

VULCAN® S **VULCAN® S ABS**

Motorcycle **Assembly & Preparation** **Manual**



Kawasaki

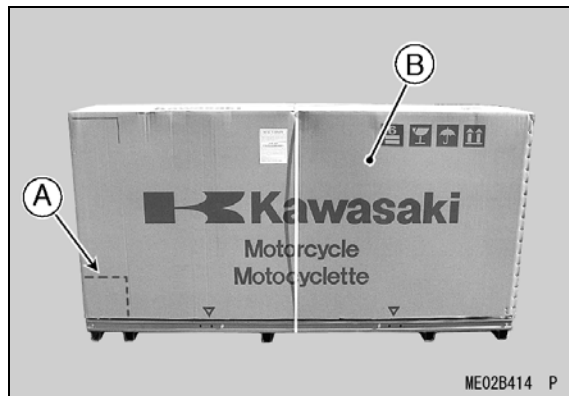
Recharge the Battery First!

The motorcycle comes with a pre-filled, pre-charged sealed battery, eliminating the need for dealers to prepare the battery by filling it with electrolyte. However, the battery must be charged upon initial receipt of each unit since it may have been warehoused for a significant time period before being delivered to your dealership.

After the initial charge at your dealership the battery should be recharged every six months. Because the battery will discharge more rapidly at high ambient temperatures, more frequent charging intervals may be required for dealerships located in hot climate zones.

When the battery is not charged periodically during long term storage, its internal resistance increases and could prevent the battery from being recharged. Refer to the "Battery Service" chapter for details.

The battery is located within the crate at the lower left corner indicated with a dotted line. The battery can be removed from the crate for charging by cutting off a portion of the cardboard cover along the dotted line.



- A. Dotted Line for Battery Location
- B. Cardboard Cover

Foreword

In order to ship Kawasaki vehicles as efficiently as possible, they are partially disassembled before crating. Since some of the most commonly removed parts have a direct bearing on a vehicle's reliability and safety, conscientious pre-sale assembly and preparation becomes extremely important. Good setup procedures can prevent needless warranty claims and give customers a greater sense of confidence in Kawasaki and their Kawasaki Dealers.

This Assembly and Preparation Manual explains step by step procedures of the following items for all Kawasaki VULCAN S, VULCAN S ABS.

1. Uncrating
2. Assembly
3. Preparation

The selling dealer assumes sole responsibility for any unauthorized modifications prior to sale. Refer to your Service Binder for any Service Bulletins specifying Factory Directed Modifications (Special Claims) which must be performed before the vehicle is ready for sale.

Whenever you see the following symbols heed their instructions! Always follow safe operating and maintenance practices.

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

NOTE

○*NOTE* indicates information that may help or guide you in the operation or service of the vehicle.

Kawasaki Heavy Industries, Ltd. accepts no liability for any inaccuracies or omissions in this publication, although every possible measure has been taken to make it as complete and accurate as possible. All procedures and specifications subject to change without notice.

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Uncrating

Opening Crate

⚠ WARNING

Crates have sharp edges and may have nails or screws that can cause cuts and injury. Always wear protective gloves, boots and eye protection when uncrating to prevent injury.



MC03003B S

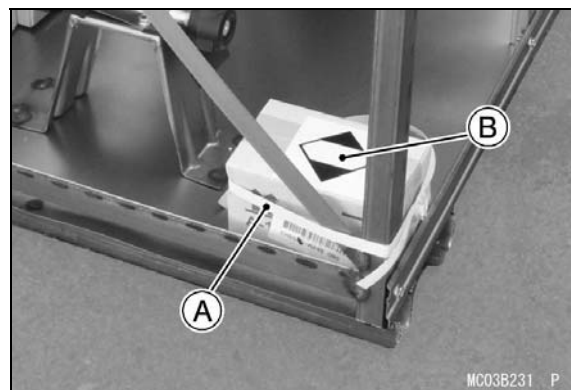
⚠ WARNING

The steel crate panel plates and fasteners have sharp edges. Always wear protective gloves, boots and eye protection when uncrating to prevent injury.



MC03004B S

- Clear a space about 6 m (20 ft) square to give yourself plenty of space to work.
- Place the crate upright on its base.
- Remove the cardboard cover.
- Remove the battery cardboard box first. Cut the strap and remove the battery cardboard box from the crate base.



A. Straps

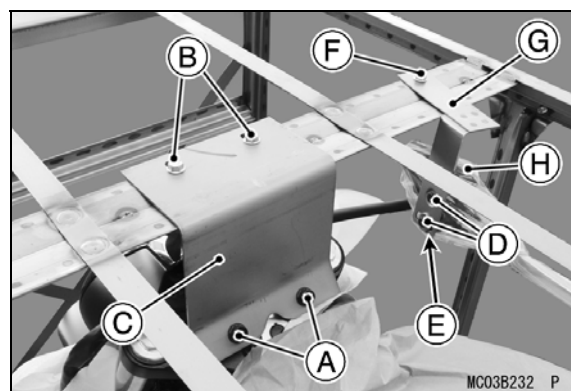
B. Battery Cardboard Box

- Remove the parts box.

NOTICE

When removing the crate bracket from the motorcycle, be careful not to drop any parts or the bracket onto the fuel tank and other components, and not to scratch the fuel tank or other components with the crate bracket.

- First, remove the lower bolts (D = 10, L = 18) at the steering stem and discard them.
- Remove the upper bolts (D = 8, L = 16) to take off the crate bracket and discard them.
- Remove the lower bolts (D = 6, L = 12) and washer to take off the front master cylinder.
- Remove the upper bolt (D = 8, L = 16) to take off the crate bracket and discard it.



A. Lower Bolts (D = 10, L = 18)

B. Upper Bolts (D = 8, L = 16)

C. Crate Bracket

D. Lower Bolts (D = 6, L = 12)

E. Washer

F. Upper Bolt (D = 8, L = 16)

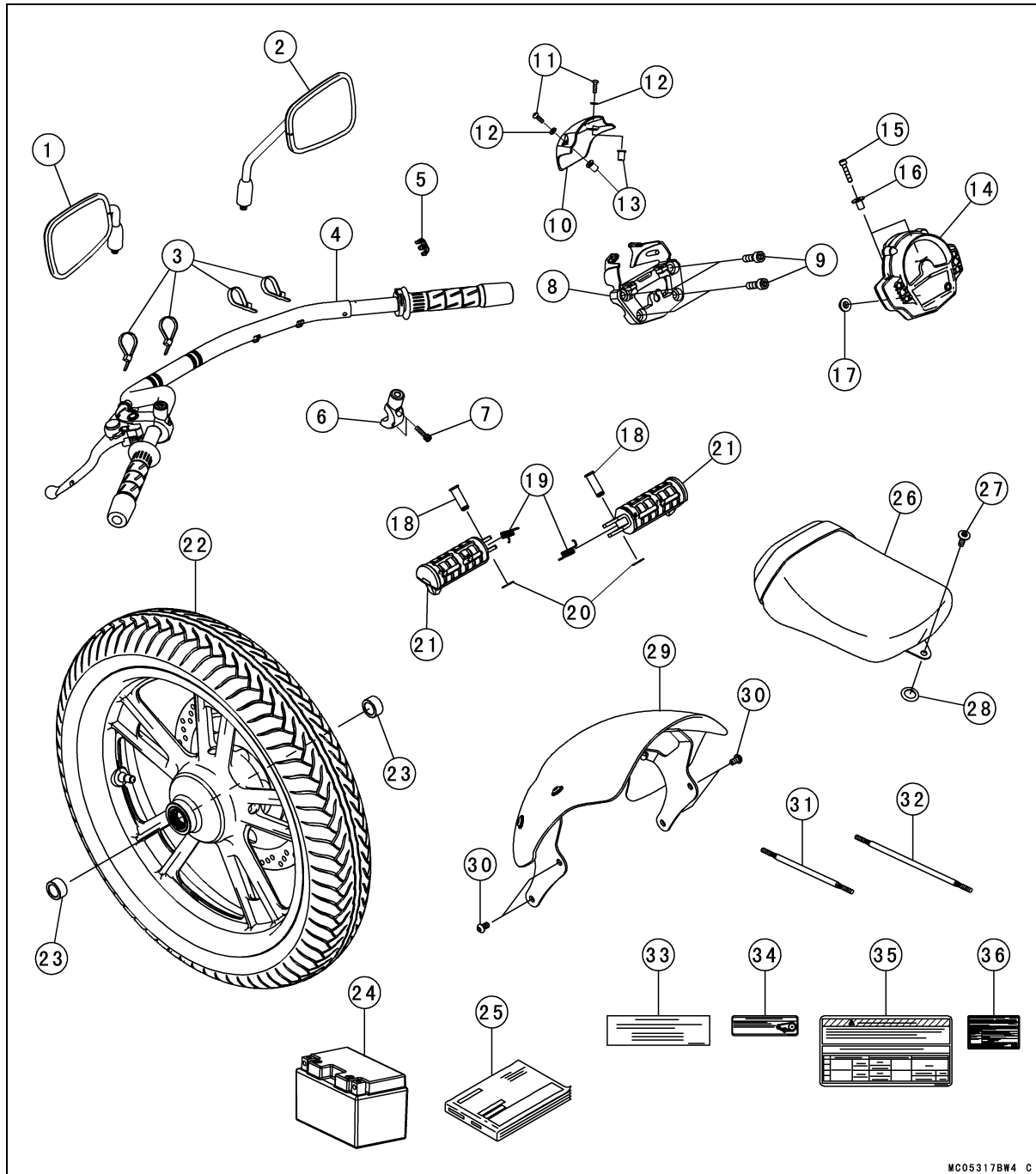
G. Crate Bracket

H. Front Master Cylinder

4 UNCRATING

Parts Check

- Open the parts box, and check the parts against the illustrations. There may be minor differences between these illustrations and the actual vehicle parts. In the following charts under Remarks, D = diameter in millimeters, and L = length in millimeters.



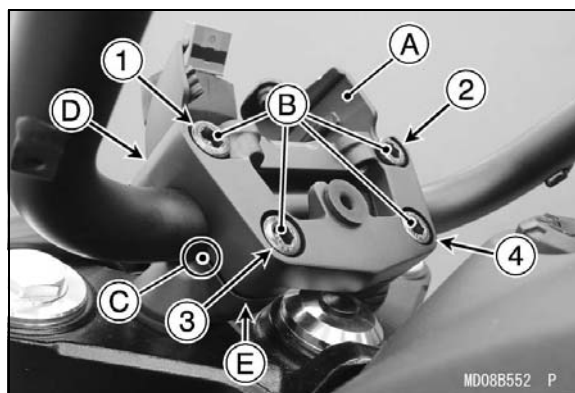
No.	Part Name	Qty	Remarks
1	Left Rear View Mirror	1	L = 140
2	Right Rear View Mirror	1	
3	Plastic Clamp	4	
4	Handlebar Assembly	1	
5	Clamp, Cable	1	
6	Clamp	1	
7	Socket Bolt	2	D = 6, L = 22
8	Handlebar Holder	1	D = 10, L = 30
9	Socket Bolt	4	
10	Meter Cover	1	D = 5, L = 16
11	Socket Bolt	2	
12	Washer	2	D = 5
13	Wellnut	2	
14	Meter with Dampers	1	D = 6, L = 30
15	Socket Bolt	2	
16	Collar	2	D = 6.3
17	Damper	1	D = 6
18	Pin	2	D = 12, L = 37
19	Spring	2	
20	Circlip	2	
21	Footpeg	2	D = 30
22	Front Tire	1	
23	Collar	2	
24	Battery YTZ10	1	12 V 8.6 Ah
25	Owner's Manual	1	
(Equipped Model only)			
26	Passenger's Seat	1	D = 8, L = 25
27	Socket Bolt, Passenger's Seat	1	
28	Cap, Passenger's Seat	1	
(EN650E Model only)			
29	Windshield Assembly	1	D = 8, L = 14
30	Socket Bolt	4	
(Europe Model only)			
31	Tie-Rod	1	L = 180
32	Tie-Rod	1	L = 230
(French Label for Canada Model only)			
33	French Table	1	
34	Important Drive Chain Information	1	
35	Tire and Load Data	1	
36	Vehicle Emission Control Information	1	

Assembly

Handlebars

- Tighten the socket bolts (D = 10, L = 30) in the indicated sequence (1 to 4) to the specified torque. There will be a gap at the rear of the handlebar holder after tightening.

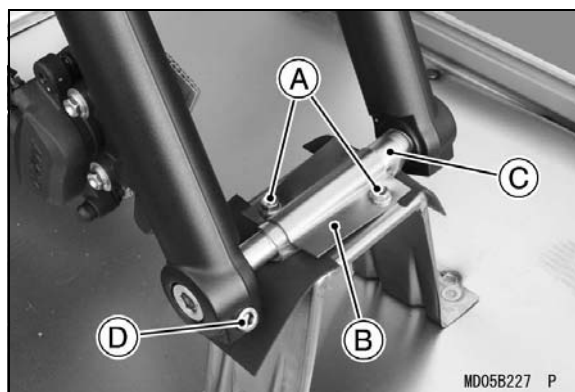
Torque: 34 N·m (3.5 kgf·m, 25 ft·lb)



- A. Upper Handlebar Holder
- B. Socket Bolts (D = 10, L = 30)
- C. Punched Mark
- D. No Gap
- E. Gap

Front Wheel Installation

- Remove the crate bolts (D = 8, L = 18) to take off the crate bracket holding the front axle and discard them.

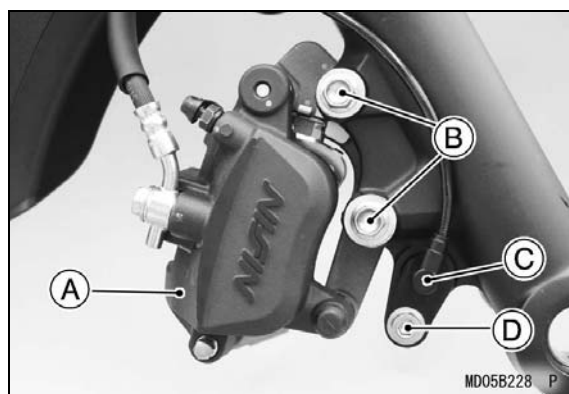


- A. Crate Bolts (D = 8, L = 18)
- B. Crate Bracket
- C. Front Axle
- D. Axle Clamp Bolt (Right)

- Lift the motorcycle off the crate base with the suitable lifter.
- Discard the crate base.
- Loosen the axle clamp bolt on the right fork leg and remove the front axle.
- Remove the front brake caliper mounting bolts (D = 8, L = 45) (2), and remove the front brake caliper.
- Remove the front wheel rotation sensor mounting bolt (D = 8, L = 16), and remove the front wheel rotation sensor (ABS equipped models).

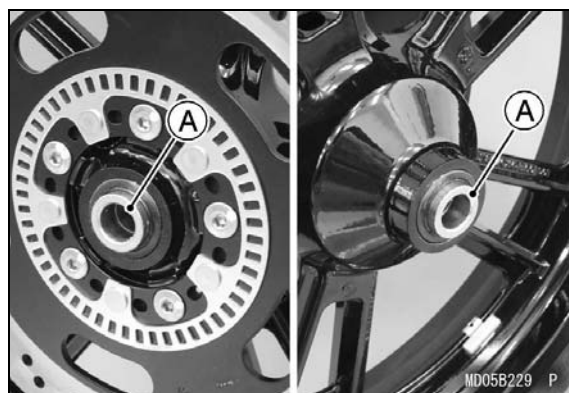
NOTICE

Do not leave the front caliper hanging by the brake hoses. After removing the front caliper, secure them to the frame using a suitable band.



- A. Front Caliper
- B. Front Caliper Mounting Bolts (D = 8, L = 45)
- C. Front Wheel Rotation Sensor (ABS Equipped Models)
- D. Front Wheel Rotation Sensor Mounting Bolt (D = 8, L = 16) (ABS Equipped Models)

- Fit the axle collars (D = 30) on both sides of the front wheel hub. The collars are identical.

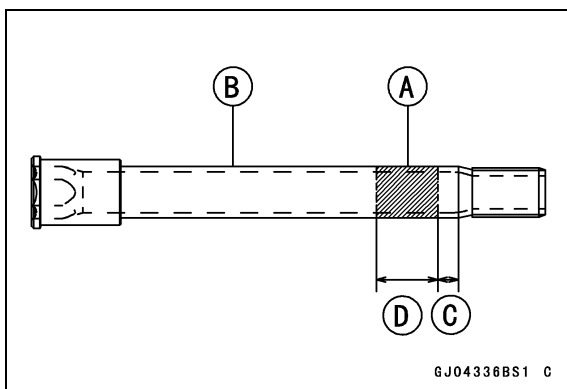


- A. Axle Collars (D = 30)

- Position the front wheel assembly between the fork legs.
- Apply a thin coat of grease to the front axle for rust prevention.

NOTE

○ Do not apply grease to the threads of the axle.



A. Grease Applying Area

B. Front Axle

C. About 10 mm (0.4 in.)

D. About 30 mm (1.2 in.)

- Insert the front axle from the right side of the wheel and push it completely through.

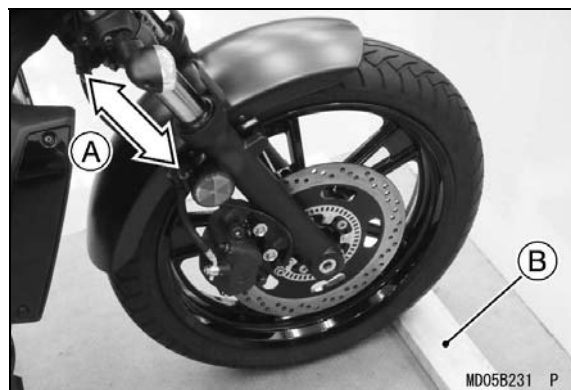


A. Front Axle

- Tighten the front axle to the specified torque.
Torque: 108 N·m (11.0 kgf·m, 79.7 ft·lb)
- Install the front brake caliper, but do not tighten completely.
- Before tightening the axle clamp bolt on the right fork leg, pump the front fork up and down 4 or 5 times to allow the right front fork leg to seat on the front axle.

NOTE

○ Put a block in front of the front wheel to stop moving.



A. Pump the fork up and down.

B. Block

- Tighten the front axle clamp bolt to the specified torque.

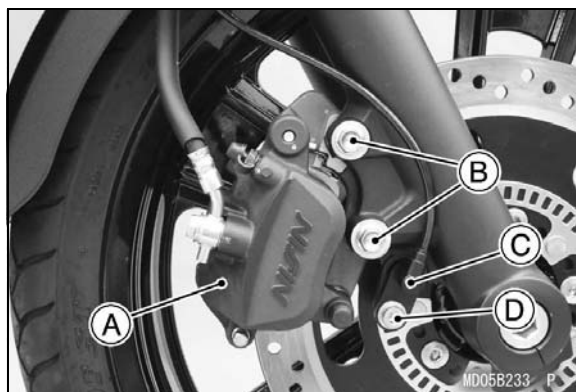
Torque: 34 N·m (3.5 kgf·m, 25 ft·lb)



A. Front Axle Clamp Bolt

- Tighten the front caliper mounting bolts (D = 8, L = 45)(2) to the specified torque.
Torque: 25 N·m (2.5 kgf·m, 18 ft·lb)
- Install the front wheel rotation sensor with the front wheel rotation sensor mounting bolt (D = 8, L = 16) (ABS equipped models).

8 ASSEMBLY



- A. Front Caliper
- B. Front Caliper Mounting Bolts (D = 8, L = 45)
- C. Front Wheel Rotation Sensor (ABS Equipped Models)
- D. Front Wheel Rotation Sensor Mounting Bolt (D = 8, L = 16) (ABS Equipped Models)

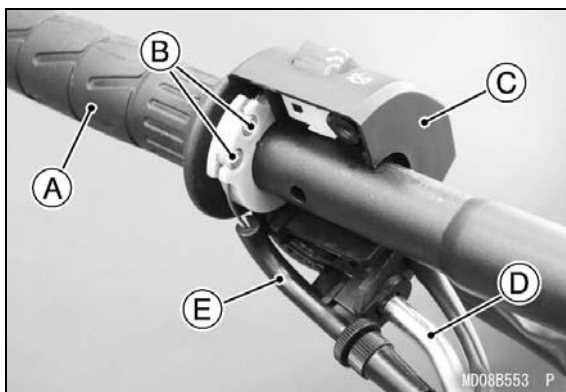
- Check the front brake.

WARNING

It may take several applications of the brake lever before the brake pads contact the disc, which could result in increased stopping distance and cause an accident resulting in injury or death. Do not attempt to ride the motorcycle until a firm brake lever is obtained by pumping the lever until the pads are against the disc.

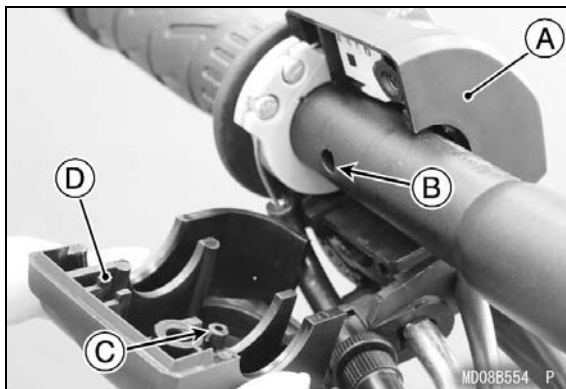
Throttle Grip and Right Switch Housing

- Apply a light coat of grease on the exposed portion of the throttle inner cables.
- Fit both throttle cable tips into the nearest sockets in the throttle grip.



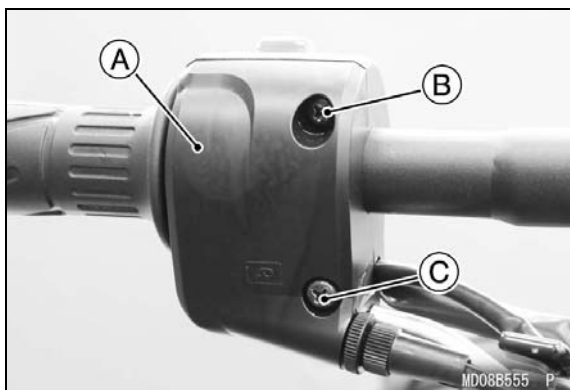
- A. Throttle Grip
- B. Cable Tips : Apply Grease.
- C. Rear Half
- D. Throttle Cable (Decelerator Cable)
- E. Throttle Cable (Accelerator Cable)

- Fit the two halves of the right switch housing so that the projection on the front half fits into the hole in the handlebar.



- A. Rear Half
- B. Hole
- C. Projection
- D. Front Half

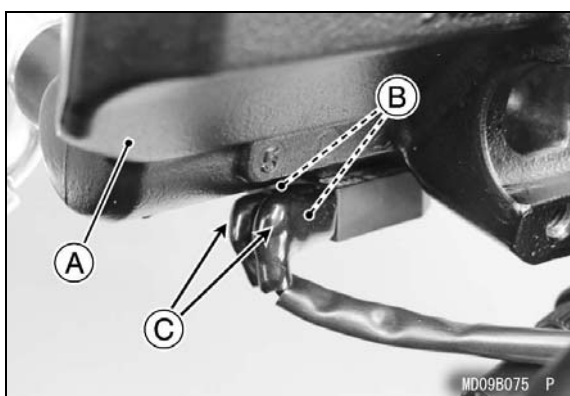
- Insert the two screws (D = 5, L = 25) (D = 5, L = 40) and tighten them to the specified torque.
Torque: 3.5 N·m (0.36 kgf·m, 31 in·lb)



- A. Right Switch Housing**
- B. Screw (D = 5, L = 25)**
- C. Screw (D = 5, L = 40)**

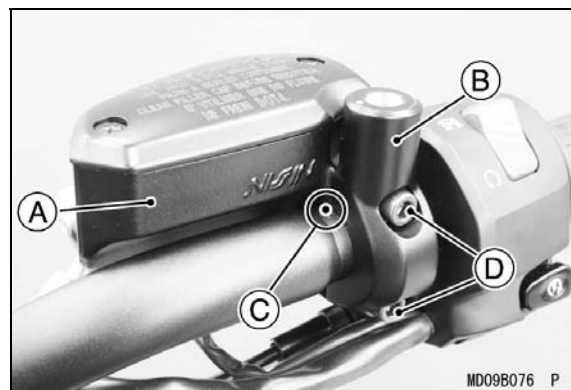
Front Brake Master Cylinder

- Connect the right switch housing lead connectors to the front brake light switch terminals on the front brake master cylinder.



- A. Front Master Cylinder**
- B. Brake Light Switch Terminals**
- C. Connectors and Dust Covers**

- Install the front master cylinder with its clamp and the two bolts (D = 6, L = 22).
- Position the master cylinder so that the mating surface of the front and rear master cylinder clamps align with the punched mark on the handlebar.



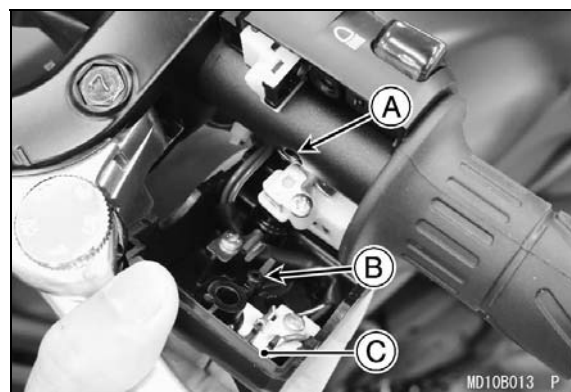
- A. Front Master Cylinder**
- B. Clamp**
- C. Punched Mark**
- D. Socket Bolts (D = 6, L = 22)**

- Tighten the upper clamp bolt first and then the lower clamp bolt to the specified torque.

Torque: 11 N·m (1.1 kgf·m, 97 in·lb)

Left Switch Housing

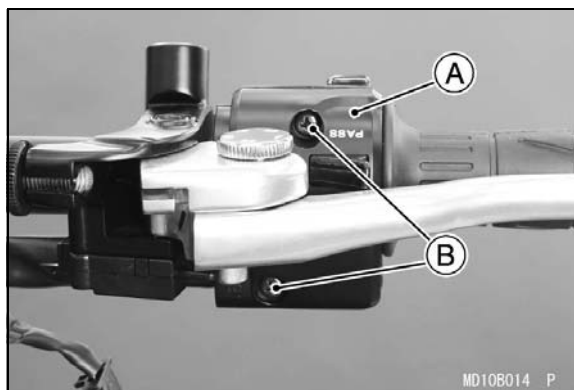
- Fit the two halves of the left switch housing together so that the small projection on the front half fits into the hole in the handlebar.



- A. Hole**
- B. Projection**
- C. Front Half**

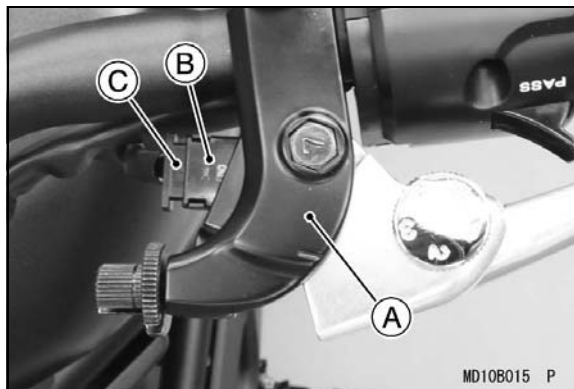
- Insert the two screws (D = 5, L = 25) and tighten them to the specified torque.

Torque: 3.5 N·m (0.36 kgf·m, 31 in·lb)



A. Left Switch Housing
B. Screws (D = 5, L = 25)

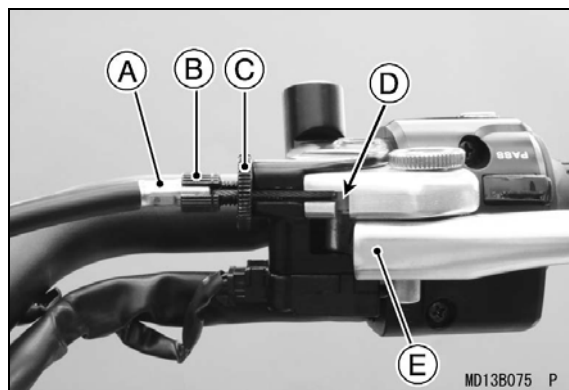
- Connect the left switch housing connector to the starter lockout switch on the clutch lever assembly.



A. Clutch Lever Assy
B. Starter Lockout Switch
C. Connector

Clutch Cable

- Apply a light coat of grease on the clutch inner cable.
- Line up the slots on the clutch lever, locknut, and adjuster.
- Fit the tip of the clutch inner cable into the lever socket, slide the inner cable through the slots, and release the outer cable into the adjuster.



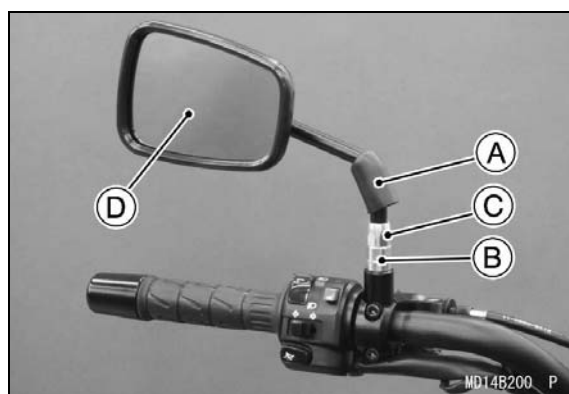
A. Clutch Cable
B. Adjuster
C. Locknut
D. Cable Tip
E. Clutch Lever

Rear View Mirrors

- Slide up the rubber boot.
- Screw the mounting area of the left rear view mirror into the holder all the way, and tighten the lower hexagonal area securely.
- Turn the stay to assure visibility to the rear with the operator sitting on the motorcycle.
- While holding the lower hexagonal area, tighten the upper hexagonal area (locknut).

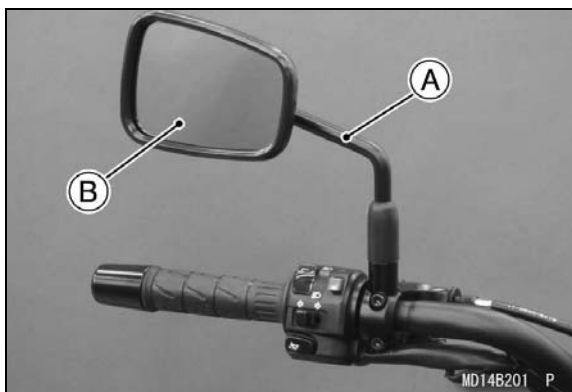
NOTE

- The upper hexagonal area (locknut) has left hand threads.



A. Rubber Boot
B. Lower Hexagonal Area for Tightening
C. Upper Hexagonal Area (Locknut)
D. Rear View Mirror

- Slide the rubber boot to the original position.
- Adjust the rear view mirror by slightly moving only the mirror portion of the assembly.

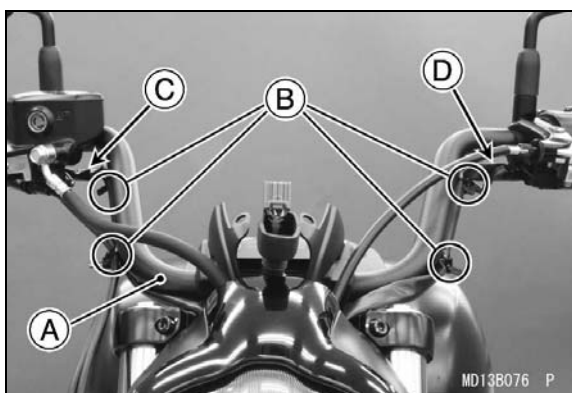


A. Stay
B. Mirror

- Installation and adjustment of the right side mirror is common with the left side mirror. Follow the procedure specified for the left side mirror.

Wiring Clamps

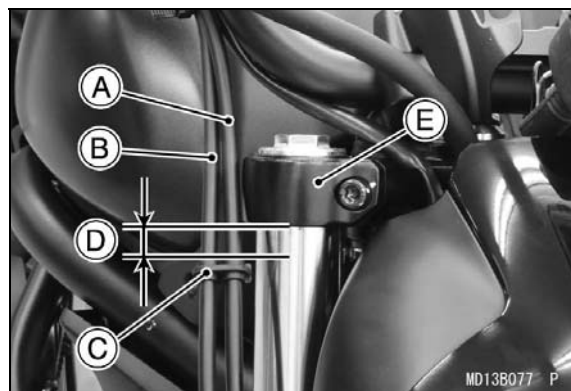
- Fasten the right and left switch housing harnesses and throttle cables to the handlebars with plastic clamps (L = 140) as shown.



A. Handlebars
B. Plastic Clamps (L = 140)
C. Right Switch Housing Harness
D. Left Switch Housing Harness

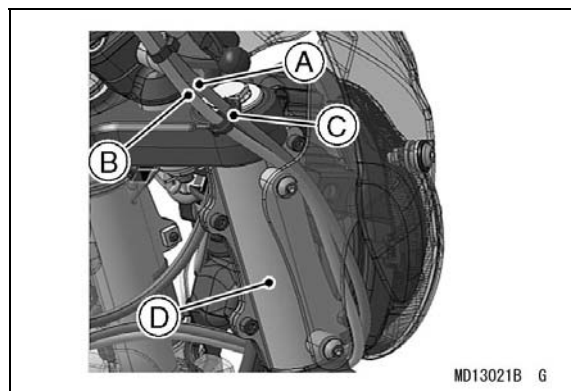
- Fasten the throttle cables with clamp as shown.
- Cut the clamp ends.

Other than EN650E Model



A. Throttle Cable (Accelerator)
B. Throttle Cable (Decelerator)
C. Clamp
D. 5 ~ 25 mm
E. Front Fork (Right Side)

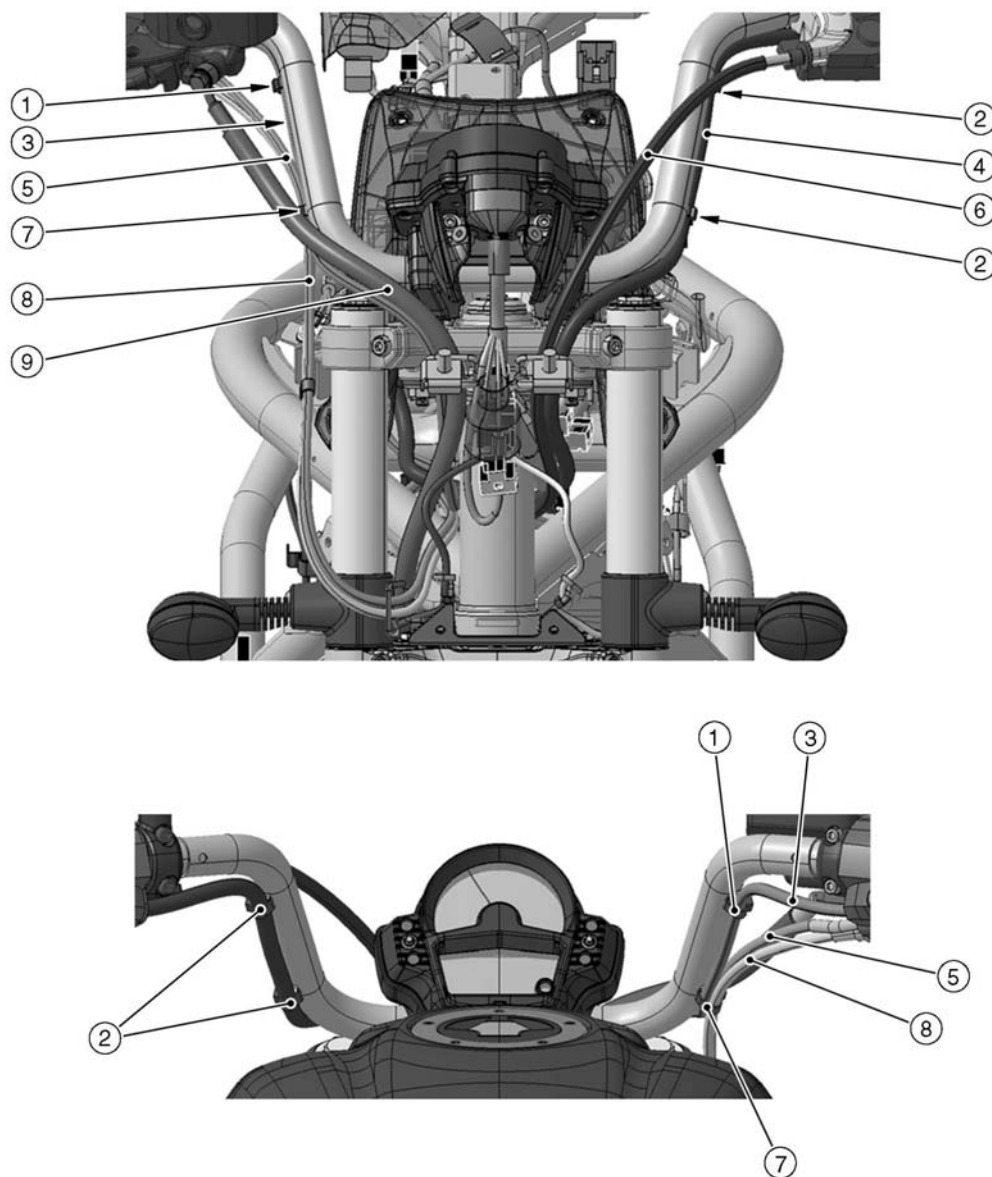
EN650E Model



A. Throttle Cable (Accelerator)
B. Throttle Cable (Decelerator)
C. Clamp
D. Front Fork (Right Side)

Cables, Harness and Hoses Routing

- Check that the cables, wiring leads and hoses are routed correctly.



MD13022B G

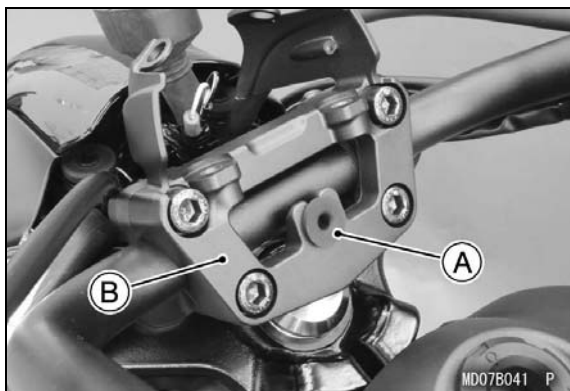
1. Plastic Clamp (Hold the right switch housing harness.)
2. Plastic Clamps (Hold the left switch housing harness.)
3. Right Switch Housing Harness
4. Left Switch Housing Harness
5. Throttle Cable (Accelerator)
6. Clutch Cable
7. Plastic Clamp (Hold the right switch housing harness and throttle cables.)
8. Throttle Cable (Decelerator)
9. Front Brake Hose

Meter

NOTICE

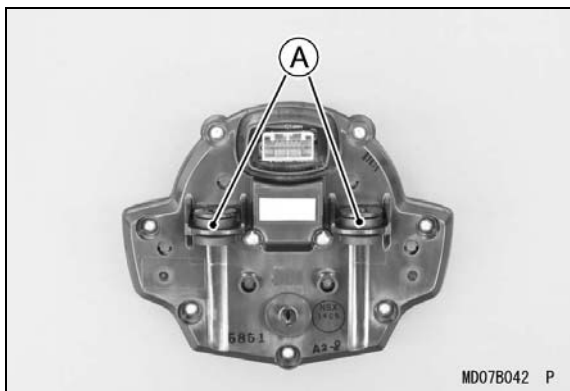
Do not drop the meter unit. Place the meter unit so that it faces upward. If the meter unit is left upside down or sideways for a long time or dropped, it will malfunction.

- Install the damper (D = 6) so that the large diameter side faces outside.



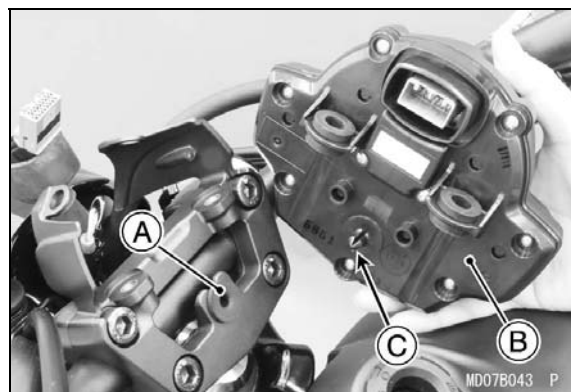
A. Damper (D = 6) (Large Diameter Side)
B. Upper Handlebar Holder

- Be sure that dampers (D = 10) are in position as shown.



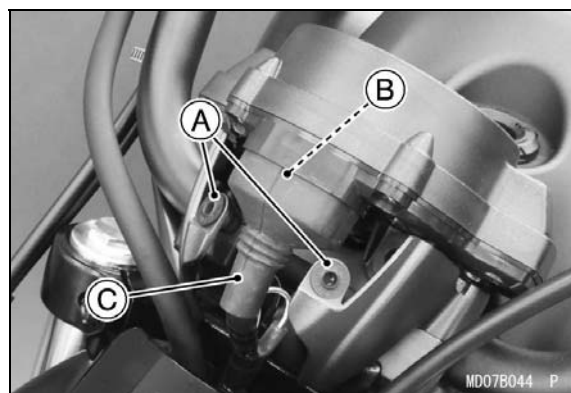
A. Dampers (D = 10)

- Insert the projection of the meter into the damper (D = 6).



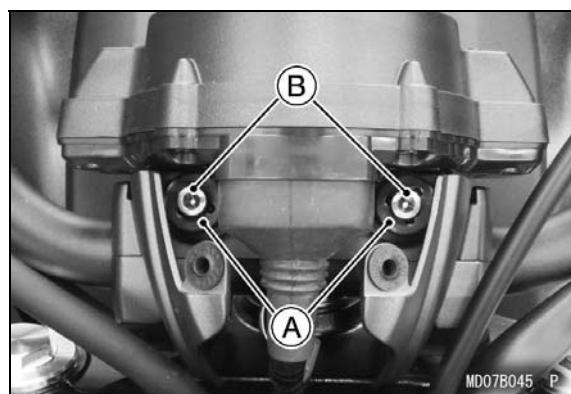
A. Damper (D = 6)
B. Meter
C. Projection

- Install the wellnuts (D = 5) on the upper handlebar holder.
- Connect the meter connector, and cover the meter connector with the dust cover.



A. Wellnuts (D = 5)
B. Meter Connector
C. Dust cover

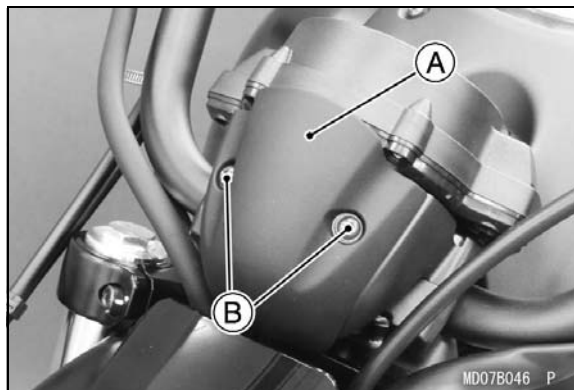
- Install the collars (D = 6.5) and socket bolts (D = 6, L = 30) and tighten them.



A. Collars (D = 6.5)
B. Socket Bolts (D = 6, L = 30)

Meter Cover

- Install the meter cover on the upper handlebar holder.
- Tighten the socket bolts (D = 5, L = 16).



A. Meter Cover

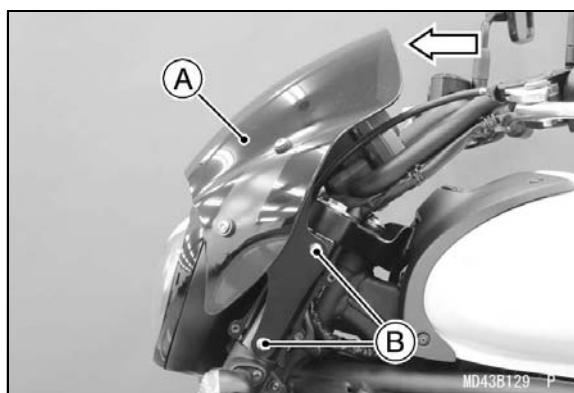
B. Socket Bolts (D = 5, L = 16)

Windshield (EN650E Model)

- Install the windshield assembly and temporarily tighten the bolts (D = 8, L = 14).
- Tighten the bolts at both sides while pushing the top of the windshield forward.

NOTE

○ Tighten the upper bolts first.



A. Windshield Assembly

B. Socket Bolts (D = 8, L = 14)

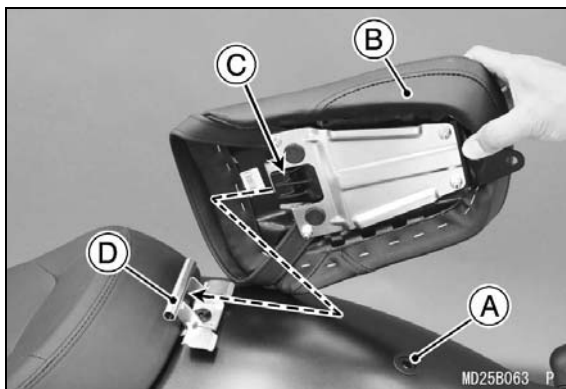
Passenger's Seat (Equipped Models)

NOTE

○ It is recommended that the passenger's seat should be installed after completing the steps in the "Battery Service" section in the PREPARATION chapter.

- Install the cap.
- Insert the tab at the front part of the passenger's seat under the bracket and tighten the bolt.

Torque: 17 N·m (1.7 kgf·m, 13 ft·lb)



A. Cap

B. Passenger's Seat

C. Tab

D. Bracket

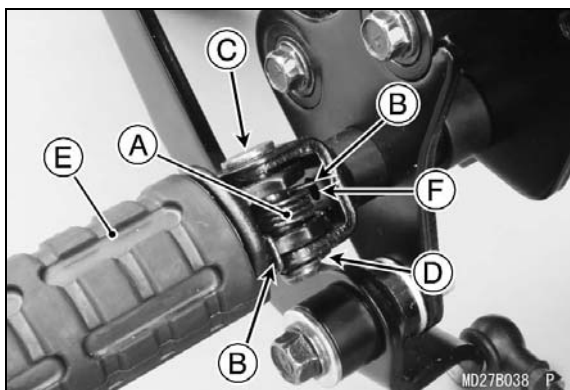
Footpegs

- Apply grease to the rubbing portion of footpeg.
- Set the spring and the footpeg as shown.

NOTE

○ Do not install the hook of the spring into the hole.

- Insert the link pin (D = 12, L = 37) through the spring from the front.
- Install the circlip to the link pin.

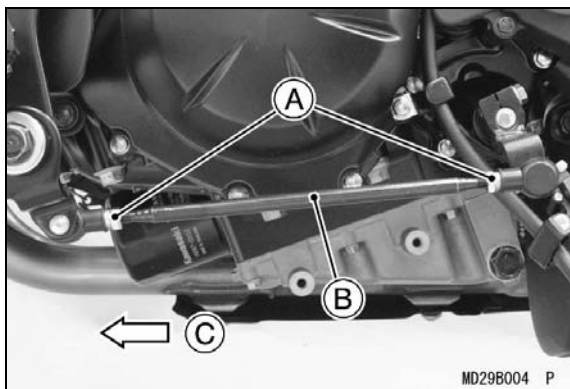


- A. Spring**
- B. Hook**
- C. Link Pin (D = 12, L = 37)**
- D. Circlip**
- E. Left Footpeg**
- F. Hole**

- Install the right footpeg in the same manner as the left footpeg.

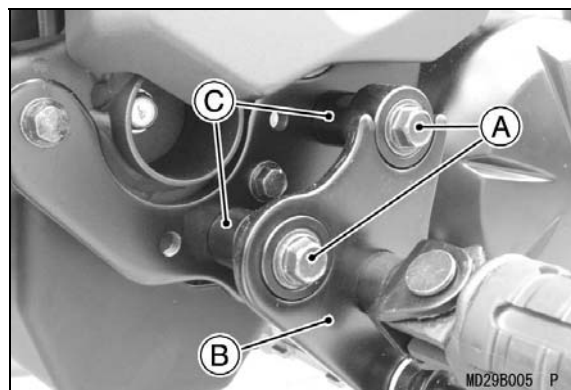
Shift Lever Tie-Rod (Europe Model)

- Loosen the tie-rod locknuts fully.
- The rear locknut has left-hand threads.
- Remove the tie-rod and locknuts.



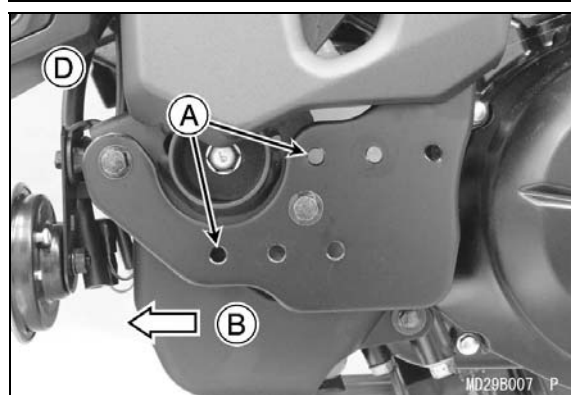
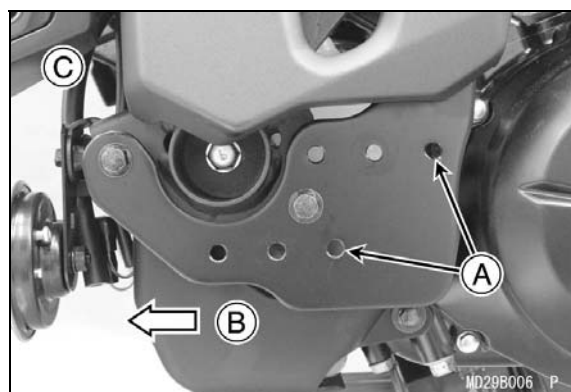
- A. Tie-rod Locknuts**
- B. Tie-Rod**
- C. Forward**

- Remove the left footpeg bracket bolts and washers.
- Remove the left footpeg assy and collars.



- A. Left Footpeg Bracket Bolts and Washers**
- B. Left Footpeg Assy**
- C. Collars**

- Using the screw holes on the footpeg bracket holder, install the left footpeg assy.



- A. Holes**
- B. Forward**
- C. For Tie-Rod (L = 180) Model**
- D. For Tie-Rod (L = 230) Model**

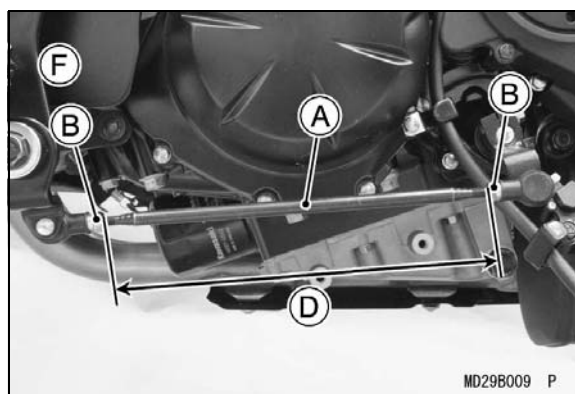
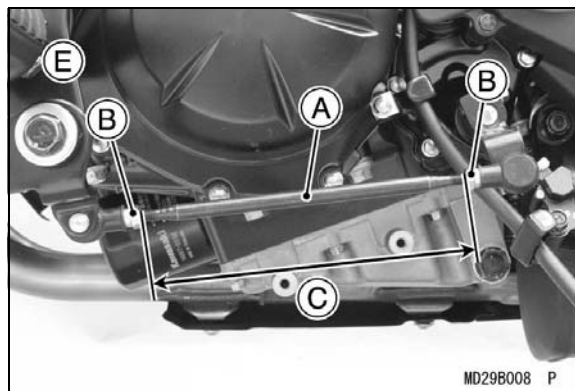
- Install the collars so that the rubber side faces outward.
- Tighten the left footpeg bracket bolts and washers.

Torque: 25 N·m (2.5 kgf·m, 18 ft·lb)

16 ASSEMBLY

- Install the locknuts to the tie-rod.
- Install the tie-rod with length between locknuts as shown.
- Tighten the tie-rod locknuts.

Torque: 9.8 N·m (1.0 kgf·m, 87 in·lb)



A. Tie-Rod

B. Tie-rod Locknuts

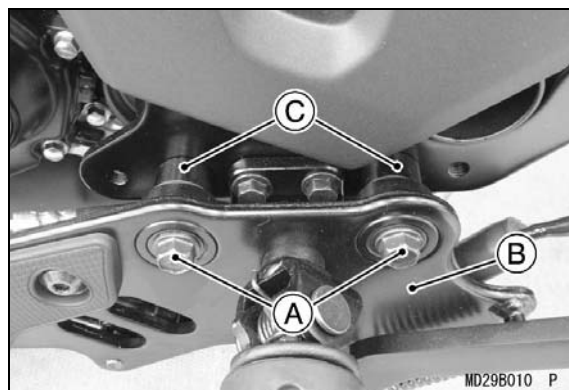
C. 154 ±1 mm (6.06 ±0.04 in.)

D. 204 ±1 mm (8.03 ±0.04 in.)

E. For Tie-Rod (L = 180) Model

F. For Tie-Rod (L = 230) Model

- Remove the right footpeg bracket bolts and washers.
- Remove the right footpeg assy and collars.

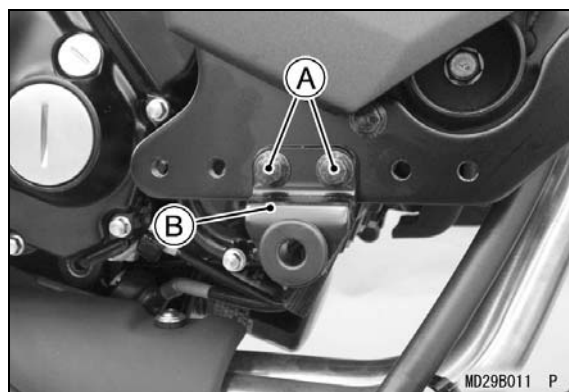


A. Right Footpeg Bracket Bolts and Washers

B. Right Footpeg Assy

C. Collars

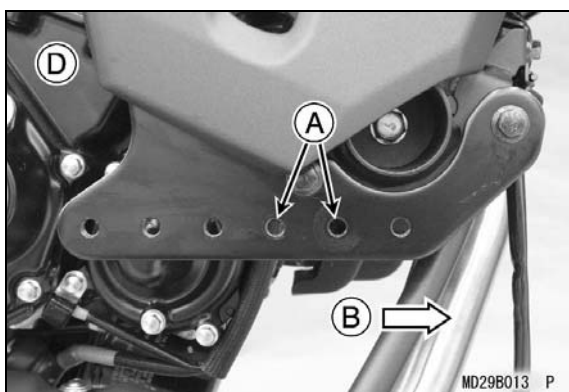
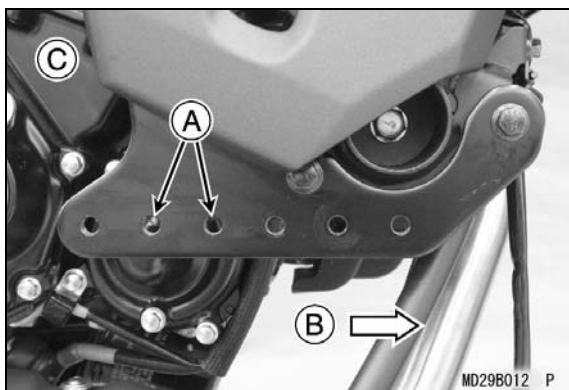
- Remove the bracket bolts and bracket.



A. Bracket Bolts

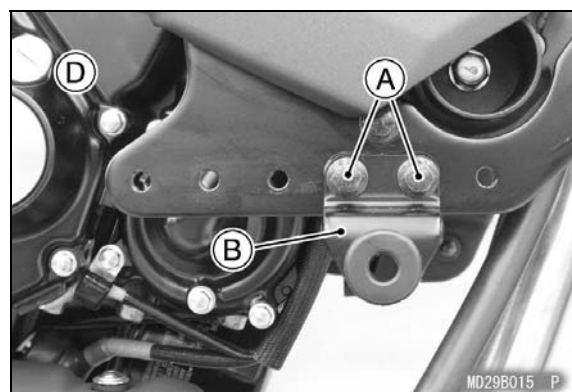
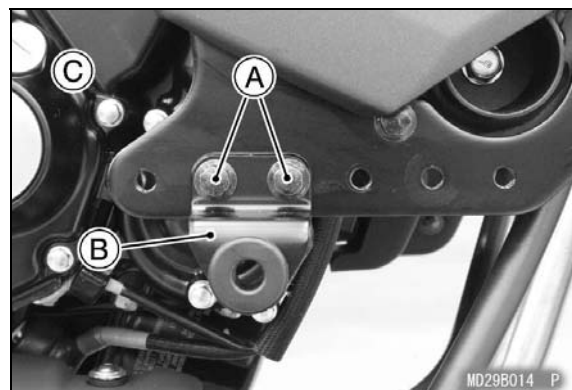
B. Bracket

- Using the screw holes on the footpeg bracket holder, install the bracket.



- A. Holes
- B. Forward
- C. For Tie-Rod (L = 180) Model
- D. For Tie-Rod (L = 230) Model

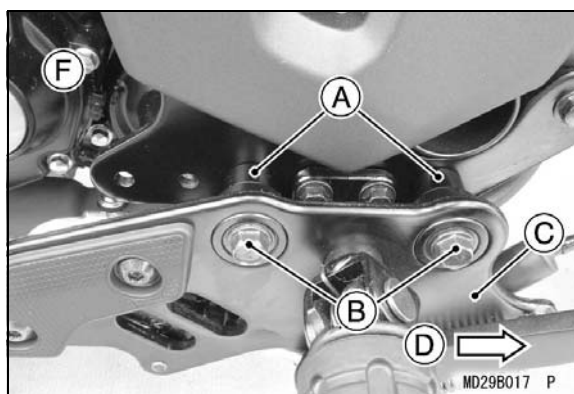
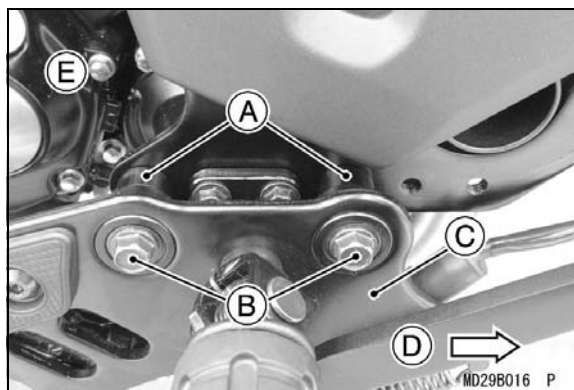
- Tighten the bracket bolts securely.



- A. Bracket Bolts
- B. Bracket
- C. For Tie-Rod (L = 180) Model
- D. For Tie-Rod (L = 230) Model

- Install the collars and the right footpeg assy.
- Tighten the right footpeg bracket bolts and washers.

Torque: 25 N·m (2.5 kgf·m, 18 ft·lb)



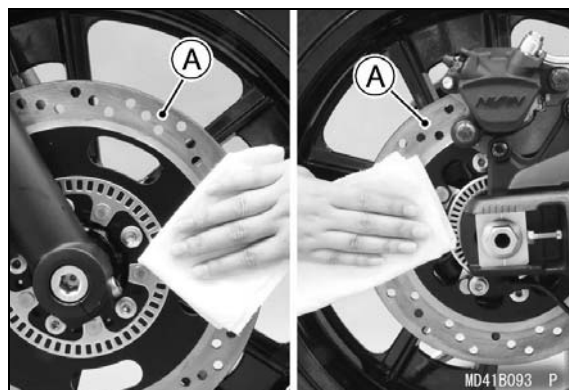
- A. Collars
- B. Right Footpeg Bracket Bolts and Washers
- C. Right Footpeg Assy
- D. Forward
- E. For Tie-Rod (L = 180) Model
- F. For Tie-Rod (L = 230) Model

Brake Disc Cleaning

- Clean the front and rear brake discs using oilless solvent.

⚠ WARNING

An anticorrosive treatment applied to the brake discs will increase braking distance and can cause an accident resulting in serious injury or death. Remove the anticorrosive treatment using an oilless solvent.



A. Brake Disc

Preparation

Battery Service

Charged Battery Service

NOTICE

This battery is a pre-filled, pre-charged sealed battery. It is not necessary to fill the battery with electrolyte. Do not try to remove the strip of caps.

- Make sure the battery type before service.

Battery Recharging

⚠ DANGER

Batteries produce an explosive gas mixture of hydrogen and oxygen that can cause serious injury and burns if ignited. Keep the battery away from sparks and open flames during charging. When using a battery charger, connect the battery to the charger before turning on the charger. This procedure prevents sparks at the battery terminals which could ignite any battery gases.

NOTICE

Always remove the battery from the vehicle for charging. If the battery is charged while still installed, battery electrolyte may spill and corrode the frame or other parts of the motorcycle. Charging the battery at a rate higher than specified may ruin the battery. Charging at a high rate causes excess heat which can warp the plates and cause internal shorting. Higher-than-normal charging rates also cause the plates to shed active material. Deposits will accumulate, and can cause internal shorting.

If the temperature of the electrolyte rises above 45°C (113°F) during charging, reduce the charging rate to lower the temperature, and increase charging time proportionately.

NOTE

- Never attempt to charge a frozen battery.
- Allow it to warm up to room temperature before charging.
- Never leave a battery on a trickle charger longer than 48 hours. Serious damage to the battery will occur.
- Always install the red insulating cap to the battery positive (+) terminal while the battery is stored.
- Charge the battery with the standard charging rates indicated on the battery.

Battery types	YTZ10
Standard Charge	0.9 A × 5 ~ 10 hours

- Use a recommended battery charger, following the manufacturer's instructions.

Kawasaki-recommended chargers:

Battery Mate 150-9

OptiMate PRO 4-S/PRO S/PRO 2

Yuasa MB-2040/2060

Christie C10122S

- If the recommended chargers are not available, use equivalent one.

NOTE

- Charging rates will vary depending on how long the battery has been stored, temperature, and the type of charger used.
- Determine battery condition after charging.

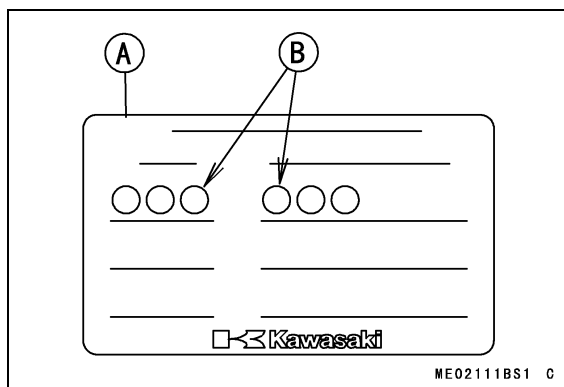
NOTE

- Determine the condition of the battery 30 minutes after completion of the charge by measuring the terminal voltage according to the table below.

Criteria	Judgement
12.8 V or higher	Good
12.0 ~ 12.8 V	Charge insufficient → Recharge
12.0 V or lower	Unserviceable → Replace

NOTE

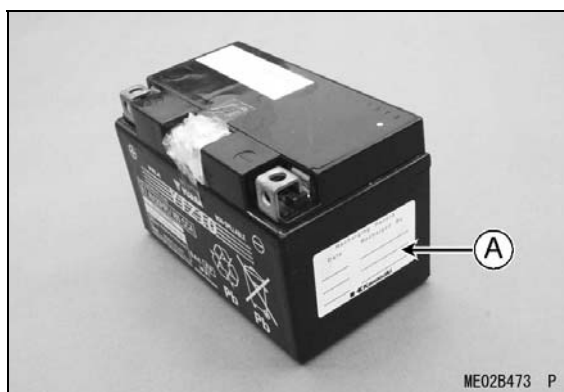
- If it is less than 12.8 volts, repeat charging cycle.
- If the minimum voltage specification cannot be reached after three consecutive charging attempts, the battery should be replaced.
- After recharging, record the charging date and the name of person in charge of this job to the label attached on the battery.



A. Recharging Record Label

B. Record the Charging Date and the Name of Person Here.

- The battery recharging record label is attached on the battery side as shown.

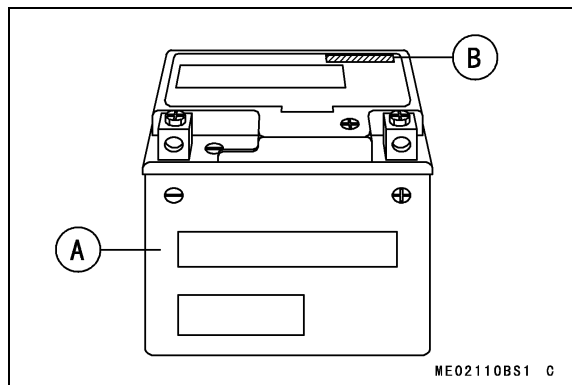


A. Battery Recharging Record Label

20 PREPARATION

- The battery manufacturing date is printed on battery top.

Example) 01 09 10 XX
Day Month Year Mfg. location

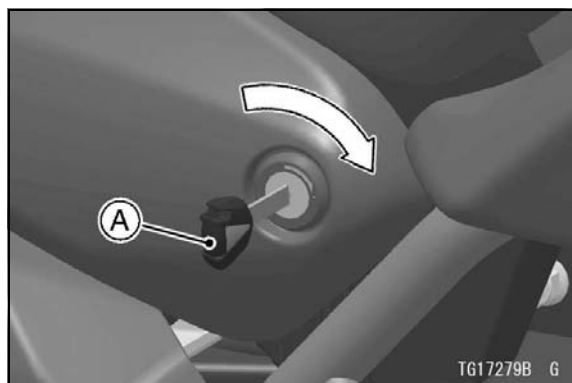


A. Battery

B. Manufacturing Date

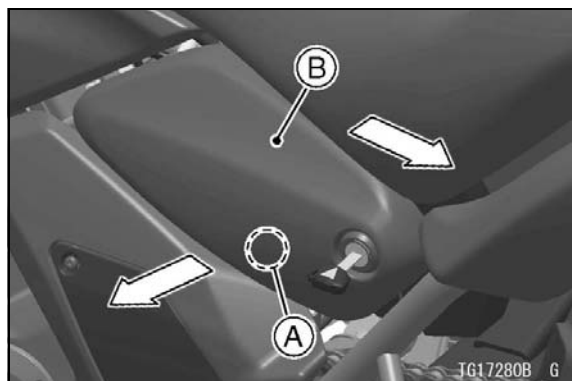
Side Cover Removal

- Insert the ignition key into the side cover lock and turn the key clockwise.



A. Ignition Key

- Pull the side cover outward to clear the projection and remove the side cover backward.

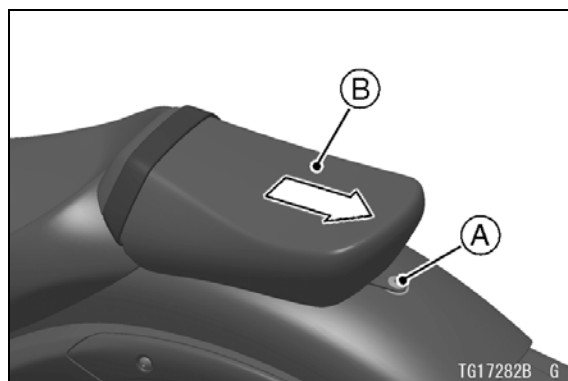


A. Projection

B. Side Cover

Seats Removal (Passenger's Seat Equipped Models)

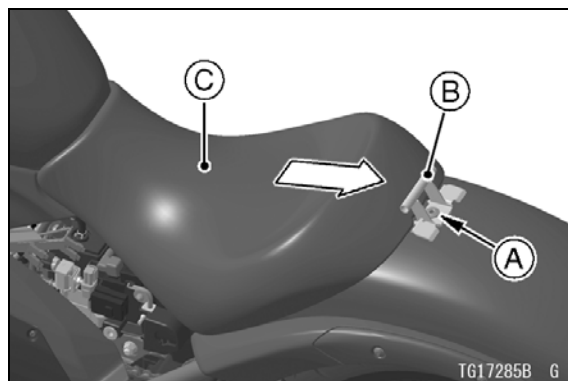
- Remove the bolt and remove the passenger's seat backward.



A. Bolt

B. Passenger's Seat

- Remove the bolt and remove the passenger's seat bracket.
- Remove the rider's seat backward.



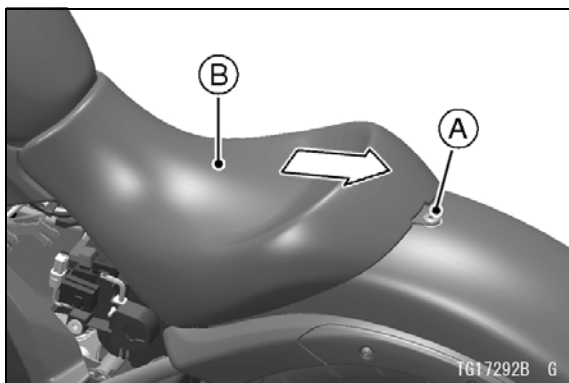
A. Bolt

B. Passenger's Seat Bracket

C. Rider's Seat

Seat Removal (Passenger Seat not Equipped Model)

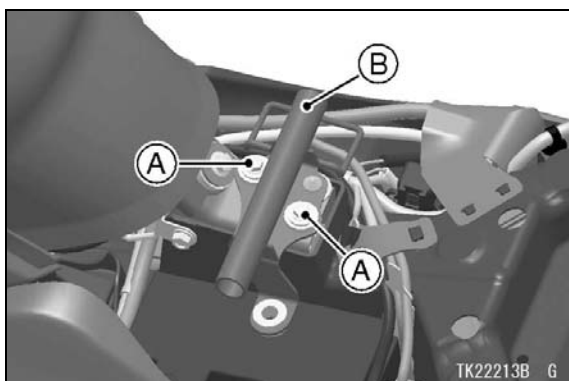
- Remove the bolt and remove the seat backward.



A. Bolt
B. Seat

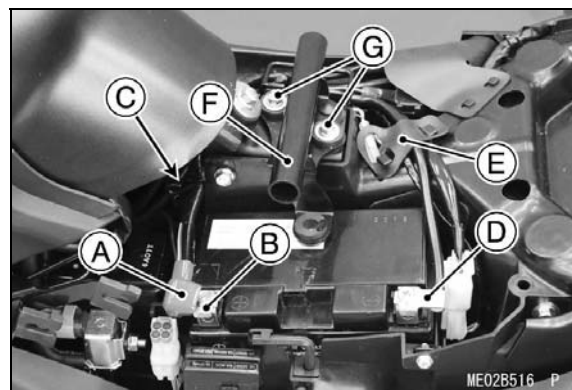
Battery Installation

- Inspect the battery voltage using a voltmeter, and recharge the battery if the voltage reading is below 12.8 volts just before delivering to your customer to ensure the maximum performance and customer satisfaction. (Refer to the "Battery Recharging" section.)
- Turn the ignition switch off.
- Remove the bolts, collars and bracket.



A. Bolts and Collars
B. Bracket

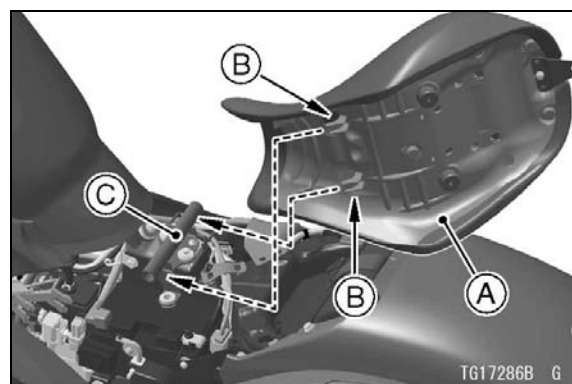
- Place the battery upright on the battery case with the terminal faces the left.
- Connect the battery positive cable to the (+) terminal first.
- Then connect the negative cable to the (-) terminal.
- Put a light coat of grease on the terminals to prevent corrosion.
- Cover the (+) terminal with the red cap.
- Install the bracket, collars and bolts.
- Run the battery positive cable (+) under the guide.



A. Red Cap
B. Positive (+) Terminal
C. Guide
D. Negative (-) Terminal
E. Band
F. Bracket
G. Bolts and Collars

Seats Installation (Passenger's Seat Equipped Models)

- Insert the tabs at the front part of the rider's seat under the bracket.



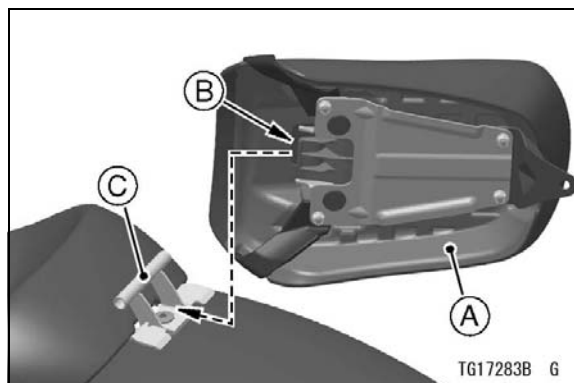
A. Rider's Seat
B. Tabs
C. Bracket

- Install the passenger's seat bracket and tighten the bolt.

Torque: 17 N·m (1.7 kgf·m, 13 ft·lb)

- Insert the tab at the front part of the passenger's seat under the bracket and tighten the bolt.

Torque: 17 N·m (1.7 kgf·m, 13 ft·lb)



A. Passenger's Seat

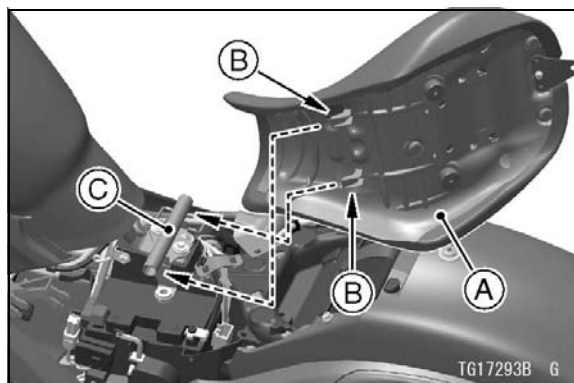
B. Tab

C. Bracket

Seat Installation (Passenger Seat not Equipped Model)

- Insert the tabs at the front part of the seat under the bracket and tighten the bolt.

Torque: 17 N·m (1.7 kgf·m, 13 ft·lb)



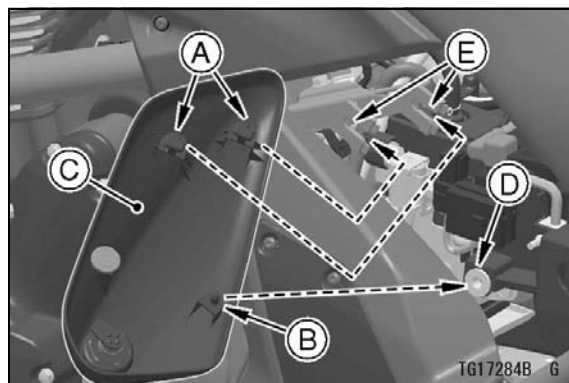
A. Seat

B. Tabs

C. Bracket

Side Cover Installation

- Fit the tabs on the side cover to the slots on the frame.
- Insert the projection on the side cover into the grommet on the battery case.



A. Tabs

B. Projection

C. Side Cover

D. Grommet

E. Slots

- Turn the key counterclockwise and remove it.

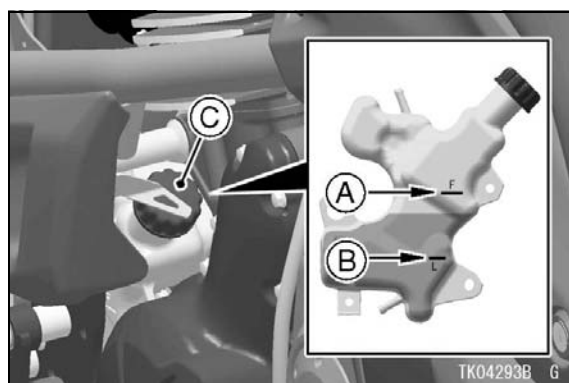
Coolant

Coolant Level Inspection

- Position the motorcycle so that it is perpendicular to the ground.
- Check the coolant level through the coolant level gauge on the reserve tank located to the behind of the engine. The coolant level should be between the F (Full) and L (Low) level lines.

NOTE

- Check the level when the engine is cold (room or atmospheric temperature).



A. F (Full) Level Line

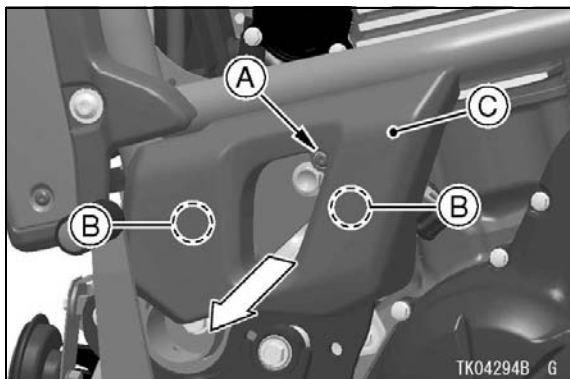
B. L (Low) Level Line

C. Reserve Tank

- If the amount of coolant is insufficient, add coolant into the reserve tank.

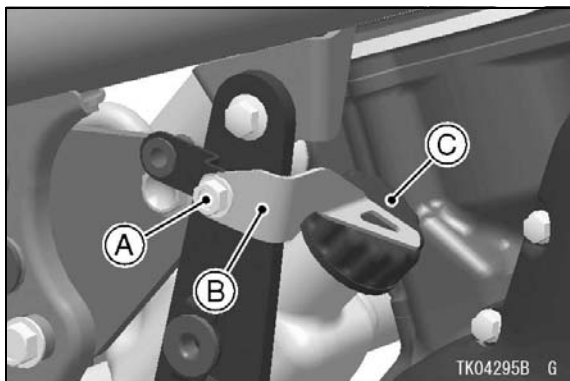
Coolant filling

- Remove the bolt and washer.
- Pull the left front frame cover outward to clear the projections.



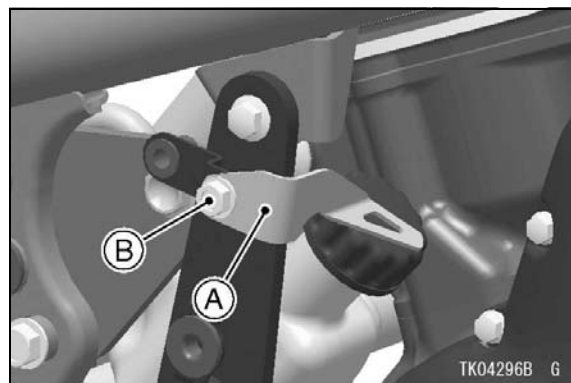
- A. Bolt and Washer**
- B. Projections**
- C. Left Front Frame Cover**

- Remove the bolt and stopper.
- Remove the cap from the reserve tank and add coolant through the filler opening to the F (Full) level line.



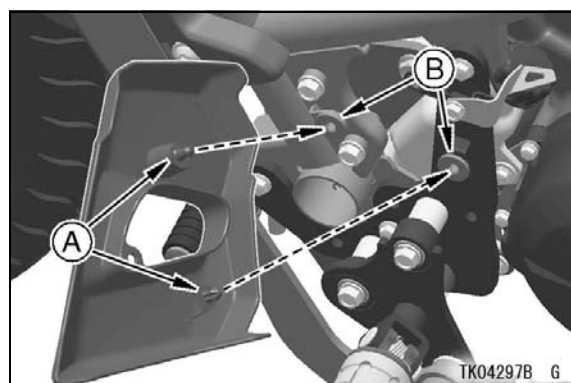
- A. Bolt**
- B. Stopper**
- C. Reserve Tank Cap**

- Install the reserve tank cap.
- Install the stopper and tighten the bolt.



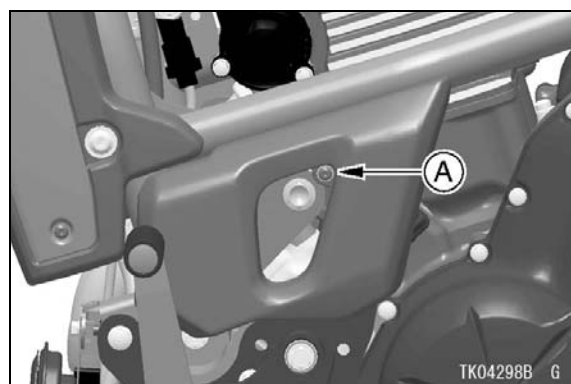
- A. Stopper**
- B. Bolt**

- Check the grommets are in place on the frame and footpeg bracket holder.
- Insert the projections on the front frame cover into the holes on the frame and footpeg bracket holder.



- A. Projections**
- B. Holes**

- Tighten the bolt and washer.



- A. Bolt and Washer**

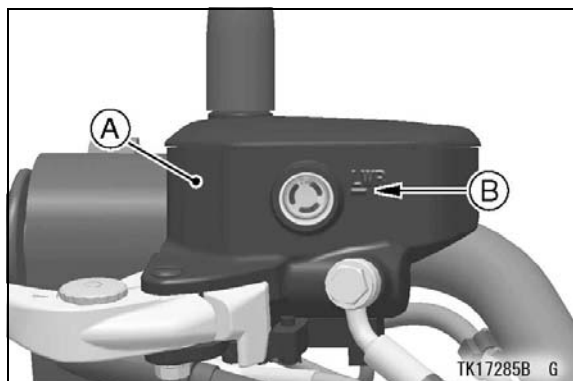
NOTE

- A permanent type of antifreeze is installed in the cooling system when shipped. It is mixed at 50% and has the freezing point of -35°C (-31°F).

Front Brake

Front Brake Fluid Level Inspection

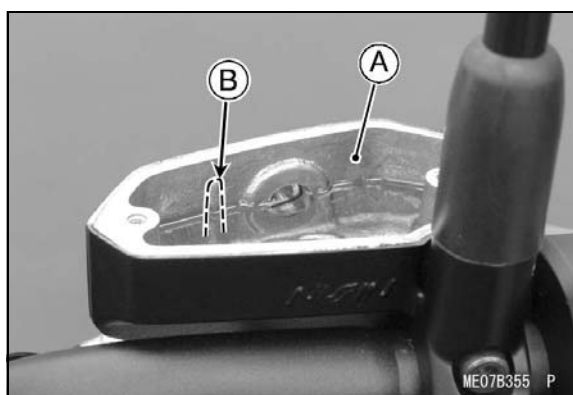
- With the front brake fluid reservoir held horizontal, check that the fluid level is above the lower level line.



A. Front Brake Fluid Reservoir

B. Lower Level Line

- If the fluid level in the reservoir is lower than the lower level line, check for fluid leaks in the front brake lines and fill the reservoir.
- Loosen the reservoir cap screws to remove the front brake fluid reservoir cap and diaphragm.
- Fill the reservoir to the upper level line with DOT4 brake fluid, reinstall the diaphragm and reservoir cap.



A. Front Brake Fluid Reservoir

B. Upper Level Line

- Tighten the reservoir cap screws to the specified torque.

Torque: 1.5 N·m (0.15 kgf·m, 13 in·lb)

⚠ WARNING

When working with the disc brake, observe the precautions listed below.

- **Never reuse old brake fluid.**
- **Do not use fluid from a container that has been left unsealed or that has been open for a long time.**
- **Do not mix two types and brands of fluid for use in the brake. This lowers the brake fluid boiling point and could cause the brake to be ineffective. It may also cause the rubber brake parts to deteriorate.**
- **Do not leave the reservoir cap off for any length of time to avoid moisture contamination of the fluid.**
- **Do not change the fluid in the rain or when a strong wind is blowing.**
- **Brake fluid quickly damages painted surfaces; any spilled fluid should be completely wiped up immediately.**
- **If any of the brake line fittings or the bleed valve is opened at any time, the AIR MUST BE BLED FROM THE BRAKE LINE.**

- Operate the brake lever several times.
- If it feels spongy, there might be air in the brake line.
- If necessary, bleed the air in the front brake line.
- Also check for fluid leakage around the fittings.

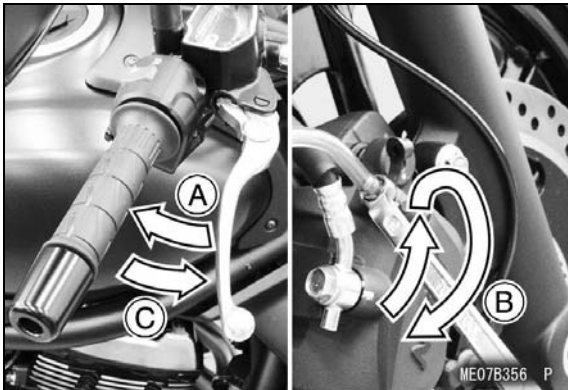
Brake Line Air Bleeding

- Loosen the reservoir cap bolts to remove the front brake fluid reservoir cap and diaphragm, and check that there is plenty of fluid in the reservoir.

NOTE

- *The fluid level must be checked several times, during the bleeding operation and replenished as necessary. If the fluid in the reservoir runs completely out any time during bleeding, the bleeding operation must be repeated from the beginning since air will have entered the line.*

- Attach a clear plastic hose to the bleed valve on each front brake caliper and run the other end of the hose into a container.
- With the reservoir cap off, slowly pump the brake lever several times until no air bubbles can be seen rising up through the fluid from the holes at the bottom of the reservoir. This bleeds the air from the brake master cylinder end of the line.
- Pump the brake lever a few times until it becomes hard and then, holding the lever squeezed, quickly open (turn counterclockwise) and close the bleed valve. Then release the lever. Repeat this operation until no more air can be seen coming out into the plastic hose.



- A. Hold the brake lever applied.**
- B. Quickly open and close the bleed valve on the front brake caliper.**
- C. Release the brake lever.**

- Repeat the previous step one more time for the other front disc brake.
- When air bleeding is finished, check that the fluid level is between the upper and lower level lines.
- Tighten the bleed valve to the specified torque.

Torque: 7.8 N·m (0.80 kgf·m, 69 in·lb)

- Reinstall the diaphragm and reservoir cap.
- Tighten the reservoir cap screws to the specified torque.

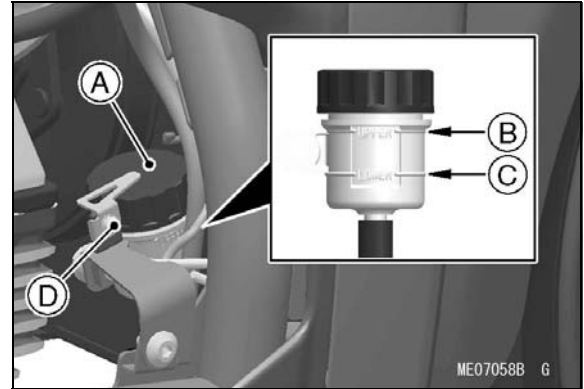
Torque: 1.5 N·m (0.15 kgf·m, 13 in·lb)

- Apply the brake forcefully for a few seconds, and check for fluid leakage around the fittings.

Rear Brake

Rear Brake Fluid Level Inspection

- With the rear brake fluid reservoir held horizontal, check that the fluid level is between the upper and lower level lines.



- A. Rear Brake Fluid Reservoir**
- B. Upper Level Line**
- C. Lower Level Line**
- D. Reservoir Cap Stopper Screw**

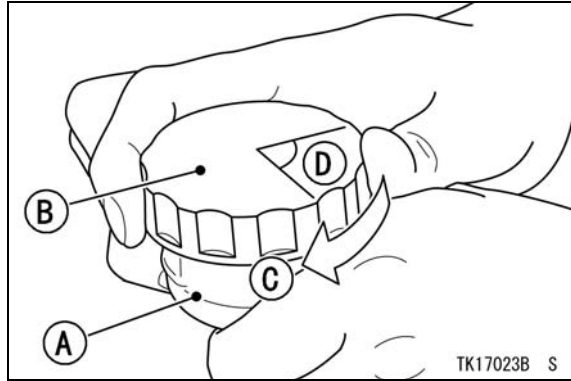
- If the fluid level in the reservoir is lower than the lower level line, check for fluid leaks in the brake line, and fill the reservoir.
- Loosen the reservoir cap stopper screw to remove the reservoir cap and diaphragm.
- Fill the reservoir to the upper level line with DOT4 brake fluid, reinstall the diaphragm and reservoir cap.

NOTICE

Brake fluid quickly damages painted plastic surfaces; any spilled fluid should be completely washed away immediately.

NOTE

- First, tighten the rear brake fluid reservoir cap clockwise by hand until slight resistance is felt indicating that the cap is seated on the reservoir body, then tighten the cap an additional 1/6 turn while holding the brake fluid reservoir body.



A. Rear Brake Fluid Reservoir

B. Reservoir Cap

C. Clockwise

D. 1/6 turn

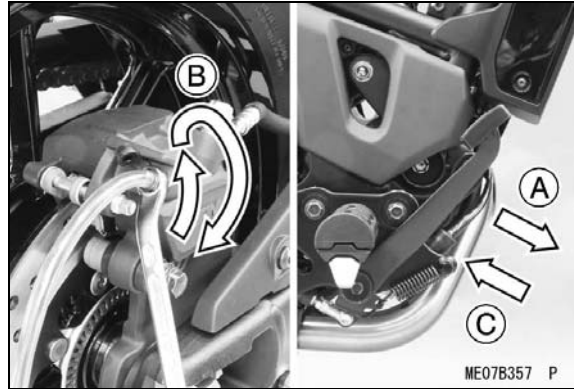
- Operate the brake pedal several times.
- If it feels spongy, there might be air in the brake line.
- If necessary, bleed the air in the rear brake line.
- Also check for fluid leakage around the fittings.

Brake Line Air Bleeding

- Loosen the reservoir cap stopper screw to remove the rear brake reservoir cap and diaphragm, and check that there is plenty of fluid in the reservoir.

NOTE

- *The fluid level must be checked several times, during the bleeding operation and replenished as necessary. If the fluid in the reservoir runs completely out any time during bleeding, the bleeding operation must be repeated from the beginning since air will have entered the line.*
- Attach a clear plastic hose to the bleed valve on the rear brake caliper and run the other end of the hose into a container.
- With the reservoir cap off, slowly pump the brake pedal several times until no air bubbles can be seen rising up through the fluid from the holes at the bottom of the reservoir. This bleeds the air from the rear brake master cylinder end of the line.
- Pump the brake pedal a few times until it becomes hard and then, holding the pedal pushed down, quickly open (turn counter-clockwise) and close the bleed valve. Then release the pedal. Repeat this operation until no more air can be seen coming out into the plastic hose.



A. Hold the brake pedal applied.

B. Quickly open and close the bleed valve on the rear brake caliper.

C. Release the brake pedal.

- When air bleeding is finished, check that the fluid level is between the upper and lower level lines.
- Tighten the bleed valve to the specified torque.

Torque: 7.8 N·m (0.80 kgf·m, 69 in·lb)

- Reinstall the diaphragm and reservoir cap.

NOTE

- *First, tighten the rear brake fluid reservoir cap clockwise by hand until slight resistance is felt indicating that the cap is seated on the reservoir body, then tighten the cap an additional 1/6 turn while holding the brake fluid reservoir body.*

- Tighten the reservoir cap stopper screw.

Torque: 1.5 N·m (0.15 kgf·m, 13 in·lb)

- Apply the brake forcefully for a few seconds, and check for fluid leakage around the fittings.

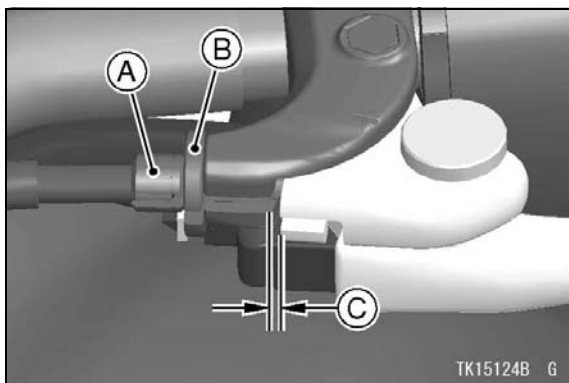
Clutch Lever and Cable

Clutch Lever Free Play Inspection

- Check that the clutch lever has the specified amount of free play as shown.

Clutch Lever Free Play:

2 ~ 3 mm (0.08 ~ 0.12 in.)



A. Adjuster

B. Locknut

C. Free Play: 2 ~ 3 mm (0.08 ~ 0.12 in.)

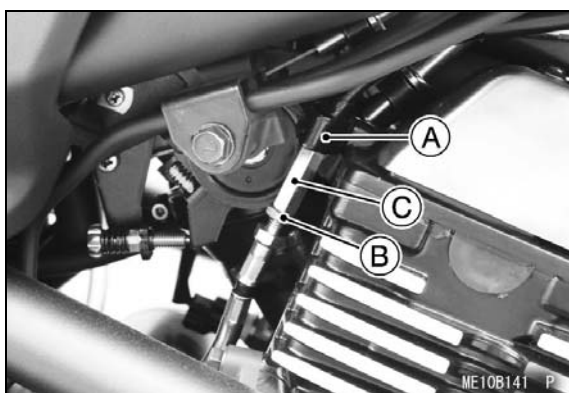
- If the free play is incorrect, adjust the lever free play.

Clutch Lever Free Play Adjustment

- Turn the adjuster so that the clutch lever will have 2 ~ 3 mm (0.08 ~ 0.12 in.) of free play.
- If it cannot be done, use the adjuster at the middle of the clutch cable.
- Slide the dust cover, and loosen the locknut at the middle of the clutch cable.
- Turn the adjuster until the free play is correct.

⚠ WARNING

Operation with incorrectly routed or improperly adjusted cables could result in an unsafe riding condition. Be sure the cables are routed correctly and properly adjusted.



A. Dust Cover

B. Locknut

C. Adjuster

NOTE

- After the adjustment is made, start the engine and check that the clutch does not slip and that it releases properly.
- For minor corrections, use the adjuster at the clutch lever.

Drive Chain

Drive Chain Slack and Wheel Alignment Inspection

- Set the motorcycle up on its side stand.
- Make sure that the drive chain has the specified amount of play, and that the left and right indicators are on the same marks or points on the left and right of the swingarm.

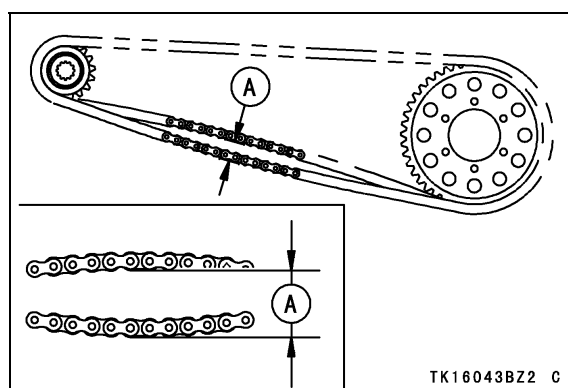
⚠ WARNING

Misalignment of the wheel will result in abnormal tire wear and can cause an unsafe riding condition. Be sure the wheel is properly aligned.

- Rotate the rear wheel to find the position where the chain is tightest, and measure the maximum chain slack by pulling up and pushing down the chain midway between the engine sprocket and rear wheel sprocket.

Drive Chain Slack:

10 ~ 20 mm (0.4 ~ 0.8 in.)



A. 10 ~ 20 mm (0.4 ~ 0.8 in.)

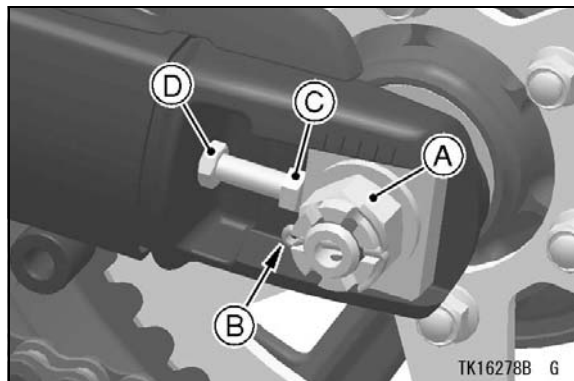
- If the drive chain is too tight or too loose, adjust it so that the chain slack will be within the standard value.

⚠ WARNING

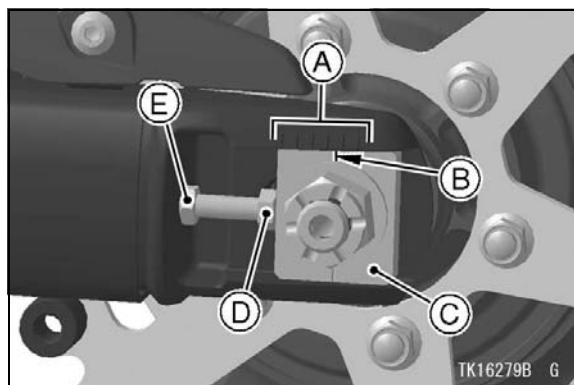
A chain that breaks or jumps off the sprockets could snag on the engine sprocket or lock the rear wheel, severely damaging the motorcycle and causing it to go out of control. Inspect the chain for damage and proper adjustment.

Drive Chain Slack Adjustment

- Remove the rear axle nut cap.
- Loosen the left and right chain adjuster locknuts.
- Remove the cotter pin, and loosen the rear axle nut.

**A. Rear Axle Nut****B. Cotter Pin****C. Adjusting Nut****D. Locknut**

- If the chain is too loose, turn in the left and right chain adjusting nuts evenly.
- If the chain is too tight, turn out the left and right chain adjusting nuts evenly.
- Turn both chain adjusting nuts evenly until the drive chain has the correct amount of slack. To keep the chain and wheel properly aligned, the top of the left wheel alignment indicator should align with the same swingarm mark that the right indicator aligns with.

**A. Marks****B. Notch****C. Indicator****D. Adjusting Nut****E. Locknut****NOTE**

- Wheel alignment can also be checked using the straightedge or string method.

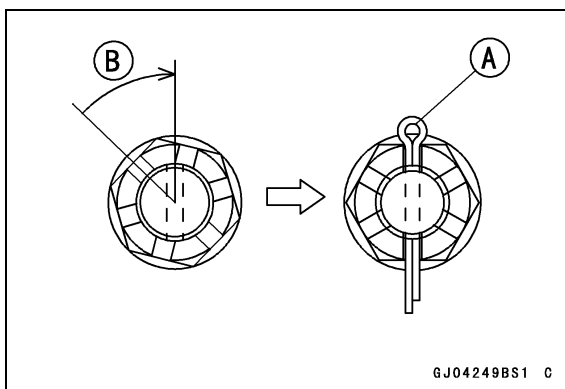
- Tighten both chain adjuster locknuts.
- Tighten the rear axle nut to the specified torque.

Torque: 108 N·m (11.0 kgf·m, 79.7 ft·lb)

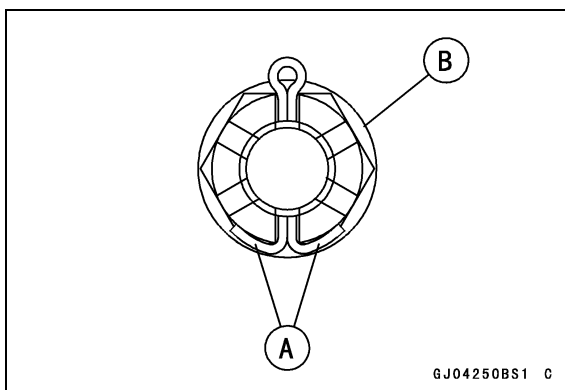
- Rotate the wheel, measure the chain slack again at the tightest position, and readjust if necessary.
- Install a new cotter pin.

NOTE

- When inserting the cotter pin, if the slots in the nut do not align with the cotter pin hole in the axle, tighten the nut clockwise up to the next alignment.
- It should be within 30 degrees.
- Loosen once and tighten again when the slot goes past the nearest hole.

**A. Cotter Pin****B. Turning Clockwise**

- Bend the cotter pin over the nut.

**A. Cotter Pin****B. Nut****⚠ WARNING**

A loose axle nut can lead to an accident resulting in serious injury or death. Tighten the axle nut to the proper torque and be sure the cotter pin is installed correctly.

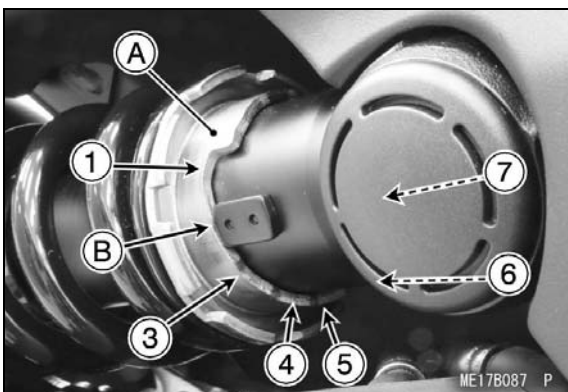
- Cover the rear axle nut with the cap.
- Check the rear brake effectiveness.

Rear Shock Absorber

Spring Preload Inspection

- Check the position of the spring preload adjuster on the rear shock absorber.

STD Spring Preload: No.2 position



A. Spring Preload Adjuster

B. No.2 Position

- Turn the preload adjuster to the No.2 position with the wrench in tool kit.

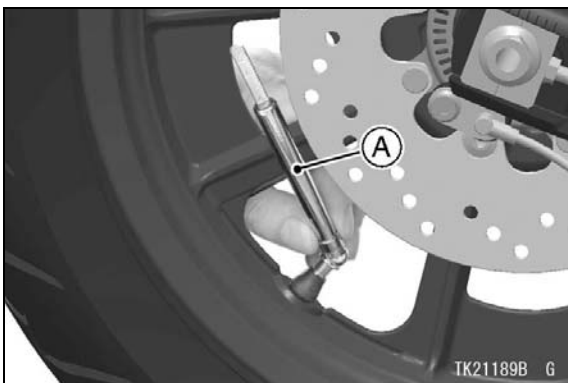
Tire Air Pressures

- To prevent flat-spotting during shipment, the tires are over-inflated before crating. Adjust the pressures to the specified values in the front and rear, and make sure to tighten the caps securely.

Tire Air Pressure [when cold]:

Front: 225 kPa (2.25 kgf/cm², 32 psi)

Rear: 250 kPa (2.50 kgf/cm², 36 psi)



A. Tire Air Pressure Gauge

Fuel

⚠ WARNING

Gasoline is extremely flammable and can be explosive under certain conditions, creating the potential for serious burns. When filling the tank, turn the ignition switch off. Do not smoke. Make sure the area is well ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

- Open the fuel tank cap, and check for debris in the fuel tank.
- Fill the fuel tank with one gallon or four liters of unleaded gasoline. Use a gasoline with a minimum octane rating shown below.

For US and Canada Specifications

Fuel Type	Unleaded Gasoline	
Minimum Octane Rating	Antiknock Index	(RON + MON)
	87	2

For Other than US and Canada Specifications

Use clean, fresh unleaded gasoline with an octane rating equal to or higher than that shown in the table.

Fuel Type	Unleaded Gasoline	
Minimum Octane Rating	Research Octane Number (RON)	
	91	

- Close the fuel tank cap and check for any leaks.

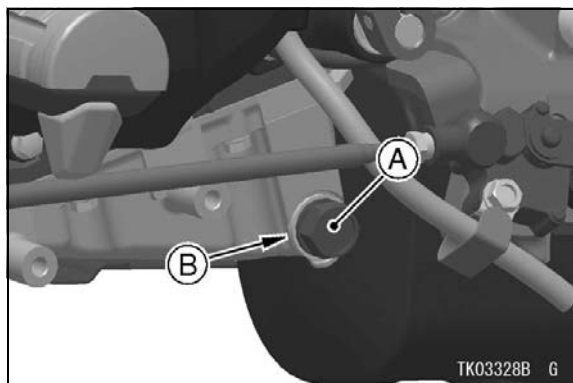
Engine Oil (4-stroke)

Engine Oil Level Inspection

NOTE

- This vehicle's engine is filled with 10W-40 oil from the factory. **DO NOT DRAIN** and refill the crankcase before use. Check oil level and drain bolt tightness.

Torque: 30 N·m (3.1 kgf·m, 22 ft·lb)

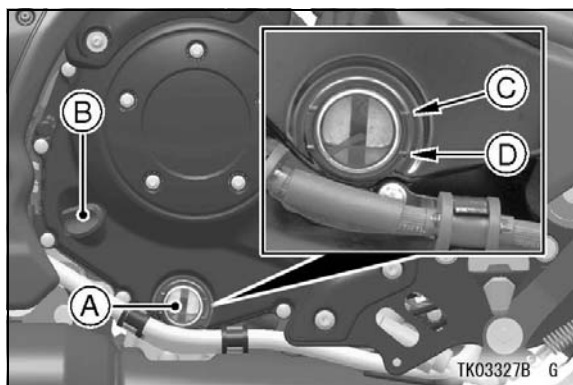
**A. Engine Oil Drain Bolt****B. Gasket**

- Park the vehicle on level ground.
- Before starting the engine, check that the engine has oil.
- With the motorcycle held level, check that the engine has oil through the oil level inspection window in the lower right side of the engine.

NOTICE

If the engine is run without oil, it will be severely damaged.

- Start the engine and run it for several minutes at idle speed. Stop the engine, then wait several minutes until the oil settles.
- With the motorcycle held level, check the engine oil level through the oil level inspection window. The oil level should come up between the upper and lower level lines next to the oil level inspection window.

**A. Oil Level Inspection Window****B. Oil Filler Cap****C. Upper Level Line****D. Lower Level Line**

- If the oil level is too high, remove the excess oil through the oil filler opening, using a syringe or some other suitable device.
- If the oil level is too low, add oil to reach the correct level. Use the same type of oil that is already in the engine.
- When replacing the cap, be sure the O-ring is in place, and tighten the cap in finger tight.

Recommended Engine Oil

Type: API SG, SH, SJ, SL or SM with JASO MA, MA1 or MA2

Viscosity: SAE 10W-40

Capacity: 1.6 L (1.7 US qt)

[when filter is not removed]

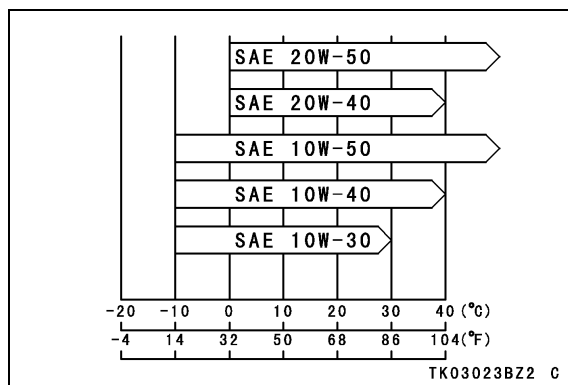
1.8 L (1.9 US qt)

[when filter is removed]

NOTE

- Do not add any chemical additive to the oil. Oils fulfilling the above requirements are fully formulated and provide adequate lubrication for both the engine and the clutch.

Although 10W-40 engine oil is the recommended oil for most conditions, the oil viscosity may need to be changed to accommodate atmospheric conditions in your riding area.

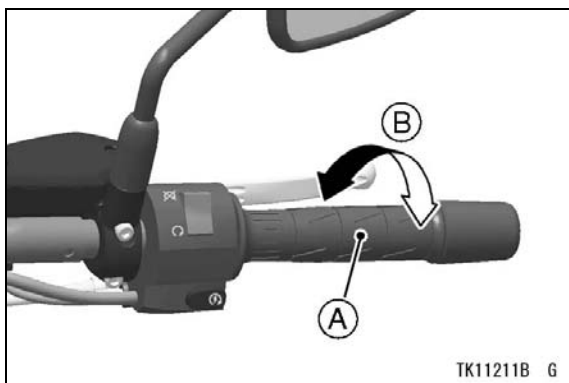
**Throttle Grip and Cable****Throttle Grip Free Play Inspection**

- Inspect the throttle grip free play. If the free play is incorrect, adjust the throttle cables.

Throttle Grip Free Play:

2 ~ 3 mm (0.08 ~ 0.12 in.)

- Check that the throttle grip moves smoothly from full open to close, and the throttle closes quickly and completely in all steering positions by the return spring. If the throttle grip does not return properly, check the throttle cable routing, grip free play, and for possible cable damage. Then lubricate the throttle cables.



A. Throttle Grip

B. 2 ~ 3 mm (0.08 ~ 0.12 in.)

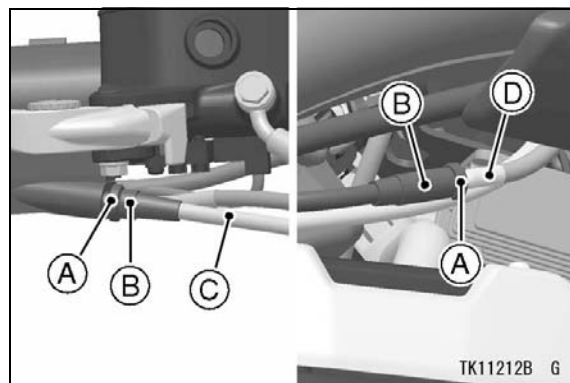
- Run the engine at idle speed, and turn the handlebars all the way to the right and left to ensure that the idle speed does not change. If the idle speed increases, check the throttle grip free play.

⚠ WARNING

Operation with incorrectly routed, improperly adjusted or damaged cables could result in an unsafe riding condition. Be sure the cables are routed correctly, properly adjusted and are not damaged in any way.

Throttle Grip Free Play Adjustment

- Loosen the locknuts at the upper end of the throttle cable, and turn the throttle cable adjuster until the specified amount of play is obtained.
- If the throttle cable can not be adjusted by using the cable adjuster at the throttle grip, use the cable adjuster near the cylinder head.
- Loosen the locknut at the throttle grip and turn in the adjuster fully.
- Turn out the throttle cable (decelerator cable) adjuster until there is no play when the throttle grip is completely closed.
- Tighten the locknut.



A. Locknuts

B. Adjusters

C. Throttle Cable (Accelerator Cable)

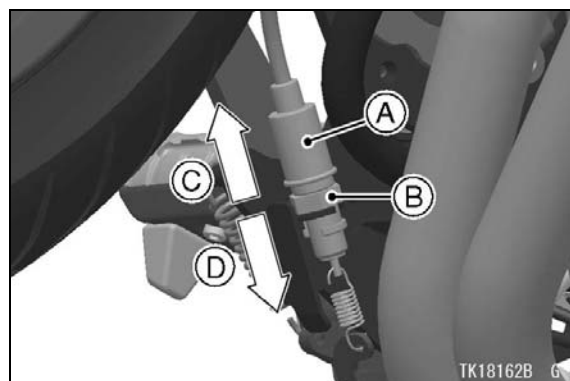
D. Throttle Cable (Decelerator Cable)

- Turn out the throttle cable (accelerator cable) adjuster until 2 ~ 3 mm (0.08 ~ 0.12 in.) of throttle grip play is obtained.
- Tighten the locknut.

Rear Brake Light Switch

Rear Brake Light Switch Adjustment

- Turn the ignition switch on. The brake light should illuminate when the brake pedal is depressed about 10 mm (0.39 in.)
- If it does not, turn the adjusting nut at the rear brake light switch as required.
- To adjust the rear brake light switch, move the switch up or down by turning the adjusting nut.



A. Rear Brake Light Switch

B. Adjusting Nut

C. Lights sooner.

D. Lights later.

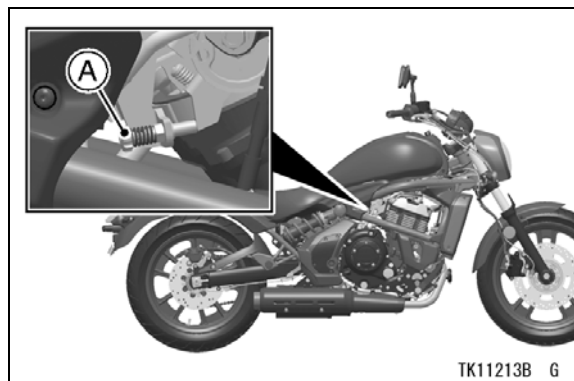
NOTICE

To avoid damaging the electrical connections inside the switch, be sure that the switch body does not turn during adjustment.

Idle Speed Adjustment

- Start the engine and warm it up thoroughly.
- Adjust the idle speed to 1 250 ~ 1 350 r/min (rpm) by turning the idle adjusting screw.

Idle Speed: 1 250 ~ 1 350 r/min (rpm)



A. Idle Adjusting Screw

- Open and close the throttle grip a few times to make sure that the idle speed does not change.
- With the engine idling, turn the handlebars to each side. If handlebars movement changes the idle speed, check the throttle cable routing and free play.

⚠ WARNING

Operation with incorrectly routed or damaged throttle cable could result in an unsafe riding condition. Be sure the throttle cable is routed correctly, properly adjusted and is not damaged in any way.

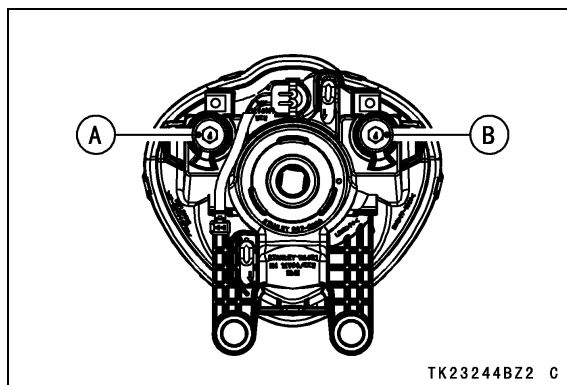
- Check for any exhaust leaks and correct if necessary.

Headlight Aim

The headlight beam is adjustable both horizontally and vertically. Headlight aim must be correctly adjusted for safe riding as well as on-coming drivers. In most areas it is illegal to ride with improperly adjusted headlights.

Headlight Aiming Adjustment

- The left adjuster and right adjuster on the headlight can move the direction of the headlight beam to up, down, left and right by turning each adjuster itself as the below table.

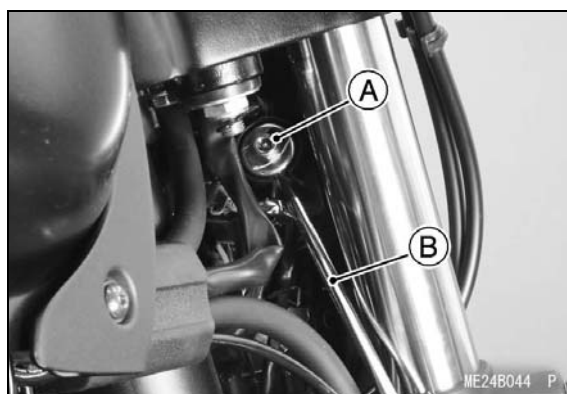


A. Left Adjuster

B. Right Adjuster

	Turning Direction of Adjuster	Moving Direction of Headlight Beam
Left Adjuster	Clockwise	Left and Up
	Counterclockwise	Right and Down
Right Adjuster	Clockwise	Right and Up
	Counterclockwise	Left and Down

- To move the headlight beam leftward, turn the left adjuster clockwise and turn the right adjuster counterclockwise same number as the left adjuster was turned until the beam points straight ahead.



A. Right Adjuster

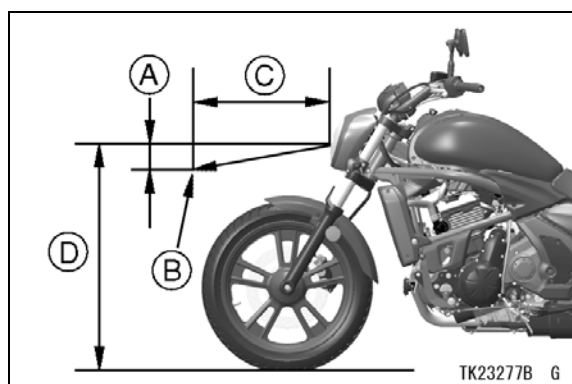
B. Screwdriver

- To move the headlight beam rightward, turn the left adjuster counterclockwise and turn the right adjuster clockwise same number as the left adjuster was turned until the beam points straight ahead.
- To move the headlight beam upward, turn the both adjusters clockwise same number.
- To move the headlight beam downward, turn the both adjusters counterclockwise same number.

For US and Canada Models

NOTE

- On high beam, the brightest point should be slightly below horizontal. The proper angle is 0.4 degrees below horizontal. This is a 50 mm (2.0 in.) drop at 7.6 m (25 ft) measured from the center of the headlight, with the motorcycle on its wheels and the rider seated.

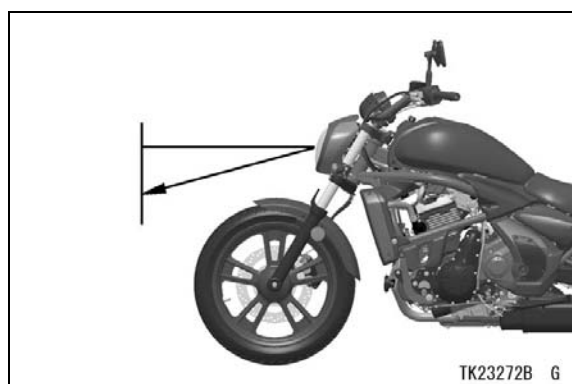


- A. 50 mm (2.0 in.)
- B. Center of Brightest Spot
- C. 7.6 m (25 ft)
- D. Height of Headlight Center

For other than US and Canada Models

NOTE

- On high beam, the brightest point should be slightly below horizontal with the motorcycle on its wheels and the rider seated. Adjust the headlight to the proper angle according to local regulation.



Digital Meter

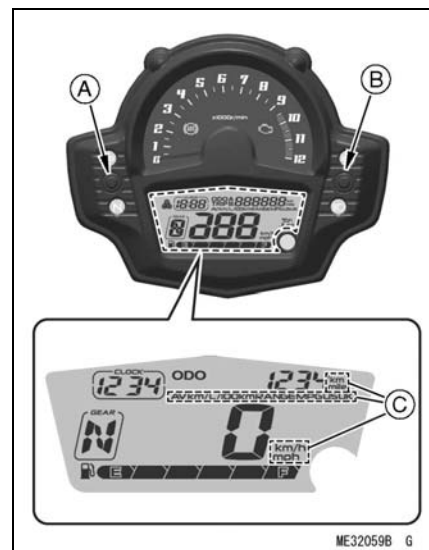
Check the Unit Setting: km/h, mph

Mph-km/h Display can alternate between English and metric modes (mph and km/h) on the digital meter. Make sure that mph or

km/h is correctly displayed according to local regulations before sale.

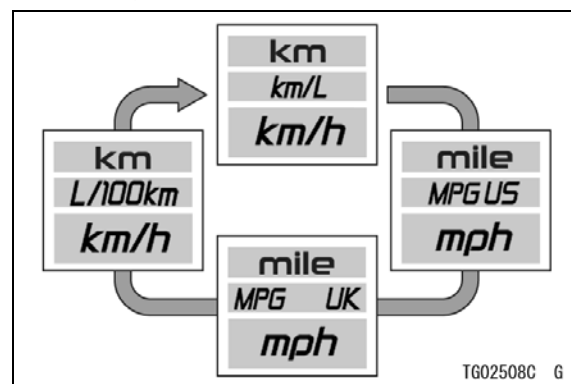
NOTE

- Do not operate the vehicle with the digital meter displaying the wrong unit (mph or km/h) of the digital meter. Shift the mph km/h display on the digital meter as follows.
- Turn the ignition switch on.
- Push the left meter button to display the odometer in the digital meter.



- A. Left Meter Button
- B. Right Meter Button
- C. Display Units

- Push the right meter button while pushing the left meter button to select the meter display units. The display units can be shifted in the following order.

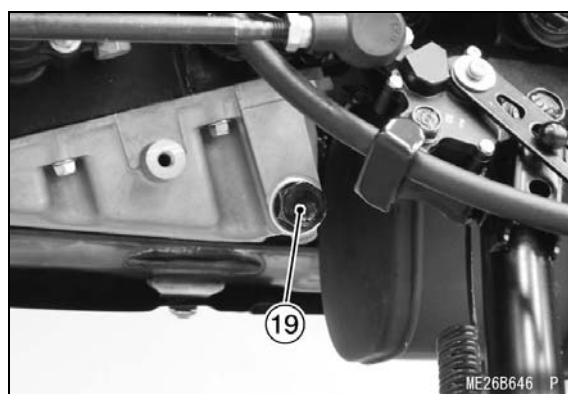
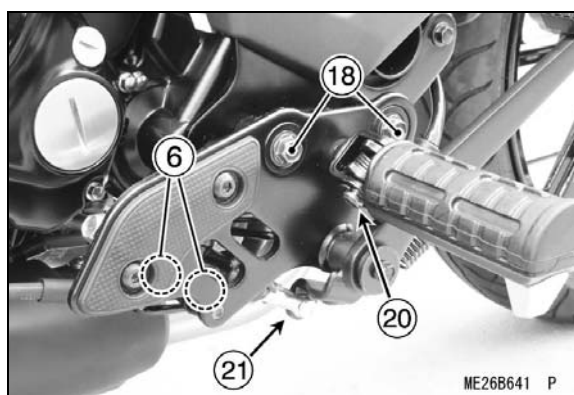
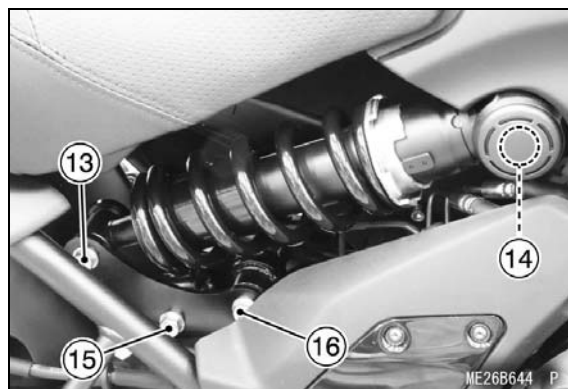
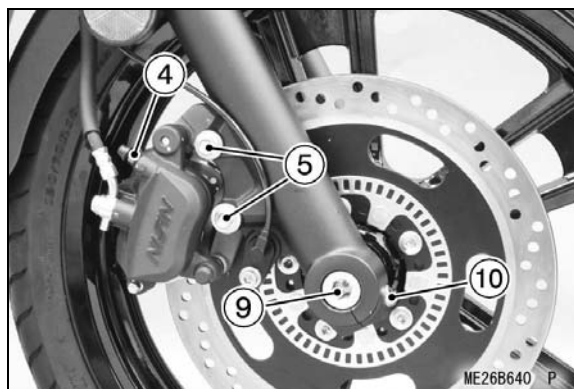
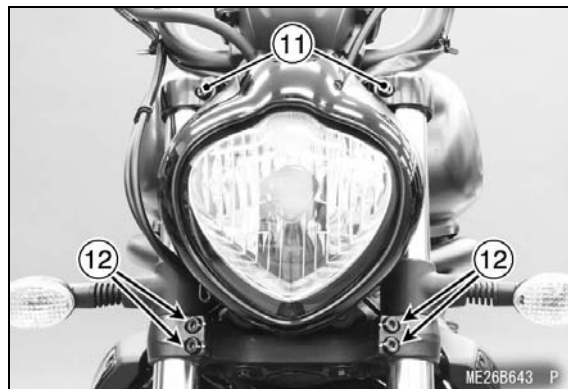
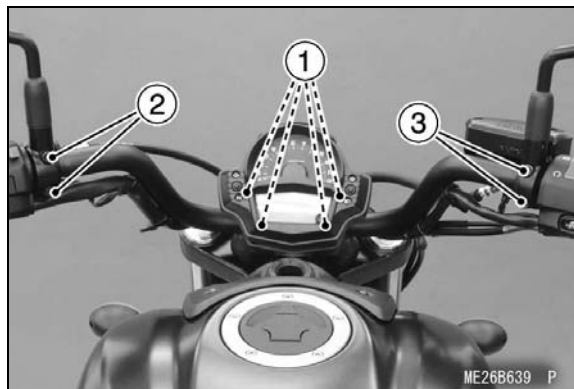


NOTE

- The data is maintained even if the battery is disconnected.

Fastener Check

- The torque values listed are for assembly and preparation items only, see the appropriate Service Manual for a more comprehensive list. Check tightness of all fasteners that are in the table before retail delivery. Also check to see that each cotter pin or circlip is in place.



No.	Fastener	Torque			Remarks
		N·m	kgf·m	ft·lb	
Steering					
1	Handlebar holder bolts	34	3.5	25	
Clutch					
2	Clutch lever holder clamp bolts	7.8	0.80	69 in·lb	
Brake					
3	Front master cylinder clamp bolts	11	1.1	97 in·lb	
4	Front caliper bleed valve	7.8	0.80	69 in·lb	
5	Front caliper mounting bolts	25	2.5	18	
6	Rear master cylinder mounting bolts	25	2.5	18	
7	Rear caliper bleed valve	7.8	0.80	69 in·lb	
8	Rear caliper mounting bolts	25	2.5	18	
Wheels/Tires					
9	Front axle	108	11.0	79.7	
10	Front axle clamp bolt	34	3.5	25	
Suspension					
11	Upper front fork clamp bolts (Left and Right)	20	2.0	15	
12	Lower front fork clamp bolts (Left and Right)	21	2.1	15	
13	Lower rear shock absorber bolt	34	3.5	25	
14	Upper rear shock absorber bolt	59	6.0	44	
15	Rocker arm bolt	34	3.5	25	
16	Upper tie-rod bolt	34	3.5	25	
17	Swingarm pivot shaft nut	108	11.0	79.7	
Others					
18	Footpeg bracket bolts (Left and Right)	25	2.5	18	
Engine Oil Drain					
19	Engine oil drain bolt	30	3.1	22	
Cotter Pin or Circlip					
20	Front footpeg pin circlip (Left and Right)	—	—	—	
21	Rear master cylinder push rod cotter pin	—	—	—	
22	Rear footpeg pin circlip (Left and Right) (Equipped Model)	—	—	—	
23	Rear axle nut cotter pin	—	—	—	

Standard Torque Table

This table relating tightening torque to thread diameter, lists the basic torque for bolts and nuts. Use this table for only the bolts and nuts which do not require a specific torque value. All of the values are for use with dry solvent-cleaned threads.

General Fasteners

Threads dia. (mm)	Torque		
	N·m	kgf·m	ft·lb
5	3.4 ~ 4.9	0.35 ~ 0.50	30 ~ 43 in·lb
6	5.9 ~ 7.8	0.60 ~ 0.80	52 ~ 69 in·lb
8	14 ~ 19	1.4 ~ 1.9	10.0 ~ 13.5
10	25 ~ 34	2.6 ~ 3.5	19.0 ~ 25
12	44 ~ 61	4.5 ~ 6.2	33 ~ 45
14	73 ~ 98	7.4 ~ 10.0	54 ~ 72
16	115 ~ 155	11.5 ~ 16.0	83 ~ 115
18	165 ~ 225	17.0 ~ 23.0	125 ~ 165
20	225 ~ 325	23.0 ~ 33.0	165 ~ 240

Test Ride the Motorcycle

- Complete the test ride checklist.

Control Cables:

Throttle cables must work without binding in any steering position.

Steering:

Action is free from lock-to-lock.

Suspension:

Check operation front and rear.

Engine:

Electric starter works properly and engine starts promptly. Good throttle response and return.

Transmission and Clutch:

Smooth operation.

Brakes:

Adequate, smooth stopping power, No drag.

Digital Meter:

Check operation

Electrical System:

Headlight - check high and low beams.

Taillight - check operation.

Brake Light - check operation.

Turn Signal Lights - check operation.

Horn - check operation.

Instrument Lights and Indicator Lights -

Check operation.

Engine Stop Switch Works:

Starter Interlock Switch Works:

No Unusual Noises:

No Fuel, Oil, Brake Fluid, or Coolant Leaks:

PREPARATION COMPLETE.

WARNING

New tires are slippery and may cause loss of control and serious injury or death. A break-in period of 160 km (100 miles) is necessary to establish normal tire traction. During break-in, avoid sudden and maximum braking, acceleration, and hard cornering.

A & P Check List

- Complete the A & P Check List.

MODEL APPLICATION

Year	Model	Name
2017	EN650CH	VULCAN S
2017	EN650DH	VULCAN S ABS
2017	EN650EH	VULCAN S ABS