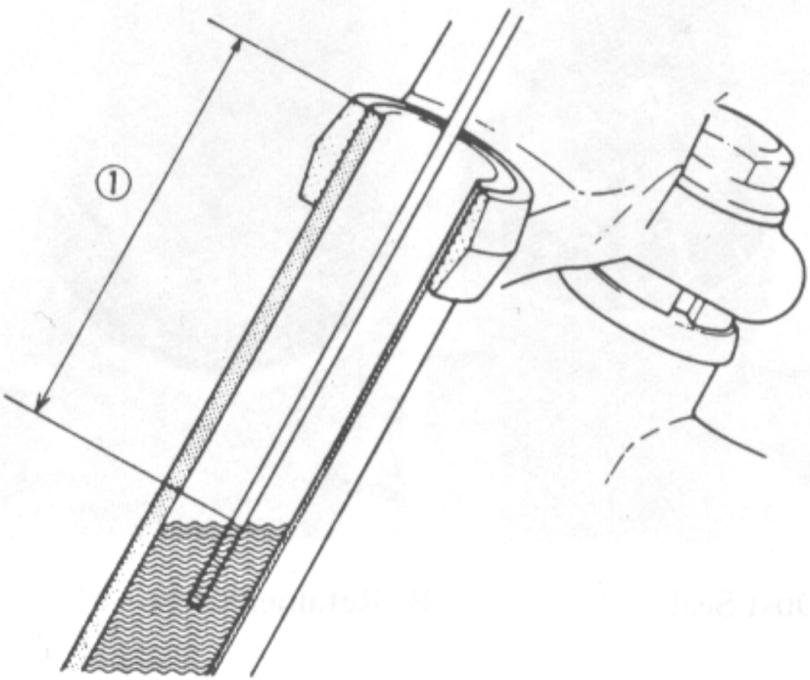
Amount per side

When changing oil: **About 355 mL**

After disassembly and

completely dry: **421 ±4 mL**

- With the fork fully compressed insert a tape measure or rod in the inner tube, and measure the distance from the top of the inner tube to the oil.



1. Oil Level

**Fork Oil Level**

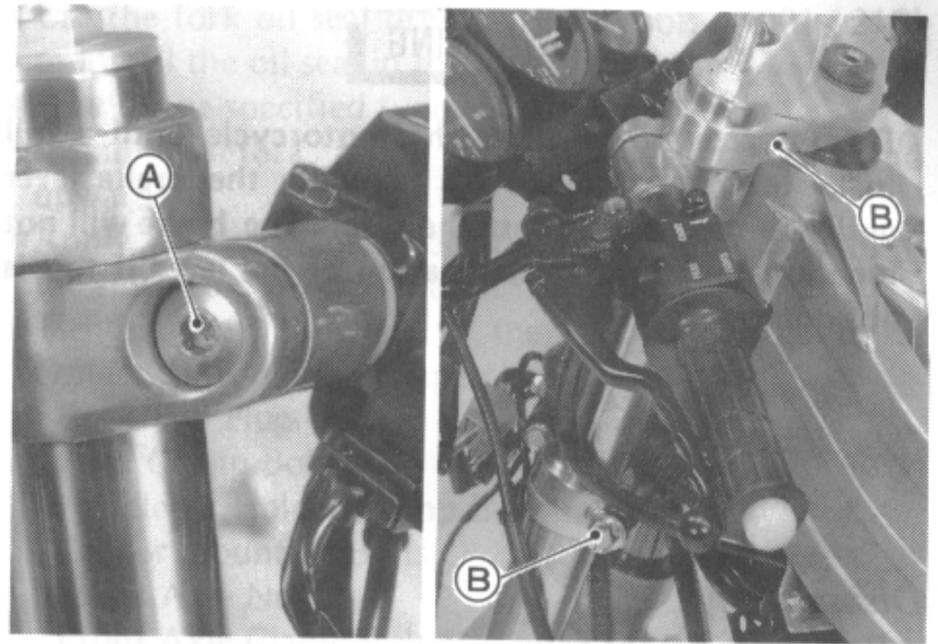
**(Fully Compressed, without main spring)**

**125 ±2 mm**

- ★If the oil is above or below the specified level, remove or add oil and recheck the oil level.
- When installing the parts removed, tighten the fork top plug to the specified torque (see General Information chapter).
- Change the oil of the other fork leg in the same manner.

**Removal (each fork leg)**

- Remove the front wheel (see Wheels/Tires chapter).
- ★If the front fork legs are to be disassembled, loosen the fork top plugs beforehand.
- Remove the following.
  - Caliper (from the fork leg to be removed.)
  - Fairings
  - Front Fender

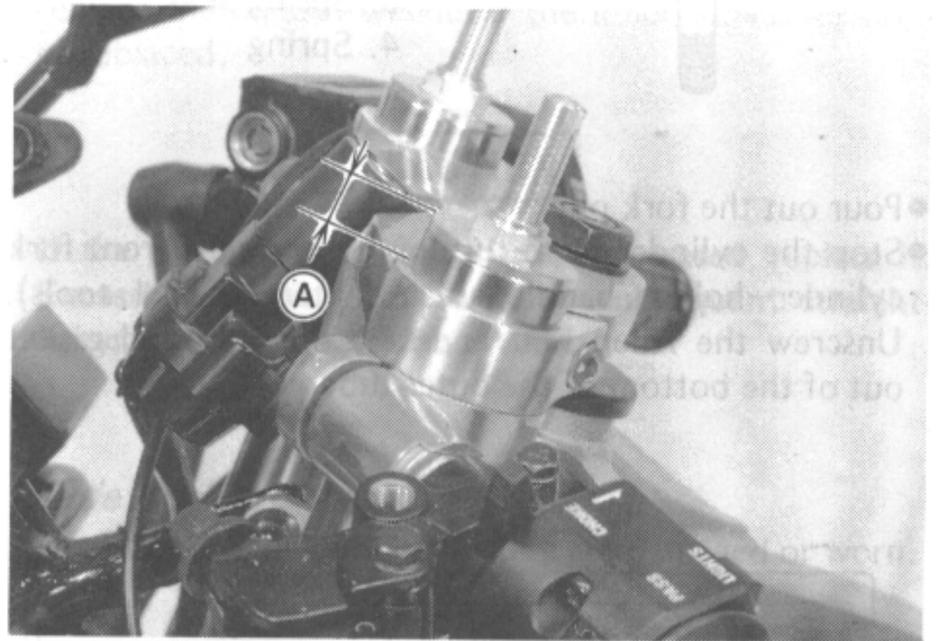


A. Handlebar Holder Clamp Bolt    B. Fork Clamp Bolts

- With a twisting motion, work the fork leg down and out.

**Installation (each fork leg)**

- Install the fork leg as shown.



A. 10 mm

- Apply a non-permanent locking agent to the threads of side stand bracket mounting bolt.
- Tighten the following to the specified torques (see General Information chapter).
  - Fork Clamp Bolts
  - Handlebar Holder Clamp Bolt
  - Caliper Mounting Bolts
  - Front Axle Nut
  - Side Stand Bracket Mounting Bolts
  - Front Axle Clamp Bolts

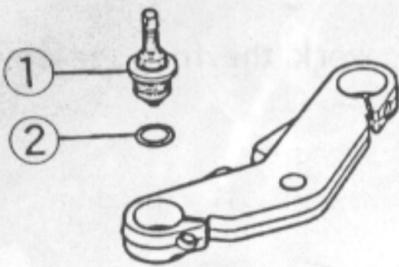
## 12-6 SUSPENSION

### WARNING

- Do not attempt to drive the motorcycle until a full brake lever is obtained by pumping the brake lever until the pads are against the disc. The brake will not function on the first application of the lever if this is not done.

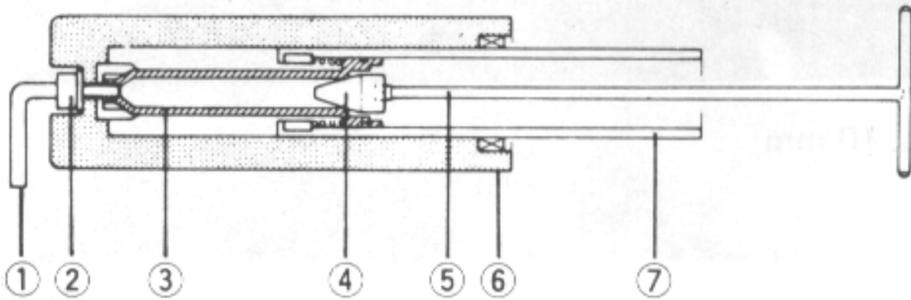
### Disassembly

- Remove the front fork.
- Remove the following.



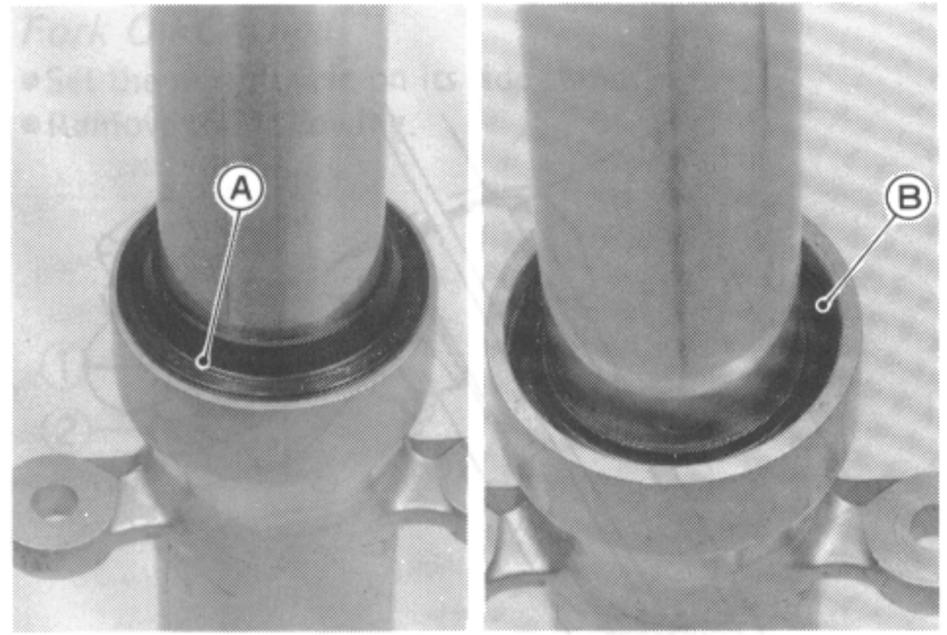
- Fork Top Plug
- O-ring
- Spring Seat
- Spring

- Pour out the fork oil.
- Stop the cylinder from turning by using the front fork cylinder holder handle and adapter (special tools). Unscrew the Allen bolt and take the bolt, and gasket out of the bottom of the outer tube.



- Wrench
- Bolt
- Cylinder
- Adapter: 57001-1057
- Handle: 57001-183
- Outer Tube
- Inner Tube

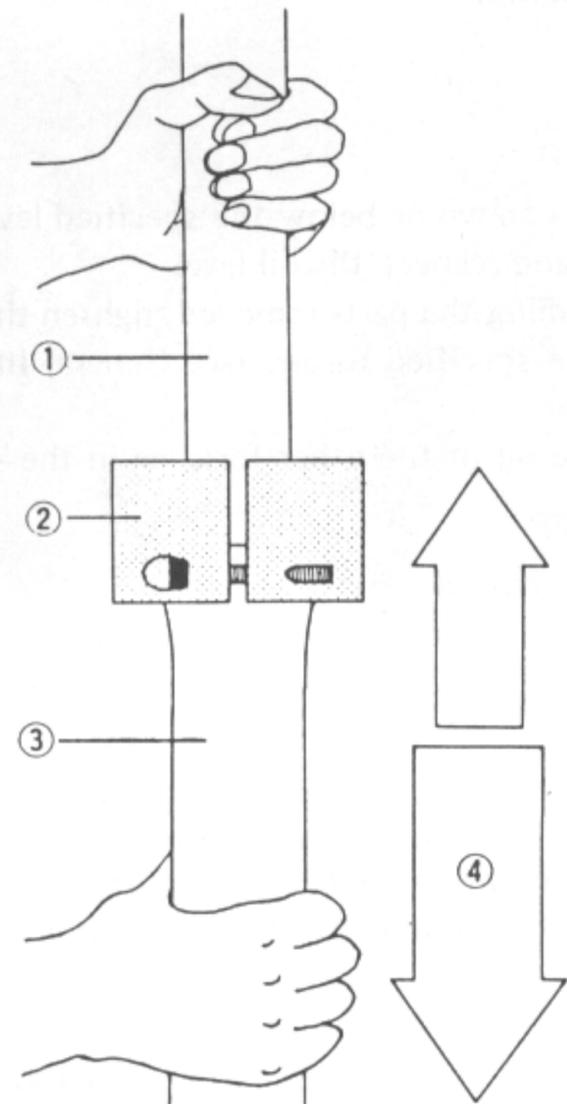
- Remove the following.



A. Dust Seal

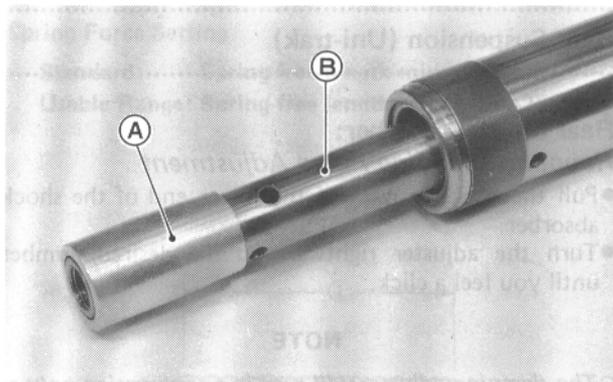
B. Retainer

- Mount the weight (special tool) on the top of the outer tube, by fitting the step of the weight (special tool) to the top corner of the outer tube.
- Holding the inner tube by hand in a vertical position, stroke the outer tube several times and pull it down.



- Inner Tube
- Fork Outer Tube Weight: 57001-1218
- Outer Tube
- Stroke

- Take the oil seal, washer, and guide bush off the inner tube.
- Take the cylinder base off the pistons cylinder unit.

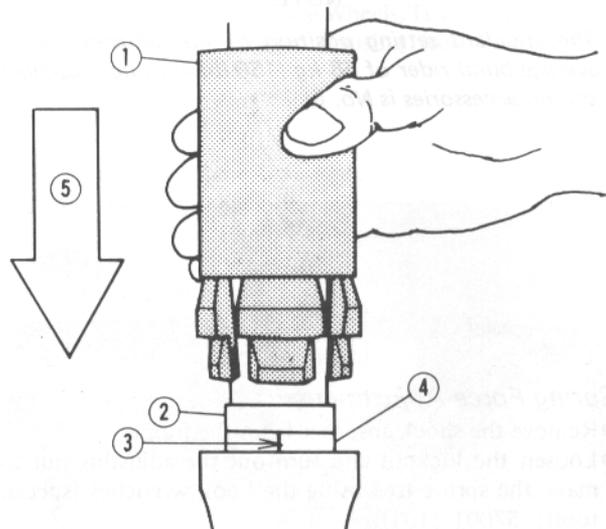


A. Cylinder Base      B. Piston Cylinder Unit

- Take the piston cylinder unit and spring out of the inner tube.

**Assembly Notes**

- Check the top plug O-rings for damage.
- ★ Replace them with new ones if damaged.
- Replace the oil seal removed with a new one.
- Replace the guide bushes with new ones.
- Apply non-permanent locking agent to the Allen bolt.
- Apply liquid gasket—silver (Kawasaki bond: 92104-002) to both sides of the gasket.
- Tighten the Allen bolt to the specified torque (see General Information chapter), using the front fork cylinder holder handle and adapter (special tools) to stop the cylinder from turning.
- Install the guide bush (with a used guide bush on it) by tapping the used guide bush with the fork oil seal driver (special tool) until it stops. The slit of the bush must be faced toward the left or right.



- 1. Driver: 57001-1219
- 2. Used Guide Bush
- 3. Slit (toward the left or right)
- 4. New Guide Bush
- 5. Tap

- Use the fork oil seal driver (special tool: 57001-1219) to install the oil seal in the front fork leg.
- Pour in the specified type and amount of oil.
- Install the fork spring with the closed spring end upward.
- Apply non-permanent locking agent to the threads of the side stand bracket mounting bolt.
- Tighten the following to the specified torques (see General Information chapter).
  - Fork Top Plug
  - Fork Clamp Bolts
  - Handlebar Holder Clamp Bolt
  - Caliper Mounting Bolts
  - Front Axle Nut
  - Front Axle Clamp Bolts
  - Side Stand Bracket Mounting Bolts

**WARNING**

- Do not attempt to drive the motorcycle until a full brake lever is obtained by pumping the brake lever until the pads are against the disc. The brake will not function on the first application of the lever if this is not done.

**Inner Tube Inspection**

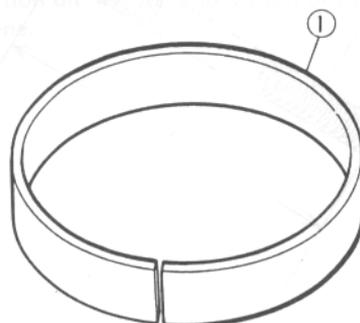
- ★ If the inner tube is damaged, replace it.
- Nicks or rust damage can sometimes be repaired by using a wet-stone to remove sharp edges or raised areas which cause seal damage.
- ★ If the damage is not repairable, replace the inner tube. Since damage to the inner tube damages the oil seal, replace the oil seal whenever the inner tube is repaired or replaced.

**CAUTION**

- If the inner tube is badly bent or creased, replace it. Excessive bending, followed by subsequent straightening, can weaken the inner tube.

**Guide Bush Inspection**

- ★ Replace the guide bushes if they are damaged or worn.

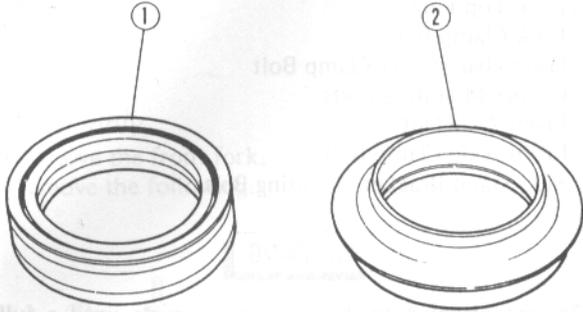


- 1. Guide Bush

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### Oil Seal and Dust Seal Inspection

- ★ If dust seal is any damage or wear, replace it.
- Replace the oil seal with a new one whenever it has been removed.



1. Oil Seal

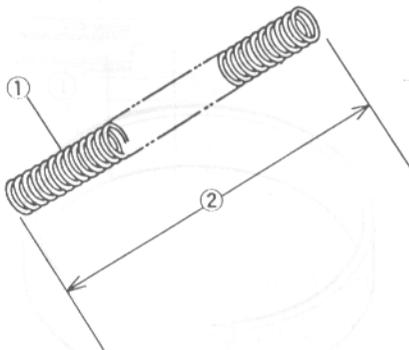
2. Dust Seal

### Spring Tension

- ★ If the spring of either fork leg is shorter than the service limit, it must be replaced. If the length of a replacement spring and that of the remaining spring vary greatly, the remaining spring should also be replaced in order to keep the fork legs balanced for motorcycle stability.

### Fork Spring Free Length

- Standard:** 450.7 mm  
**Service Limit:** 442 mm



1. Fork Spring  
 2. Free Length

## Rear Suspension (Uni-trak)

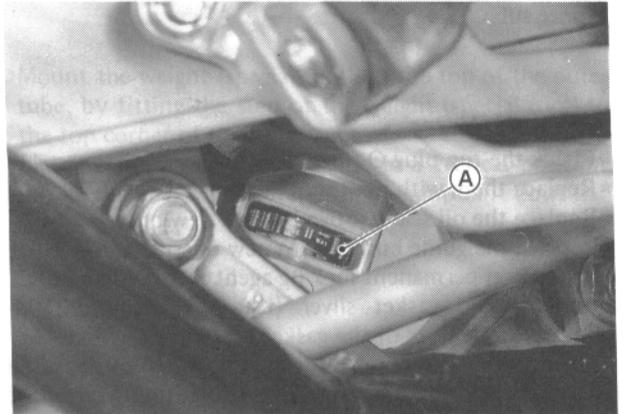
### Rear Shock Absorber:

#### Rebound Damping Force Adjustment

- Pull the plastic cover off the lower end of the shock absorber.
- Turn the adjuster rightward to the desired number until you feel a click.

#### NOTE

- The damping adjuster will turn in one direction only as indicated on it.



A. Adjuster

Position	I	II	III	III
Damping Force	➤ Larger			

#### NOTE

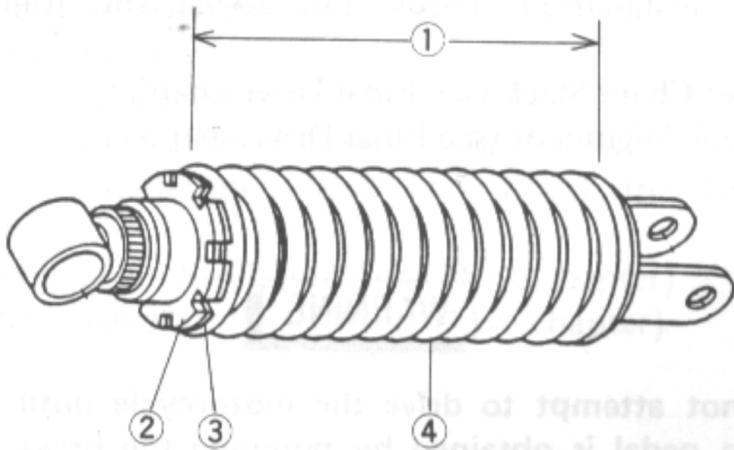
- The standard setting position of the adjuster for an average-build rider of 68 kg (150 lb) with no passenger and no accessories is No. II.

### Spring Force Adjustment

- Remove the shock absorber from the frame.
- Loosen the locknut and turn out the adjusting nut to make the spring free using the hook wrenches (special tools: 57001-1101).
- Measure the spring free length.
- Turn in the adjusting nut to the desired position and tighten the locknut.
- The adjusting nut turned in by 10 mm from the free spring end represents the recommended spring force.

**Spring Force Setting**

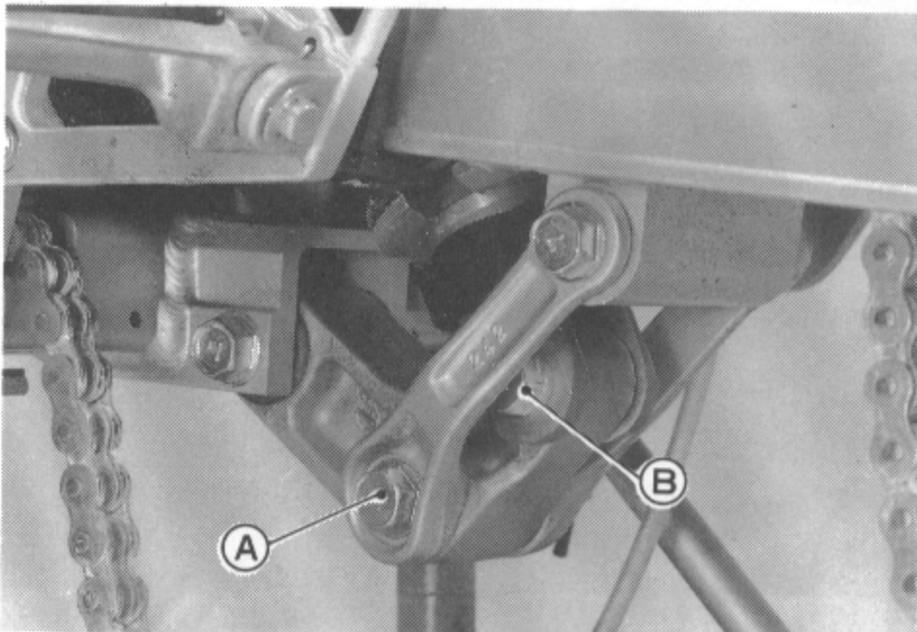
**Standard:** Spring free length minus 10 mm  
**Usable Range:** Spring free length minus 0 to 25 mm



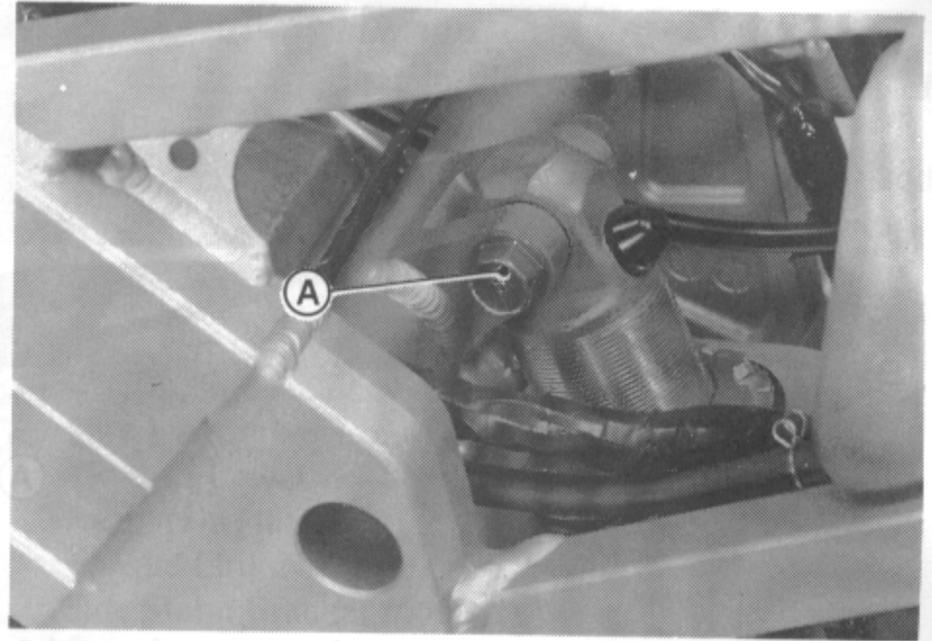
- 1. Spring Length
- 2. Locknut
- 3. Adjusting Nut
- 4. Spring

**Removal**

- Remove the rear wheel (see Wheels/Tires chapter).
- Remove the air cleaner housing (see Fuel System chapter).
- Remove the following parts.



A. Tie-Rod Lower Bolt  
 B. Shock Absorber Lower Mounting Bolt



A. Shock Absorber Upper Mounting Bolt

**Installation**

- Apply non-permanent locking agent to the threads of the side stand bracket mounting bolts.
- Visually inspect the clips for the torque link nut and rear axle nut. Replace them with the new ones, if necessary.
- Tighten the following bolts and nuts to the specified torque (see General Information chapter).
  - Shock Absorber Upper Mounting Bolt
  - Shock Absorber Lower Mounting Bolt
  - Tie-Rod Lower Bolt
  - Rear Axle Nut
  - Torque Link Nuts
  - Side Stand Bracket Mounting Bolts
- After installation, check and adjust the following.
  - Drive Chain Slack (see Final Drive chapter)
  - Wheel Alignment (see Final Drive chapter)
  - Throttle and Choke Cables Operation (see Fuel System chapter)

**WARNING**

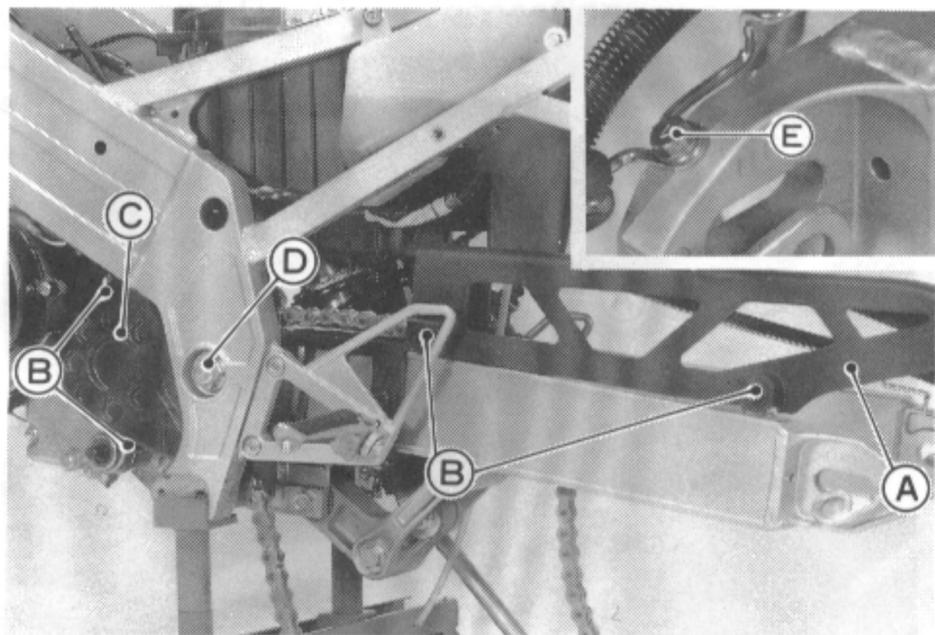
- Do not attempt to drive the motorcycle until a full brake pedal is obtained by pumping the brake pedal until the pads are against the disc. The brake will not function on the first application of the pedal if this is not done.

**Swing Arm:**

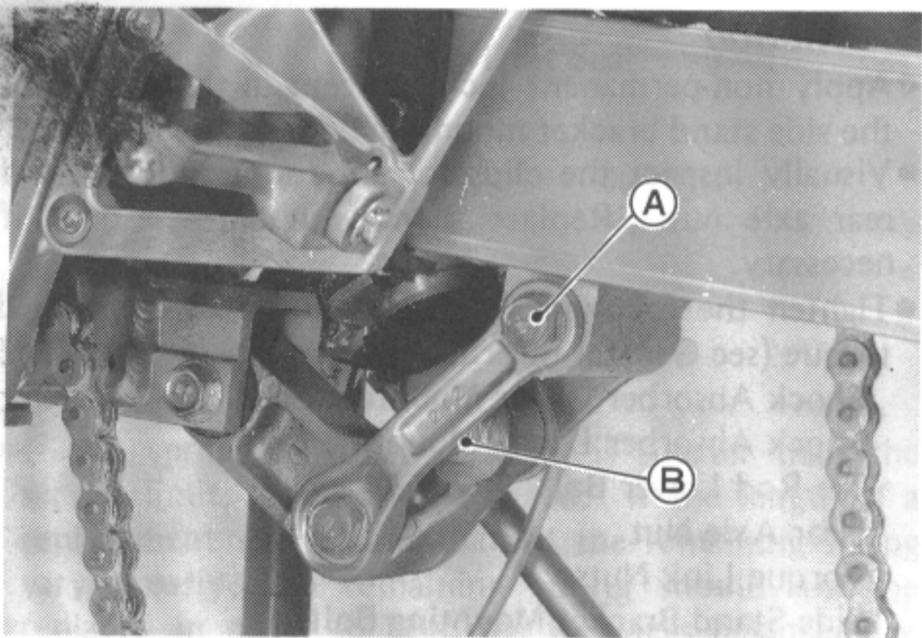
**Removal**

- Remove the rear wheel (see Wheels/Tires chapter).
- Remove the following parts.

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- A. Chain Case
- B. Mounting Bolt
- C. Engine Sprocket Cover
- D. Swing Arm Pivot Shaft Nut
- E. Brake Hose Clamp Mounting Bolt



- A. Tie-Rod Upper Bolt
- B. Shock Absorber Lower Mounting Bolt

- Pull out the swing arm pivot shaft, then remove the swing arm.

### CAUTION

- Take care not to damage the brake hose.

### Installation

- Apply non-permanent locking agent to the threads of the side stand bracket mounting bolts.
- Visually inspect the clips for the torque link nut and rear axle nut. Replace them with new ones, if necessary.

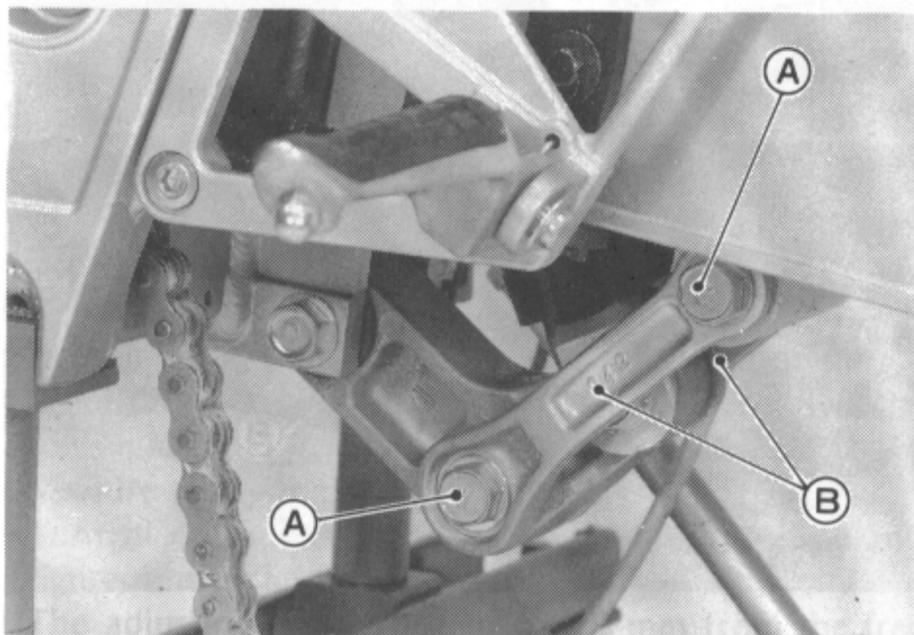
- Tighten the following bolts and nuts to the specified torque (see General Information chapter).
  - Swing Arm Pivot Shaft Nut
  - Shock Absorber Lower Mounting Bolt
  - Tie-Rod Upper Bolt
  - Rear Axle Nut
  - Torque Link Nut
  - Side Stand Bracket Mounting Bolts
- After installation, check and adjust the following items.
  - Drive Chain Slack (see Final Drive chapter)
  - Wheel Alignment (see Final Drive chapter)

### WARNING

- Do not attempt to drive the motorcycle until a full brake pedal is obtained by pumping the brake pedal until the pads are against the disc. The brake will not function on the first application of the pedal if this is not done.

### Tie-Rod, Rocker Arm: Tie-Rod Removal

- Remove the rear wheel (see Wheels/Tires chapter).
- Remove the upper and lower mounting bolts and take the tie-rods off.



- A. Mounting Bolts
- B. Tie-Rods

**Tie-Rod Installation**

- Apply non-permanent locking agent to the threads of the side stand bracket mounting bolts.
- Visually inspect the clips for the torque link nut and rear axle nut. Replace them with new ones, if necessary.
- Tighten the following bolts and nuts to the specified torque (see General Information chapter).
  - Tie-Rod Mounting Bolts
  - Rear Axle Nut
  - Torque Link Nut
  - Side Stand Bracket Mounting Bolts
- After installation, check and adjust the following items.
  - Drive Chain Slack (see Final Drive chapter)
  - Wheel Alignment (see Final Drive chapter)

**WARNING**

- Do not attempt to drive the motorcycle until a full brake pedal is obtained by pumping the brake pedal until the pads are against the disc. The brake will not function on the first application of the pedal if this is not done.

**Rocker Arm Installation**

- Apply non-permanent locking agent to the threads of the side stand bracket mounting bolts.
- Visually inspect the clips for the torque link nut and rear axle nut. Replace them with new ones, if necessary.
- Tighten the following bolts and nuts to the specified torque (see General Information chapter).
  - Rocker Arm Shaft Nut
  - Shock Absorber Lower Bolt
  - Tie-Rod Lower Bolt
  - Rear Axle Nut
  - Torque Link Nut
  - Side Stand Bracket Mounting Bolts
- After installation, check and adjust the following items.
  - Drive Chain Slack (see Final Drive chapter)
  - Wheel Alignment (see Final Drive chapter)

**WARNING**

- Do not attempt to drive the motorcycle until a full brake pedal is obtained by pumping the brake pedal until the pads are against the disc. The brake will not function on the first application of the pedal if this is not done.

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Bearing Lubrication ..... 136

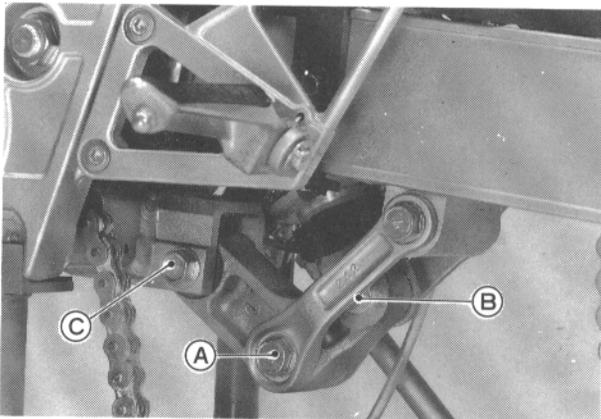
Control Arm Damage

**Rocker Arm Removal**

- Remove the rear wheel (see Wheels/Tires chapter).
- Remove the following parts.

**Needle Bearing Inspection**

- ★ If there is any doubt as to the condition of either needle bearing, replace the bearing and sleeve as a set.



**Tie-Rod, Rocker Arm Sleeve Inspection**

- ★ If there is visible damage, replace the sleeve and needle bearing as a set.

**Tie-Rod, Rocker Arm Needle Bearing Lubrication**

There is a grease nipple on the tie-rod and rocker arm for lubrication.

- Force the Molybdenum Disulfide Grease into the nipple until it comes out at both sides of the tie-rod or rocker arm, and wipe off any excess.

A. Tie-Rod Lower Bolt  
 B. Shock Absorber Lower Bolt  
 C. Rocker Arm Shaft