Kawasaki

ZZR1400 ABS
Ninja ZX-14R
Ninja ZX-14R ABS

Motorcycle Assembly & Preparation Manual

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 ZZR1400 ABS, Ninja ZX-14R and Ninja ZX-14R 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

○ *This note symbol indicates points of particular interest for more efficient and convenient operation.*

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.

Sep., 2011

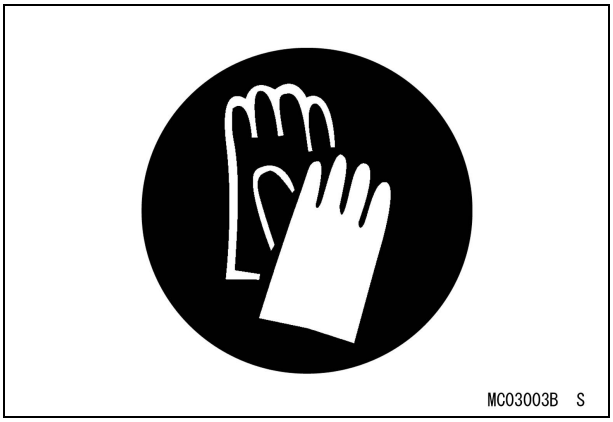
Table of Contents

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.

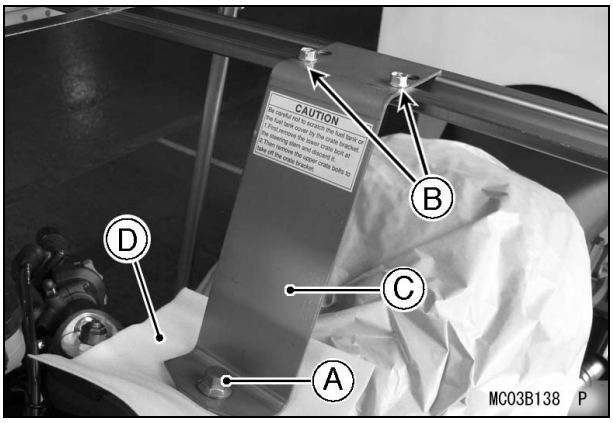
MC03004B S

- 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 parts box.

NOTICE

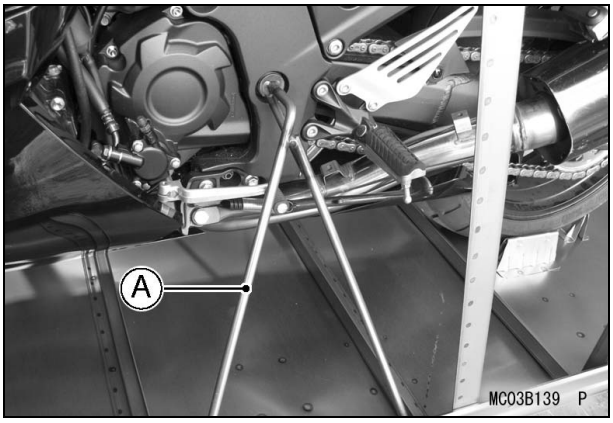
When removing the crate bracket from the motorcycle, be careful not to drop any parts or the bracket onto the fuel tank and other components, and not to scratch the fuel tank or other components with the crate bracket.

- First, remove the lower bolt (D = 22, L = 10) at the steering stem and discard it.
- Remove the upper bolts (D = 8, L = 14) to take off the crate bracket and discard them.



A. Lower Bolt (D = 22, L = 10)
B. Upper Bolts (D = 8, L = 14)
C. Crate Bracket
D. Foam Pad

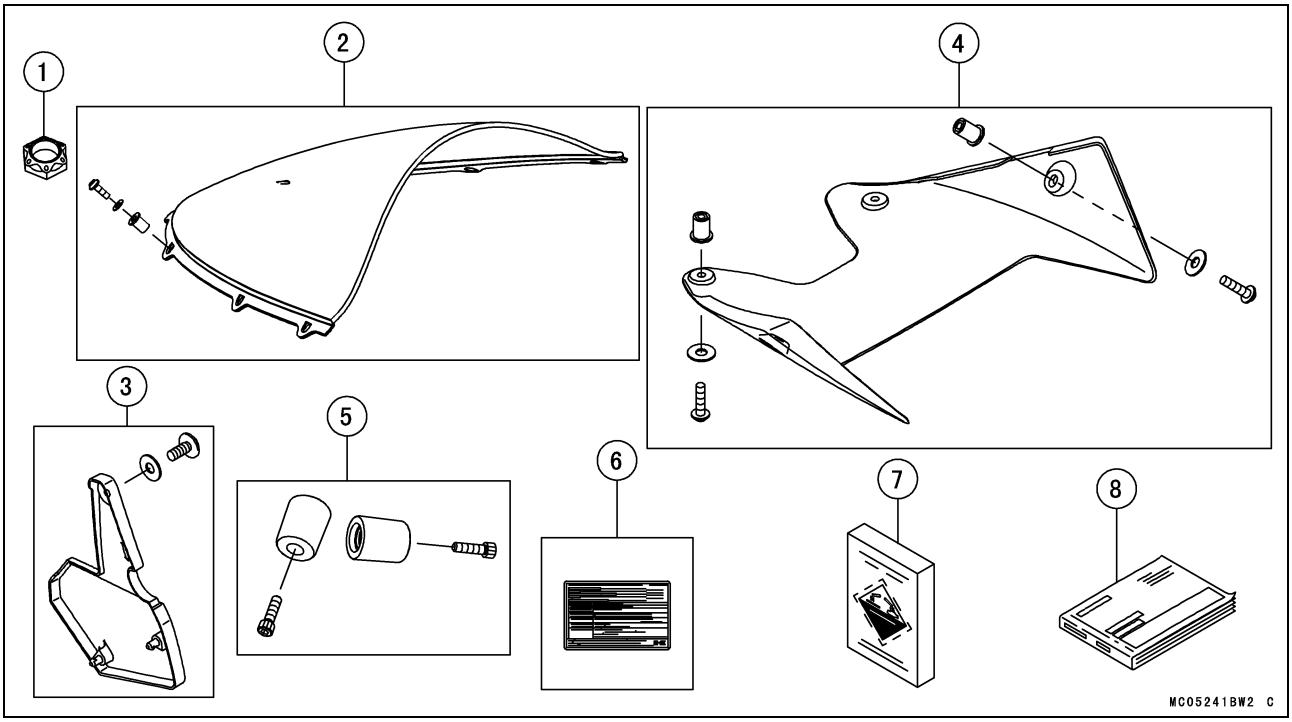
- Take out all the bolts and screws and remove the top and sides of the crate.
- Lift the vehicle upward about 10 cm (4 in.) and remove the two lower support brackets. Roll the vehicle off the crate base.



A. Lower Support Bracket (Both Sides)

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.

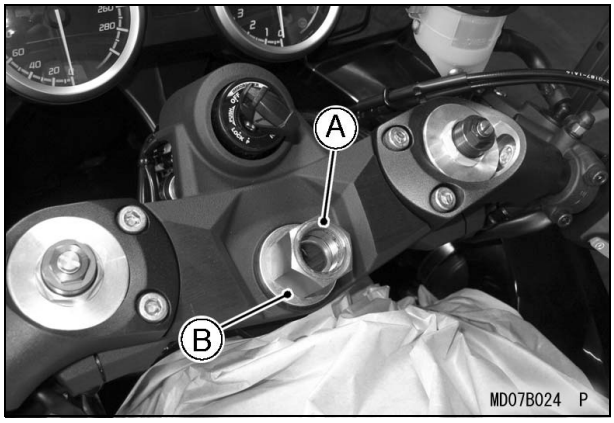


No.	Part Name	Qty	Remarks
1	Steering Stem Head Nut	1	D = 25
2	Windshield	1	
	Socket Bolt	6	D = 5, L = 16
	Plastic Washer	6	D = 5.3 × 11.5
	Wellnut	6	D = 5
3	Battery Compartment Cover	1	
	Bolt	1	D = 6, L = 14
	Washer	1	D = 6.5 × 16
4	**Other than Philippine and Southeast Asia B2 Models**		
	Rear Fairing	1	
	Socket Bolt	4	D = 6, L = 23
	Plastic Washer	4	D = 6.5 × 16
	Welnut	4	
5	Handlebar weight	2	
	Weight Screw with a Non-permanent Locking Agent	2	D = 8, L = 30
6	**French Label for Canadian Model only**		
	Emission Control Information	1	P/No. 59465-0846
7	Battery Electrolyte, FTZ14-BS	1	12 V 12 Ah
8	Owner's Manual	1	

Assembly

Steering Stem Head Nut

- Remove the steering stem head dummy nut and discard it. Do not remove the flat washer (D = 25.5) under the dummy nut.

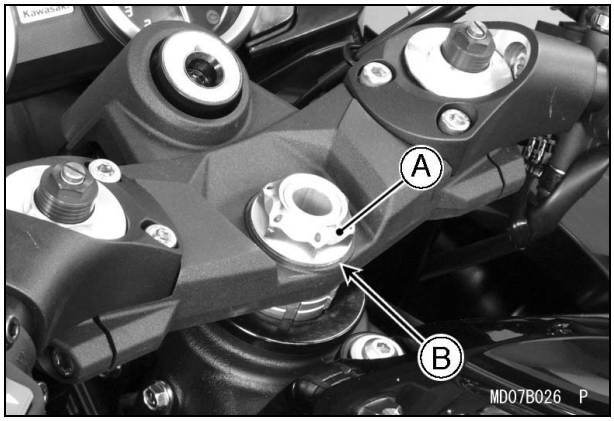


A. Dummy Nut

B. Flat Washer

- Install the steering stem head nut (D = 25) on the flat washer with the chamfered side facing upwards and tighten the nut to the specified torque.

Torque : 78 N·m (8.0 kgf·m, 58 ft·lb)

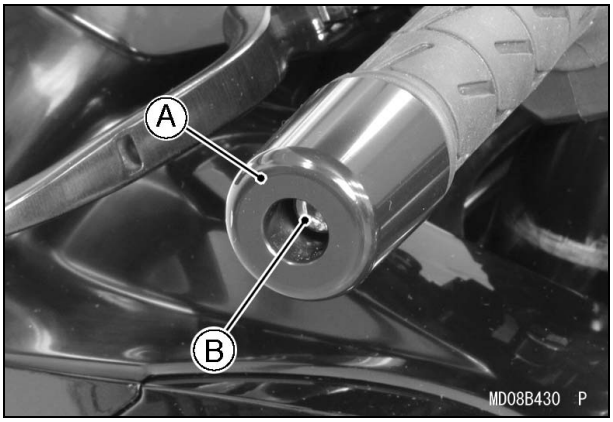


A. Steering Stem Head Nut (D = 25)

B. Flat Washer

Handlebar Weights

- Install both handlebar weights on the left and right end of the handlebar with the screws (D = 8, L = 30) with a non-permanent locking agent and tighten them.

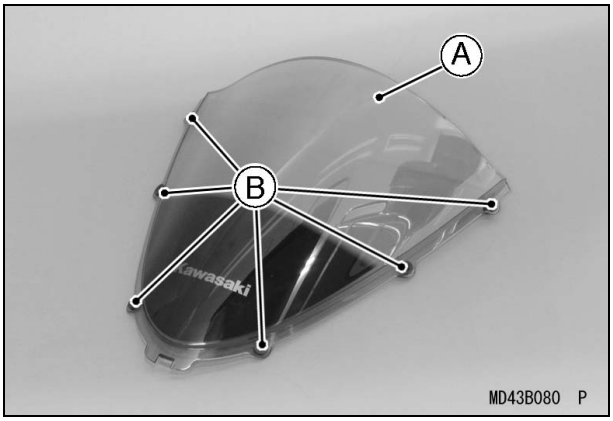


A. Handlebar Weight

B. Screw (D = 8, L = 30)

Windshield

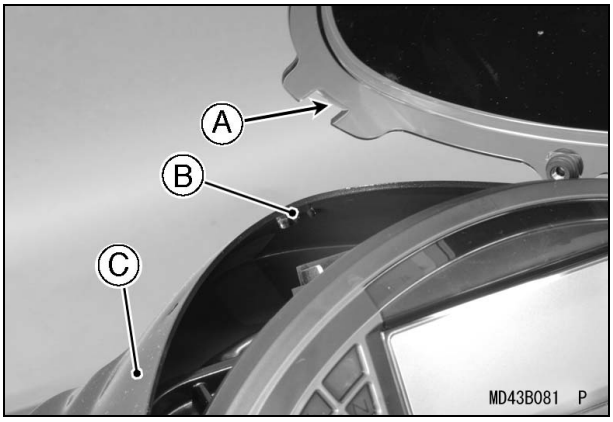
- Fit the six wellnuts (D = 5) into the holes in the edge of the windshield from the outside with their flanges out.



A. Windshield

B. Wellnuts (D = 5)

- Fit the windshield into the upper fairing so that the tab of the upper fairing fits into the front groove of the windshield, and align the bolt holes.

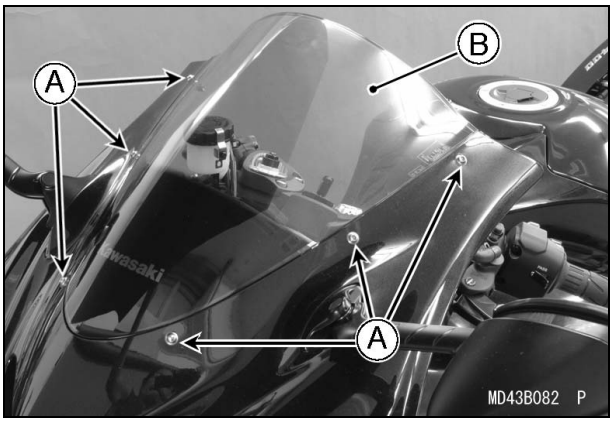


A. Front Groove

B. Tab

C. Upper Fairing

- Install the six plastic washers (D = 5.3) and the socket bolts (D = 5, L = 16) on the upper fairing.

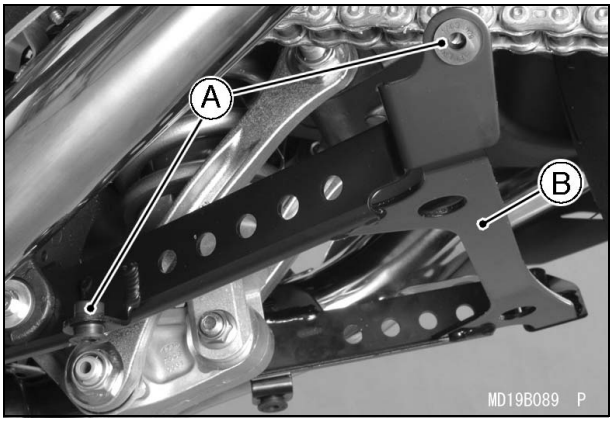


A. Plastic Washers and Bolts (D = 5, L = 16)

B. Windshield

Rear Fairing

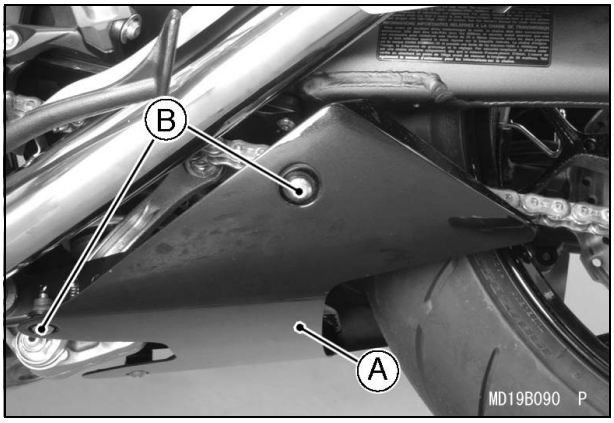
- Fit the four wellnuts (D = 6) into the mounting holes in the left and right side of the rear fairing bracket.



A. Wellnuts (D = 6)

B. Fairing Bracket

- Install the rear fairing with the four socket bolts (D = 6, L = 23) and the plastic washers (D = 6.5), and tighten the bolts.



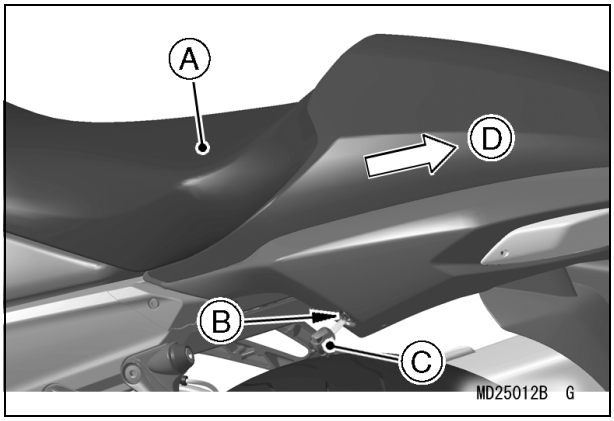
A. Rear Fairing

B. Socket Bolts (D = 6, L = 23) and Plastic Washers (D = 6.5)

Seat

Seat Removal

- Insert the ignition key into the seat lock, and turn the key clockwise.
- Remove the seat by pulling up and rearward.



A. Seat

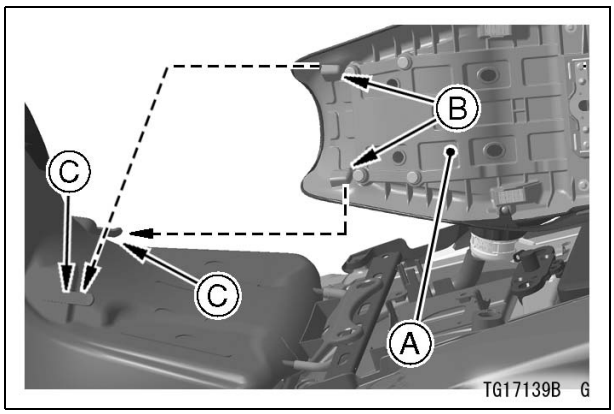
B. Seat Lock

C. Ignition Key

D. Pull Up and Rearward

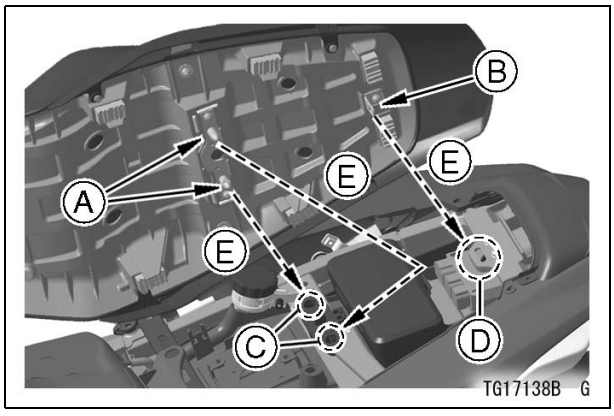
Seat Installation

- Insert each front slot of the seat onto the holder bracket on each left and right side of the fuel tank.



A. Seat
B. Slots
C. Bracket

- Insert the slots into the receivers, and insert the hook at the rear of the seat into the slot, then push down the rear part of the seat until the lock clicks.



A. Projections
B. Hook
C. Slots (Middle on the frame)
D. Slot (Rear end on the frame)
E. Insert

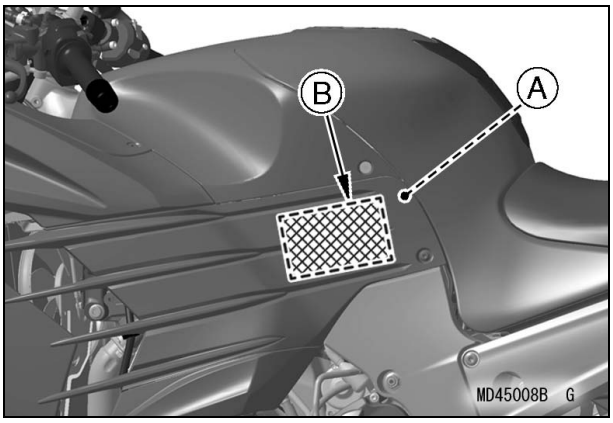
- Pull up the rear end of the seat to make sure it is securely locked.

French Label (For Canadian Models)

NOTE

○*Remove the front left side cover. See the "Coolant Filling" item in "Coolant" section on page 12 in the Preparation chapter.*
○*Stick the French label onto the English label on the left side of the frame only when required.*

- Wipe off any oil or grease from the English label. Refer to the following photograph in the label location.
- Peel the French label off the backing sheet and apply it over the English label.



A. Frame (Left Side)
B. Emission Control Information (P/No. 59465-0846)

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.

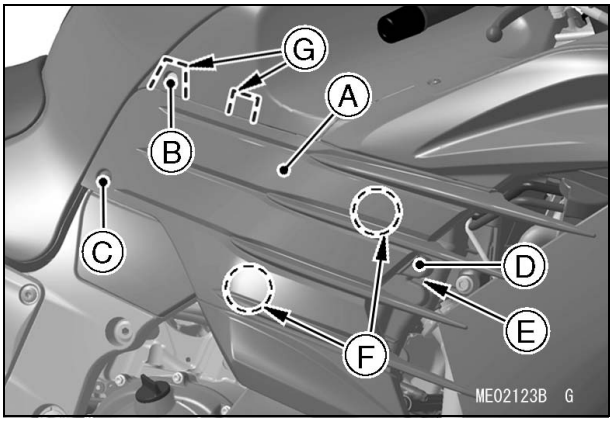
Preparation

Battery Service

The battery used in this motorcycle is a sealed type and never needs to be refilled. Follow the procedure for activating a new battery to ensure the best possible battery performance.

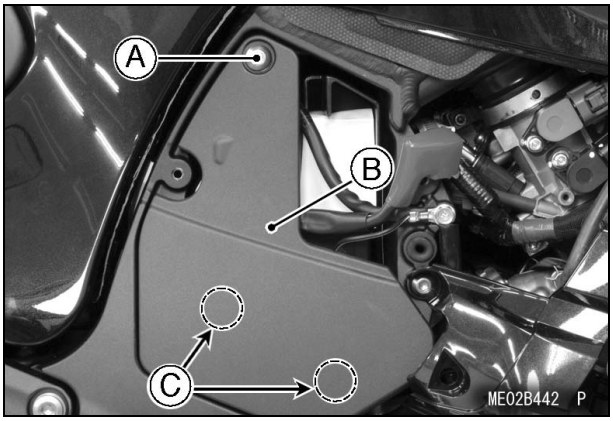
Battery Removal

- Remove the bolts.
- Pulling out the right fairing cover out slowly to clear the projections.
- Clear the right inner rubber cover from the right fairing cover, and remove the right fairing cover backward.



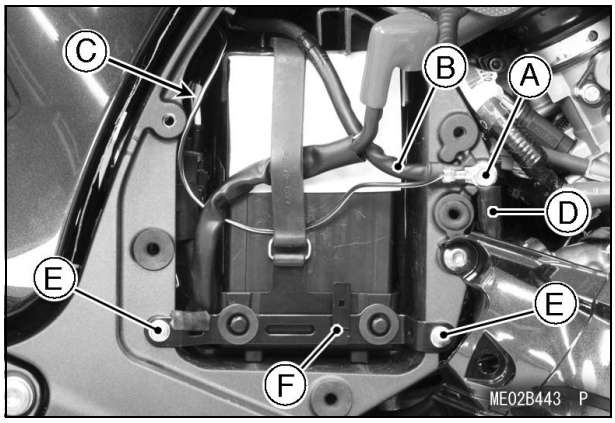
A. Right Fairing Cover
B. Bolt (D = 6, L = 30)
C. Bolt (D = 6, L = 14)
D. Bolt (D = 5, L = 20)
E. Right Inner Rubber Cover
F. Projections
G. Tabs

- Remove the battery compartment cover by removing the bolt (D = 6, L = 14).



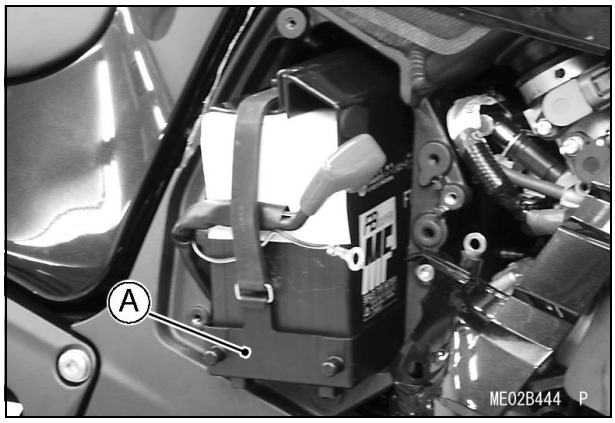
A. Bolt (D = 6, L = 14)
B. Battery Compartment Cover
C. Projections

- Remove the battery (–) cable, (–) terminal lead and frame ground cable by removing the bolt (D = 6, L = 16).
- Remove the battery holder bracket by removing the bolts (D = 6, L = 16).



A. Bolt (D = 6, L = 16)
B. Battery (–) Cable
C. (–) Terminal Lead
D. Frame Ground Cable
E. Bolts (D = 6, L = 16)
F. Battery Holder Bracket

- Slightly pull out the battery tray.
- Remove the battery cover.



A. Battery Tray

NOTICE

Be careful not to drop the battery from the motorcycle when pulling out it.
Do not give the battery tray a strong pull, or the cables may be damaged.

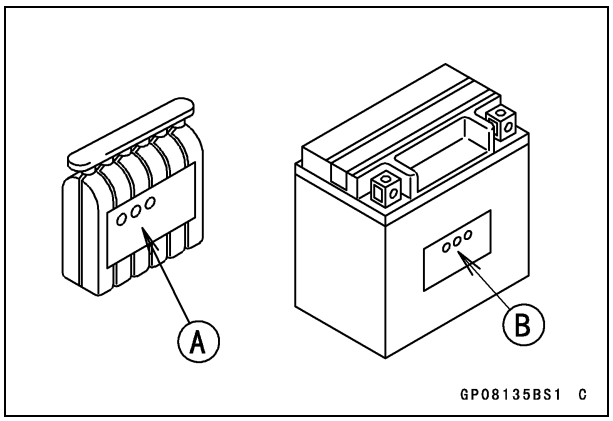
Battery Activation

Electrolyte Filling

- Make sure that the model name of the electrolyte container matches the model name of the battery. These names must be the same.

Battery Model Name

ZX1400E/F: FTX14-BS



A. Model Name of the Electrolyte

B. Model Name of the Battery

NOTICE

Each battery comes with its own specific electrolyte container; using the wrong container may overfill the battery with incorrect electrolyte, which can shorten battery life and deteriorate battery performance. Be sure to use the electrolyte container with the same model name as the battery since the electrolyte volume and specific gravity vary with the battery type.

NOTICE

Do not remove the aluminum sealing sheet from the filler ports until just prior to use. Be sure to use the dedicated electrolyte container for correct electrolyte volume.

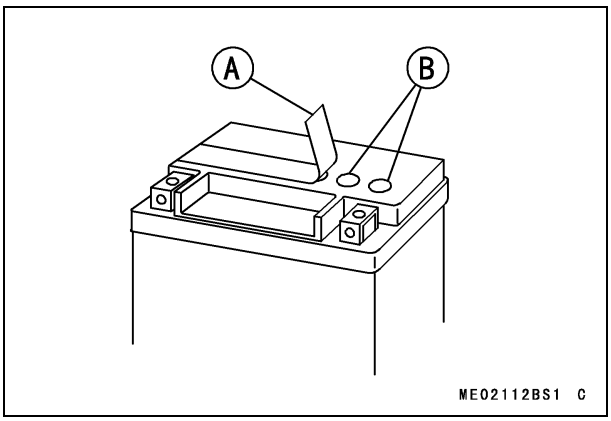
⚠ DANGER

Sulfuric acid in battery electrolyte can cause severe burns. To prevent burns, wear protective clothing and safety glasses when handling electrolyte. If the electrolyte comes in contact with your skin or eyes, wash the area with liberal amounts of water and seek medical attention for more severe burns.

- Place the battery on a level surface.
- Check to see that the sealing sheet has no peeling, tears, or holes in it.
- Remove the sealing sheet.

NOTE

○*The battery is vacuum sealed. If the sealing sheet has leaked air into the battery, it may require a longer initial charge.*



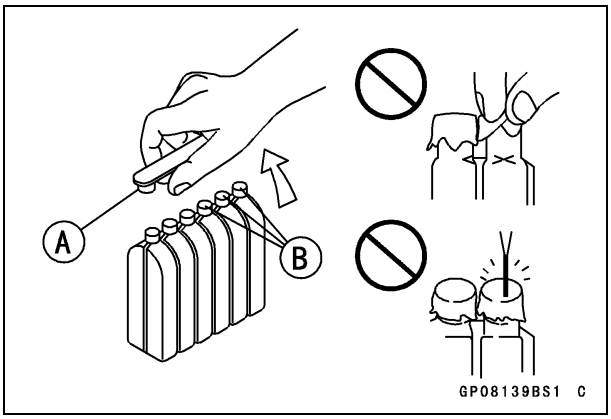
A. Sealing Sheet

B. Filler Ports

- Remove the electrolyte container from the vinyl bag.
- Detach the strip of caps from the container and set aside, these will be used later to seal the battery.

NOTE

○*Do not pierce or otherwise open the sealed cells of the electrolyte container. Do not attempt to separate individual cells.*



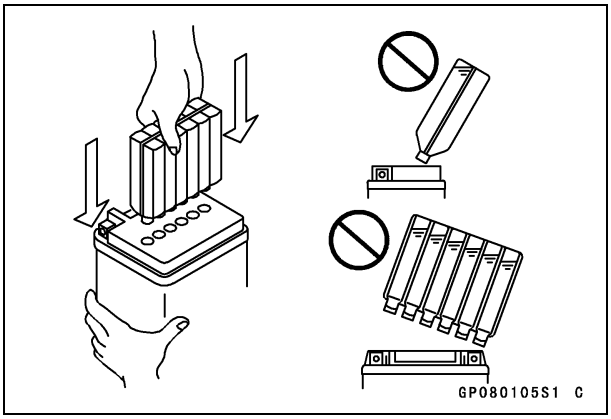
A. Strip of Caps

B. Sealed Cells

- Place the electrolyte container upside down with the six sealed cells into the filler ports of the battery. Hold the container level, push down to break the seals of all six cells. You will see air bubbles rising into each cell as the ports fill.

NOTE

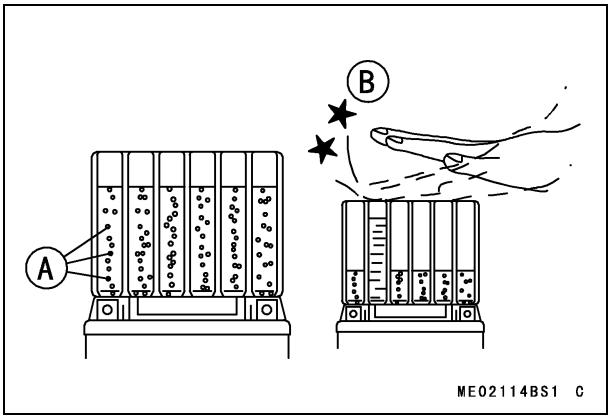
○*Do not tilt the electrolyte container.*



- Check the electrolyte flow.
- If no air bubbles are coming up from the filler ports, or if the container cells have not emptied completely, tap the container a few times.

NOTE

○*Be careful not to have the battery fall down.*



A. Air Bubbles

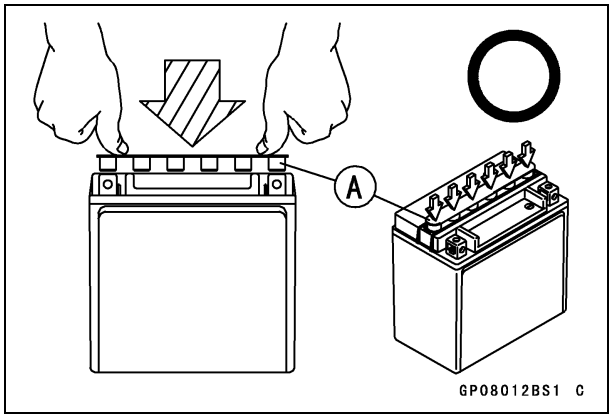
B. Tap the Container

- Keep the container in place. Don't remove the container from the battery, the battery requires all the electrolyte from the container for proper operation.

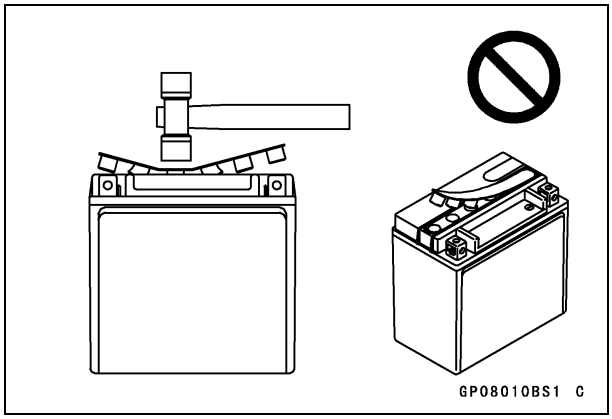
NOTICE

Removal of the container before it is completely empty can shorten the service life of the battery. Do not remove the container until it is completely empty.

- After filling, let the battery sit for 20 ~ 60 minutes with the electrolyte container kept in place, which is required for the electrolyte to fully permeate into the plates.
- Make sure that the container cells have emptied completely, and remove the container from the battery.
- Place the strip of caps loosely over the filler ports, press down firmly with both hands to seat the strip of caps into the battery (don't pound or hammer). When properly installed, the strip of caps will be level with the top of the battery.



A. Strip of Caps



NOTICE

Once the strip of caps is installed onto the battery, never remove the caps, nor add water or electrolyte to the battery.

NOTE

○*Charging the battery immediately after filling can shorten service life.*

Initial Charge

- Newly activated sealed batteries require an initial charge.

Standard Charge: 1.4 A × 5 ~ 10 hours

- If using a recommended battery charger, follow the charger's instructions for newly activated sealed battery.

Kawasaki-recommended chargers:

Battery Mate 150-9

OptiMate PRO 4-S/PRO S/PRO 2

Yuasa MB-2040/2060

Christie C10122S

- If the above chargers are not available, use equivalent one.
- Let battery sit 30 minutes after initial charge, then check voltage using a voltmeter. (Voltage immediately after charging becomes temporarily high. For accurate measuring, let the battery sit for given time.)

NOTE

- *Charging rates will vary depending on how long the battery has been stored, temperature, and the type of charger used. If voltage is not at least 12.6 volts, repeat charging cycle.*
- *To ensure maximum battery life and customer satisfaction, it is recommended the battery be load tested at three times its amp-hour rating for 15 seconds.*
  Re-check voltage and if less than 12.6 volts repeat the charging cycle and load test. If still below 12.6 volts the battery is defective.

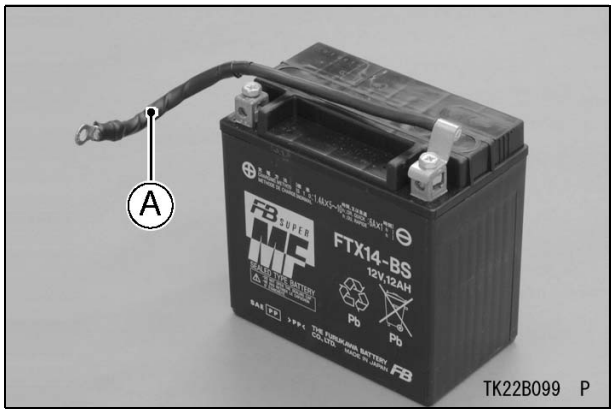
Battery Installation

Make sure that the lead or cable does not pinch with any parts.

NOTICE

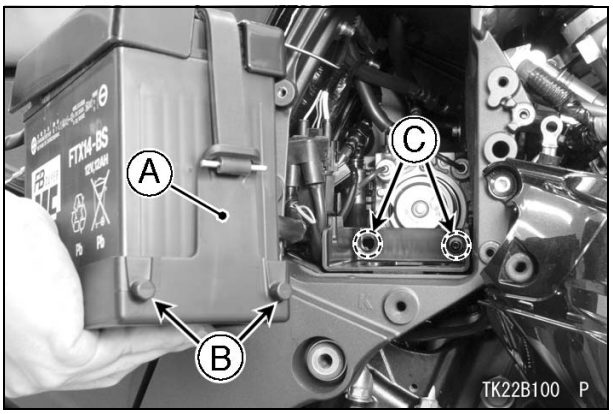
Installing the (–) cable to the (+) terminal of the battery or the (+) cable to the (–) terminal of the battery can seriously damage the electrical system.

- Install the battery (–) cable to the battery.



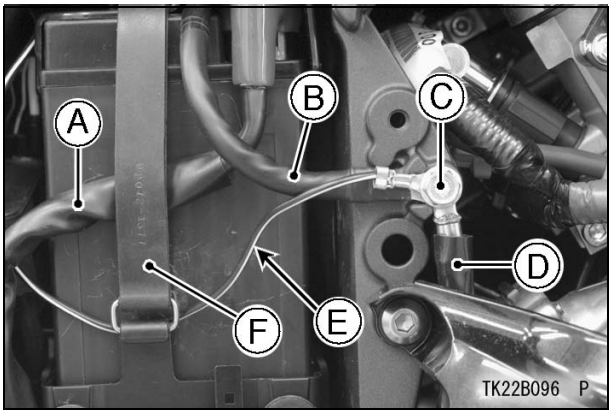
A. Battery (–) Cable

- Install the battery (+) cable to the battery, and then install the battery cover on the battery, and hook the band.
- Insert the projections on the battery tray into the holes of the battery compartment.



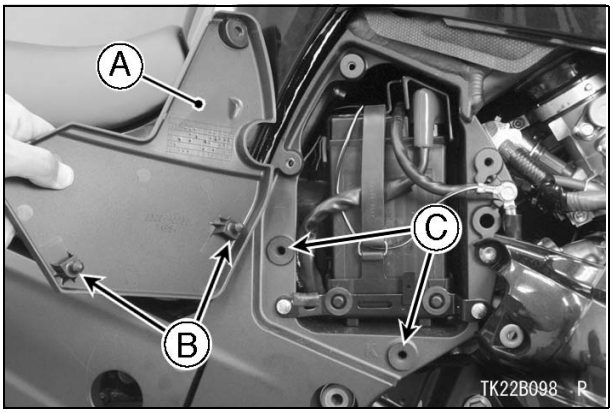
A. Battery Tray
B. Projections
C. Holes

- Install the battery holder bracket.
- Install the bolts (D = 6, L = 16).
- Install the cables and lead so that they are positioned over the frame, in order of the frame ground cable, battery (–) cable and (–) terminal lead from the bottom.
- Install the bolt (D = 6, L = 16).
- Run the battery (+) cable and (–) terminal lead under the band.



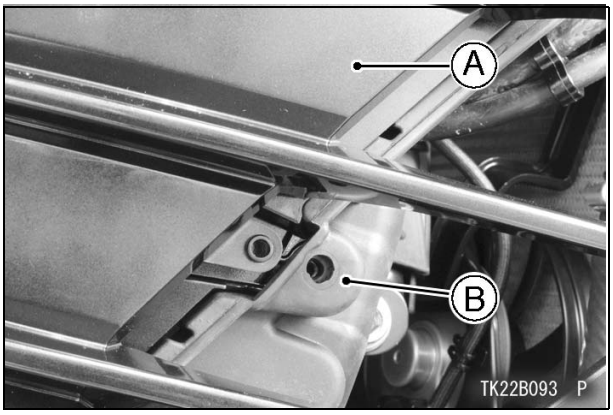
A. Battery (+) Cable
B. Battery (–) Cable
C. Bolt (D = 6, L = 16)
D. Frame Ground Cable
E. (–) Terminal Lead
F. Band

- Insert the projections on the battery compartment cover into the holes of the frame.
- Install the bolt (D = 6, L = 14).



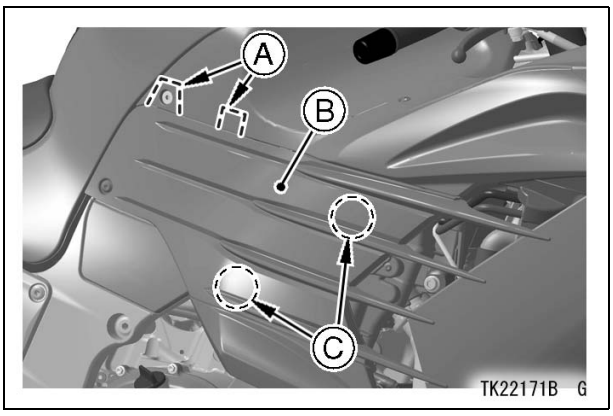
A. Battery Compartment Cover
B. Projections
C. Holes

- Insert the right fairing cover halfway, and fit the right inner rubber cover to the right fairing cover.



A. Right Fairing Cover
B. Right Inner Rubber Cover

- Insert the front part of the right fairing cover securely.
- Insert the tabs on the right fairing cover under the fuel tank cover first, and then fit the projections to the holes.
- Install the bolts and washers.



A. Tabs
B. Right Fairing Cover
C. Projections

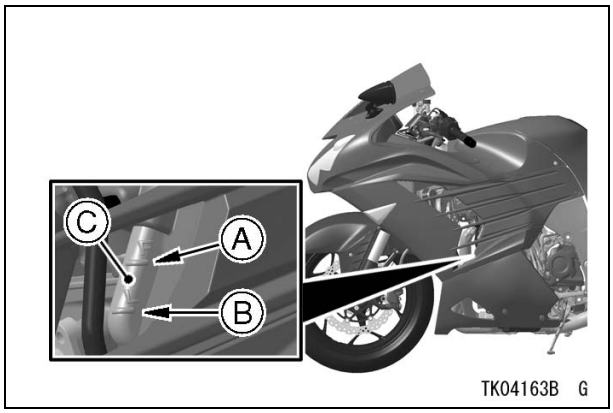
Coolant

Coolant Level Inspection

- Situate the motorcycle so that it is perpendicular to the ground.
- Check the coolant level through the coolant level gauge on the reserve tank located in the inside of the right fairing. 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).*

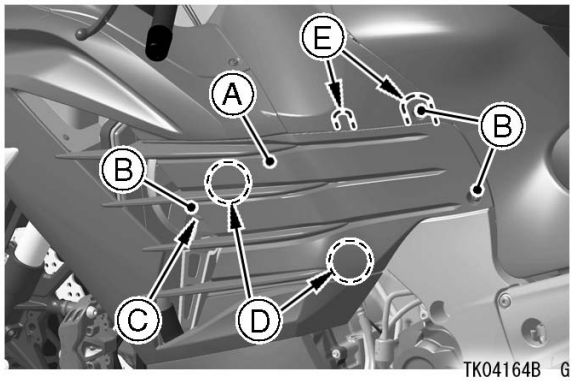


A. F (Full) Level Line
B. L (Low) Level Line
C. Reserve Tank

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

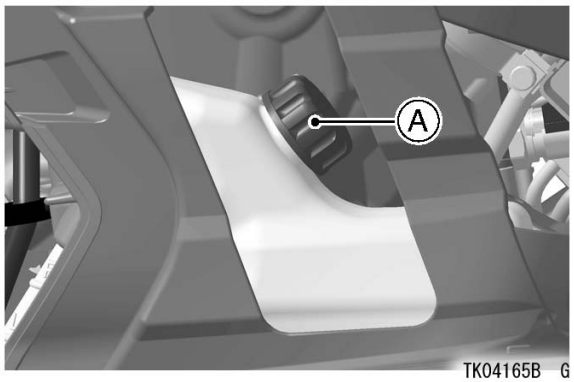
Coolant filling

- Remove the bolts (D = 6, D = 5) and washers on the left fairing cover.
- Pulling out the left fairing cover out slowly to clear the projections.
- Clear the left inner rubber cover from the left fairing cover, and remove the left fairing cover backward.



A. Left Fairing Cover
B. Bolts and Washers
C. Left Inner Rubber Cover
D. Projections
E. Tabs

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



A. Reserve Tank Cap

- Install the cap.

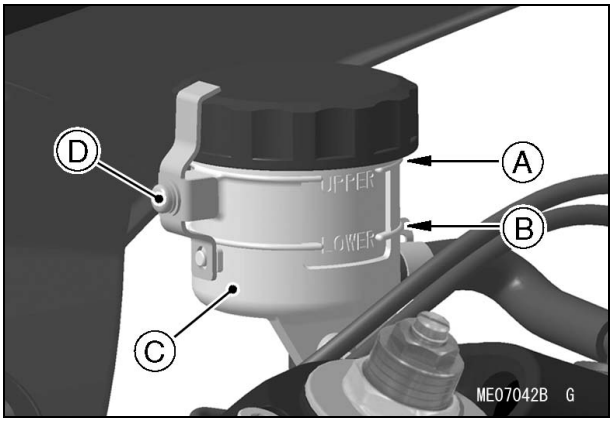
NOTE

○*A permanent type of antifreeze is installed in the cooling system when shipped. It is colored green and contains ethylene glycol. 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 between the upper and lower level lines.



A. Upper Level Line
B. Lower Level Line
C. Front Brake Fluid Reservoir
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 front brake lines and fill the reservoir.
- Loosen the reservoir cap stopper screw 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.

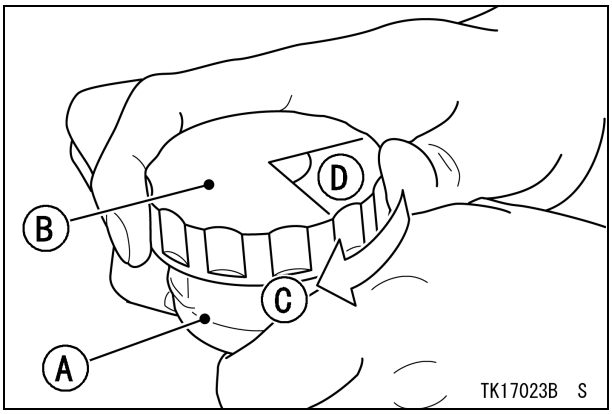
⚠ WARNING

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

1. **Never reuse old brake fluid.**
2. **Do not use fluid from a container that has been left unsealed or that has been open for a long time.**
3. **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.**
4. **Don't leave the reservoir cap off for any length of time to avoid moisture contamination of the fluid.**
5. **Don't change the fluid in the rain or when a strong wind is blowing.**
6. **Brake fluid quickly ruins painted surfaces; any spilled fluid should be completely wiped up immediately.**
7. **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.**

NOTE

○*First, tighten the front 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. Reservoir
B. Cap
C. Clockwise
D. 1/6 turn

- 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.

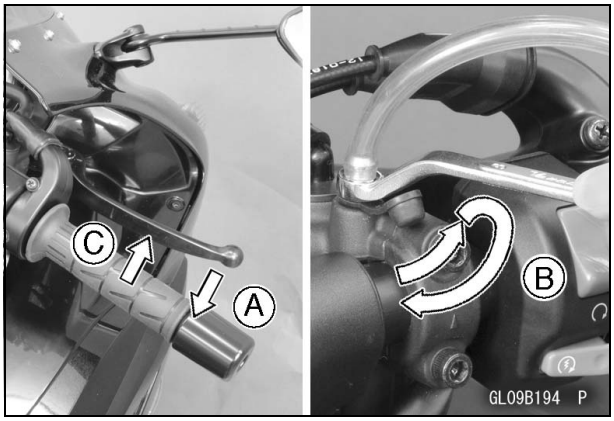
Brake Line Air Bleeding

- Loosen the cap stopper screw 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 the front master cylinder 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.

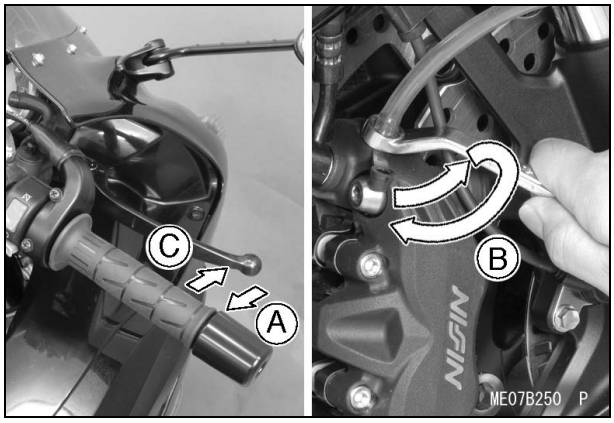


A. Hold the brake lever applied.
B. Quickly open and close the bleed valve on the front master cylinder.
C. Release the brake lever.

- Tighten the bleed valve to the specified torque.

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

- 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.
- Reinstall the diaphragm and reservoir cap.
- Tighten the bleed valve(s) to the specified torque.

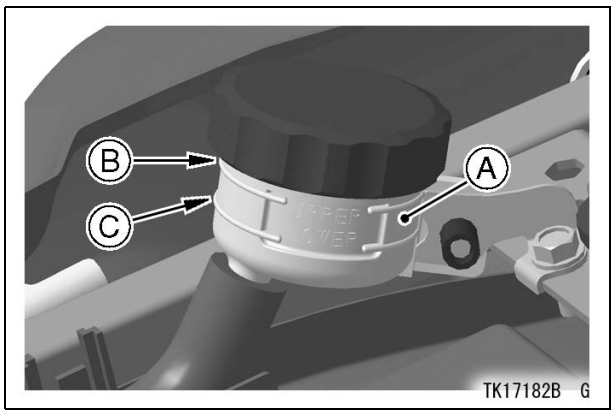
Torque: 7.8 N·m (0.80 kgf·m, 69 in·lb)

- Tighten the reservoir cap stopper screw.
- Apply the brake forcefully for a few seconds, and check for fluid leakage around the fittings.

Rear Brake

Rear Brake Fluid Level Inspection

- Remove the seat.
- 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

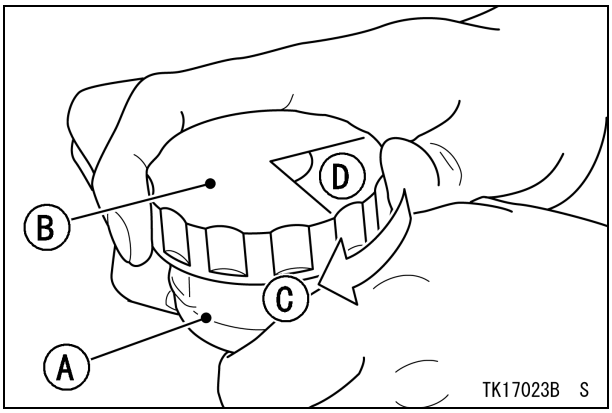
- If the fluid level in the reservoir is lower than the lower level line, check for fluid leaks in the brake line, and fill the reservoir.
- Loosen the reservoir cap stopper screw to remove the reservoir cap and diaphragm.
- Fill the reservoir to the upper level line with DOT4 brake fluid, reinstall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

NOTICE

Brake fluid quickly ruins painted surfaces. Wipe up any spilled fluid 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.

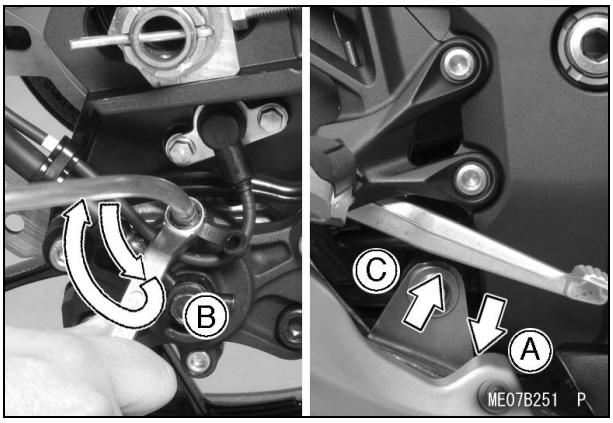
Brake Line Air Bleeding

- 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 counterclockwise) 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

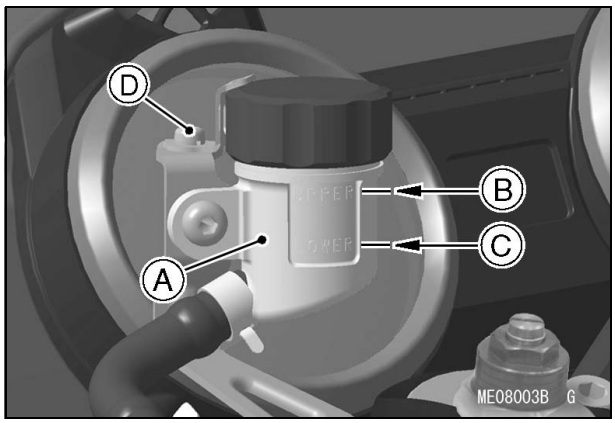
○*First, tighten the rear brake fluid reservoir cap clockwise by hand until slight resistance is felt indicating that the cap is seated on the reservoir body, then tighten the cap an additional 1/6 turn while holding the brake fluid reservoir body.*

- Tighten the reservoir cap stopper screw.
- Apply the brake forcefully for a few seconds, and check for fluid leakage around the fittings.
- Install the seat.

Clutch

Clutch Fluid Level Inspection

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



A. Clutch 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 clutch line and fill the reservoir.

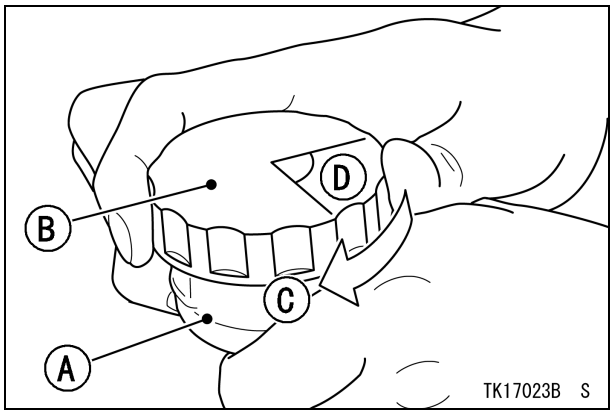
NOTE

○*Since the clutch fluid is the same as the brake fluid, refer to the "Front or Rear Brake Fluid" section for further details.*

- Loosen the reservoir cap stopper screw to remove the clutch fluid reservoir cap and diaphragm.
- Fill the reservoir to the upper level line with DOT4 clutch fluid, and reinstall the diaphragm and reservoir cap.

NOTE

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



A. Reservoir
B. Reservoir Cap
C. Clockwise
D. 1/6 turn

- Tighten the reservoir cap stopper screw.
- Operate the clutch lever several times.
- If it feels spongy, there might be air in the line.
- If necessary, bleed the air in the lines.
- Also check for fluid leakage around the fittings.

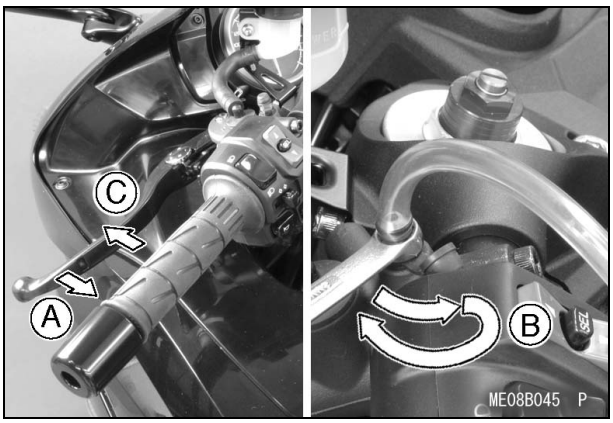
Clutch Line Air Bleeding

- Loosen the reservoir cap stopper screw to remove the 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 clutch lever and run the other end of the hose into a container.
- With the reservoir cap off, slowly pump the clutch 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 clutch master cylinder end of the line.
- Pump the clutch 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.

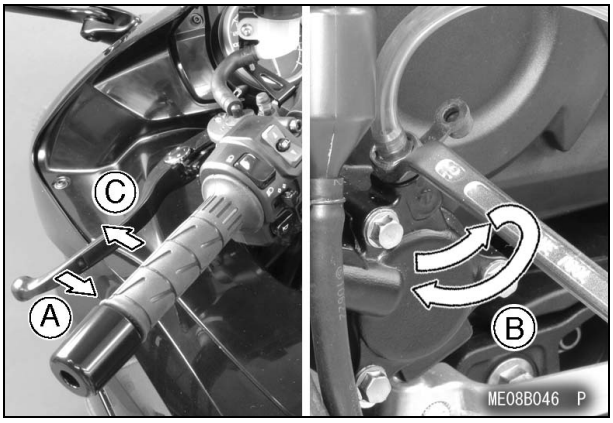


A. Hold the clutch lever applied.
B. Quickly open and close the bleed valve on the clutch master cylinder.
C. Release the clutch lever.

- Tighten the bleed valve to the specified torque.

Torque: 5.4 N·m (0.55 kgf·m, 48 in·lb)

- Attach a clear plastic hose to the bleed valve on the clutch slave cylinder and run the other end of the hose into a container.
- With the reservoir cap off, slowly pump the clutch 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 clutch master cylinder end of the line.
- Pump the clutch 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 clutch lever applied.

B. Quickly open and close the bleed valve on the clutch slave cylinder.

C. Release the clutch lever.

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

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

NOTE

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

- Tighten the reservoir cap stopper screw.
- Apply the clutch forcefully for a few seconds, and check for fluid leakage around the fittings.

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 notches are on the same marks or points on the left and right of the swingarm.

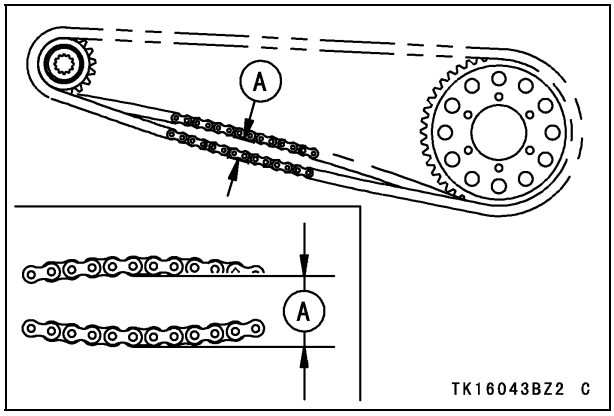
⚠ WARNING

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 sprocket.

Drive Chain Slack:

25 ~ 30 mm (1.0 ~ 1.2 in.)



A. 25 ~ 30 mm (1.0 ~ 1.2 in.)

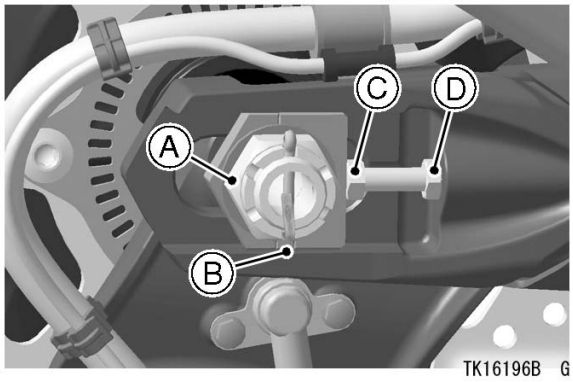
- If the drive chain is too tight or too loose, adjust it so that the chain slack will be within the standard value.

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



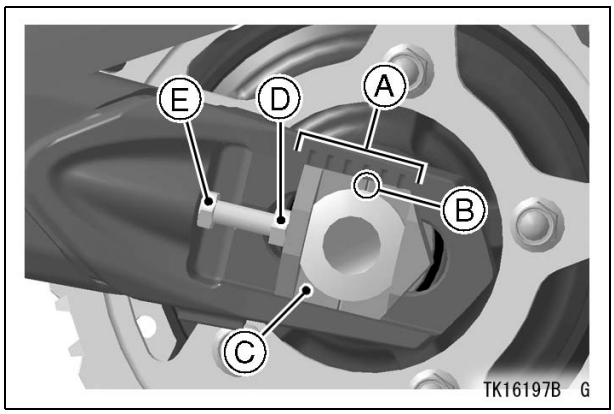
A. Rear Axle Nut

B. Cotter Pin

C. Chain Adjuster

D. Chain Adjuster Locknut

- If the chain is too loose, turn out the left and right chain adjusters evenly.
- If the chain is too tight, turn in the left and right chain adjusters evenly.
- Turn both chain adjusters evenly until the drive chain has the correct amount of slack. To keep the chain and wheel properly aligned, the wheel alignment indicator notches should align with the same marks on each side of the swingarm.



A. Marks
B. Notch
C. Indicator
D. Chain Adjuster
E. Chain Adjuster Locknut

NOTE

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

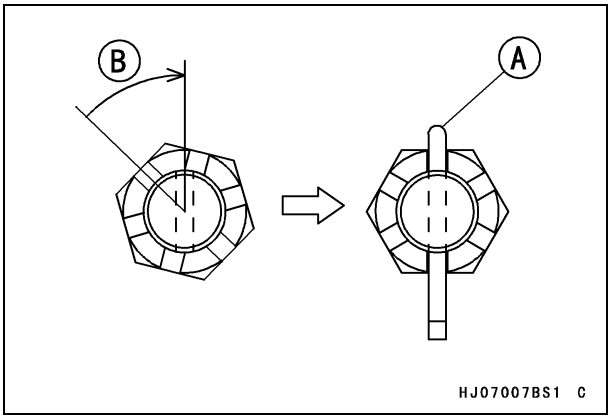
- Tighten both chain adjuster locknuts.
- Tighten the rear axle nut to the specified torque.

Torque: 127 N·m (13.0 kgf·m, 94 ft·lb)

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

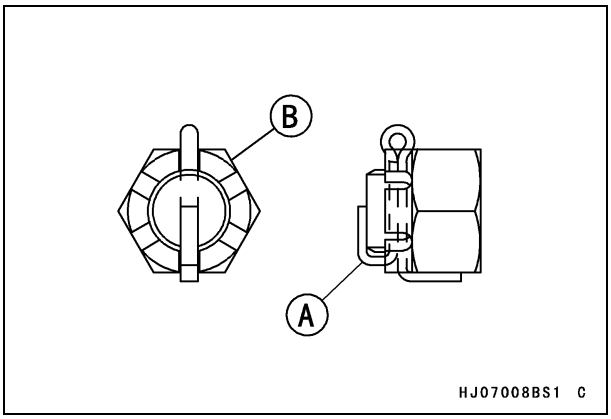
NOTE

○*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.

- Check the rear brake effectiveness.

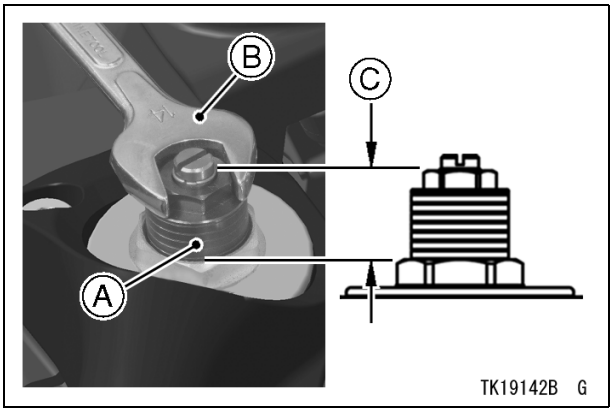
Front Fork

Spring Preload Adjustment

- Check the position of the spring preload adjusters on the left and right fork legs.

STD Spring Preload:

14 mm (0.55 in.) from the top of adjuster



A. Spring Preload Adjuster

B. Wrench

C. 14 mm (0.55 in.)

- Turn the spring preload adjuster into the nut to increase spring force and out to decrease spring force using a wrench. The adjusting range stretches 4 ~ 19 mm (0.2 ~ 0.7 in.) from the top of each adjuster. Adjust the spring preload to the standard setting position.

NOTICE

The right and left fork tubes must be adjusted evenly.

⚠ WARNING

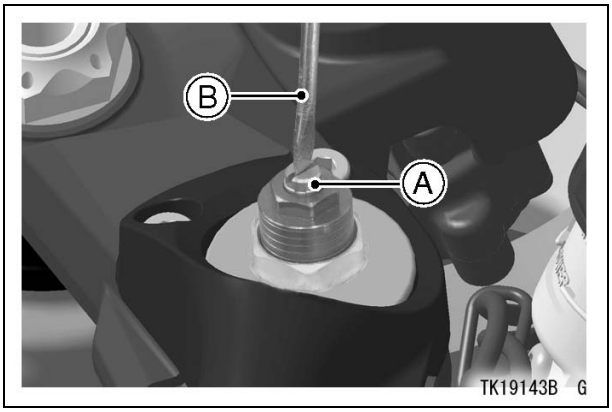
If both spring preload adjusters and both rebound and compression damping force adjusters are not adjusted equally, handling may be impaired and a hazardous condition may result. Set all suspension adjusters equally to the recommended settings.

Rebound Damping Adjustment

- Check the position of the rebound damping adjusters on the left and right fork legs.

STD Rebound Damping:

8 clicks (Counterclockwise from the fully seated position).



A. Rebound Damping Adjuster

B. Screwdriver

- To adjust the rebound damping, turn the adjuster with a screwdriver until you feel a click. Adjust the rebound damping to the standard setting position.

NOTICE

The right and left fork tubes must be adjusted evenly.

NOTICE

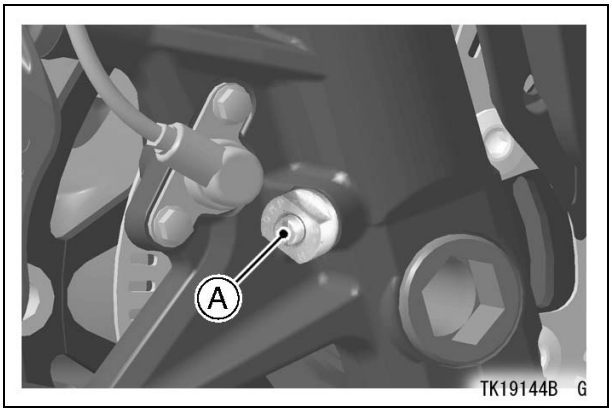
Do not force to turn the rebound damping adjuster from the fully seated position or the adjusting mechanism may be damaged.

Compression Damping Adjustment

- Check the position of the compression damping adjusters on the bottom of the left and right fork legs.

STD Compression Damping:

10 clicks (Counterclockwise from the fully seated position).



A. Compression Damping Adjuster

- To adjust the compression damping, turn the adjuster with a screwdriver until you feel a click. Adjust the compression damping to the standard setting position.

NOTICE

The right and left fork tubes must be adjusted evenly.

NOTICE

Do not force to turn the compression damping adjuster from the fully seated position or the adjusting mechanism may be damaged.

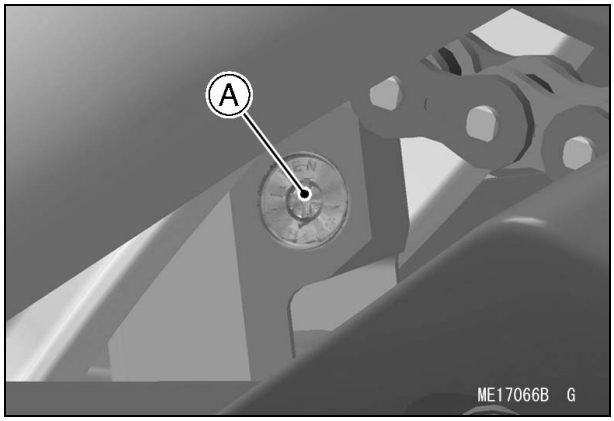
Rear Shock Absorber

Rebound Damping Adjustment

- Check the position of the rebound damping adjuster at the lower end of the rear shock absorber.

STD Rebound Damping:

2 turns out (Counterclockwise from the fully seated position).



A. Rebound Damping Adjuster

- To adjust the rear shock absorber rebound damping, turn the rebound damping adjuster with a screwdriver. Adjust the rebound damping to the standard setting position.

NOTICE

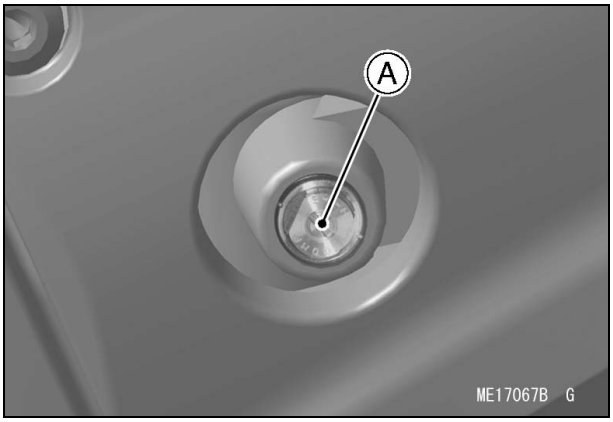
Do not force to turn the rebound damping adjuster from the fully seated position or the adjusting mechanism may be damaged.

Compression Damping Adjustment

- Check the position of the compression damping adjuster on the gas reservoir at the upper end of the rear shock absorber.

STD Compression Damping:

2 3/4 turns out (Counterclockwise from the fully seated position).



A. Compression Damping Adjuster

- To adjust the compression damping, turn the adjuster with a screwdriver. Adjust the compression damping to the standard setting position.

NOTICE

Do not force to turn the compression damping adjuster from the fully seated position or the adjusting mechanism may be damaged.

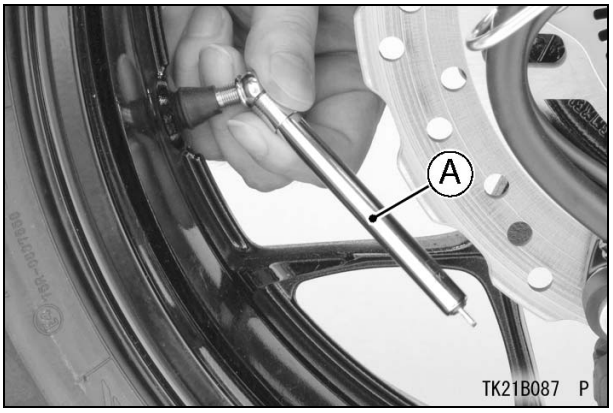
Tire Air Pressures

- 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: 290 kPa (2.90 kgf/cm², 42 psi)

Rear: 290 kPa (2.90 kgf/cm², 42 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. 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. Never fill the tank completely to the top. If the tank is filled completely to the top, heat may cause the fuel to expand and overflow through the vents in the tank cap. After refueling, make sure the tank cap is closed securely. If gasoline is spilled on the fuel tank, wipe it off immediately.

- 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, Canadian and Brazilian Specifications

Fuel Type	Unleaded Gasoline	
Minimum Octane Rating	Antiknock Index 90	(RON + MON) 2

For Other than US, Canadian and Brazilian 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) 95

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

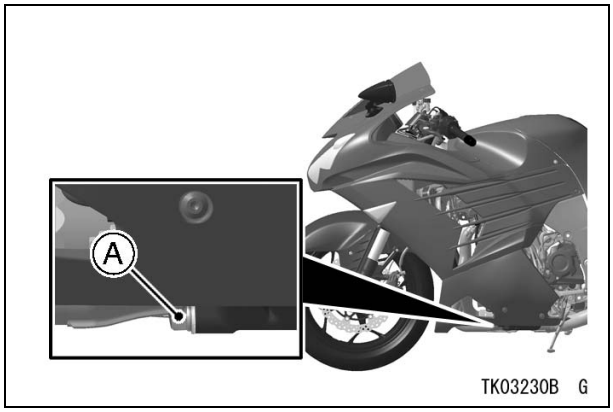
Engine Oil (4-stroke)

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.*

Engine Oil Drain Bolt Torque:
30 N·m (3.1 kgf·m, 22 ft·lb)



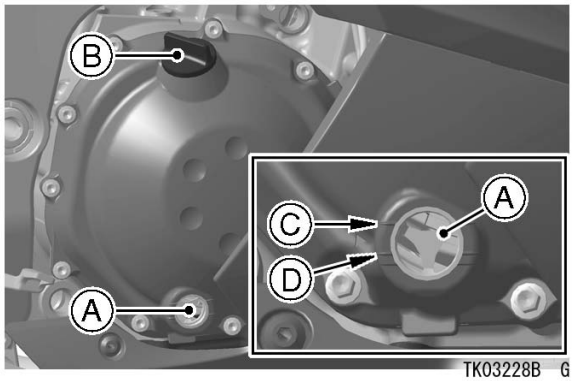
A. Engine Oil Drain Bolt

- 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

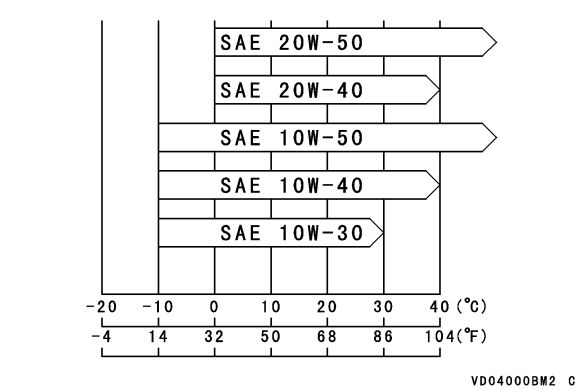
D. Lower Level Line

- 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:	**3.8 L (4.0 US qt)**
	[when filter is not removed]
	4.2 L (4.4 US qt)
	[when filter is removed]
	4.6 L (4.9 US qt)
	[when engine is completely dry]

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

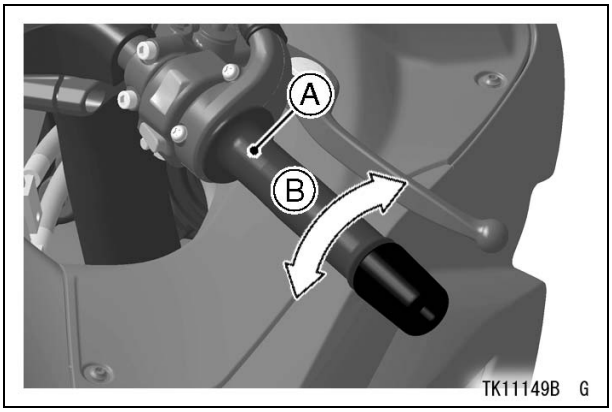
Throttle Grip Free Play Inspection

- 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.)

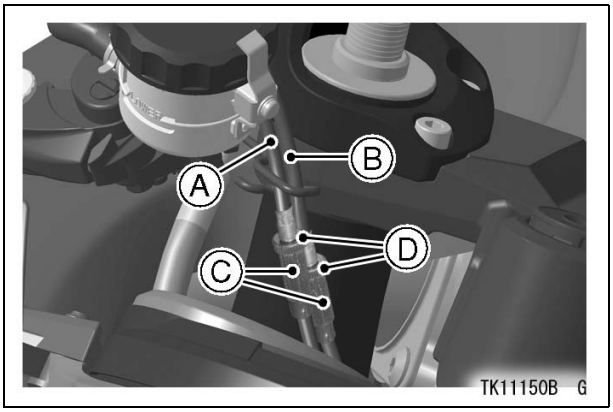
- Run the engine at idle speed, and turn the handlebar all the way to the right and left to ensure that the idle speed does not change. If the idle speed increases, check the throttle grip free play.

⚠ 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 both locknuts of the throttle cables and turn both adjusters in completely to give the throttle grip plenty of play.
- Turn out the decelerator cable adjuster until there is no play when the throttle grip is completely closed. Tighten the locknut.



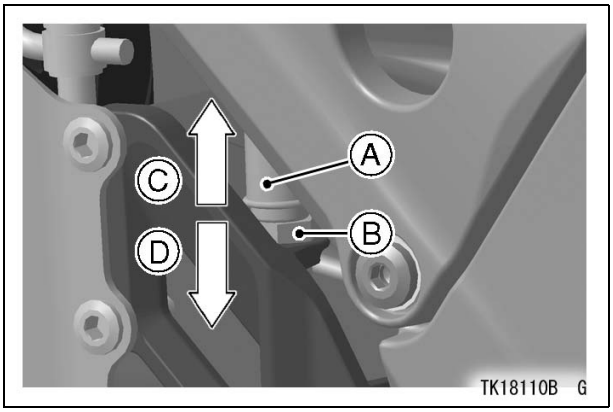
A. Decelerator Cable
B. Accelerator Cable
C. Adjusters
D. Locknuts

- Turn out the accelerator cable adjuster until the specified amount of play is obtained. Tighten the locknut.

Rear Brake Light Switch

Rear Brake Light Switch Adjustment

- Turn on the ignition switch. The brake light should illuminate when the brake pedal is depressed about 10 mm (0.4 in.)
- If it does not, turn the adjusting nut at the rear brake light switch as required.
- Cover the clean cloth on the muffler body to prevent damage.
- Remove the right front footpeg bracket bolts (D = 8, L = 30) (2).
- 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 1 050 ~ 1 150 r/min (rpm) by turning the idle adjusting screw.

Idle Speed: 1 050 ~ 1 150 r/min (rpm)

- 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 handlebar to each side. If handlebar 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.

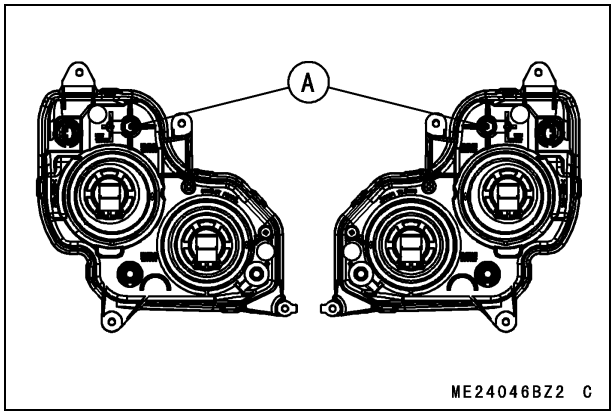
Headlight Aim

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

The left and right (high beam and low beam) headlight aim can be adjusted individually. The following explains the procedure for adjusting the left headlight aim, and the right headlight aim can be adjusted in the same manner.

Horizontal Adjustment

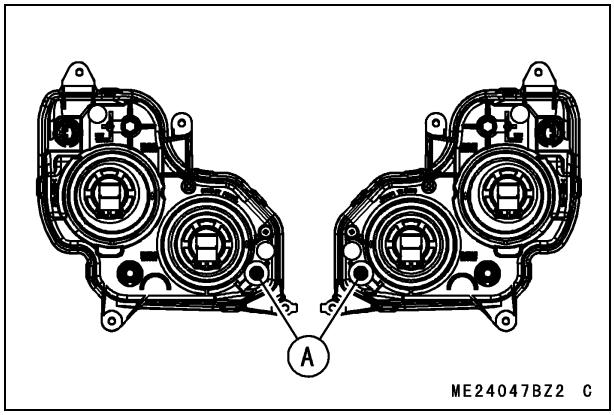
- Turn the horizontal adjuster in or out until the beam points straight ahead.



A. Horizontal Adjusters

Vertical Adjustment

- Turn the vertical adjuster in or out to adjust the headlight vertically.



A. Vertical Adjusters

For US and Canadian 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 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.*

For other than US and Canadian models

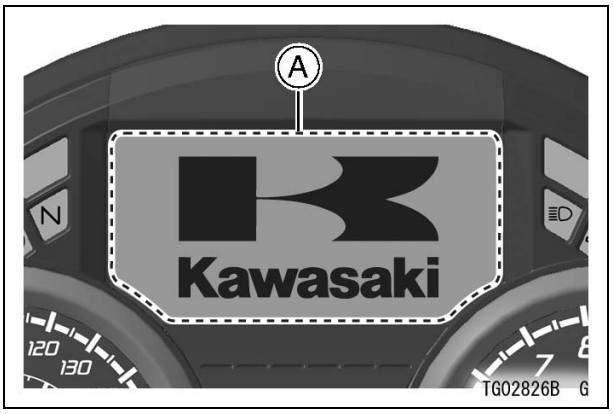
NOTE

○*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.*

Multifunction Meter

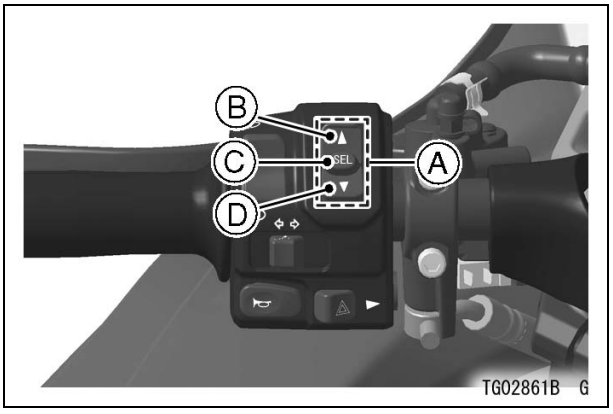
Check the Language Setting: ENGLISH/FRANCAIS

The language displayed in the multifunction meter can be changed to English or French in this Language Setting Menu.



A. Multifunction Meter

The multifunction button is located on the left handlebar switches. Select the various functions by pushing the multifunction button.



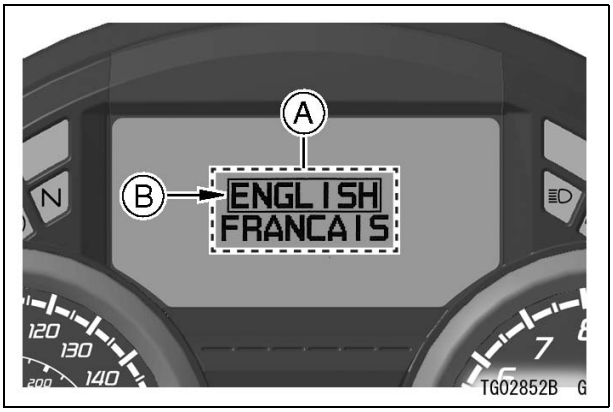
A. Multifunction Button

B. Upper Button

C. "SEL" Button

D. Lower Button

- Turn the ignition key to "ON".
- Push the "SEL" button for 2 seconds to display the Language Setting Menu.
- Align the cursor and select language to display by pushing the lower button.
- Push the upper or lower button to set the display language.
- Push the "SEL" button to display the setting menu.



A. Language Setting Menu

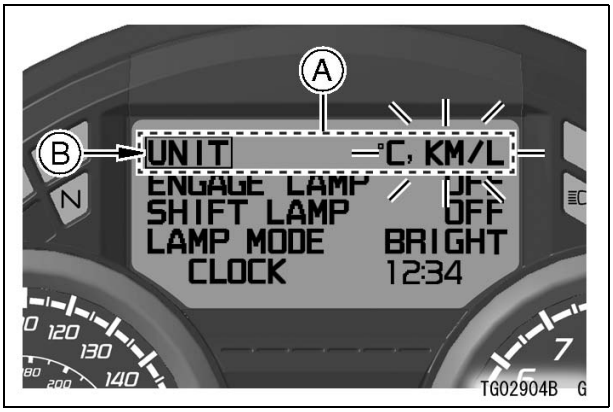
B. Cursor

Check the Unit Setting: KM/L, L/100KM, MPG USA, MPG UK

The multifunction unit setting can alternate between U.S. and metric modes (mile and km) in the digital meter. Make sure that mile or km is correctly displayed according to local regulations before delivering to your customer.

NOTE

○*Do not operate the vehicle with the digital meter displaying in the wrong unit (mile or km) of the digital meter. Shift the mile/km display in the digital meter as follows.*



A. Unit Setting Menu

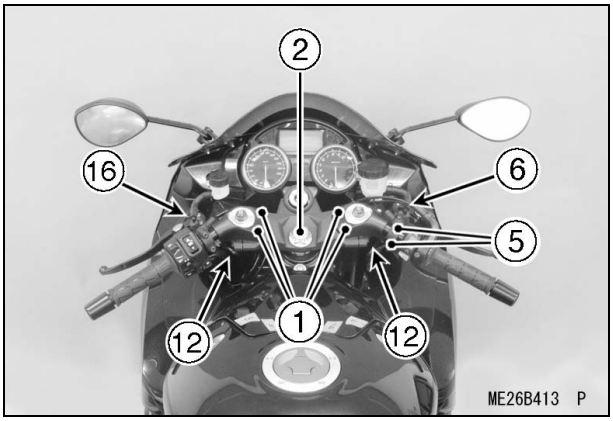
B. Cursor

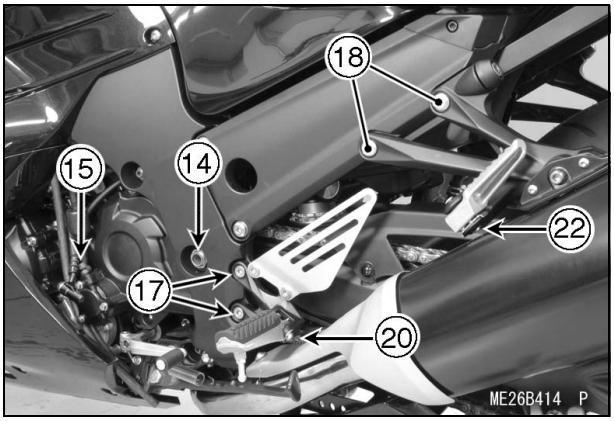
- Push the upper or lower button to align the cursor to “UNIT” after setting the language in the language setting menu.
- Push the “SEL” button, and then the previous unit setting starts blinking.
- Select the unit to display by pushing the upper or lower button.
- The unit shifts as the following order.
- Push the “SEL” button to set the display unit after setting.
- Push the “SEL” button for 2 seconds to display the multifunction meter.

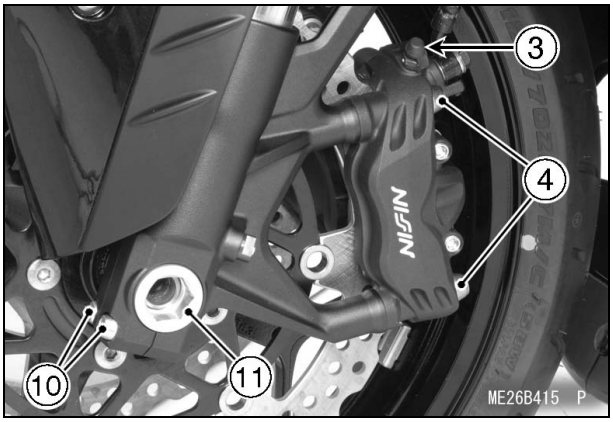
This page intentionally left blank.

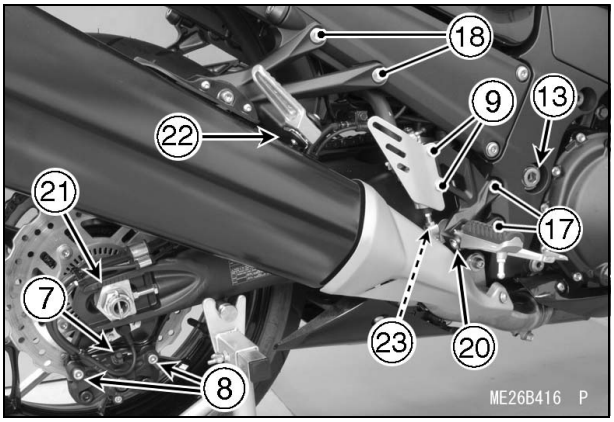
Fastener Check

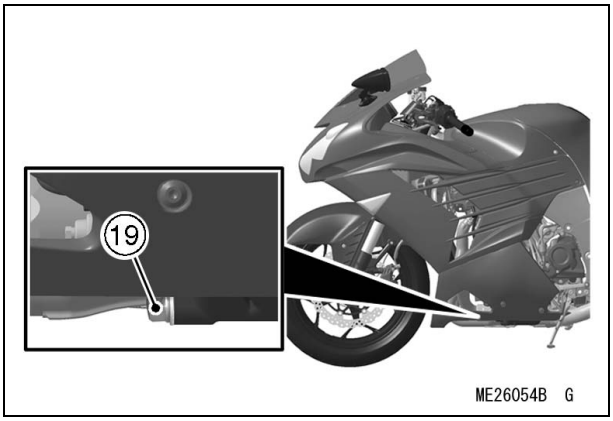
- The torque values listed are for assembly and preparation items only, see the appropriate Service Manual for a more comprehensive list. Check tightness of all fasteners that are in the table before retail delivery. Also check to see that each cotter pin or circlip is in place.











No.	Fastener	Torque			Remarks
		N·m	kgf·m	ft·lb	
Frame/Steering					
1	Handlebar mounting bolt (Left and Right)	25	2.5	18	
2	Steering stem head Nut	78	8.0	58	
Brake					
3	Front caliper bleed valve (Left and Right)	7.8	0.80	69 in·lb	
4	Front caliper mounting bolt (Left and Right)	34	3.5	25	
5	Front master cylinder clamp bolt	11	1.1	97 in·lb	S
6	Front master cylinder bleed valve	7.8	0.80	69 in·lb	
7	Rear brake bleed valve	7.8	0.80	69 in·lb	
8	Rear caliper mounting bolt	25	2.5	18	
9	Rear master cylinder mounting bolt	25	2.5	18	
Wheel					
10	Front axle clamp bolt (Left and Right)	20	2.0	15	AL
11	Front axle nut	127	13.0	93.7	
Suspension					
12	Front fork upper clamp bolt (Left and Right)	20	2.0	15	
13	Swingarm pivot shaft nut	108	11.0	80	
14	Swingarm pivot shaft locknut	98	10.0	72	
Others					
15	Clutch slave cylinder bleed valve	7.8	0.80	69 in·lb	
16	Clutch master cylinder bleed valve	5.4	0.55	48 in·lb	
17	Front footpeg bracket bolt (Left and Right)	25	2.5	18	
18	Rear footpeg bracket bolt (Left and Right)	25	2.5	18	
Engine Oil Drain					
19	Engine oil drain bolt	30	3.0	22	
Cotter Pin or Circlip					
20	Front footpeg pin circlip (Left and Right)	–	–	–	
21	Rear axle nut cotter pin	–	–	–	
22	Rear footpeg pin circlip (Left and Right)	–	–	–	
23	Rear master cylinder push rod cotter pin	–	–	–	

AL: Tighten the two clamp bolts alternately two times to ensure even tightening torque.

S: Tighten the upper clamp bolt first, and then the lower clamp bolt.

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.

Multifunction 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
2012	ZX1400EC	Ninja ZX-14R
2012	ZX1400FC	ZZR1400 ABS, Ninja ZX-14R ABS

Kawasaki
KAWASAKI HEAVY INDUSTRIES, LTD.
Motorcycle & Engine Company
Part No. 99931-1527-01