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# Steering

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## Exploded View

No.	Fastener	Torque			Remarks
		N·m	kgf·m	ft·lb	
1	Handlebar Holder Bolts	25	2.5	18	
2	Steering Stem Head Nut	44	4.5	32	
3	Steering Stem Nut	4.9	0.50	43 in·lb	T
4	Front Fork Clamp Bolts (Upper)	20	2.0	15	
5	Front Fork Clamp Bolts (Lower)	30	3.1	22	

AD: Apply adhesive cement.

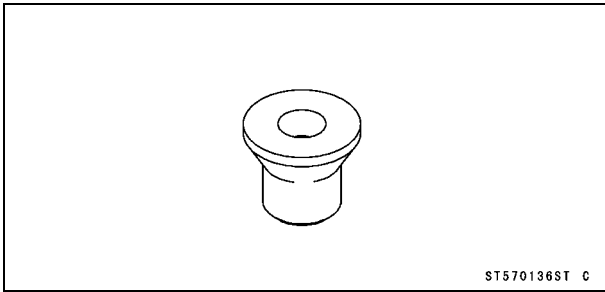
G: Apply grease.

T: First, tighten the stem nut with 39 N·m (4.0 kgf·m, 29 ft·lb) of torque, then loosen it and retighten it with 4.9 N·m (0.50 kgf·m, 43 in·lb) of torque.

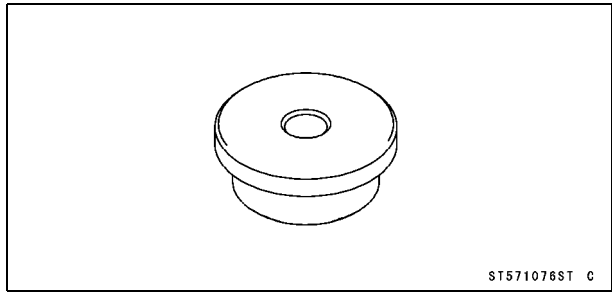
# 13-4 STEERING

## Special Tools

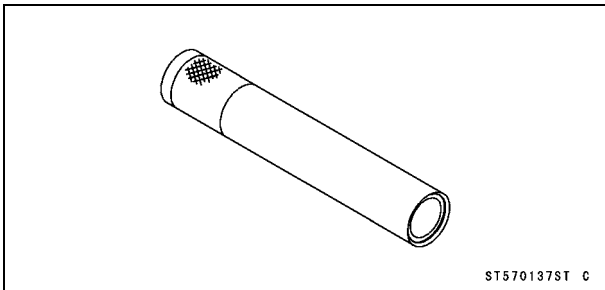
**Bearing Puller Adapter:  
57001-136**



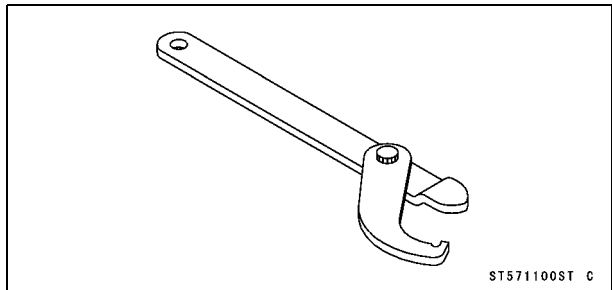
**Head Pipe Outer Race Driver,  $\phi$ 51.5:  
57001-1076**



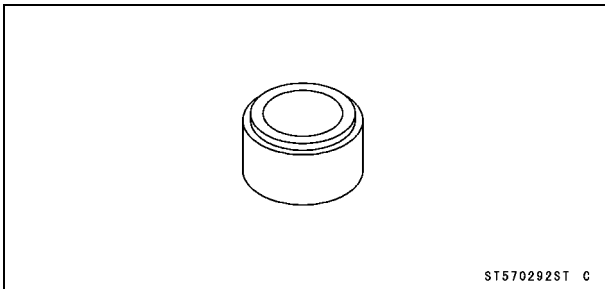
**Steering Stem Bearing Driver:  
57001-137**



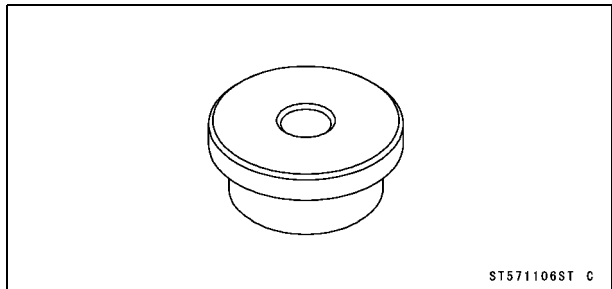
**Steering Stem Nut Wrench:  
57001-1100**



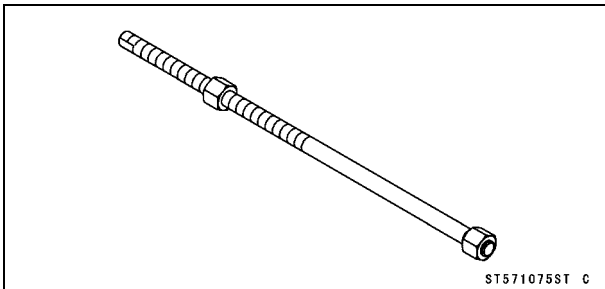
**Steering Stem Bearing Driver Adapter,  $\phi$ 32:  
57001-292**



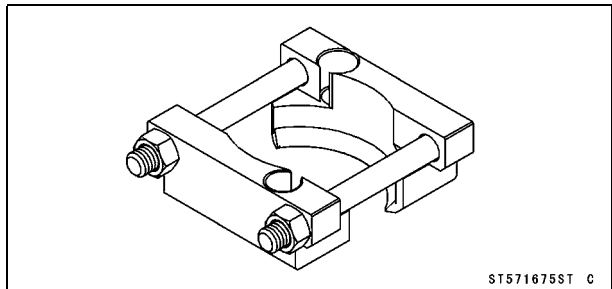
**Head Pipe Outer Race Driver,  $\phi$ 46.5:  
57001-1106**



**Head Pipe Outer Race Press Shaft:  
57001-1075**



**Bearing Puller:  
57001-1675**



**Steering**

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***Steering Inspection***

- Refer to the Steering Inspection in the Periodic Maintenance chapter.

***Steering Adjustment***

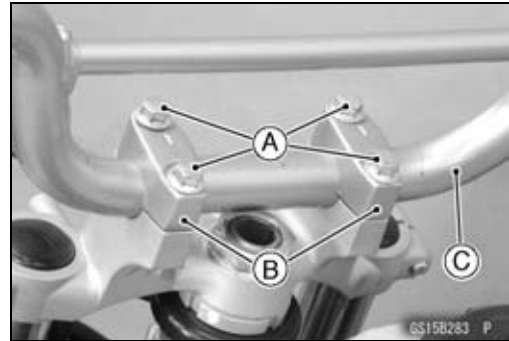
- Refer to the Steering Adjustment in the Periodic Maintenance chapter.

## 13-6 STEERING

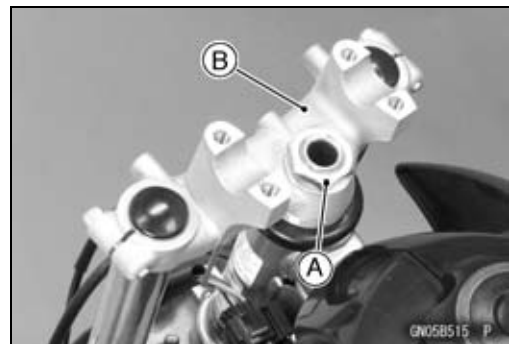
### Steering Stem

#### **Steering Stem, Stem Bearing Removal**

- Remove:
  - Front Wheel (see Front Wheel Removal in the Wheels/Tires chapter)
  - Front Fender (see Front Fender Removal in the Frame chapter)
- Remove:
  - Number Plate (see Number Plate Removal in the Frame chapter)
  - Handlebar Holder Bolts [A]
  - Handlebar Holders [B]
  - Handlebar [C]

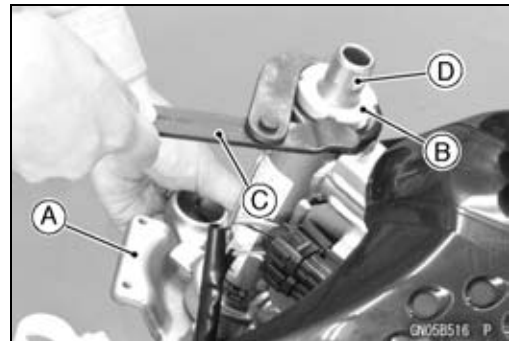


- Loosen the steering stem head nut [A].
- Remove the front fork (see Front Fork Removal in the Suspension chapter).
- Remove the head nut and the steering stem head [B].

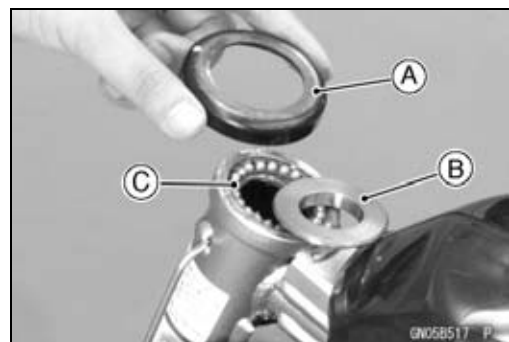


- Pushing up on the stem base [A], and remove the steering stem nut [B] with the steering stem nut wrench [C], then remove the steering stem [D] and stem base.

**Special Tool - Steering Stem Nut Wrench: 57001-1100**



- Remove:
  - Steering Stem Cap [A]
  - Upper Inner Race [B]
  - Steel Balls [C]
- There are 23 steel balls installed in the upper outer race.

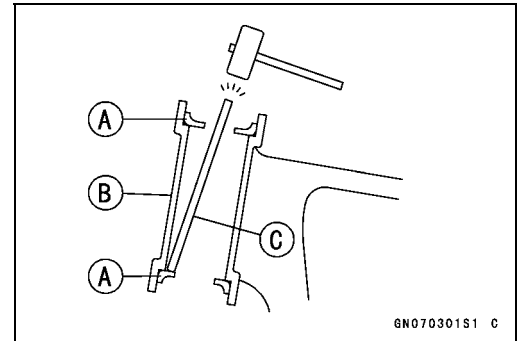


## Steering Stem

- To remove the outer races [A] pressed into the head pipe [B], insert a bar [C] into the head pipe, and hammer evenly around the circumference of the opposite race to drive it out.

### NOTE

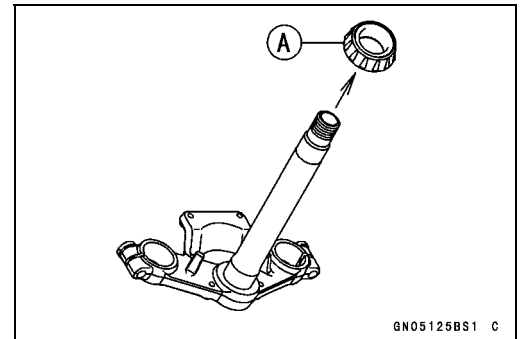
○ If either steering stem bearing is damaged, it is recommended that both the upper and lower bearing (including outer races) should be replaced with new ones.



- Remove the lower stem bearing inner race (tapered roller bearing) [A] with its grease seal from the stem using bearing puller.

**Special Tools - Bearing Puller: 57001-1675**

**Bearing Puller Adapter: 57001-136**



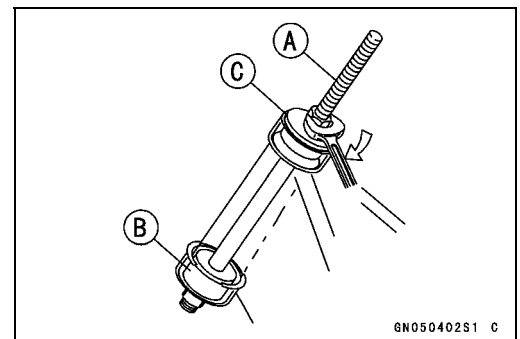
### Steering Stem, Stem Bearing Installation

- Replace the bearing outer race with new ones.
- Apply grease to the outer races, and drive them into the head pipe at the same time using the head pipe outer race press shaft [A] and the head pipe outer race drivers.

**Special Tools - Head Pipe Outer Race Press Shaft: 57001-1075**

**Head Pipe Outer Race Driver,  $\phi$ 51.5: 57001-1076 [B]**

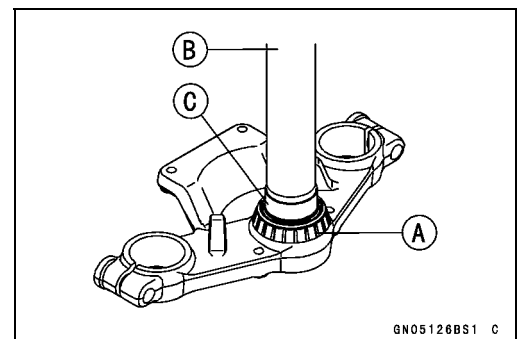
**Head Pipe Outer Race Driver,  $\phi$ 46.5: 57001-1106 [C]**



- Replace the lower inner races with new ones.
- Apply grease to the lower tapered roller bearing [A], and drive it onto the stem using the steering stem bearing driver [B] and adapter [C].

**Special Tools - Steering Stem Bearing Driver: 57001-137**

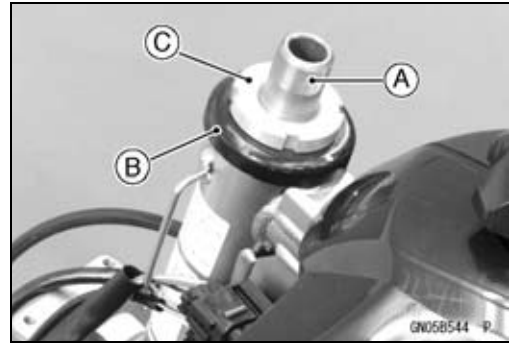
**Steering Stem Bearing Driver Adapter,  $\phi$ 32: 57001-292**



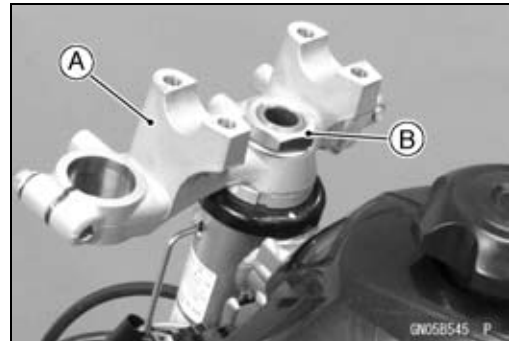
## 13-8 STEERING

### Steering Stem

- Apply grease liberally to the upper outer race in the head pipe so that the steel balls will stick in place during stem insertion, and install upper steel balls.
- Insert the steering stem [A] carefully through the head pipe so that the steel balls on the steering stem does not fall.
- Install the stem cap [B] and steering stem nut [C], and tighten it by hand.



- Install the stem head [A].
- Tighten the stem head nut [B] lightly.



- Settle the bearing in place as follows;
  - Tighten the stem nut to 39 N·m (4.0 kgf·m, 29 ft·lb) of torque. (To tighten the steering stem nut to the specified torque, hook the wrench [A] on the stem nut, and pull the wrench at the hole by 22.2 kg force [B] in the direction shown.)

#### Special Tool - Steering Stem Nut Wrench: 57001-1100

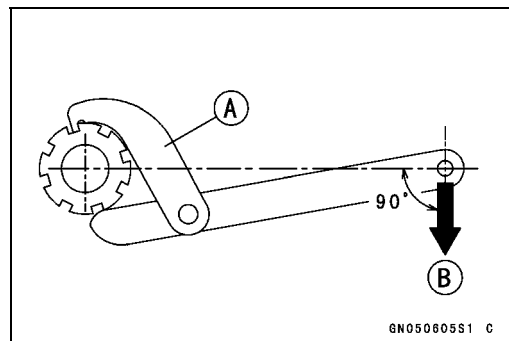
- Check that there is no play and the steering stem turns smoothly without rattles. If not, the steering stem bearings may be damaged.
- Again back out the stem nut a fraction of a turn until it turns lightly.
- Turn the stem nut lightly clockwise until it just becomes hard to turn. Do not overtighten, or the steering will be too tight.

#### Torque - Steering Stem Nut: 4.9 N·m (0.50 kgf·m, 43 in·lb)

- Install the front fork (see Front Fork Installation in the Suspension chapter).

#### NOTE

- Tighten the fork upper clamp bolts first, next the stem head nut, last the fork lower clamp bolt.





## Steering Stem

- Tighten:
  - Torque - Steering Stem Head Nut [A]: 44 N·m (4.5 kgf·m, 32 ft·lb)
  - Front Fork Clamp Bolts (Upper) [B]: 20 N·m (2.0 kgf·m, 15 ft·lb)
  - Front Fork Clamp Bolts (Lower) [C]: 30 N·m (3.1 kgf·m, 22 ft·lb)
- Install the other removed parts (see appropriate chapters).

### **⚠ WARNING**

**If the handlebar does not turn to the steering stop it may cause an accident resulting in injury or death. Be sure the cables, harnesses and hoses are routed properly and do not interfere with handlebar movement (see Cable, Wire, and Hose Routing section in the Appendix chapter).**

- Check and Adjust:
  - Steering
  - Front Brake
  - Clutch Cable (KLX110D Models)
  - Throttle Cable

### **Stem Bearing Lubrication**

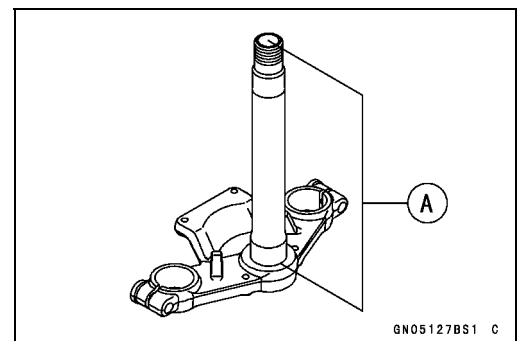
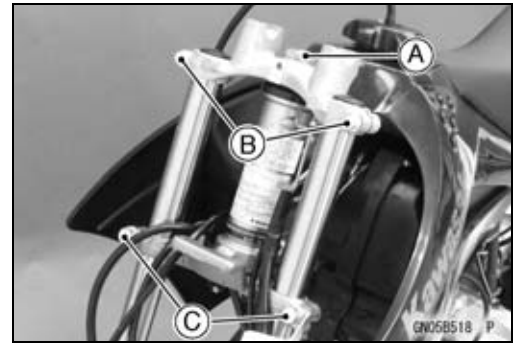
- Refer to the Stem Bearing Lubrication in the Periodic Maintenance chapter.

### **Stem Bearing Inspection**

- Using high flash-point solvent, wipe the bearings clean of grease and dirt.
- Wipe the upper and lower outer races, which are press-fitted into the frame head pipe, clean off grease and dirt.
- Check the upper races and steel balls.
- ★ If the balls or races are worn, or if either race is dented, replace both races and all the balls for that bearing as a set.
- Visually check the lower outer race and tapered roller.
- ★ Replace the bearing assembly if it show damage.

### **Stem Warp Inspection**

- Whenever the steering stem is removed, or if the steering cannot be adjusted for smooth action, check the steering stem for straightness.
- ★ If the steering stem shaft [A] is bent, replace the steering stem.

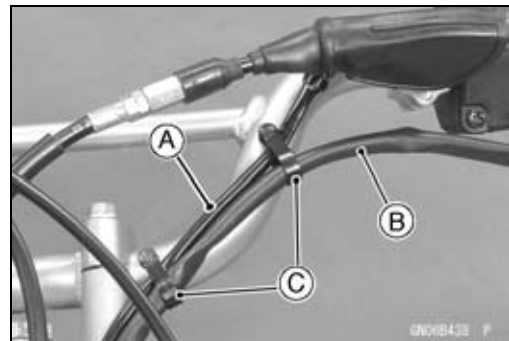
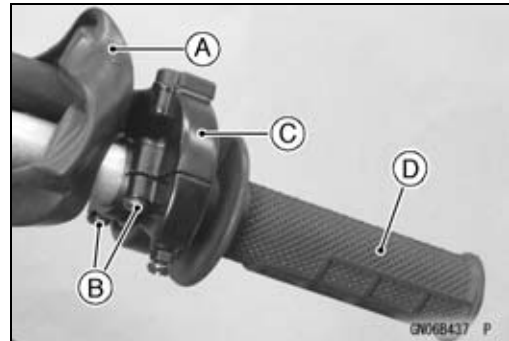
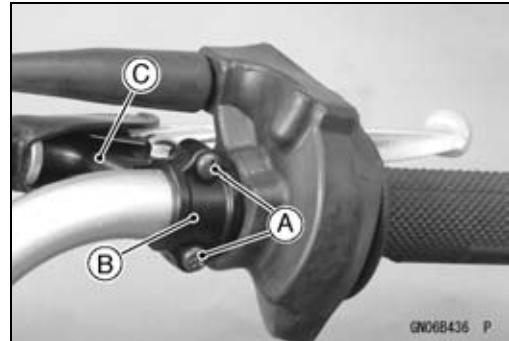


## 13-10 STEERING

### Handlebar

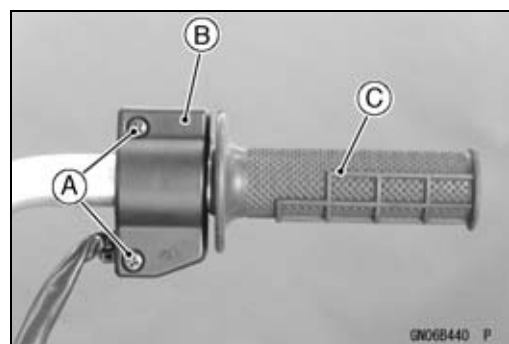
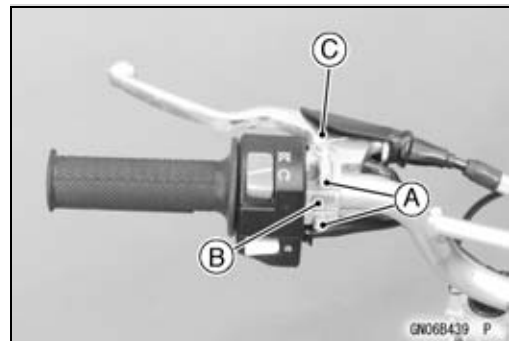
#### Handlebar Removal

- Remove:
  - Number Plate (see Number Plate Removal in the Frame chapter)
  - Screws [A]
  - Brake Lever Holder [B]
  - Brake Lever Assembly [C]
- Slide out the dust cover [A].
- Loosen the screws [B] and remove the throttle cable housing [C] together with the throttle grip [D] from the handlebar.
- Free the starter lockout switch lead [A] (KLX110D models only) and left switch housing lead [B] from the clamps [C].



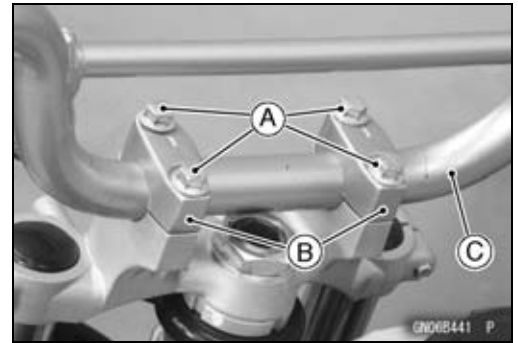
#### KLX110D Models

- Remove:
  - Bolts [A]
  - Clutch Lever Holder [B]
  - Clutch Lever Assembly [C]
- Remove:
  - Screws [A]
  - Left Switch Housing [B]
  - Left Handlebar Grip [C]



## Handlebar

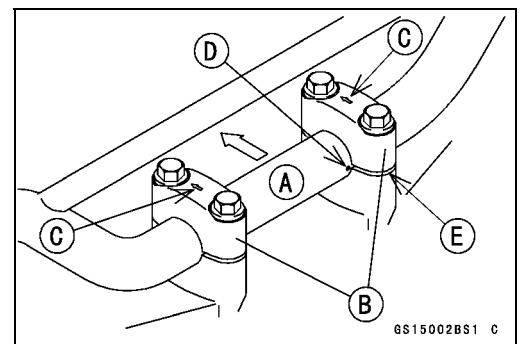
- Remove:
  - Handlebar Holder Bolts [A]
  - Handlebar Holders [B]
  - Handlebar [C]



### Handlebar Installation

- Apply adhesive to the inside of the left handlebar grip.
- Install the left handlebar grip so that the projection of grip aligns with the punch mark of the handlebar.
- Mount the handlebar holders [B] so that the arrows [C] on the holder point at the front [A].
- Align the punch mark [D] on the handlebar to the mating surface of each holders of handlebar.
- Tighten the holder bolts, front first and then the rear. If the handlebar holder is correctly installed, there will be no gap at the front and a gap [E] at the rear after tightening.
- Tighten the handlebar holder bolts to the specified torque.

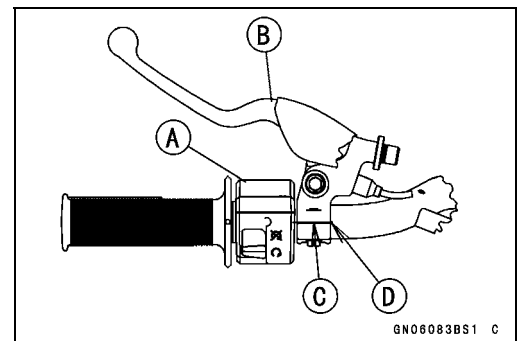
**Torque - Handlebar Holder Bolts: 25 N·m (2.5 kgf·m, 18 ft·lb)**



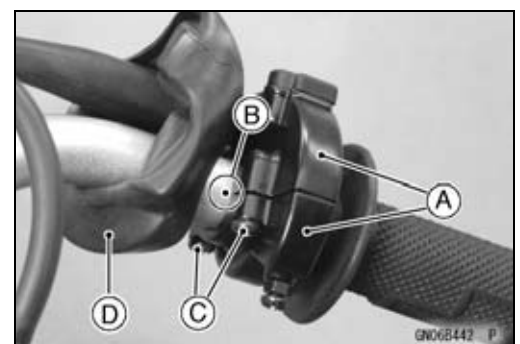
- Install the left switch housing [A].

### KLX110D Models

- Install the clutch lever [B].
- Position the clutch lever so that the mating surface [C] aligns with the punch mark [D] of the handlebar.



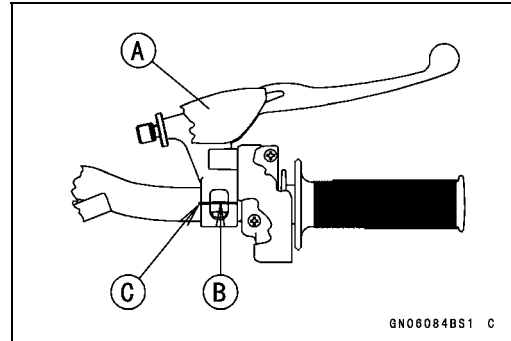
- Install the throttle grip assembly so that the grip is in as far as it will go.
- Position the throttle grip assembly so that the mating surface of the throttle cases [A] aligns with the punch mark [B] of the handlebar, and tighten the screws [C].
- Slip the dust cover [D] back onto place.



## 13-12 STEERING

### Handlebar

- Install the brake lever [A].
- Position the brake lever so that the mating surface [B] aligns with the punch mark [C] of the handlebar.



- Install the number plate (see Number Plate Installation in the Frame chapter).
- Route the cables and leads correctly (see Cable, Wire, and Hose Routing section in the Appendix chapter).