

---

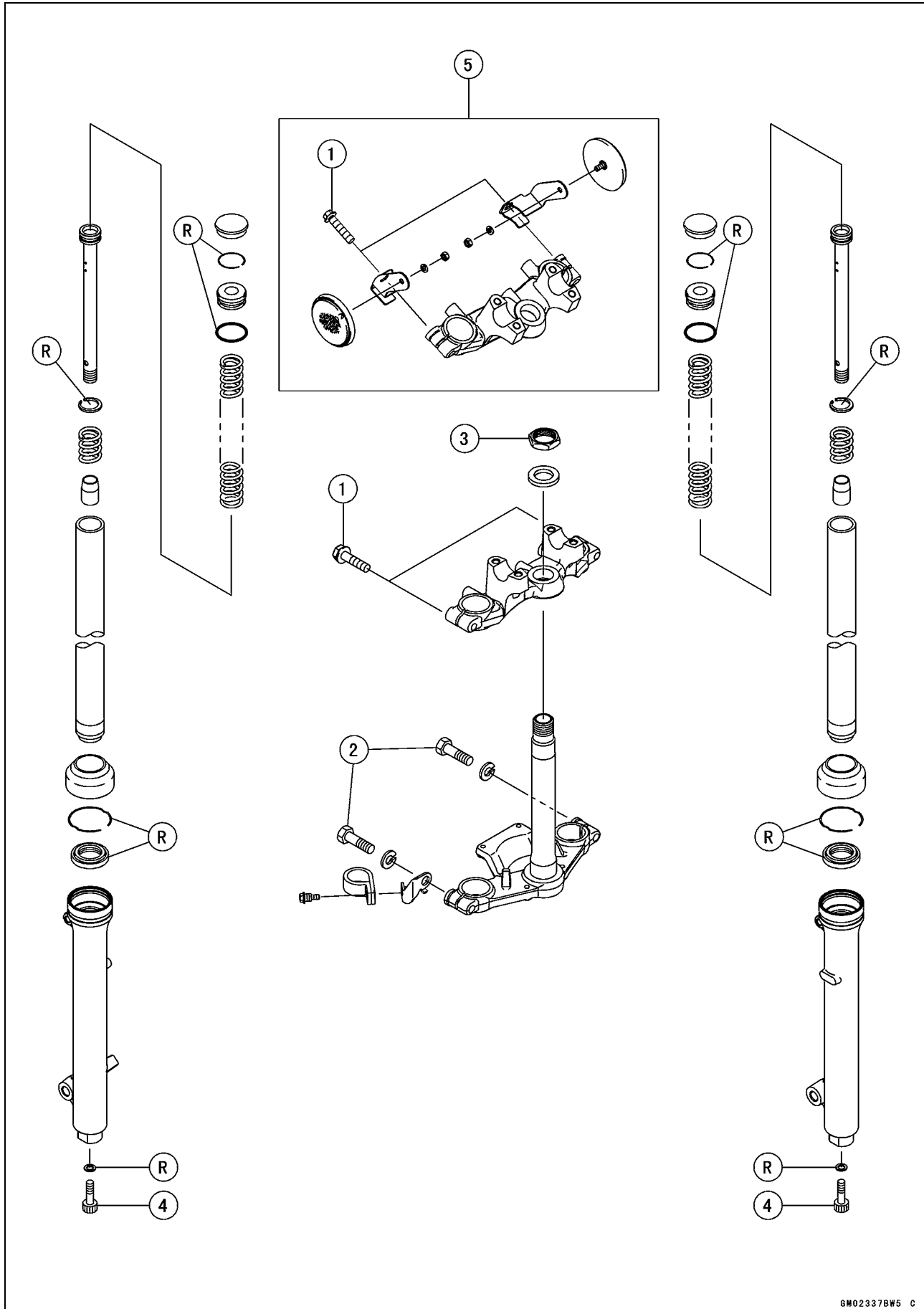
# Suspension

## Table of Contents

Exploded View .....	12-2
Specifications .....	12-6
Special Tools .....	12-7
Front Fork .....	12-8
Front Fork Oil Change .....	12-8
Front Fork Removal .....	12-8
Front Fork Installation .....	12-8
Front Fork Disassembly (each fork leg) .....	12-9
Front Fork Assembly .....	12-10
Inner Tube Inspection .....	12-12
Oil Seal Inspection .....	12-12
Spring Tension Inspection .....	12-12
Rear Shock Absorber .....	12-13
Rear Shock Absorber Removal .....	12-13
Rear Shock Absorber Installation .....	12-13
Rear Shock Absorber Inspection .....	12-14
Rear Shock Absorber Scrapping .....	12-14
Swingarm .....	12-15
Swingarm Removal .....	12-15
Swingarm Installation .....	12-15

# 12-2 SUSPENSION

## Exploded View



**Exploded View**

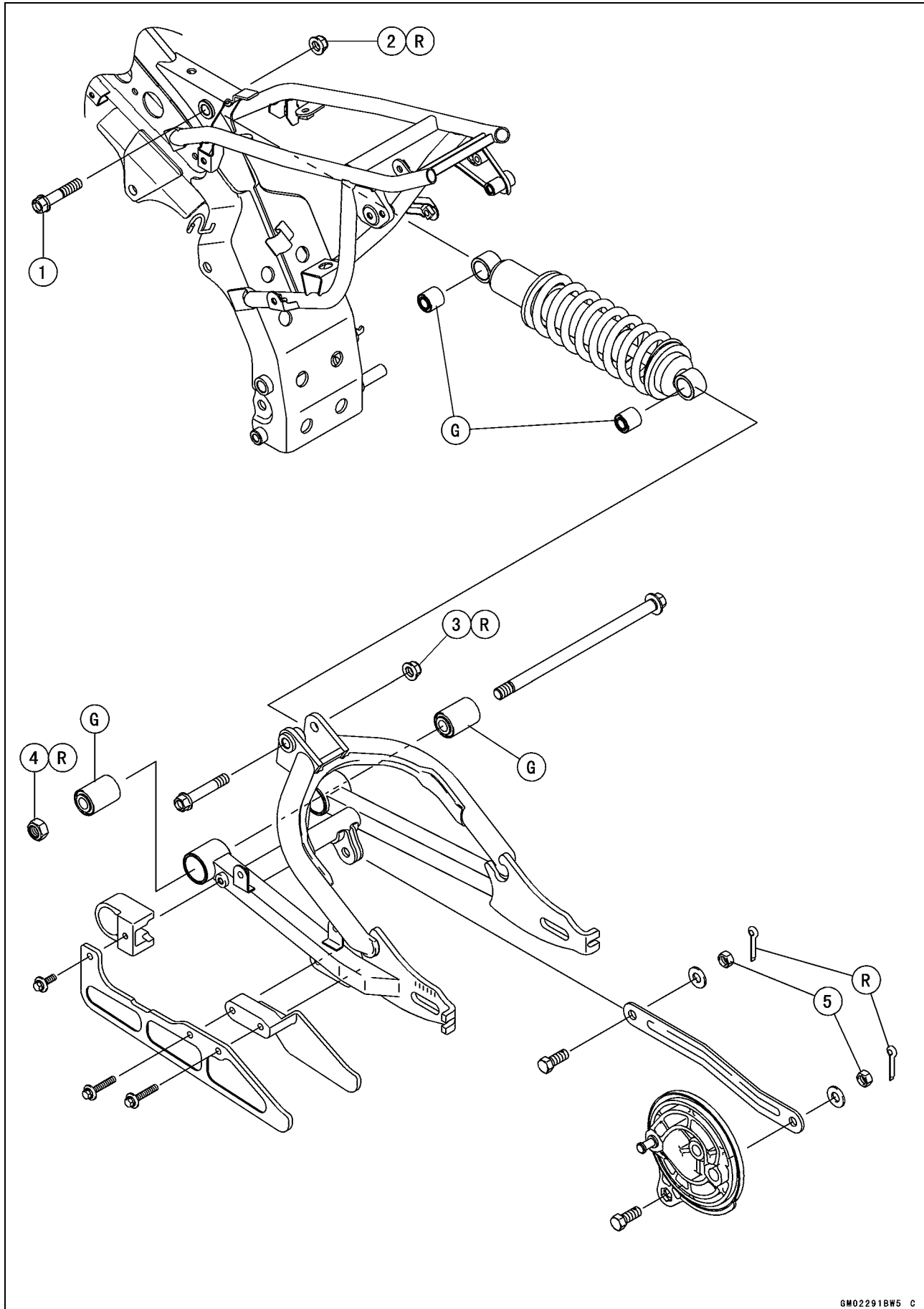
<b>No.</b>	<b>Fastener</b>	<b>Torque</b>			<b>Remarks</b>
		<b>N·m</b>	<b>kgf·m</b>	<b>ft·lb</b>	
1	Front Fork Clamp Bolts (Upper)	20	2.0	15	
2	Front Fork Clamp Bolts (Lower)	30	3.1	22	
3	Steering Stem Head Nut	44	4.5	32	
4	Fork Bottom Bolts	20	2.0	15	

5. CA model only

R: Replacement Parts

# 12-4 SUSPENSION

## Exploded View



**Exploded View**

<b>No.</b>	<b>Fastener</b>	<b>Torque</b>			<b>Remarks</b>
		<b>N·m</b>	<b>kgf·m</b>	<b>ft·lb</b>	
1	Rear Shock Absorber Mounting Bolt (Upper)	39	4.0	29	
2	Rear Shock Absorber Mounting Nut (Upper)	39	4.0	29	R
3	Rear Shock Absorber Mounting Nut (Lower)	39	4.0	29	R
4	Swingarm Pivot Nut	78	8.0	58	R
5	Torque Link Nuts	25	2.5	18	

G: Apply grease.

R: Replacement Parts

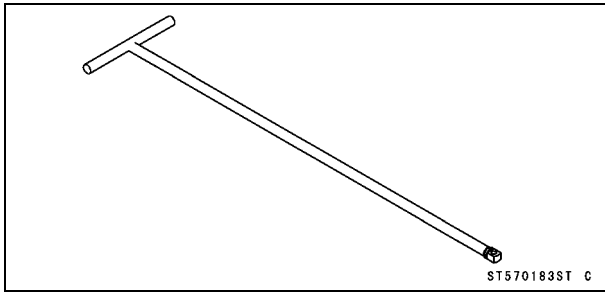
## 12-6 SUSPENSION

### Specifications

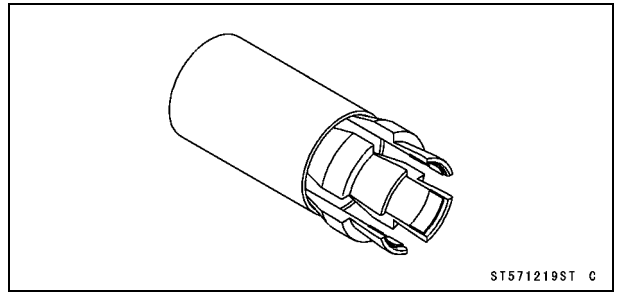
Item	Standard	Service Limit
<b>Front Fork</b>		
Air Pressure	Atmospheric pressure	---
Rebound Damping Adjustment	Non-Adjustable	---
Compression Damping Adjustment	Non-Adjustable	---
Suspension Oil	Kawasaki SS-8 or equivalent	---
Amount	(KLX110C) 165 ±2.5 mL (5.58 ±0.085 US oz)	---
	(KLX110D) 182 ±2.5 mL (6.15 ±0.085 US oz)	---
Level	(KLX110C) 85 ±2 mm (3.35 ±0.08 in.)	---
(fully compressed, without spring)	(KLX110D) 118 ±2 mm (4.65 ±0.08 in.)	---
Fork Spring Free Length	(KLX110C) 442.7 mm (17.43 in.)	433.8 mm (17.08 in.)
	(KLX110D) 498.9 mm (19.64 in.)	488.9 mm (19.25 in.)
<b>Rear Shock Absorber</b>		
Gas Pressure	980 kPa (10 kgf/cm <sup>2</sup> , 142 psi)	---

**Special Tools**

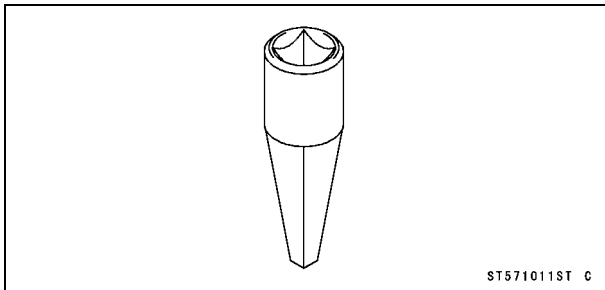
**Fork Cylinder Holder Handle:  
57001-183**



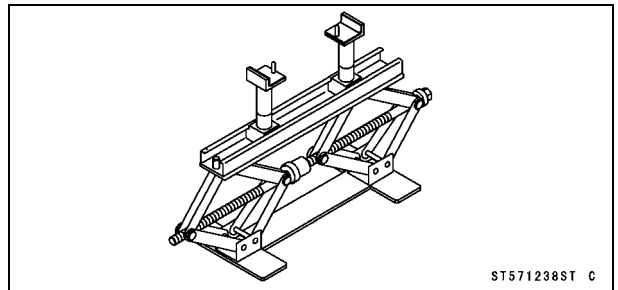
**Front Fork Oil Seal Driver:  
57001-1219**



**Fork Cylinder Holder Adapter:  
57001-1011**



**Jack:  
57001-1238**



## 12-8 SUSPENSION

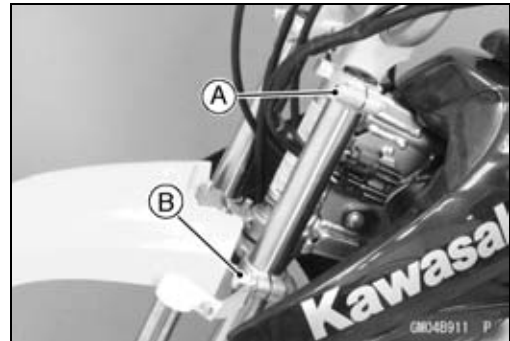
### Front Fork

#### **Front Fork Oil Change**

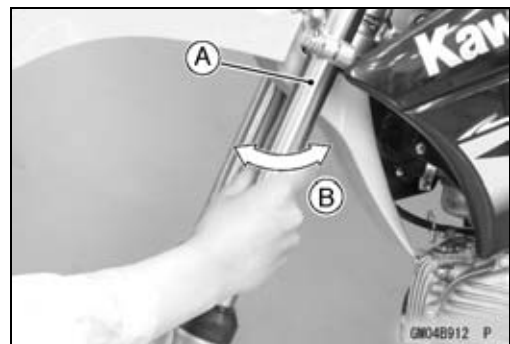
- Refer to the Front Fork Oil Change in the Periodic Maintenance chapter.

#### **Front Fork Removal**

- Remove:
  - Number Plate (see Number Plate Removal in the Frame chapter)
  - Front Wheel (see Front Wheel Removal in the Wheels/Tires chapter)
- Loosen the upper [A] and lower [B] fork clamp bolts.



- Pull out to downward the fork leg [A] with a twisting motion [B].



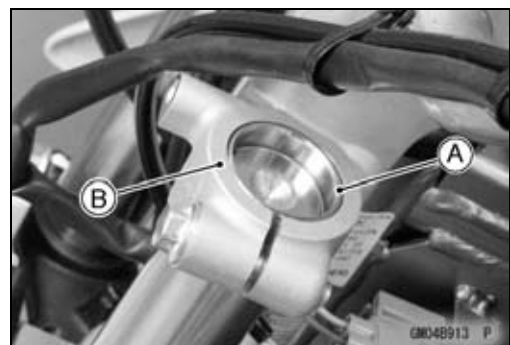
#### **Front Fork Installation**

- Install the fork, aligning the top end [A] of the inner tube with the upper surface [B] of the steering stem head.
- Route the cables and hose according to the Cable, Harness and Hose Routing section in the Appendix chapter.
- Install the front wheel (see Front Wheel Installation in the Wheels/Tires chapter).
- Tighten the fork clamp bolts.

**Torque - Front Fork Clamp Bolt (Upper): 20 N·m (2.0 kgf·m, 15 ft·lb)**

**Front Fork Clamp Bolt (Lower): 30 N·m (3.1 kgf·m, 22 ft·lb)**

- Install the other removed parts (see appropriate chapters).
- Check the front brake operation after installation.





## Front Fork

### Front Fork Disassembly (each fork leg)

- Remove the cap.
- Loosen the front fork upper clamp bolt [A].
- Remove the snap ring [B] while pressing the top plug [C], and then remove the top plug with O-ring.
- Remove the front fork (see Front Fork Removal).
- Thoroughly clean the fork before disassembly.

#### NOTICE

Be careful not scratch the inner tube and not to damage the dust seal.

Avoid scratching or damaging the inner tube or the dust seal. Use a mild detergent and sponge out dirt with plenty of water.

- Remove:  
Fork Spring  
Dust Seal
- Drain the fork oil [A] with the fork upside down.

#### NOTE

○ Pump the fork tube several times to discharge the oil.

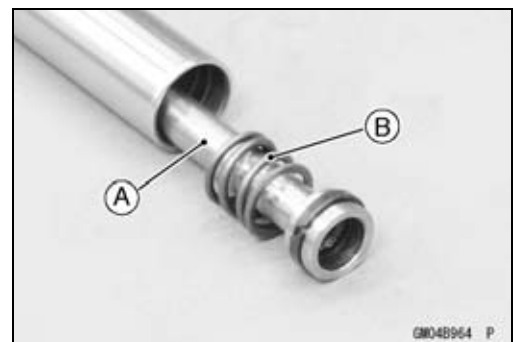
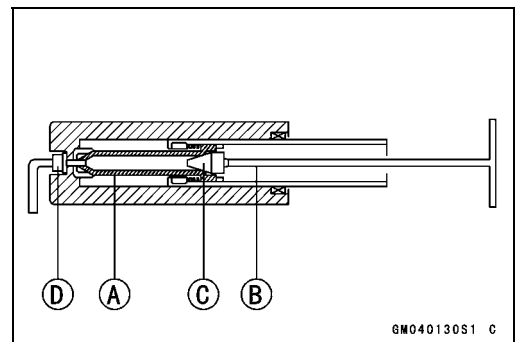
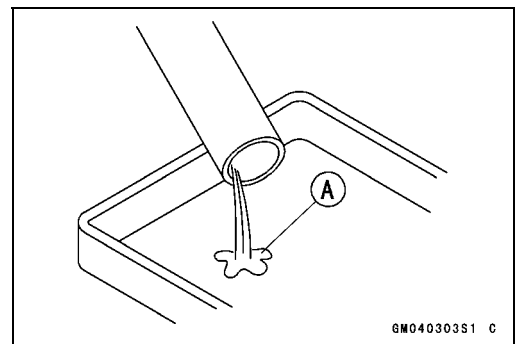
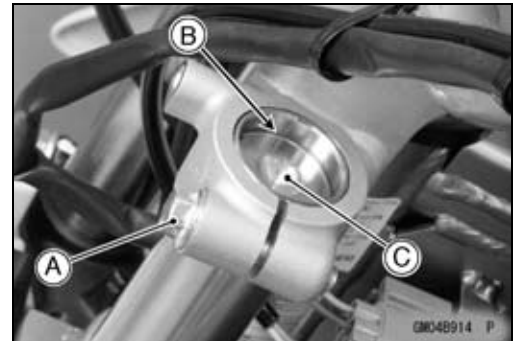
- Hold the outer tube horizontally in a vice.
- Stop the cylinder [A] from turning by using the fork cylinder holder handle [B] and adapter [C].

**Special Tools - Fork Cylinder Holder Handle: 57001-183**

**Fork Cylinder Holder Adapter: 57001-1011**

- Unscrew the Allen bolt [D], then take out the bolt and gas-ket from the bottom of the outer tube.

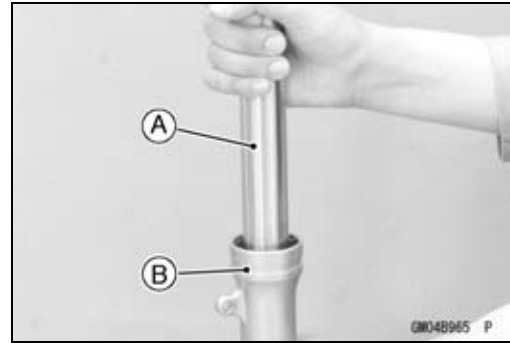
- Remove the cylinder unit [A] and spring [B] from the fork.



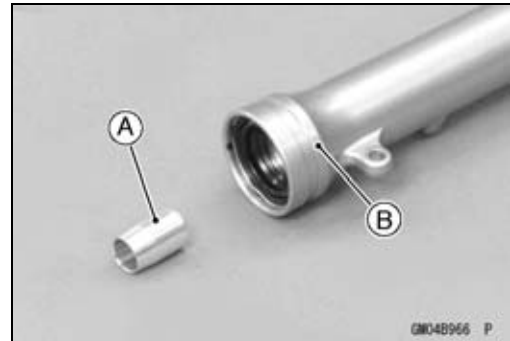
## 12-10 SUSPENSION

### Front Fork

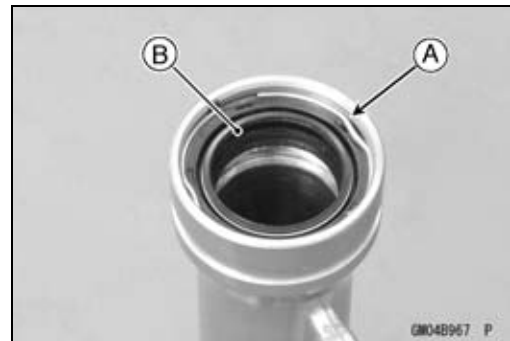
- Separate the inner tube [A] from the outer tube [B] by pulling them out.



- Take the cylinder base [A] out of the outer tube [B].



- Remove the retaining ring [A] from the outer tube.
- Remove the oil seal [B], using a standard tip screwdriver if necessary.

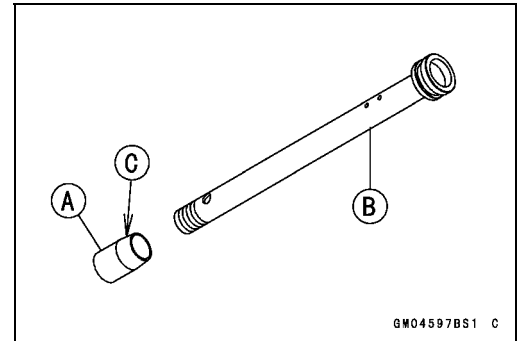


### **Front Fork Assembly**

- When the fork tubes are not disassembled, hold the fork inverted position for more than 20 minutes to allow the fork oil to fully drain.
- Assembly is the reverse of disassembly.
- Replace the following parts removed with a new one.
  - Retaining Ring
  - Oil Seal
  - Bottom Allen Bolt Washer
- Inspect the following and replace them with new ones if damaged.
  - Inner Tube (see Inner Tube Inspection)
  - Top Plug O-ring
- Insert the cylinder unit and spring in the inner tube.

**Front Fork**

- Insert the cylinder base [A] in the cylinder unit [B].
- The cylinder base must be installed with the tapered side [C] facing upward.
- Insert the inner tube and cylinder unit as a set into the outer tube.



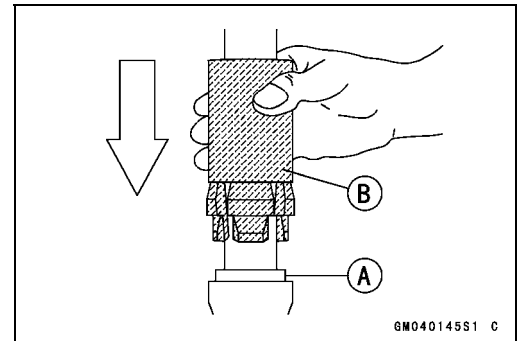
- Apply a non-permanent locking agent to the bottom Allen bolt and tighten it to the specified torque, using the front fork cylinder holder.

**Torque - Fork Bottom Bolt: 20 N·m (2.0 kgf·m, 15 ft·lb)**

**Special Tools - Fork Cylinder Holder Handle: 57001-183**  
**Fork Cylinder Holder Adapter: 57001-1011**

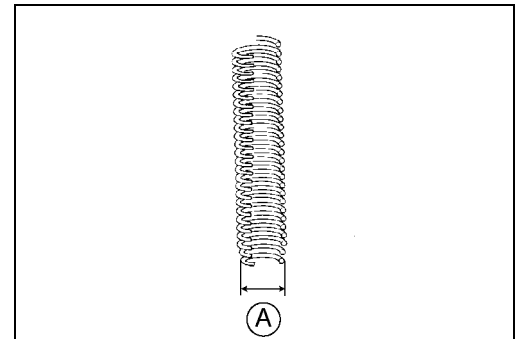
- Install the oil seal [A] by tapping with the fork oil seal driver [B] until it stops.

**Special Tool - Fork Oil Seal Driver: 57001-1219**



- Install the following.
  - Retainer
  - Dust Seal

- Measure the both diameters of the fork spring ends and insert the fork spring with the small diameter end [A] facing down.



- Fill the fork oil (see Front Fork Oil Change in the Periodic Maintenance chapter).
- Install the fork legs (see Front Fork Installation).

## 12-12 SUSPENSION

### Front Fork

#### Inner Tube Inspection

- Visually inspect the inner tube [A].
- ★ If there is any damage, replace the inner tube. Since damage to the inner tube damages the oil seal and dust seal, replace the oil seal and dust seal whenever the inner tube is replaced.

#### NOTICE

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

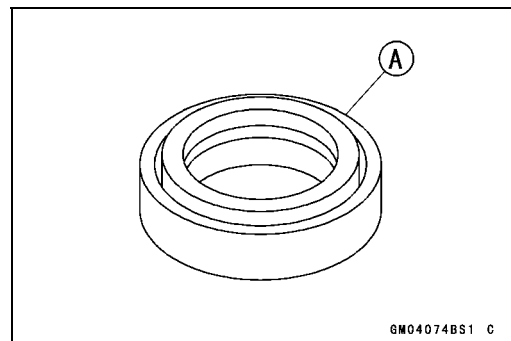
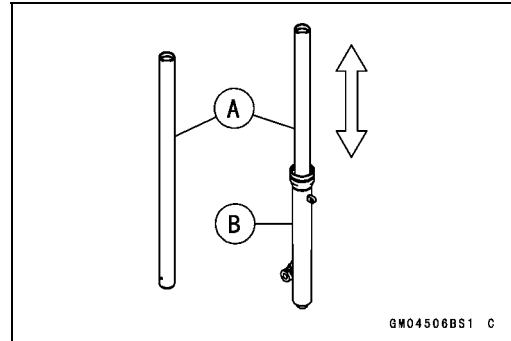
- Temporarily assemble the inner and outer [B] tubes, and pump them back and forth manually to check for smooth operation.
- ★ If you feel binding or catching, the inner and outer tubes must be replaced.

#### WARNING

A straightened inner or outer fork tube may fall in use, possibly causing an accident resulting in serious injury or death. Replace a badly bent or damaged inner or outer tube and inspect the other tube carefully before reusing it.

#### Oil Seal Inspection

- Replace the oil seal [A] with a new one whenever it has been removed.



#### Spring Tension Inspection

- Since a spring becomes shorter as it weakens, check its free length [A] to determine its condition.
- ★ 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 from motorcycle stability.

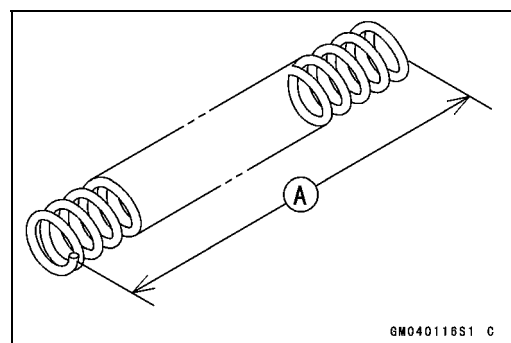
#### Spring Free Length

##### Standard:

KLX110C Models	442.7 mm (17.43 in.)
KLX110D Models	498.9 mm (19.64 in.)

##### Service Limit:

KLX110C Models	433.8 mm (17.08 in.)
KLX110D Models	488.9 mm (19.25 in.)



## Rear Shock Absorber

### Rear Shock Absorber Removal

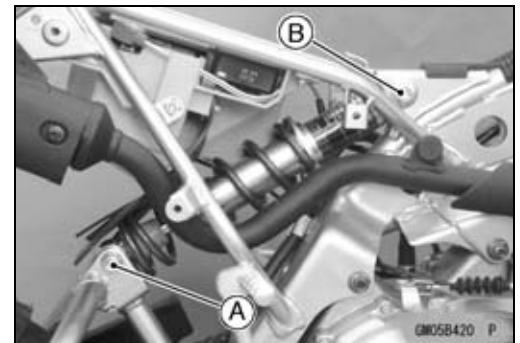
- Remove:
  - Seat (see Seat Removal in the Frame chapter)
  - Fuel Tank (see Fuel Tank Removal in the Fuel System chapter)
- Raise the rear wheel off the ground with the jack.
 

Special Tool - Jack: 57001-1238

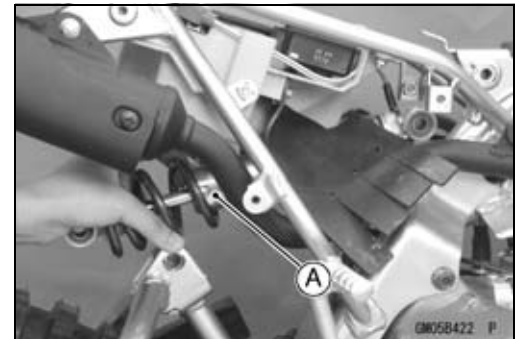
#### NOTICE

When pulling out the mounting bolts, lift the rear wheel slightly. Forcing or tapping on a bolt could damage the bolt, sleeve and bearing.

- Remove:
  - Rear Shock Absorber Mounting Nut [A] and Bolt (Lower)
  - Rear Shock Absorber Mounting Nut [B] and Bolt (Upper)



- Remove the rear shock absorber [A] backward.



### Rear Shock Absorber Installation

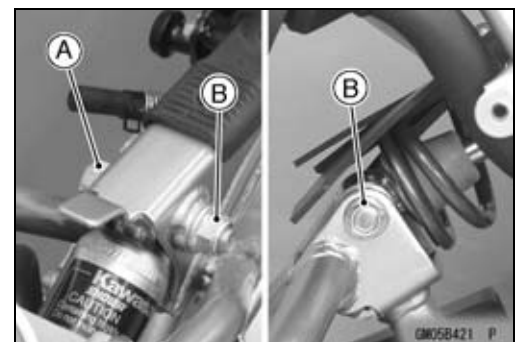
- Installation is the reverse of removal; note the following.
- Replace the rear shock absorber mounting nuts [B] with new ones.
- Tighten:

Torque - Rear Shock Absorber Mounting Bolt (Upper) [A]:

39 N·m (4.0 kgf·m, 29 ft·lb)

Rear Shock Absorber Mounting Nuts: 39 N·m (4.0

kgf·m, 29 ft·lb)

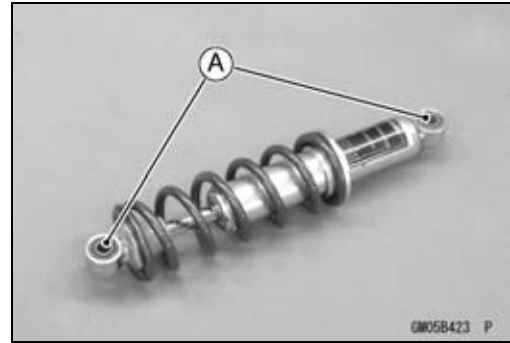


## 12-14 SUSPENSION

### Rear Shock Absorber

#### **Rear Shock Absorber Inspection**

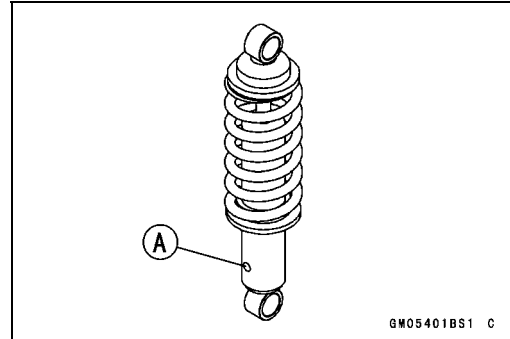
- Remove the rear shock absorber (see Rear Shock Absorber Removal).
- Visually inspect the following items.
  - Oil Leakage
  - Crack or Dent
- ★ If there is any damage to the rear shock absorber, replace it.
- Visually inspect the rubber bushings [A].
- ★ If it show any signs of damage, replace it.



#### **Rear Shock Absorber Scrapping**

##### **⚠ WARNING**

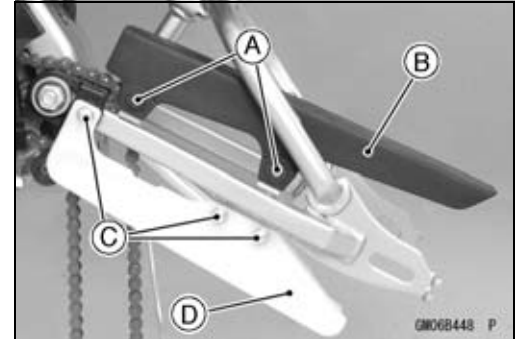
Since the rear shock absorber contains nitrogen gas, do not incinerate the rear shock absorber without first releasing the gas or it may explode. Before a rear shock absorber is scrapped, drill a hole at the point [A] shown to release the nitrogen gas completely. Wear safety glasses when drilling the hole, as the gas may blow out bits of drilled metal when the hole opens.



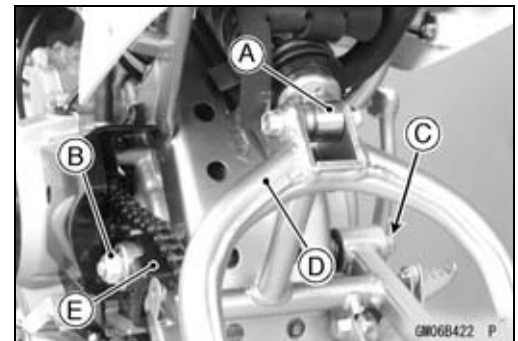
## Swingarm

### Swingarm Removal

- Raise the rear wheel off the ground with the jack.
  - Special Tool - Jack: 57001-1238**
- Remove:
  - Drive Chain (see Drive Chain Removal in the Final Drive chapter)
  - Rear Wheel (see Rear Wheel Removal in the Wheels/Tires chapter)
- Remove:
  - Drive Chain Cover Bolts [A]
  - Drive Chain Cover [B]
  - Drive Chain Guide Bolts [C]
  - Drive Chain Guide [D]



- Remove:
  - Rear Shock Absorber Lower End [A] (see Rear Shock Absorber Removal)
  - Swingarm Pivot Shaft Nut [B]
- Pull out the Swingarm pivot shaft [C] and remove the swingarm [D] backward.
- Remove the chain slipper [E] from the swingarm.



### Swingarm Installation

- Installation is the reverse of removal.
- Replace the rear shock absorber mounting nut [A] and swingarm pivot shaft nut [B] with new ones.
- Tighten the pivot shaft nut after installing the rear shock absorber.

**Torque - Rear Shock Absorber Mounting Nut: 39 N·m (4.0 kgf·m, 29 ft·lb)**

**Swingarm Pivot Shaft Nut: 78 N·m (8.0 kgf·m, 58 ft·lb)**

