



**Includes:**

- Important Safety Information
- Operating Instructions
- Maintenance and Storage

**VERSYS**  
**VERSYS ABS**  
**Motorcycle**

**OWNER'S MANUAL**

# Quick Reference Guide

This Quick Reference Guide will assist you in finding the information you're looking for.

**GENERAL INFORMATION**

**HOW TO RIDE THE MOTORCYCLE**

**SAFE OPERATION**

**MAINTENANCE AND ADJUSTMENT**

**STORAGE**

**TROUBLESHOOTING GUIDE**

A Table of Contents is included after the Foreword.



Whenever you see the symbols shown below, 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.

** WARNING**

Engine exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

***NOTICE***

**THIS PRODUCT HAS BEEN MANUFACTURED FOR USE IN A REASONABLE AND PRUDENT MANNER BY A QUALIFIED OPERATOR AND AS A VEHICLE ONLY.**

## FOREWORD

Congratulations on your purchase of a new Kawasaki motorcycle. Your new motorcycle is the product of Kawasaki's advanced engineering, exhaustive testing, and continuous striving for superior reliability, safety and performance.

**Please read this Owner's Manual carefully before riding** so that you will be thoroughly familiar with the proper operation of your motorcycle's controls, its features, capabilities, and limitations. This manual offers many safe riding tips, but its purpose is not to provide instruction in all the techniques and skills required to ride a motorcycle safely. Kawasaki strongly recommends that all operators of this vehicle enroll in a motorcycle rider training program to attain awareness of the mental and physical requirements necessary for safe motorcycle operation.

To ensure a long, trouble-free life for your motorcycle, give it the proper care and maintenance described in this manual. For those who would like more detailed information on their Kawasaki Motorcycle, a Service Manual is available for purchase from any authorized Kawasaki motorcycle dealer. The Service Manual contains detailed disassembly and maintenance information. Those who plan to do their own work should, of course, be competent mechanics and possess the special tools described in the Service Manual.

Keep this Owner's Manual aboard your motorcycle at all times so that you can refer to it whenever you need information.

This manual should be considered a permanent part of the motorcycle and should remain with the motorcycle when it is sold.

All rights reserved. No part of this publication may be reproduced without our prior written permission.

This publication includes the latest information available at the time of printing. However, there may be minor differences between the actual product and illustrations and text in this manual.

All products are subject to change without prior notice or obligation.

**KAWASAKI HEAVY INDUSTRIES, LTD.**  
**Motorcycle & Engine Company**

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## 10 SPECIFICATIONS

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## SPECIFICATIONS

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### PERFORMANCE

Minimum Turning Radius            2.7 m (8.9 ft)

### DIMENSIONS

Overall Length                        2 125 mm (83.7 in.)

Overall Width                         840 mm (33.1 in.)

Overall Height                        1 330 mm (52.4 in.)

Wheelbase                             1 415 mm (55.7 in.)

Road Clearance                        180 mm (7.1 in.)

Curb Mass:                            KLE650C 206 kg (454 lb)

    KLE650D 209 kg (461 lb)

### ENGINE

Type                                      4-stroke, DOHC, 2-cylinder, liquid-cooled

Displacement                         649 cm<sup>3</sup> (39.6 cu in.)

Bore × Stroke                         83.0 × 60.0 mm (3.3 × 2.4 in.)

Compression Ratio                   10.6:1

Starting System	Electric starter
Cylinder Numbering Method	Left to right, 1-2
Firing Order	1-2
Fuel System	FI (Fuel Injection)
Ignition System	Battery and coil (transistorized ignition)
Ignition Timing (Electronically advanced)	10° BTDC @1 300 r/min (rpm) ~ 33° BTDC @5 000 r/min (rpm)
Spark Plug	NGK CR9EIA-9
Lubrication System	Forced lubrication (semi-dry sump)
Engine Oil:	
Type	API SG, SH, SJ, SL or SM with JASO MA, MA1 or MA2
Viscosity	SAE 10W-40
Capacity	2.4 L (2.5 US qt)
Coolant Capacity	1.2 L (1.3 US qt)

## 12 SPECIFICATIONS

### TRANSMISSION

Transmission Type	6-speed, constant mesh, return shift
Clutch Type	Wet, multi disc
Driving System	Chain drive
Primary Reduction Ratio	2.095 (88/42)
Final Reduction Ratio	3.067 (46/15)
Overall Drive Ratio	5.473 @Top gear
Gear Ratio:	
1st	2.438 (39/16)
2nd	1.714 (36/21)
3rd	1.333 (32/24)
4th	1.111 (30/27)
5th	0.966 (28/29)
6th	0.852 (23/27)

### FRAME

Caster	25°
Trail	108 mm (4.3 in.)

## Tire Size:

Front 120/70 ZR17 M/C (58W)

Rear 160/60 ZR17 M/C (69W)

## Rim Size:

Front J17M/C × MT3.50

Rear J17M/C × MT4.50

Fuel Tank Capacity 19 L (5.0 US gal)

**ELECTRICAL EQUIPMENT**

Battery 12 V 10 Ah

## Headlight:

High Beam 12 V 55 W

Low Beam 12 V 55 W

Tail/Brake Light LED

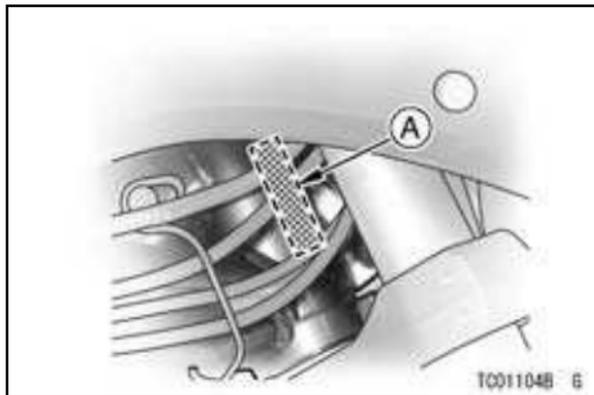
Even if one of LED (Light Emitting Diode) tail/brake light is not lit, consult with an authorized Kawasaki dealer.

Specifications are subject to change without notice.

# SERIAL NUMBER LOCATIONS

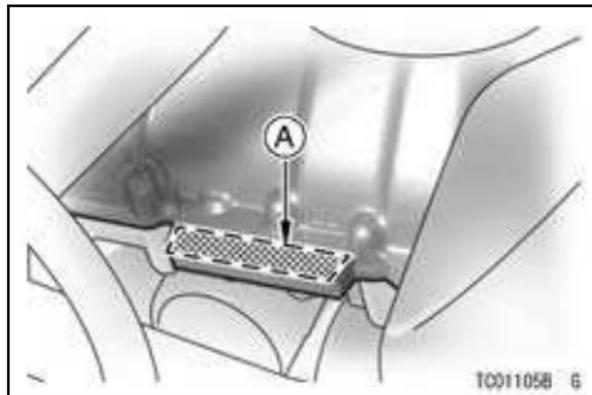
The engine and frame serial numbers are used to register the motorcycle. They are the only means of identifying your particular machine from others of the same model type. These serial numbers may be needed by your dealer, when ordering parts. In the event of theft, the investigating authorities will require both numbers as well as the model type and any peculiar features of your machine that can help them identify it.

**Frame No.**



**A. Frame Number**

**Engine No.**

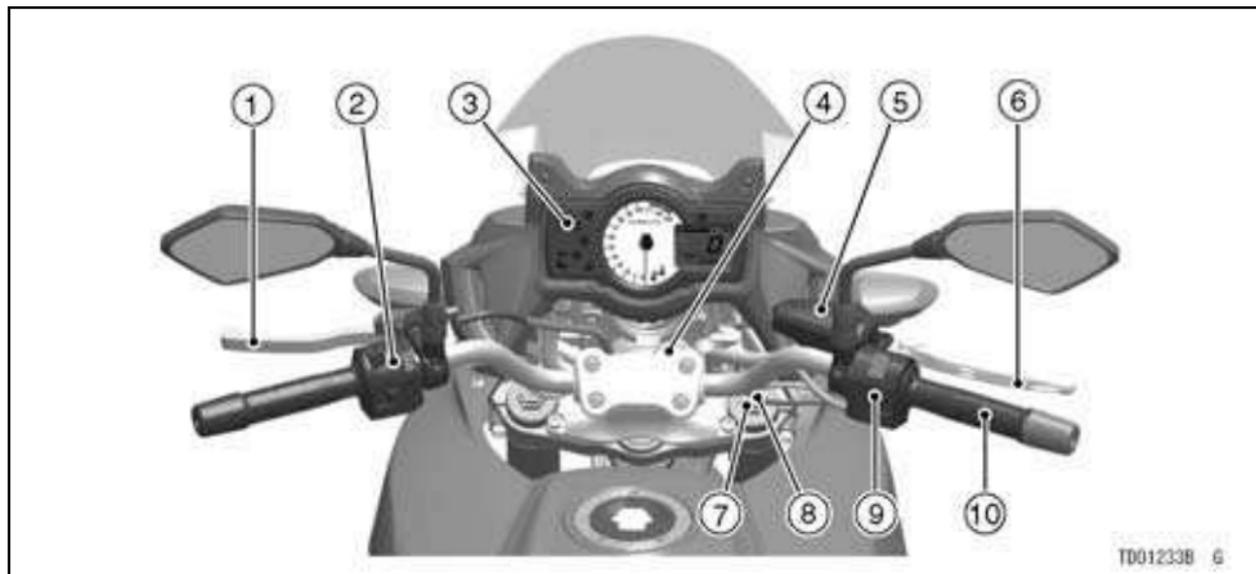


**A. Engine Number**

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## LOCATION OF PARTS

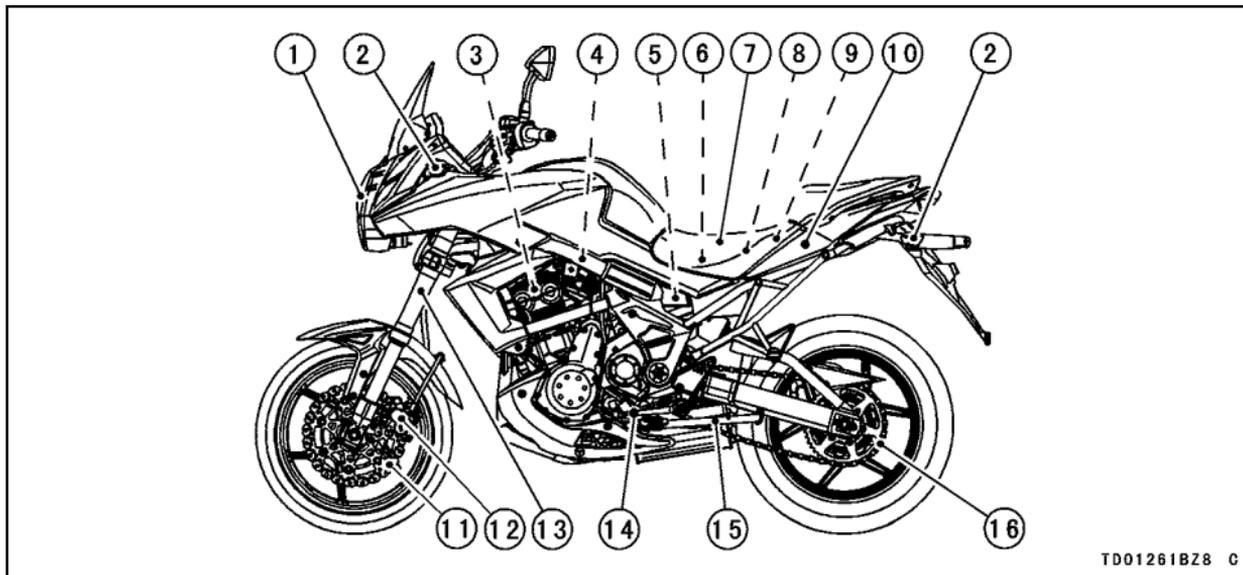
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1. Clutch Lever
2. Left Handlebar Switches
3. Meter Instruments
4. Ignition Switch/Steering Lock
5. Brake Fluid Reservoir (Front)
6. Front Brake Lever

7. Spring Preload Adjuster (Front Fork)
8. Rebound Damping Force Adjuster (Front Fork)
9. Right Handlebar Switches
10. Throttle Grip

## 16 LOCATION OF PARTS

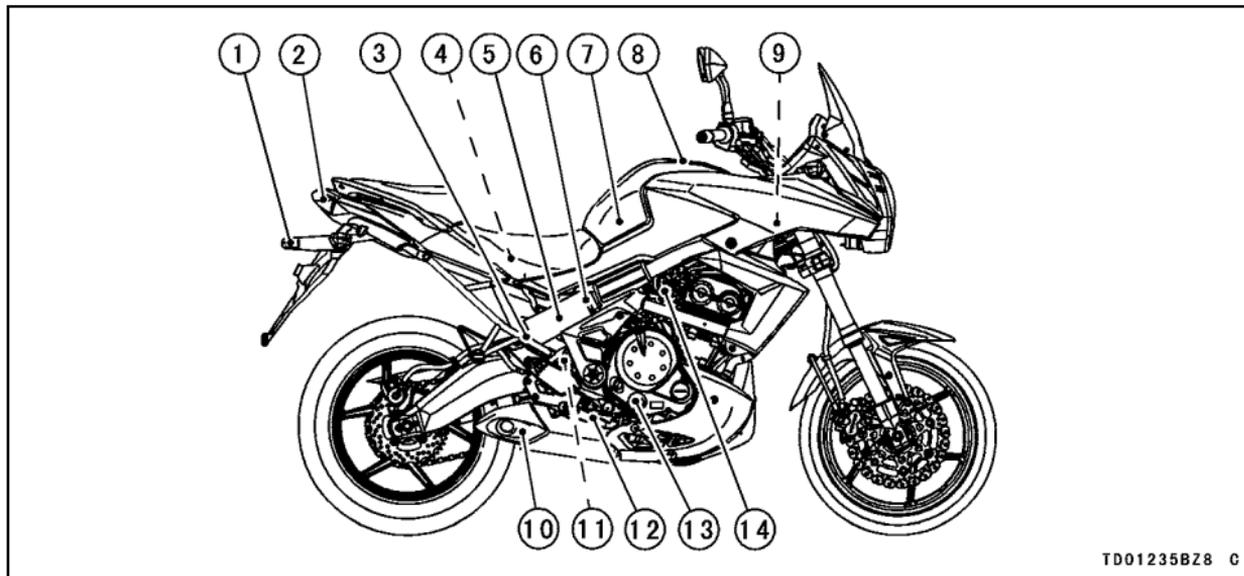


TD01261B28 C

- 1. Headlight/City Light
- 2. Turn Signal Light
- 3. Spark Plugs
- 4. Air Cleaner
- 5. Main Fuse
- 6. Battery

- 7. Seat
- 8. Helmet Hook
- 9. Tool Kit/Storage  
Compartments
- 10. Seat Lock
- 11. Brake Disc

- 12. Brake Caliper
- 13. Front Fork
- 14. Shift Pedal
- 15. Side Stand
- 16. Drive Chain



TD01235BZ8 C

1. License Plate Light
2. Tail/Brake Light
3. Rebound Damping Force Adjuster (Rear Shock Absorber)
4. Brake Fluid Reservoir (Rear)

5. Rear Shock Absorber
6. Spring Preload Adjuster (Rear Shock Absorber)
7. Fuel Tank
8. Fuel Tank Cap
9. Coolant Reserve Tank

10. Muffler
11. Rear Brake Light Switch
12. Rear Brake Pedal
13. Oil Level Inspection Window
14. Idle Adjusting Screw

## LOADING AND ACCESSORIES INFORMATION

### **WARNING**

**Incorrect loading, improper installation or use of accessories, or modification of your motorcycle may result in an unsafe riding condition. Before you ride the motorcycle, make sure that the motorcycle is not overloaded and that you have followed these instructions.**

With the exception of genuine Kawasaki Parts and Accessories, Kawasaki has no control over the design or application of accessories. In some cases, improper installation or use of accessories, or motorcycle modification, will void the motorcycle

warranty, can negatively affect performance, and can even be illegal. In selecting and using accessories, and in loading the motorcycle, you are personally responsible for your own safety and the safety of other persons involved.

### **NOTE**

○ *Kawasaki Parts and Accessories have been specially designed for use on Kawasaki motorcycles. We strongly recommend that all parts and accessories you add to your motorcycle be genuine Kawasaki components.*

Because a motorcycle is sensitive to changes in weight and aerodynamic forces, you must take extreme care

in carrying cargo, passengers and/or in the fitting of additional accessories. The following general guidelines have been prepared to assist you in making your determinations.

1. Any passenger should be thoroughly familiar with motorcycle operation. The passenger can affect control of the motorcycle by improper positioning during cornering and sudden movements. It is important that the passenger sits still while the motorcycle is in motion and not interfere with the operation of the motorcycle. Do not carry animals on your motorcycle.
2. You should instruct any passenger before riding to keep his or her feet on the passenger footpegs and hold on to the operator or seat strap. Do not carry a passenger unless he or she is tall enough to reach the footpegs and footpegs are provided.
3. All baggage should be carried as low as possible to reduce the effect on the motorcycle center of gravity. Baggage weight should also be distributed equally on both sides of the motorcycle. Avoid carrying baggage that extends beyond the rear of the motorcycle.
4. Baggage should be securely attached. Make sure that the baggage will not move around while you are riding. Recheck baggage security as often as possible (not while the motorcycle is in motion) and adjust as necessary.
5. Do not carry heavy or bulky items on a luggage rack. They are designed for light items, and overloading can affect handling due to changes in weight distribution and aerodynamic forces.

## 20 LOADING AND ACCESSORIES INFORMATION

6. Do not install accessories or carry baggage that impairs the performance of the motorcycle. Make sure that you have not adversely affected any lighting components, road clearance, banking capability (i.e., lean angle), control operation, wheel travel, front fork movement, or any other aspects of the motorcycle's operation.
7. Weight attached to the handlebar or front fork will increase the mass of the steering assembly and can result in an unsafe riding condition.
8. Fairings, windshields, backrests, and other large items have the capability of adversely affecting stability and handling of the motorcycle, not only due to their weight, but also due to the aerodynamic forces acting on these surfaces while the motorcycle is in operation. Poorly

designed or installed items can result in an unsafe riding condition.

9. This motorcycle was not intended to be equipped with a sidecar or to be used to tow any trailers or other vehicles. Kawasaki does not manufacture sidecars or trailers for motorcycles and cannot predict the effects of such accessories on handling or stability, but can only warn that the effects can be adverse and that Kawasaki cannot assume responsibility for the results of such unintended use of the motorcycle. Furthermore, any adverse effects on motorcycle components caused by the use of such accessories will not be remedied under warranty.

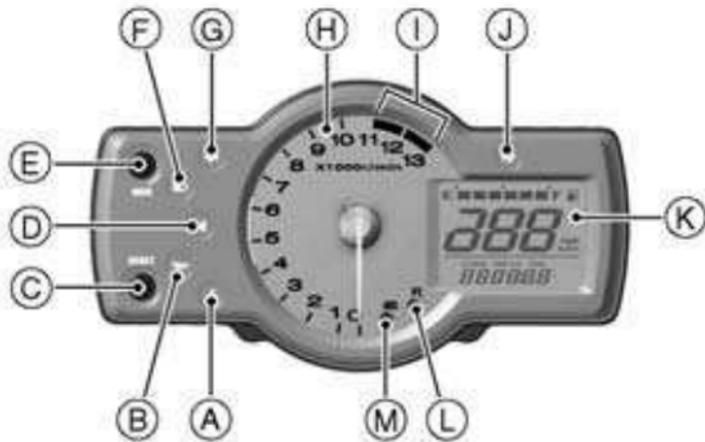
### Maximum Load

Weight of rider, passenger, baggage, and accessories must not exceed 180 kg (397 lb).

# GENERAL INFORMATION

## Meter Instruments

- A. Water Temperature Warning Indicator Light
- B. Oil Pressure Warning Indicator Light
- C. RESET Button
- D. Neutral Indicator Light
- E. MODE Button
- F. High Beam Indicator Light
- G. Left Turn Signal Indicator Light
- H. Tachometer
- I. Red Zone
- J. Right Turn Signal Indicator Light
- K. LCD (Speedometer, Clock, Odometer, Trip Meter A/B, Fuel Gauge)
- L. FI Warning Indicator Light
- M. ABS Indicator Light (model with ABS)



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### Tachometer

The tachometer shows the engine speed in revolutions per minute (r/min, rpm). On the right side of the tachometer face is a portion called the “red zone”. Engine r/min (rpm) in the red zone is above maximum recommended engine speed and is also above the range for good performance.

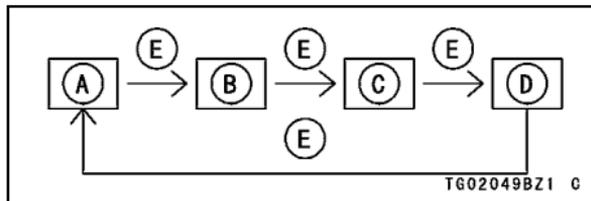
When the ignition key is turned to “ON”, the tachometer needle momentarily points to the last reading to check its operation. If the tachometer needle does not operate correctly, have it inspected by an authorized Kawasaki dealer.

### **NOTICE**

**Engine r/min (rpm) should not be allowed to enter the red zone; operation in the red zone will overstress the engine and may cause serious engine damage.**

### **LCD (Speedometer, Clock, Odometer, Trip Meter A/B, Fuel Gauge)**

The LCD (Liquid Crystal Display) located in the tachometer face is used to display the Speedometer, Clock, Odometer, Trip Meter A/B, and Fuel Gauge. Pushing the MODE button shifts the display through the following four modes: CLOCK, ODO, and TRIP A/B. When the ignition key is turned to “ON”, all the LCD segments are displayed for three seconds, then the clock or meters operate normally depending on the mode selected.

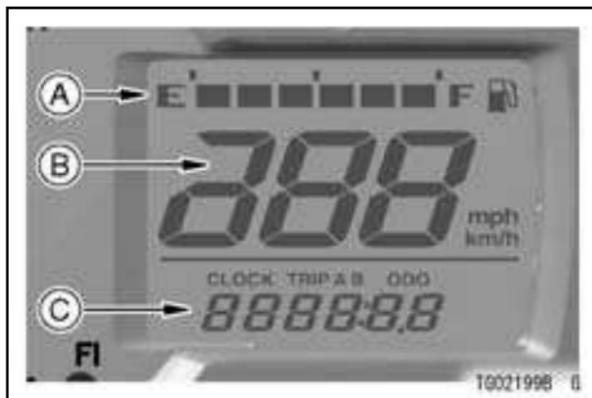


- A. Clock
- B. Odometer
- C. Trip Meter A
- D. Trip Meter B
- E. Push MODE Button

### NOTE

- *For safe operation do not press the MODE button while riding.*

## Digital Meter



- A. Fuel Gauge
- B. Speedometer
- C. Clock, Trip Meter A/B, Odometer

### NOTE

- *Do not shift the digital meter display while riding for safe operation.*

## 24 GENERAL INFORMATION

### mph·km/h Display -

mph·km/h Display can alternate between English and metric modes (mph and km/h) in the digital meter. Make sure that mph or km/h is correctly displayed according to local regulations before riding.

#### NOTE

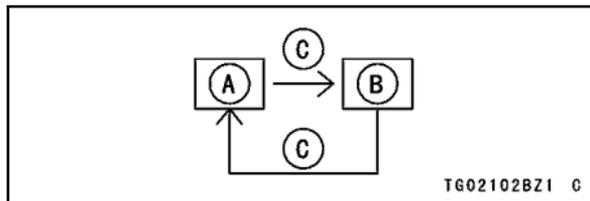
- Do not operate the vehicle with the digital meter displaying in the wrong unit (mph or km/h). Shift the mph·km/h display in the digital meter as follows.

- Display the odometer in the digital meter.
- The mph·km/h display shifts by pushing the RESET button while the MODE button pushed in.



A. mph·km/h Display

- The mph·km/h display shifts as follows.



- A. mph Display  
 B. km/h Display  
 C. Push RESET Button with MODE Button in

### NOTE

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

### Speedometer -

The speedometer shows the speed of the vehicle in digital value.

### Clock -

To adjust the hours and minutes:

- Turn the ignition key to "ON".
- Push the MODE button to display the clock.
- Push the RESET button for more than two seconds. Both the hour and minute displays start blinking.



## 26 GENERAL INFORMATION

- Push the RESET button. The hour display only blinks. Push the MODE button to advance the hours.



- Push the RESET button. The hour display stops blinking and the minute display starts blinking. Push the MODE button to advance the minutes.



- Push the RESET button. Both the hour and minute displays start blinking again.
- Push the MODE button. The displays stop blinking and the clock starts working.

### NOTE

- *Pushing the MODE button momentarily advances the hour or minute step by step. Pushing and holding the button advance the hour or minute continuously.*
- *The clock works normally from the back-up power while the ignition switch is turned off.*
- *When the battery is disconnected, the clock resets to 1:00 and starts working again when the battery is connected.*

**Odometer -**

The odometer shows the total distance the vehicle has been ridden. This meter cannot be reset.

**NOTE**

- *The data is maintained even if the battery is disconnected.*
- *When the figures come to 999999, they are stopped and locked.*

**Trip Meter -**

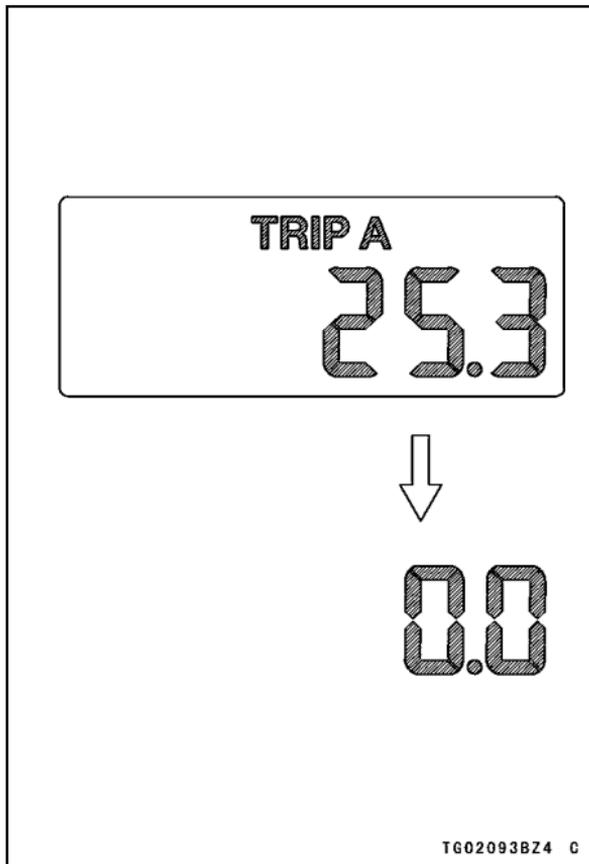
The trip meters show the distance in kilometers traveled since they were last reset to zero.

TRIP A: 0.0 ~ 999.9

TRIP B: 0.0 ~ 9999.9

To reset the trip meter:

- Push the MODE button to display the trip meter A or B.
- Push the RESET button and hold it in.
- After two seconds, the figure display turns to 0.0, and then starts counting when the vehicle is operated. The meter counts until it is reset.



## NOTE

- *The data is maintained by the back-up power if the ignition key is turned off.*
- *When the trip meter reaches 999.9 (TRIP A) or 9999.9 (TRIP B) while running, the meters reset to 0.0 and continues counting.*
- *When the battery is disconnected, the meter display resets to 0.0.*

## Fuel Gauge -

The fuel in the fuel tank is shown by the number of segments displayed. When the fuel tank is full, all the segments are displayed. As the fuel level in the tank goes down, the segments disappear one by one from F (full) to E (empty). When only the most bottom segment is displayed, approximately 5.0 L (1.3 US gal) of usable fuel remain. Furthermore, when the lowest segment and “FUEL” blink in the digital meter, approximately 3.6 L (0.9 US gal) of usable fuel remain.

Refuel at the earliest opportunity if the most bottom segment of the fuel gauge blinks.

When vehicle stands with Side Stand, Fuel Gauge cannot show the amount of fuel in the fuel tank exactly. Stand upright the vehicle to check the fuel level.



A. Blink

## NOTE

- When pushing the MODE button while “FUEL” is displayed, the display can be shifted to odometer, trip meter, or clock mode.

## Warning/Indicator Lights

**N** : When the transmission is in neutral, the neutral indicator light goes on.

### 30 GENERAL INFORMATION

 : When the headlight is on high beam, the high beam indicator light goes on.

 : When the turn signal switch is pushed to the left or right, the corresponding turn signal indicator light blinks.

 : The oil pressure warning light goes on whenever the oil pressure is dangerously low or the ignition key is in the ON position with the engine not running, and goes off when the engine oil pressure is high enough. Refer to the Maintenance and Adjustment chapter for more detailed engine oil information.

**FI** : The fuel injection (FI) warning indicator light goes on when the ignition switch is turned to “ON” and goes

off soon after ensuring that its circuit functions properly. The warning indicator light also goes on whenever the troubles occur in digital fuel injection system (DFI). If the warning indicator light goes on, have the DFI system checked by an authorized Kawasaki dealer. When the warning indicator light blinks, first turn the ignition key to “OFF” and then back to “ON”.

 : The water temperature warning indicator light goes on whenever the water temperature rises to about 119°C (246°F) when the motorcycle is in operation. This warns the operator that the water temperature is too high. If the warning indicator light goes on, stop the engine and check the coolant level in the reserve tank after the engine cools down.

**NOTICE**

**Do not let the engine continue running when the warning indicator light blinks. Prolonged engine operation will result in severe damage from overheating.**

**(For models equipped with ABS)**

 : The ABS (Anti-lock Brake System) indicator light goes on when the ignition switch is turned to “ON” and goes off shortly after the motorcycle starts moving. If the ABS is normal, it stays off. If something is wrong with the ABS, the indicator goes on and stays on. When the indicator light is on, the ABS does not function but if the ABS fails, the conventional brake system will still work normally.

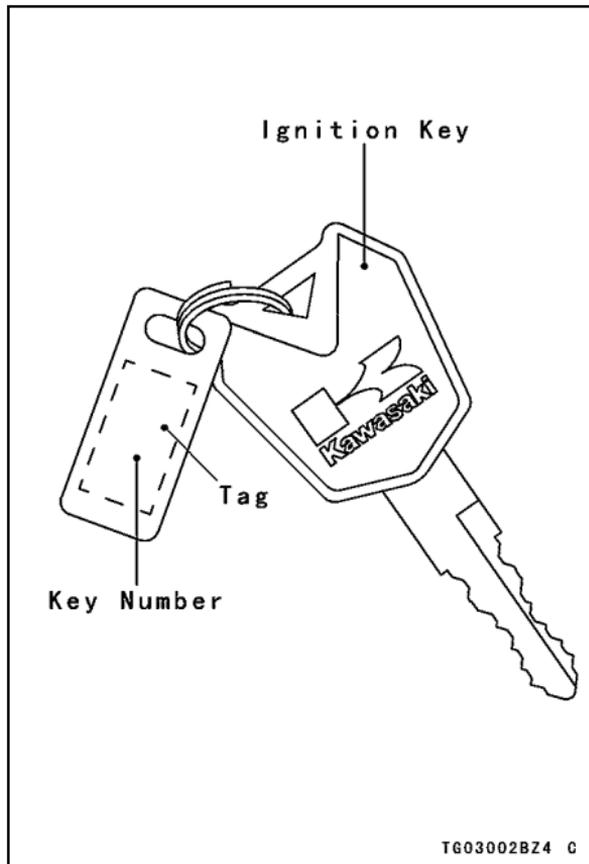
For more detailed information about ABS, see the Anti-lock Brake System (ABS) section in the How to Ride the Motorcycle chapter.

## 32 GENERAL INFORMATION

### Key

This motorcycle has a combination key, which is used for the ignition switch/steering lock, seat lock, and fuel tank cap.

Included with the key is a key number, which may be stamped on a separate plate. Record the key number in the space provided and store the number in a safe place. If your keys came with a plate, store it in a safe place as well.



Write your key number here.

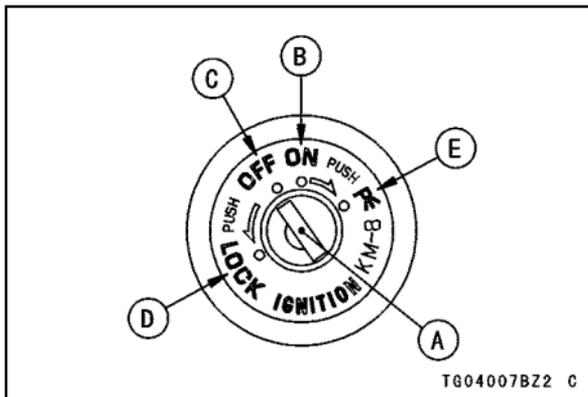
In the event you lose your keys, you will need the key number to have a duplicate made. If you cannot locate your key number, contact the dealer where you purchased your Kawasaki motorcycle. It's possible the dealer may have the number in its records. If the key number is lost completely, you will need to replace the ignition switch and all other locks operated by that key.

Contact your Kawasaki dealer to purchase additional spare keys either using your original key as a master or using the key code on the tag or your key. Store one key at home and keep another spare in your wallet or riding gear, in case the original is lost.

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### Ignition Switch/Steering Lock

This is a four-position, key-operated switch. The key can be removed from the switch when it is in the OFF, LOCK, or P (Park) position.



- A. Ignition Switch/Steering Lock
- B. ON Position
- C. OFF Position
- D. LOCK Position
- E. P (Park) Position

<b>OFF</b>	Engine off. All electrical circuits off.
<b>ON</b>	Engine on. All electrical equipment can be used.
<b>LOCK</b>	Steering locked. Engine off. All electrical circuits off.
<b>P (Park)</b>	Steering locked. Engine off. License plate, tail, and city lights on and turn signals can be used. All other electrical circuits cut off.

### NOTE

- *The city, tail and license plate lights are on whenever the ignition key is in the ON position. One headlight goes on when the starter button is released after starting the engine. To avoid battery discharge, always start the engine immediately after turning the ignition key to "ON".*

- If you leave the P (Park) position on for a long time (one hour), the battery may become totally discharged.

To operate the ignition switch:

OFF ← ↔ → ON → 2a → P(Park)

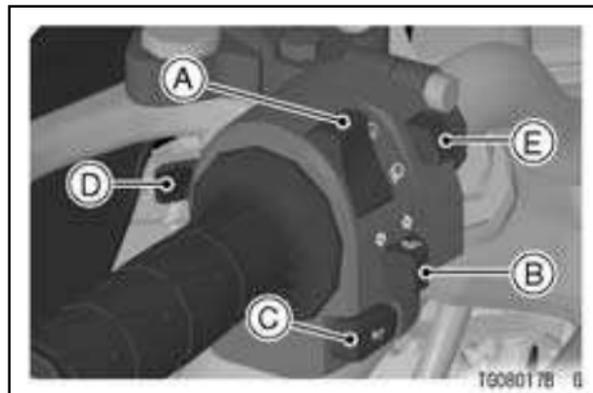


LOCK

1. Turn the handlebar fully to the left.
2. a. For parking push down the key in the ON position and turn it to P(Park).  
b. For locking push down the key in the OFF position and turn it to LOCK.

TG04097B22 C

## Left Handlebar Switches



- A. Dimmer Switch
- B. Turn Signal Switch
- C. Horn Button
- D. Passing Button
- E. Hazard Switch

## 36 GENERAL INFORMATION

### Dimmer Switch

High or low beam can be selected with the dimmer switch. When the headlight is on high beam ( ≡⊙ ), the high beam indicator light goes on.

High Beam···( ≡⊙ )

Low Beam···( ⊙ )

### NOTE

- *When the headlight is on high beam, both headlights go on. When the headlight is on low beam, only one headlight goes on.*

### Turn Signal Switch

When the turn signal switch is pushed to the left ( ⚡ ) or right ( ⚡ ), the corresponding turn signals blink on and off.

To stop blinking, push the switch in.

### Horn Button

When the horn button is pushed, the horn sounds.

### Passing Button

When the passing button is pushed, the headlight high beam (passing beam) goes on to signal the driver of the vehicle ahead that you are about to pass. The passing light is shut off as soon as the button is released.

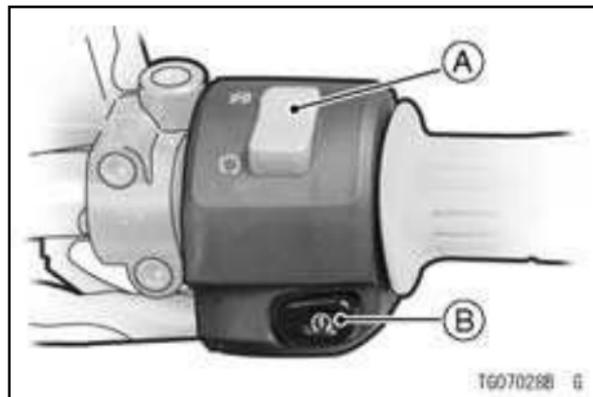
### Hazard Switch

If an emergency requires you to park on the highway shoulder, turn on the hazard lights to warn other drivers of your location.

Push in the hazard switch with the ignition switch in the ON or P (Park) position. All the turn signals and turn signal indicator lights will blink on and off.

**NOTICE**

If you leave the switch on for a long time, the battery may become totally discharged. So be careful not to use the hazard lights for more than 30 minutes.

**Right Handlebar Switches**

A. Engine Stop Switch

B. Starter Button

**Engine Stop Switch**

In addition to the ignition switch, the engine stop switch must be in the  position for the motorcycle to operate.

The engine stop switch is for emergency use. If required, move the switch to the  position.

## NOTE

- *Although the engine stop switch stops the engine, it does not turn off all the electrical circuits. Ordinarily, the ignition switch should be used to stop the engine.*

### **Starter Button**

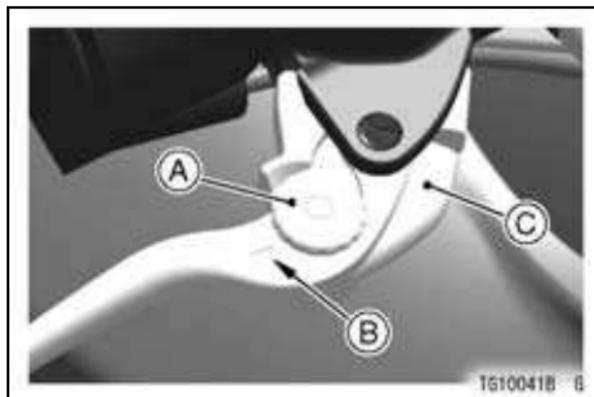
The starter button operates the electric starter when the transmission is in neutral.

Refer to the Starting the Engine section of the “How to Ride the Motorcycle” chapter for starting instructions.

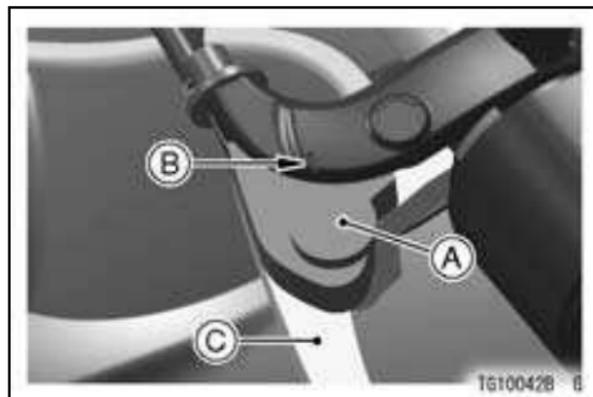
### **Brake/Clutch Lever Adjusters**

There is an adjuster on both the brake and clutch levers. Each adjuster has 5 positions so that the released lever position can be adjusted to suit the operator's hands. Push the lever forward and turn the adjuster to align the number with the mark on the lever holder.

The distance from the grip to the released lever is minimum at Number 5 and maximum at Number 1.



- A. Adjuster
- B. Mark
- C. Brake Lever



- A. Adjuster
- B. Mark
- C. Clutch Lever

## 40 GENERAL INFORMATION

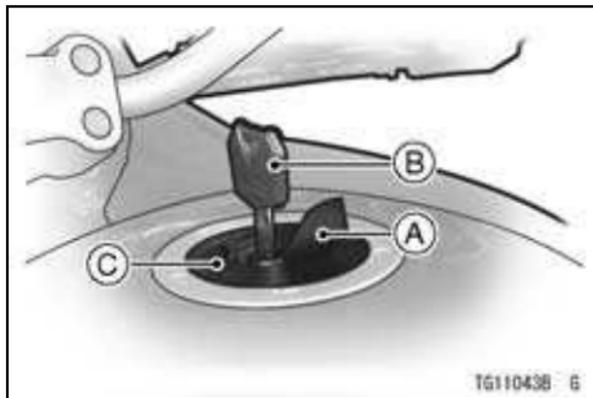
### Fuel Tank Cap

To open the fuel tank cap, pull up the key hole cover. Insert the ignition key into the fuel tank cap and turn the key to the right.

To close the cap, push it down into place with the key inserted. The key can be removed by turning it to the left to the original position. Close the key hole cover.

#### NOTE

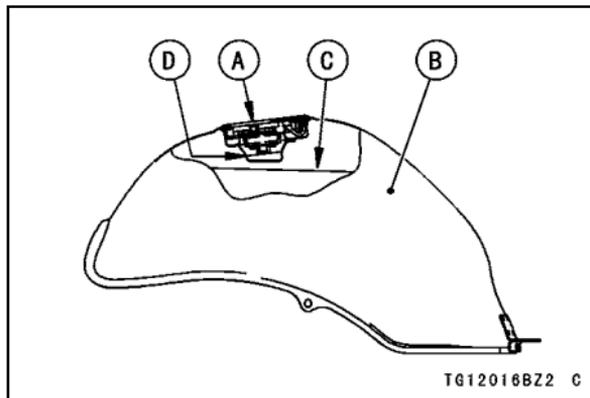
- *The fuel tank cap cannot be closed without the key inserted, and the key cannot be removed unless the cap is locked properly.*
- *Do not push on the key to close the cap, or the cap cannot be locked.*



- A. Key Hole Cover
- B. Ignition Key
- C. Fuel Tank Cap

## Fuel Tank

The following octane rating gasoline is recommended for the fuel tank. Avoid filling the tank in the rain or where heavy dust is blowing so that the fuel does not get contaminated.



- A. Tank Cap
- B. Fuel Tank
- C. Top Level
- D. Filler Neck

## **⚠** 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.**

**NOTICE**

**California model only: Never fill the tank so the fuel level rises into the filler neck. If the tank is overfilled, heat may cause the fuel to expand and flow into the Evaporative Emission Control System resulting in hard starting and engine hesitation and in compliance with the emission regulation.**

**Fuel Requirement***Fuel Type*

Use clean, fresh unleaded gasoline with a minimum Antiknock Index of 87. The Antiknock Index is posted on service station pumps. The octane rating

of a gasoline is a measure of its resistance to detonation or “knocking”. The Antiknock Index is an average of the Research Octane Number (RON) and the Motor Octane Number (MON) as shown in the table.

Octane Rating Method		Minimum Rating
Antiknock Index	$\frac{(\text{RON} + \text{MON})}{2}$	87

**NOTICE**

**Use minimum of 87 octane gasoline only to prevent severe engine damage.**

**NOTICE**

**If engine “knocking” or “pinging” occurs, use a different brand of gasoline of a higher octane rating. If this condition is allowed to continue it can lead to severe engine damage.**

**Gasoline quality is important. Fuels of low quality or not meeting standard industry specifications may result in unsatisfactory performance. Operating problems that result from the use of poor quality or nonrecommended fuel may not be covered under your warranty.**

*Fuels Containing Oxygenates*

Gasoline frequently contains oxygenates (alcohols and ethers) especially in areas of the U.S. and Canada which are required to sell such reformulated fuels as part of a strategy to reduce exhaust emissions.

The types and volume of fuel oxygenates approved for use in unleaded gasoline by the U.S. Environmental Protection Agency include a broad range of alcohols and ethers, but only two components have seen any significant level of commercial use.

Gasoline/Alcohol Blends - Gasoline containing up to 10% ethanol (alcohol produced from agricultural products such as corn), also known as “gasohol” is approved for use.

## **NOTICE**

**Avoid using blends of unleaded gasoline and methanol (wood alcohol) whenever possible, and never use “gasohol” containing more than 5% methanol. Fuel system damage and performance problems may result.**

Gasoline/Ether Blends - The most common ether is methyl tertiary butyl ether (MTBE). You may use gasoline containing up to 15% MTBE.

## **NOTE**

- *Other oxygenates approved for use in unleaded gasoline include TAME (up to 16.7%) and ETBE (up to 17.2%). Fuel containing these oxygenates can also be used in your Kawasaki.*

## **NOTICE**

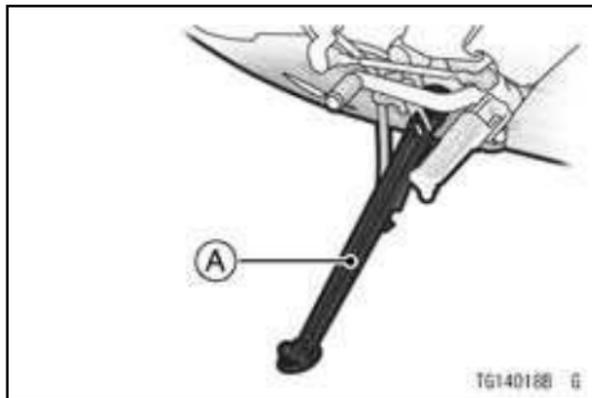
**Never use gasoline with an octane rating lower than the minimum specified by Kawasaki. Never use “gasohol” with more than 10% ethanol, or more than 5% methanol. Gasoline containing methanol must also be blended with cosolvents and corrosion inhibitors. Certain ingredients of gasoline may cause paint fading or damage. Be extra careful not to spill gasoline or gasoline oxygenate blends during refueling. When not operating your Kawasaki for 30 to 60 days, mix a fuel stabilizer (such as STA-BIL) with the gasoline in the fuel tank. Fuel stabilizer additives inhibit oxidation of the fuel which minimizes gummy deposits.**

**NOTICE**

Never store this product with “gasohol” in the fuel system. Before storage it is recommended that you drain all fuel from the fuel system. See the Storage section in this manual.

**Stand**

The motorcycle is equipped with a side stand.



A. Side Stand

**NOTE**

- *When using the side stand, turn the handlebar to the left.*

Do not sit on the motorcycle while it is on its side stand. Always kick the stand fully up before sitting on the motorcycle.

### NOTE

- *The motorcycle is equipped with a side stand switch. This switch is designed so that the engine does not start if the transmission is in gear and the side stand is down.*

### Seat

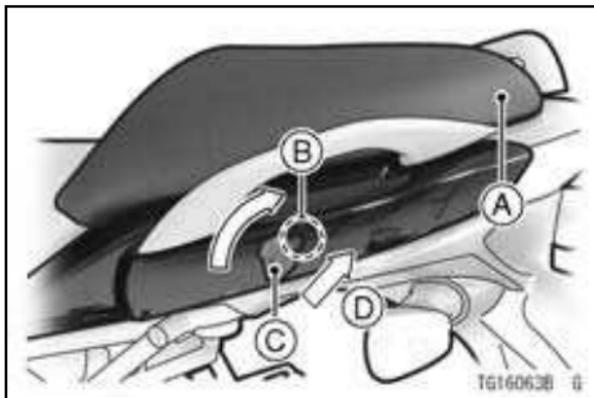
#### *Seat Removal*

Insert the ignition key into the seat lock, located on the seat cover.

Turn the key clockwise while pulling on the rear end of the seat.

### NOTE

- *If there is difficulty removing the seat, be sure to insert the key all the way and to push down strongly on the rear end of the seat while turning the key clockwise.*

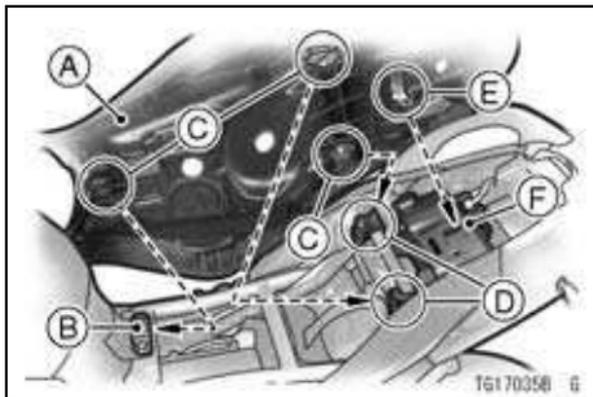


- A. Seat
- B. Seat Lock
- C. Ignition Key
- D. Pull up and rear

### Seat Installation

Install the seat in the reverse order of removal.

- Place the tabs into the matching slot and receptacles.
- Insert the hook at the rear of the seat into the lock on the frame.



- A. Seat
- B. Slot
- C. Tabs
- D. Receptacles
- E. Hook
- F. Lock

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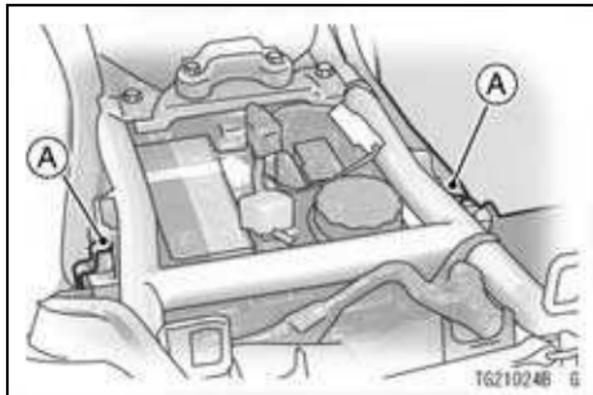
- Push down the rear part of the seat until the lock clicks.
- Pull up the rear end of the seat to make sure it is securely locked.

### NOTE

- *If there is difficulty removing the ignition key from the seat lock, turn it lightly counterclockwise while pulling it out.*

## Helmet Hooks

Helmets can be secured to the motorcycle using the helmet hooks located under the seat.



A. Helmet Hooks

 **WARNING**

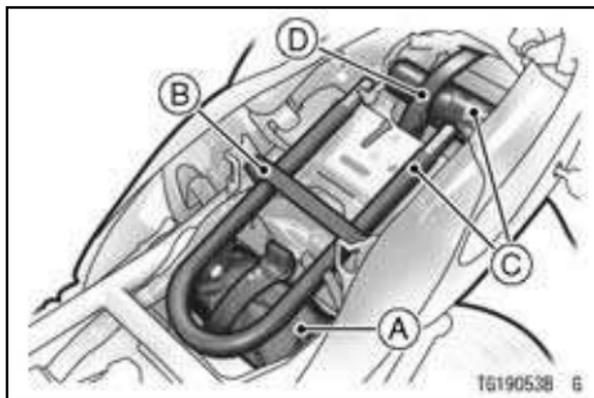
**Riding with helmets attached to the hooks could cause an accident by distracting the operator or interfering with normal vehicle operation. Do not ride the motorcycle with helmets attached to the hooks.**

### **Tool Kit/U-Shaped Lock Compartment**

The tool kit is stored under the seat. The kit contains tools that can be helpful in making roadside repairs, adjustments, and some maintenance procedures explained in this manual.

Also, under the seat, can hold a U-shaped lock (not supplied).

Install the U-shaped part and lock separately and secure them each with the bands (not supplied).

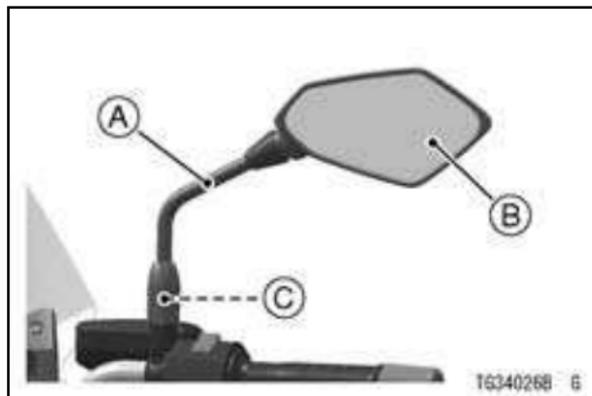


- A. Tool Kit
- B. Band (Part No. 92072-1203, not supplied)
- C. U-Shaped Lock (not supplied)
- D. Band (Part No. 92072-1085, not supplied)

## Rear View Mirror

### *Rear View Mirror Adjustment*

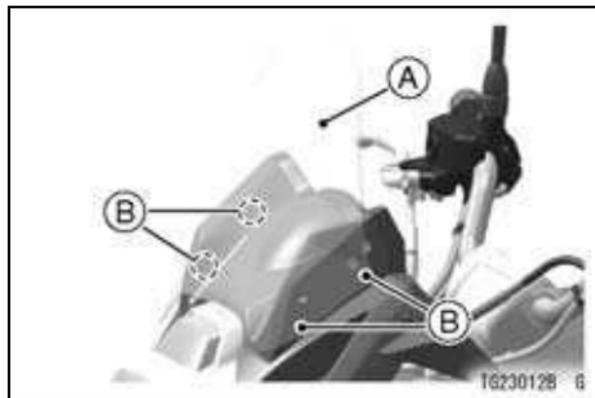
- Adjust the rear view mirror by slightly moving only the mirror portion of the assembly.
- If the rear visibility can not be assured by moving the mirror, loosen the upper locknut and turn the stay by hand.



- A. Stay
- B. Rear View Mirror
- C. Locknut

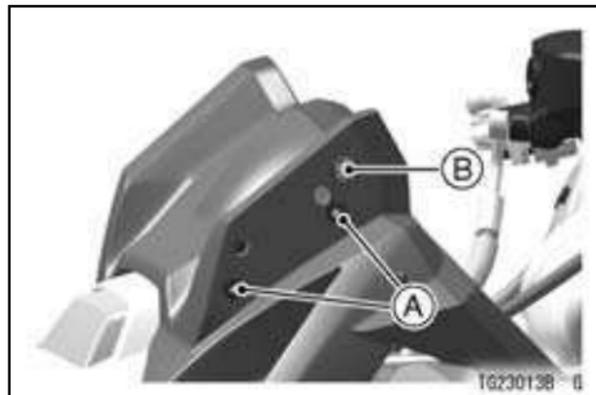
## Windshield

The windshield can be adjusted within 3 positions in height to suit the rider's preference. Remove the bolts on the windshield.



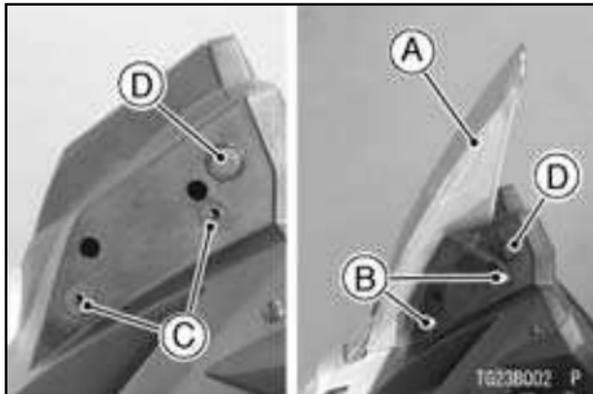
A. Windshield  
B. Bolts

- Remove the wellnuts and rivets, and install them in the positions to suit the rider's preference. After adjusting, make sure to tighten all four bolts securely.



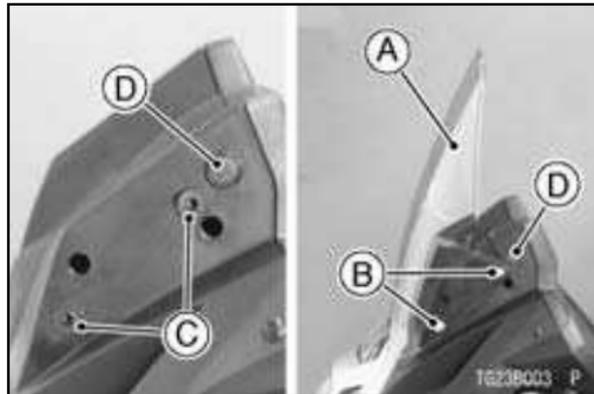
A. Wellnuts  
B. Rivets

### Windshield Position 1



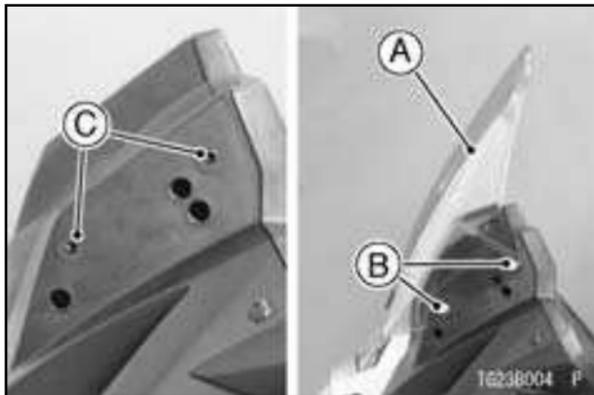
- A. Windshield
- B. Bolts
- C. Wellnuts
- D. Rivets

### Windshield Position 2



- A. Windshield
- B. Bolts
- C. Wellnuts
- D. Rivets

### Windshield Position 3



- A. Windshield
- B. Bolts
- C. Wellnuts

### NOTE

- *Keep the uninstalled rivets in a safe place.*

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**BREAK-IN**

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The first 1 600 km (1 000 miles) that the motorcycle is ridden is designated as the break-in period. If the motorcycle is not used carefully during this period, you may very well end up with a “broken down” instead of a “broken in” motorcycle after a few thousand kilometers.

The following rules should be observed during the break-in period.

- The table shows maximum recommended engine speed during the break-in period.

Distance traveled	Maximum engine speed
0 ~ 800 km (0 ~ 500 miles)	4 000 r/min (rpm)
800 ~ 1 600 km (500 ~ 1 000 miles)	6 000 r/min (rpm)

**NOTE**

- *When operating on public roadways, keep maximum speed under traffic law limits.*
- Do not start moving or race the engine immediately after starting it, even if the engine is already warm. Run the engine for two or three minutes at idle speed to give the oil a chance to work up into all the engine parts.
- Do not race the engine while the transmission is in neutral.

 **WARNING**

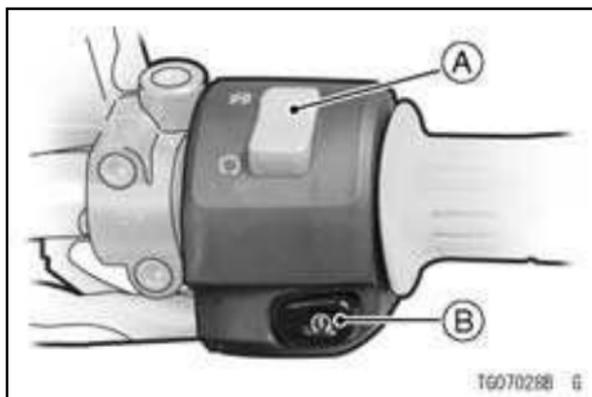
**New tires are slippery and may cause loss of control and injury. A break-in period of 160 km (100 miles) is necessary to establish normal tire traction. During break-in, avoid sudden and maximum braking and acceleration, and hard cornering.**

In addition to the above, at 1 000 km (600 miles) it is extremely important that the owner have the initial maintenance service performed by an authorized Kawasaki dealer.

## HOW TO RIDE THE MOTORCYCLE

### Starting the Engine

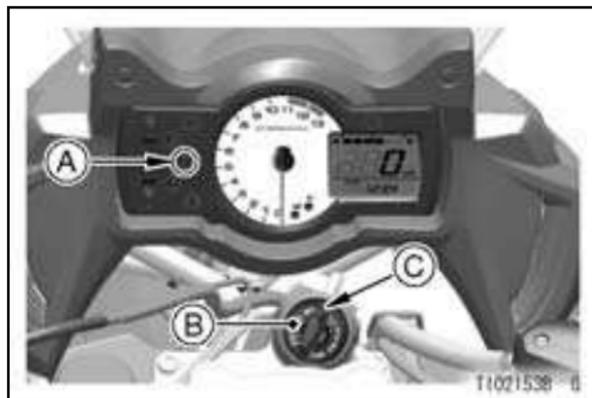
- Check that the engine stop switch is in the  position.



- A. Engine Stop Switch
- B. Starter Button

- Turn the ignition key to “ON”.

- Make sure the transmission is in neutral.
- Without holding the throttle grip, push the starter button to start the engine.



- A. Neutral Indicator Light
- B. Ignition Switch
- C. ON Position

**NOTE**

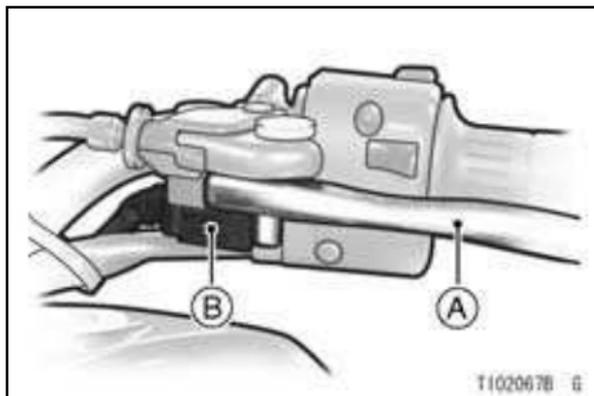
- *The FI warning indicator light may stay on for a few seconds. However, as long as it goes off soon, there is no problem with the motorcycle riding.*
- *While the engine is cold, the fast idle system automatically raises the engine idling speed. At this time, the FI warning indicator light may go on if you operate the throttle grip unnecessarily.*
- *The motorcycle is equipped with a vehicle-down sensor, which causes the engine to stop automatically and the FI warning indicator light to blink when the motorcycle falls down. After righting the motorcycle, first turn the ignition key to “OFF” and then back to “ON” before starting the engine.*

**NOTICE**

**Do not operate the starter continuously for more than 5 seconds, or the starter will overheat and the battery power will drop temporarily. Wait 15 seconds between each operation of the starter to let it cool and the battery power recover.**

### NOTE

- *The motorcycle is equipped with a starter lockout switch. This switch is designed so that the engine does not start if the transmission is in gear and the side stand is down. However, the engine can be started if the clutch lever is pulled and the side stand is fully up.*



- A. Clutch Lever
- B. Starter Lockout Switch

### NOTICE

**Do not let the engine idle longer than five minutes, or engine overheating and damage may occur.**

## Jump Starting

If your motorcycle battery is “run down”, it should be removed and charged. If this is not practical, a 12 volt booster battery and jumper cables may be used to start the engine.

### **DANGER**

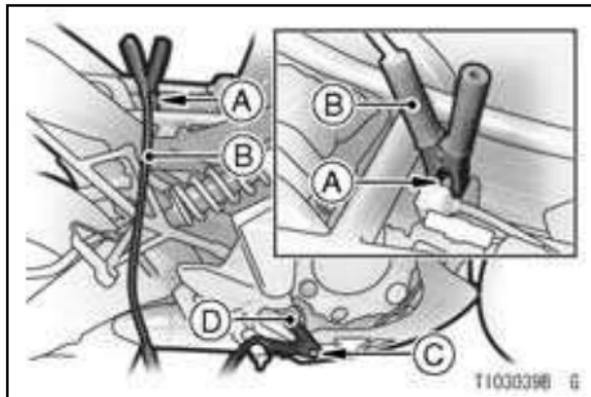
**Battery acid generates hydrogen gas which is flammable and explosive under certain conditions. It is present within a battery at all times, even in a discharged condition. Keep all flames and sparks (cigarettes) away from the battery. Wear eye protection when working with a battery. In the event of battery acid contact with skin, eyes, or clothing, wash the affected areas immediately with water for at least 5 minutes. Seek medical attention.**

#### *Connecting Jumper Cables*

- Remove the seat (see Seat section in the GENERAL INFORMATION chapter).

## 60 HOW TO RIDE THE MOTORCYCLE

- Make sure the ignition key is turned to "OFF".
- Connect a jumper cable from the positive (+) terminal of the booster battery to the positive (+) terminal of the motorcycle battery.
- Connect another jumper cable from the negative (-) terminal of the booster battery to your motorcycle footpeg or other unpainted metal surface. Do not use the negative (-) terminal of the battery.



- A. Motorcycle Battery Positive (+) Terminal**
- B. From Booster Battery Positive (+) Terminal**
- C. Footpeg**
- D. From Booster Battery Negative (-) Terminal**

 **DANGER**

Batteries contain sulfuric acid that can cause burns and produce hydrogen gas which is highly explosive. Do not make this last connection at the fuel system or battery. Take care not to touch the positive and negative cables together, and do not lean over the battery when making this last connection. Do not connect to a frozen battery. It could explode. Do not reverse polarity by connecting positive (+) to negative (-), or a battery explosion and serious damage to the electrical system may occur.

- Follow the standard engine starting procedure.

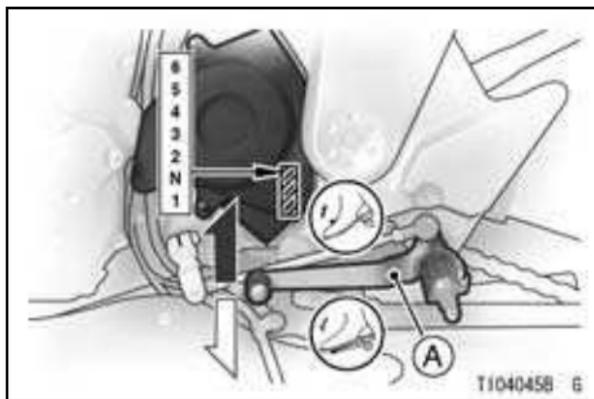
***NOTICE***

Do not operate the starter continuously for more than 5 seconds or the starter will overheat and the battery power will drop temporarily. Wait 15 seconds between each operation of the starter to let it cool and the battery power recover.

- After the engine has started, disconnect the jumper cables. Disconnect the negative (-) cable from the motorcycle first.
- Reinstall the removed parts.

## Moving Off

- Check that the side stand is up.
- Pull in the clutch lever.
- Shift into 1st gear.
- Open the throttle a little, and start to let out the clutch lever very slowly.
- As the clutch starts to engage, open the throttle a little more, giving the engine just enough fuel to keep it from stalling.



A. Shift Pedal

## NOTE

- *The motorcycle is equipped with a side stand switch. This switch is designed so that the engine does not start if the transmission is in gear and the side stand is down.*
- *When the headlight is on high beam, two headlight beams go on, and on low beam, one headlight goes on.*

## Shifting Gears

- Close the throttle while pulling in the clutch lever.
- Shift into the next higher or lower gear.
- Open the throttle halfway, while releasing the clutch lever.
- For smooth riding, each gear position should cover the proper rate of speed shown in the table.

## WARNING

**Downshifting at high speed can make the rear wheel skid and cause an accident resulting in severe injury or death, as well as cause the engine to overrev and damage it. When shifting down to a lower gear, do not shift at such a high speed that engine rpm jumps excessively. Downshift at the vehicle speeds shown in the table in this section.**

## Vehicle speed when shifting

Shifting up	km/h (mph)	Shifting down	km/h (mph)
1st → 2nd	15 ( 9)	6th → 5th	30 (19)
2nd → 3rd	25 (15)	5th → 4th	25 (15)
3rd → 4th	35 (21)	4th → 3rd	20 (12)
4th → 5th	45 (27)	3rd → 2nd	15 ( 9)
5th → 6th	55 (34)	2nd → 1st	15 ( 9)

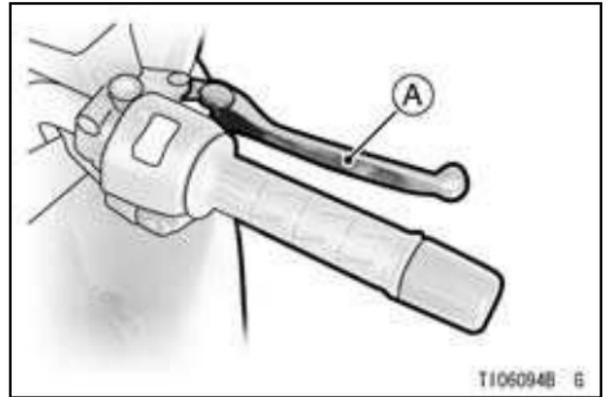
**NOTE**

- *The transmission is equipped with a positive neutral finder. When the motorcycle is standing still, the transmission cannot be shifted past neutral from 1st gear. To use the positive neutral finder, shift down to 1st gear, then lift up on the shift pedal while standing still. The transmission will shift only into neutral.*

**Braking**

- Close the throttle completely, leaving the clutch engaged (except when shifting gears) so that the engine will help slow down the motorcycle.
- Shift down one gear at a time so that you are in 1st gear when you come to a complete stop.

- When stopping, always apply both brakes at the same time. Normally the front brake should be applied a little more than the rear. Shift down or fully disengage the clutch as necessary to keep the engine from stalling.
- Never lock the brakes, or it will cause the tires to skid. When turning a corner, it is better not to brake at all. Reduce your speed before you get into the corner.
- Even in motorcycles equipped with ABS, braking during cornering may cause wheel slip. When turning a corner, it is better to limit braking to the light application of both brakes or not to brake at all. Reduce your speed before you get into the corner.



**A. Front Brake Lever**



A. Rear Brake Pedal

## Anti-lock Brake System (ABS) for models equipped with ABS

ABS is designed to help prevent the wheels from locking up when hard brakes are applied while running straight. The ABS automatically regulates brake force. Intermittently gaining gripping force and braking force helps prevent wheel lock-up and allows stable steering control while stopping.

Brake control function is identical to that of a conventional motorcycle. The brake lever is used for the front brake and the brake pedal for the rear brake.

Although the ABS provides stability while stopping by preventing wheel lock-up, remember the following characteristics:

- ABS cannot compensate for adverse road conditions, misjudgement or improper application of brakes. You must take the same care as with motorcycles not equipped with ABS.
  - ABS is not designed to shorten the braking distance. On loose, uneven or downhill surfaces, the stopping distance of a motorcycle with ABS may be longer than that of an equivalent motorcycle without ABS. Use special caution in such areas.
  - ABS will help prevent wheel lock-up during straight-up braking, but it cannot control wheel slip which may be caused by braking during cornering. When turning a corner, it is better to limit braking to the light application of both brakes or not to brake at all. Reduce your speed before you get into the corner.
- The computers integrated in the ABS compare vehicle speed with wheel speed. Since non-recommended tires can affect wheel speed, they may confuse the computers, which can extend braking distance.

 **WARNING**

**ABS cannot protect the rider from all possible hazards and is not a substitute for safe riding practices. Be aware of how the ABS system operates and its limitations. It is the rider's responsibility to ride at appropriate speeds and manner for weather, road surface and traffic conditions.**

 **WARNING**

Use of non-recommended tires may cause malfunctioning of ABS and can lead to extended braking distance. The rider could have an accident as a result. Always use recommended standard tires for this motorcycle.

**NOTE**

- *When the ABS is functioning, you may feel a pulsing in the brake lever or pedal. This is normal. You need not suspend applying brakes.*
- *ABS does not function at the speed of approx. 5 km/h (3.1 mph) or below.*
- *ABS does not function if the battery is discharged.*

○ *ABS indicator light may go on under motorcycle riding condition (ex. The front or rear wheel races.). In this case, first turn the ignition key to "OFF", and then back to "ON". ABS indicator light goes off by this operation, but if ABS indicator light stays on after the motorcycle runs at the speed of approx. 5 km/h (3.1 mph) or below, you should have the ABS checked by an authorized Kawasaki dealer.*

**ABS Indicator Light**

Normally the ABS indicator light goes on when the ignition switch is turned on and goes off shortly after the motorcycle starts moving.

If the ABS indicator light shows any of the following, a fault or faults may have taken place in the ABS. You should have the ABS checked by an authorized Kawasaki dealer.

- The light does not go on when the ignition switch is turned on.
- The light stays on after the motorcycle starts moving.
- The light goes on and stays on after the motorcycle starts moving.

Remember that the ABS does not function when the indicator light is on, but if the ABS fails, the conventional brake system still works normally.

## Stopping the Engine

- Close the throttle completely.
- Shift the transmission into neutral.
- Turn the ignition key to “OFF”.
- Support the motorcycle on a firm, level surface with the side stand.
- Lock the steering.

### NOTE

- *The motorcycle is equipped with a vehicle-down sensor, which causes the engine to stop automatically and the FI warning indicator light to blink when the motorcycle falls down. After righting the motorcycle, first turn the ignition key to “OFF” and then back to “ON” before starting the engine.*

### **Stopping the Motorcycle in an Emergency**

Your Kawasaki Motorcycle has been designed and manufactured to provide you optimum safety and convenience. However, in order to fully benefit from Kawasaki's safety engineering and craftsmanship, it is essential that you, the owner and operator, properly maintain your motorcycle and become thoroughly familiar with its operation. Improper maintenance can create a dangerous situation known as throttle failure. Two of the most common causes of throttle failure are:

1. An improperly serviced or clogged air cleaner may allow dirt and dust to enter the throttle body and stick the throttle open.
2. During removal of the air cleaner, dirt is allowed to enter and jam the fuel injection system.

In an emergency situation such as throttle failure, your vehicle may be stopped by applying the brakes and disengaging the clutch. Once this stopping procedure is initiated, the engine stop switch may be used to stop the engine. If the engine stop switch is used, turn off the ignition switch after stopping the motorcycle.

## Parking

### **WARNING**

Operating or parking the vehicle near flammable materials can cause a fire, and can result in property damage or severe personal injury.

Do not idle or park your vehicle in an area where tall or dry vegetation, or other flammable materials could come into contact with the muffler or exhaust pipe.

### **WARNING**

The engine and exhaust system get extremely hot during normal operation and can cause serious burns.

Never touch a hot engine, exhaust pipe, or muffler during operation or after stopping the engine.

- Shift the transmission into neutral and turn the ignition key to “OFF”.
- Support the motorcycle on a firm, level surface with the side stand.

### **NOTICE**

Do not park on a soft or steeply inclined surface, or the motorcycle may fall over.

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- If parking inside a garage or other structure, be sure it is well ventilated and the motorcycle is not close to any source of flame or sparks; this includes any appliance with a pilot light.

### **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.**

- Lock the steering to prevent theft.

### **NOTE**

- *When stopping near traffic at night, you can leave the taillight on for greater visibility by turning the ignition key to the P (Park) position.*
- *Do not leave the ignition switch at P (Park) position too long, or the battery will discharge.*

## Catalytic Converter

This motorcycle is equipped with a catalytic converter in the exhaust system. The converter reacts with carbon monoxide, hydrocarbons and nitrogen oxides to convert them into carbon dioxide, water, nitrogen and oxygen resulting in much cleaner exhaust gases to be discharged into the atmosphere.

For proper operation of the catalytic converter, the following cautions must be observed.

### WARNING

**Operating or parking the vehicle near flammable materials can cause a fire, and can result in property damage or severe personal injury.**

**Do not idle or park your vehicle in an area where tall or dry vegetation, or other flammable materials could come into contact with the muffler or exhaust pipe.**

### WARNING

**The engine and exhaust system get extremely hot during normal operation and can cause serious burns.**

**Never touch a hot engine, exhaust pipe, or muffler during operation or after stopping the engine.**

## 74 HOW TO RIDE THE MOTORCYCLE

- Use only unleaded gasoline. Never use leaded gasoline. Leaded gasoline significantly reduces the capability of the catalytic converter.
- Do not operate the vehicle with the engine or any one cylinder misfiring. Under these conditions unburned

air/fuel mixture flowing out of engine excessively accelerates reaction in the converter allowing the converter to overheat and become damaged when the engine is hot, or reduces converter performance when the engine is cold.

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## SAFE OPERATION

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### Safe Riding Technique

The points given below are applicable for everyday motorcycle use and should be carefully observed for safe and effective vehicle operation.

For safety, eye protection and a helmet are strongly recommended. You should be aware of and verify the applicable safety regulations in force prior to riding your motorcycle. Gloves and suitable footwear should also be used for added protection in case of a mishap.

A motorcycle does not provide the impact protection of an automobile, so defensive riding in addition to wearing protective apparel is extremely important. Do not let protective apparel give you a false sense of security.

When riding always keep both hands on the handlebars and both feet on the footpegs. Removing your hands from the handlebars or feet from the footpegs while riding can be hazardous. If you remove even one hand or foot, you can reduce your ability to control the motorcycle.

Before changing lanes, look over your shoulder to make sure the way is clear. Do not rely solely on the rear view mirror; you may misjudge a vehicle's distance and speed, or you may not see it at all.

In general your actions should be smooth as sudden acceleration, braking or turning may cause loss of control, especially when riding in wet conditions or on loose roadway surfaces, when the ability to maneuver will be reduced.

When going up steep slopes, shift to a lower gear so that there is plenty of power to spare rather than overloading the engine.

When applying the brakes, use both the front and rear brakes. Applying only one brake for sudden braking may cause the motorcycle to skid and lose control.

When going down long slopes, control vehicle speed by closing the throttle. Use the front and rear brakes for auxiliary braking.

In wet conditions, rely more on the throttle to control vehicle speed and less on the front and rear brakes. The throttle should also be used judiciously to avoid skidding the rear wheel from too rapid acceleration or deceleration.

Riding at the proper rate of speed and avoiding unnecessarily fast acceleration are important not only for safety and low fuel consumption but also for long vehicle life and quieter operation.

On rough roads, exercise caution, slow down, and grip the fuel tank with the knees for better stability.

When quick acceleration is necessary as in passing, shift to a lower gear to obtain the necessary power.

**Do not downshift at too high an r/min (rpm) to avoid damage to the engine from overrevving.**

**Avoiding unnecessary weaving is important to the safety of both the rider and other motorists.**



## Daily Checks

Check the following items each day before you ride. The time required is minimal, and habitual performance of these checks will help ensure you a safe, reliable ride.

If any irregularities are found during these checks, refer to the Maintenance and Adjustment chapter or see your dealer for the action required to return the motorcycle to a safe operating condition.

### **WARNING**

**Failure to perform these checks before operation may result in serious damage or an accident. Always perform daily checks before operation.**

### **DANGER**

**Exhaust gas contains carbon monoxide, a colorless, odorless poisonous gas.**

**Inhaling carbon monoxide can cause serious brain injury or death.**

**DO NOT run the engine in enclosed areas. Operate only in a well-ventilated area.**

Fuel ..... Adequate supply in tank, no leaks.

Engine Oil ..... Oil level between level lines.

Tires ..... Air pressure (when cold):

Front	225 kPa (2.25 kgf/cm <sup>2</sup> , 32 psi)
Rear	250 kPa (2.50 kgf/cm <sup>2</sup> , 36 psi)

Install the air valve cap.

Drive Chain ..... Slack 25 ~ 35 mm (1.0 ~ 1.4 in.)

Lubricate the drive chain if dry.

Nuts, Bolts, Fasteners Check that steering and suspension components, axles, and all controls are properly tightened or fastened.

Steering ..... Action smooth but not loose from lock to lock.

No binding of control cables.

Brakes ..... Brake pad wear: Lining thickness more than 1 mm (0.04 in.) left.

No brake fluid leakage.

Throttle ..... Throttle grip play 2 ~ 3 mm (0.08 ~ 0.12 in.).

Clutch ..... Clutch lever play 2 ~ 3 mm (0.08 ~ 0.12 in.).

Clutch lever operates smoothly.

Coolant ..... No coolant leakage.

Coolant level between level lines (when engine is cold).

Electrical Equipment ... All lights (Headlight, City Light, Tail/Brake Lights, Turn Signal Lights, License Plate Light, Warning/Indicator Lights) and horn work.

Engine Stop Switch .... Stops engine.

## 80 SAFE OPERATION

Side Stand ..... Return to its fully up position by spring tension.  
Return spring not weak or not damaged.

## **Additional Considerations for High Speed Operation**

**Brakes:** The importance of the brakes, especially during high speed operation, cannot be overemphasized. Check to see that they are correctly adjusted and functioning properly.

**Steering:** Looseness in the steering can cause loss of control. Check to see that the handlebar turns freely but has no play.

**Tires:** High speed operation is hard on tires, and good tires are crucial for riding safety. Examine their overall condition, inflate them to the proper pressure, and check the wheel balance.

**Fuel:** Have sufficient fuel for the high fuel consumption during high speed operation.

**Engine Oil:** To avoid engine seizure and resulting loss of control, make sure that the oil level is at the upper level line.

**Coolant:** To avoid overheating, check that the coolant level is at the upper level line.

**Electrical Equipment:** Make sure that the headlight, tail/brake light, turn signal lights, license plate light, horn, etc., all work properly.

**Miscellaneous:** Make sure that all nuts and bolts are tight and that all safety related parts are in good condition.

 **WARNING**

**Handling characteristics of a motorcycle at high speeds may vary from those you are familiar with at legal highway speeds. Do not attempt high speed operation unless you have received sufficient training and have the required skills.**

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## MAINTENANCE AND ADJUSTMENT

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The maintenance and adjustments outlined in this chapter must be carried out in accordance with the Periodic Maintenance Chart to keep the motorcycle in good running condition. **The initial maintenance is vitally important and must not be neglected.**

With a basic knowledge of mechanics and the proper use of tools, you should be able to carry out many of the maintenance items described in this chapter. If you lack proper experience or doubt your ability, all adjustments, maintenance, and repair work should be completed by a qualified technician.

Please note that Kawasaki cannot assume any responsibility for damage resulting from incorrect or improper adjustment done by the owner.

## EMISSION CONTROL INFORMATION

To protect the environment in which we all live, Kawasaki has incorporated crankcase emission (1) and exhaust emission (2) control systems in compliance with applicable regulations of the United States Environmental Protection Agency and California Air Resources Board. Additionally, Kawasaki has incorporated an evaporative emission control system (3) in compliance with applicable regulations of the United States Environmental Protection Agency and California Air Resources Board.

### 1. Crankcase Emission Control System

This system eliminates the release of crankcase vapors into the atmosphere. Instead, the vapors are routed through an oil separator to the intake side of the engine. While the engine is operating, the vapors are drawn into the combustion chamber, where they are burned along with the fuel and air supplied by the fuel injection system.

### 2. Exhaust Emission Control System

This system reduces the amount of pollutants discharged into the atmosphere by the exhaust of this motorcycle. The fuel, ignition and exhaust systems of this motorcycle have been carefully designed and constructed to ensure an efficient engine with low exhaust pollutant levels. The exhaust system of this model motorcycle includes a catalytic converter system.

### **3. Evaporative Emission Control System**

The evaporative emission control system for this vehicle consists of low permeation fuel hoses and fuel tank.

### **3. Evaporative Emission Control System (California)**

Vapors caused by fuel evaporation in the fuel system are not vented into the atmosphere. Instead, fuel vapors are routed into the running engine to be burned, or stored in a canister when the engine is stopped. Liquid fuel is caught by a vapor separator and returned to the fuel tank.

### **High Altitude Performance Adjustment Information**

High Altitude adjustment is not required.

## MAINTENANCE AND WARRANTY

Proper maintenance is necessary to ensure that your motorcycle will continue to have low emission levels. This Owner's Manual contains those maintenance recommendations for your motorcycle. Those items identified by the Periodic Maintenance Chart are necessary to ensure compliance with the applicable standards.

As the owner of this motorcycle, you have the responsibility to make sure that the recommended maintenance is carried out according to the instructions in this Owner's Manual at your own expense.

The Kawasaki Limited Emission Control System Warranty requires that you return your motorcycle to an authorized Kawasaki dealer for remedy under warranty. Please read the warranty carefully, and keep it valid by complying with the owner's obligations it contains.

You should keep a maintenance record for your motorcycle. To assist you in keeping this record, we have provided space on pages 183 through 187 of this manual where an authorized Kawasaki dealer, or someone equally competent, can record the maintenance. You should also retain copies of maintenance work orders, bills, etc., as verification of this maintenance.

## **TAMPERING WITH NOISE CONTROL SYSTEM PROHIBITED:**

Federal law prohibits the following acts or the causing thereof: (1) the removal or rendering inoperative by any person other than for purposes of maintenance, repair, or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use, or (2) the use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

Among those acts presumed to constitute tampering are the acts listed below:

- \* Replacement of the original exhaust system or muffler with a component not in compliance with Federal regulations.
- \* Removal of the muffler(s) or any internal portion of the muffler(s).
- \* Removal of the air box or air box cover.
- \* Modifications to the muffler(s) or air intake system by cutting, drilling, or other means if such modifications result in increased noise levels.

## Periodic Maintenance Chart

### 1. Periodic Inspection (Engine Related Items)

Operation (Engine Items)	Frequency	*Odometer Reading km × 1 000 (mile × 1 000)							See Page
	Whichever comes first ↓ Every	1 (0.6)	6 (3.75)	12 (7.5)	18 (11.25)	24 (15)	30 (18.75)	36 (22.5)	
<b>K</b> Air cleaner element - clean (e)				●		●		●	116
<b>K</b> Valve clearance - inspect (e)						●			114
Throttle control system (play, smooth return, no drag) - inspect (e)	year	●		●		●		●	117
<b>K</b> Engine vacuum synchronization - inspect (e)				●		●		●	120
Idle speed - inspect (e)		●		●		●		●	120

Frequency	Operation (Engine Items)	Whichever comes first ↓ Every	*Odometer Reading km × 1 000 (mile × 1 000)						See Page	
			1 (0.6)	6 (3.75)	12 (7.5)	18 (11.25)	24 (15)	30 (18.75)		36 (22.5)
K	Fuel leak (fuel hose and pipe) - inspect	year	•		•		•		•	–
K	Fuel hoses damage - inspect	year	•		•		•		•	–
K	Fuel hoses installation condition - inspect	year	•		•		•		•	–
	Coolant level - inspect		•		•		•		•	108
	Coolant leak - inspect	year	•		•		•		•	105
	Radiator hose damage - inspect	year	•		•		•		•	105

## 90 MAINTENANCE AND ADJUSTMENT

Frequency	Whichever comes first ↓	*Odometer Reading km × 1 000 (mile × 1 000)							See Page
		→	1 (0.6)	6 (3.75)	12 (7.5)	18 (11.25)	24 (15)	30 (18.75)	
Operation (Engine Items)	Every								
Radiator hoses installation condition - inspect	year	•		•		•		•	105
Evaporative emission control system - function (California model only) (e)		•	•	•	•	•	•	•	113
<b>K</b> Air suction system damage - inspect (e)				•		•		•	115

## 2. Periodic Inspection (Chassis Related Items)

Frequency	Whichever comes first								See Page
	Every	1 (0.6)	6 (3.75)	12 (7.5)	18 (11.25)	24 (15)	30 (18.75)	36 (22.5)	
Operation (Chassis Items)	*Odometer Reading km × 1 000 (mile × 1 000)								
<b>Clutch and drive train:</b>									
Clutch operation (play, engagement, disengagement) - inspect		•		•		•		•	122
Drive chain lubrication condition - inspect #	every 600 km (400 mile)								131
Drive chain slack - inspect #	every 1 000 km (600 mile)								124
Drive chain wear - inspect #				•		•		•	129

## 92 MAINTENANCE AND ADJUSTMENT

Frequency	Operation (Chassis Items)	*Odometer Reading km × 1 000 (mile × 1 000)							See Page
		Whichever comes first ↓	→						
	Every	1 (0.6)	6 (3.75)	12 (7.5)	18 (11.25)	24 (15)	30 (18.75)	36 (22.5)	
<b>K</b>	Drive chain guide wear - inspect			•		•		•	–
<b>Wheels and tires:</b>									
	Tire air pressure - inspect	year		•		•		•	145
	Wheels/tires damage - inspect			•		•		•	146
	Tire tread wear, abnormal wear - inspect			•		•		•	146
<b>K</b>	Wheel bearings damage - inspect	year		•		•		•	–



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Frequency	Whichever comes first  								See Page
	Every	1 (0.6)	6 (3.75)	12 (7.5)	18 (11.25)	24 (15)	30 (18.75)	36 (22.5)	
Brake operation (effectiveness, play, drag) - inspect	year	•	•	•	•	•	•	•	135
Brake light switch operation - inspect		•	•	•	•	•	•	•	136
<b>Suspensions:</b>									
Front forks/rear shock absorber operation (damping and smooth stroke) - inspect				•		•		•	138, 141

Frequency	Whichever comes first →								See Page
	↓	*Odometer Reading km × 1 000 (mile × 1 000)							
Operation (Chassis Items)	Every	1 (0.6)	6 (3.75)	12 (7.5)	18 (11.25)	24 (15)	30 (18.75)	36 (22.5)	
Front forks/rear shock absorber oil leak - inspect	year			•		•		•	138, 141
<b>Steering system:</b>									
<b>K</b> Steering play - inspect	year	•		•		•		•	—
<b>K</b> Steering stem bearings - lubricate	2 years					•			—
<b>Electrical system:</b>									
Lights and switches operation - inspect	year			•		•		•	—

## 96 MAINTENANCE AND ADJUSTMENT

Frequency	Operation (Chassis Items)	Whichever comes first ↓	*Odometer Reading km × 1 000 (mile × 1 000)						See Page	
			→	1 (0.6)	6 (3.75)	12 (7.5)	18 (11.25)	24 (15)		30 (18.75)
	Headlight aiming - inspect	year			•		•		•	155
	Side stand switch operation - inspect	year			•		•		•	–
	Engine stop switch operation - inspect	year			•		•		•	–
<b>Chassis:</b>										
<b>K</b>	Chassis parts - lubricate	year			•		•		•	160
<b>K</b>	Bolts and nuts tightness - inspect		•		•		•		•	168

## 3. Periodic Replacement

Change/Replacement Items	Frequency	*Odometer Reading km × 1 000 (mile × 1 000)					See Page
	Whichever comes first ↓ Every	1 (0.6)	12 (7.5)	24 (15)	36 (22.5)	48 (30)	
<b>K</b> Air cleaner element - replace # (e)	2 years						116
Engine oil - change #	year	●	●	●	●	●	101
Oil filter - replace	year	●	●	●	●	●	101
<b>K</b> Fuel hoses - replace	5 years						–
<b>K</b> Coolant - change	3 years				●		112
<b>K</b> Radiator hoses and O-rings - replace	3 years				●		–
<b>K</b> Brake hoses - replace	4 years					●	–
<b>K</b> Brake fluid (front and rear) - change	2 years			●		●	135

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Change/Replacement Items	Frequency	*Odometer Reading km × 1 000 (mile × 1 000)					See Page
	Whichever comes first ↓ Every	1 (0.6)	12 (7.5)	24 (15)	36 (22.5)	48 (30)	
<b>K</b> Rubber parts of master cylinder and caliper - replace	4 years					●	–
<b>K</b> Spark plug - replace (e)			●	●	●	●	112

**K:** Should be serviced by an authorized Kawasaki dealer.

\*: For higher odometer readings, repeat at the frequency interval established here.

#: Service more frequently when operating in severe conditions: dusty, wet, muddy, high speed, or frequent starting/stopping.

(e): Emission Related Item

## Engine Oil

In order for the engine, transmission, and clutch to function properly, maintain the engine oil at the proper level, and change the oil and replace the oil filter in accordance with the Periodic Maintenance Chart. Not only do dirt and metal particles collect in the oil, but the oil itself loses its lubricative quality if used too long.

### **WARNING**

Motorcycle operation with insufficient, deteriorated, or contaminated engine oil will cause accelerated wear and may result in engine or transmission seizure, accident, and injury. Check the oil level before each ride and change the oil according to the periodic maintenance chart in the Owner's Manual.

### *Oil Level Inspection*

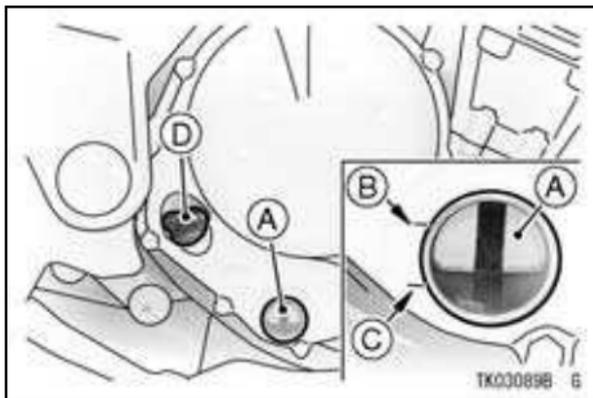
- If the oil has just been changed, start the engine and run it for several minutes at idle speed. This fills the oil filter with oil. Stop the engine, then wait several minutes until the oil settles.

### ***NOTICE***

**Racing the engine before the oil reaches every part can cause engine seizure.**

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- If the motorcycle has just been used, wait several minutes for all the oil to drain down.
- Check the engine oil level through the oil level inspection window. With the motorcycle held level, the oil level should come up between the upper and lower level lines next to the oil level inspection window.

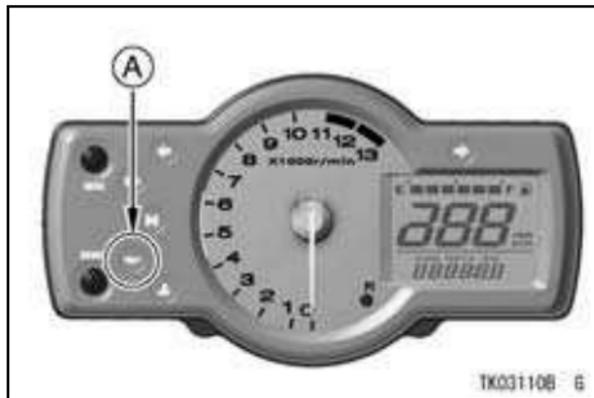


- A. Oil Level Inspection Window
- B. Upper Level Line
- C. Lower Level Line
- D. Oil Filler Cap

- 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 the oil to reach the correct level. Use the same type and brand of oil that is already in the engine.

### **NOTICE**

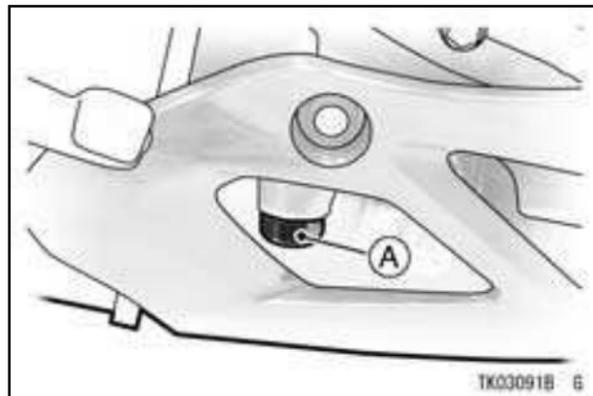
**If the engine oil gets extremely low or if the oil pump does not function properly or oil passages are clogged, the oil pressure warning indicator light will go on. If it stays on when the engine speed is above idle, stop the engine immediately and have it serviced. Failure to do so could cause serious engine damage.**



A. Oil Pressure Warning Indicator Light

### *Oil and/or Oil Filter Change*

- Warm up the engine thoroughly, and then stop it.
- Place an oil pan beneath the engine.
- Remove the engine oil drain bolt.



A. Drain Bolt

- Let the oil completely drain with the motorcycle perpendicular to the ground.

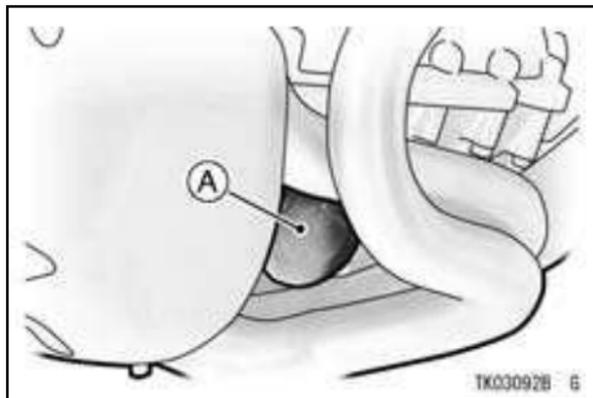
**⚠ WARNING**

Engine oil is a toxic substance. Dispose of used oil properly. Contact your local authorities for approved disposal methods or possible recycling.

- Remove the oil filter and replace it with a new one.

**NOTE**

- *If a torque wrench or required Kawasaki special tool is not available, this item should be serviced by a Kawasaki dealer.*

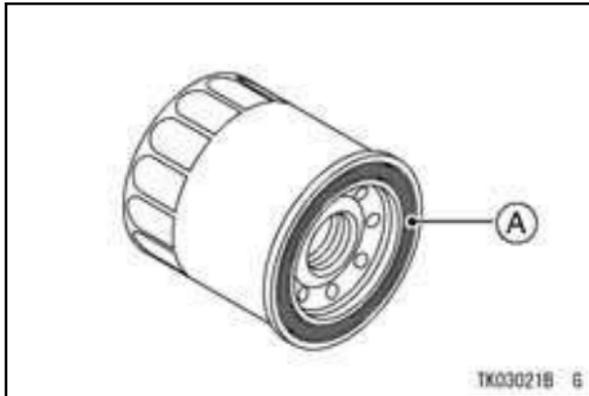


A. Oil Filter

- Apply a thin film of engine oil to the packing and tighten the oil filter to the specified torque.

### Tightening Torque

Oil Filter:  
17.5 N·m (1.8 kgf·m, 13 ft·lb)



### A. Packing

- Install the drain bolt with its new gasket. Tighten it to the specified torque.

## NOTE

- *Replace the gasket with a new one.*

### Tightening Torque

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

- Fill the engine up to the upper level line with a good quality engine oil specified in the table.

### Recommended Engine Oil

Type: Kawasaki Performance 4-Stroke Motorcycle Oil\*  
Kawasaki Performance 4-Stroke Semi-Synthetic Oil\*  
Kawasaki Performance 4-Stroke Full Synthetic Oil\*  
or other 4-stroke oils with API SG, SH, SJ, SL, SM and JASO MA, MA1, MA2 rating

Viscosity: SAE 10W-40

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\*Kawasaki Performance Oils and Lubricants have been specifically engineered for your vehicle. Consistent use of these products meets or exceeds warranty and service requirements and can help to extend the life of your Kawasaki.

### NOTE

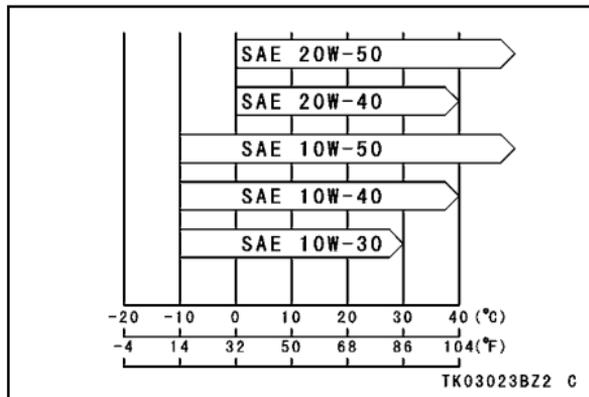
○ *Do not add any chemical additive to the oil. Oils fulfilling the above requirements are fully formulated and provide adequate lubrication for both the engine and the clutch.*

### Engine Oil Capacity

Capacity:

- 1.7 L (1.8 US qt) (when filter is not removed)
- 1.9 L (2.0 US qt) (when filter is removed)
- 2.4 L (2.5 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.



- Start the engine.
- Check the oil level and oil leakage.

## Cooling System

### Radiator and Cooling Fan -

Check the radiator fins for obstruction by insects or mud. Clean off any obstructions with a stream of low-pressure water.

 **WARNING**

The cooling fan spins at high speed and can cause serious injuries. Keep your hands and clothing away from the cooling fan blades at all times.

## **NOTICE**

Using high-pressure water, as from a car wash facility, could damage the radiator fins and impair the radiator's effectiveness. Do not obstruct or deflect airflow through the radiator by installing unauthorized accessories in front of the radiator or behind the cooling fan. Interference with the radiator airflow can lead to overheating and consequent engine damage.

### Radiator Hoses -

Check the radiator hoses for leakage, cracks or deterioration, and connections for leakage, or looseness each day before riding the motorcycle, and in accordance with the Periodic Maintenance Chart.

### Coolant -

Coolant absorbs excessive heat from the engine and transfers it to the air at the radiator. If the coolant level becomes low, the engine overheats and may suffer severe damage. Check the coolant level each day before riding the motorcycle, and in accordance with the periodic maintenance chart and replenish coolant if the level is low. Change the coolant in accordance with the Periodic Maintenance Chart.

#### *Information for Coolant*

To protect the cooling system (consisting of the aluminum engine and radiator) from rust and corrosion, the use of corrosion and rust inhibitor chemicals in the coolant is essential. If coolant containing corrosion and rust inhibitor chemicals is not used, over a

period of time, the cooling system accumulates rust and scale in the water jacket and radiator. This will clog up the coolant passages, and considerably reduce the efficiency of the cooling system.

### **WARNING**

**Coolant containing corrosion inhibitors for aluminum engines and radiators include harmful chemicals for human body. Drinking coolant can result in serious injury or death. Use coolant in accordance with the instructions of the manufacturer.**

Soft or distilled water must be used with the antifreeze (see below for antifreeze) in the cooling system.

**NOTICE**

**If hard water is used in the system, it causes scale accumulation in the water passages, and considerably reduces the efficiency of the cooling system.**

If the lowest ambient temperature encountered falls below the freezing point of water, use permanent antifreeze in the coolant to protect the cooling system against engine and radiator freeze-up, as well as from rust and corrosion.

Use a permanent type of antifreeze (soft water and ethylene glycol plus corrosion and rust inhibitor chemicals for aluminum engines and radiators) in the cooling system. On the mixture ratio of coolant, choose the suitable one referring to the relation between freezing point and strength directed on the container.

**NOTICE**

**Permanent types of antifreeze on the market have anti-corrosion and anti-rust properties. When it is diluted excessively, it loses its anti-corrosion property. Dilute a permanent type of antifreeze in accordance with the instructions of the manufacturer.**

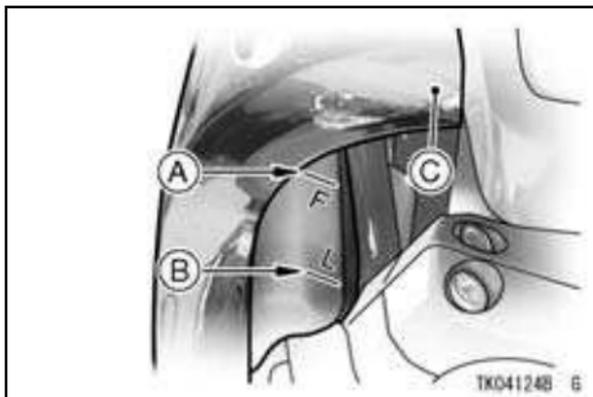
**NOTE**

- *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  $-35^{\circ}\text{C}$  ( $-31^{\circ}\text{F}$ ).*

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### *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 to the right of the engine. The coolant level should be between the F (Full) and L (Low) level lines.



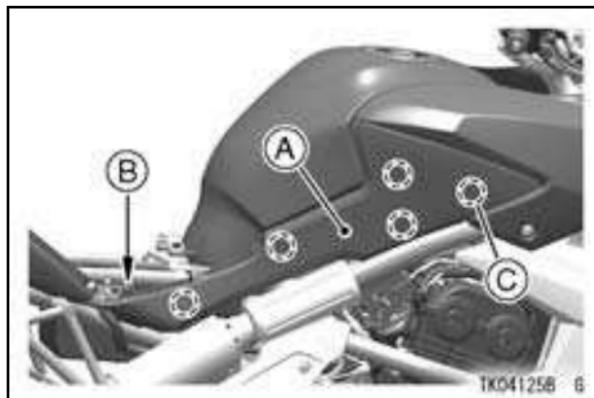
- A. F (Full) Level Line
- B. L (Low) Level Line
- C. Right Middle Fairing

### **NOTE**

- Check the level when the engine is cold (room or atmospheric temperature).
- If the amount of coolant is insufficient, remove the right middle fairing and add coolant into the reserve tank.

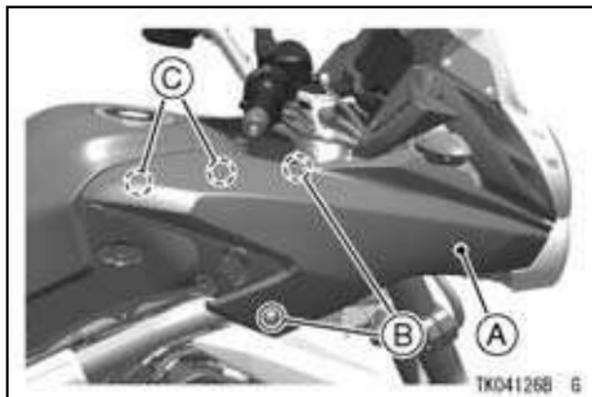
### Coolant Filling

- Remove the seat (see Seat section in the GENERAL INFORMATION chapter).
- Remove the screw.
- Clear the projections from the grommets, and remove the right middle cover backward.



- A. Right Side Cover
- B. Screw
- C. Projections and Grommets

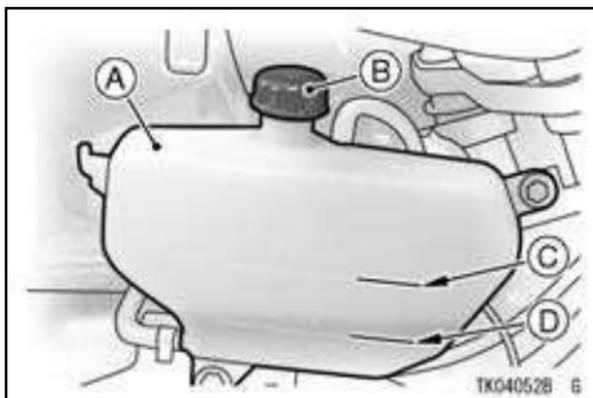
- Remove the bolts.
- Clear the projections from the grommets, and remove the right middle fairing forward.



- A. Right Middle Fairing
- B. Bolts
- C. Projections and Grommets

## 110 MAINTENANCE AND ADJUSTMENT

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



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

### NOTE

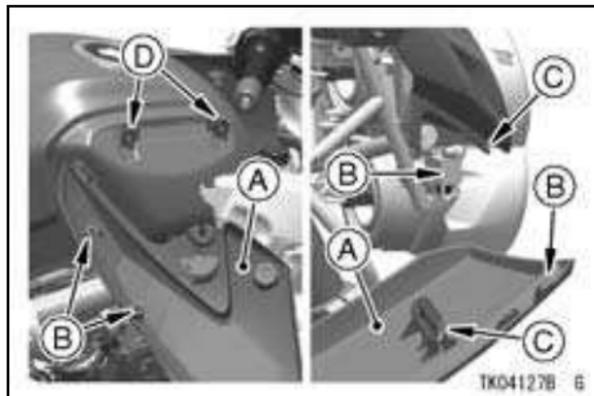
- *In an emergency you can add water alone to the coolant reserve tank, however, it must be returned to the correct mixture ratio by the addition of antifreeze concentrate as soon as possible.*

### NOTICE

**If coolant must be added often, or the reserve tank completely runs dry, there is probably leakage in the system. Have the cooling system inspected by your authorized Kawasaki dealer.**

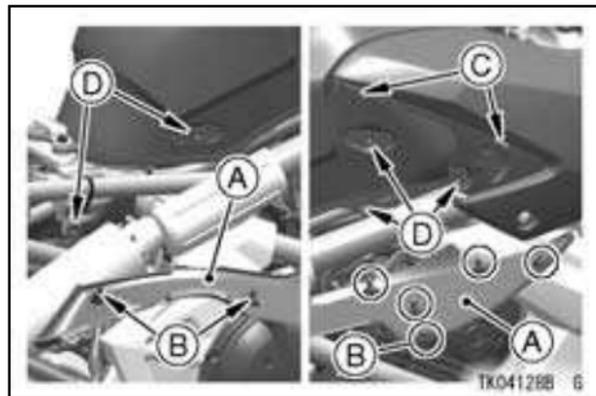
- Install the cap.

- Install the right middle fairing as follows.
- Fit the projections to the slots.
- Fit the projections to the grommets.
- Tighten the bolts.



- A. Right Middle Fairing**
- B. Projections**
- C. Slots**
- D. Grommets**

- Install the right side cover as follows.
- Fit the projections to the slots.
- Fit the projections to the grommets.
- Tighten the screw.
- Install the seat (see Seat section in the GENERAL INFORMATION chapter).



- A. Right Side Cover**
- B. Projections**
- C. Slots**
- D. Grommets**

## 112 MAINTENANCE AND ADJUSTMENT

### *Coolant Change*

Have the coolant changed by an authorized Kawasaki dealer.

### **Spark Plugs**

The standard spark plug is shown in the table. The spark plugs should be replaced in accordance with the Periodic Maintenance Chart.

Spark plug removal should be done by an authorized Kawasaki dealer.

#### **Spark Plug**

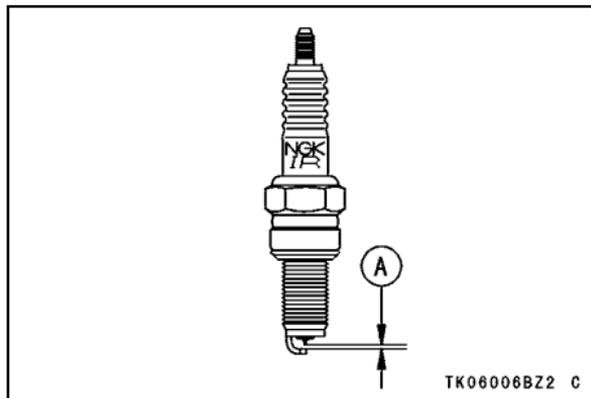
Standard Plug	NGK CR9EIA-9
Plug Gap	0.8 ~ 0.9 mm (0.031 ~ 0.035 in.)
Tightening Torque	15 N·m (1.5 kgf·m, 11 ft·lb)

## Evaporative Emission Control System (California model only)

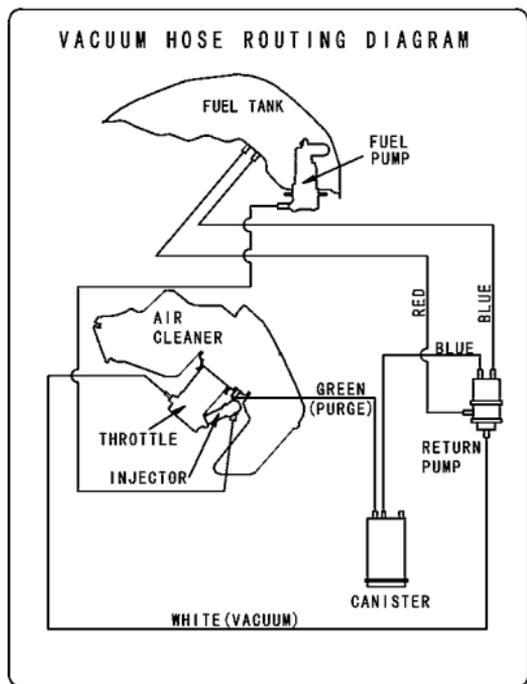
This system routes fuel vapors from the fuel system into the running engine or stores the vapors in a canister when the engine is stopped. Although no adjustments are required, a thorough visual inspection must be made at the intervals specified by the Periodic Maintenance Chart.

### *Inspection*

- Check that the hoses are securely connected.
- Replace any kinked, deteriorated, or damaged hoses.



A. 0.8 ~ 0.9 mm (0.031 ~ 0.035 in.)



59464-0560

TE03986BN7 C

## Valve Clearance

Valve and valve seat wear decreases valve clearance, upsetting valve timing.

### **NOTICE**

If valve clearance is left unadjusted, wear will eventually cause the valves to remain partly open; which lowers performance, burns the valves and valve seats, and may cause serious engine damage.

Valve clearance for each valve should be checked and adjusted in accordance with the Periodic Maintenance Chart.

Inspection and adjustment should be done by an authorized Kawasaki dealer.

## **Kawasaki Clean Air System**

The Kawasaki Clean Air System (KCA) is a secondary air suction system that helps the exhaust gases to burn more completely. When the spent fuel charge is released into the exhaust system, it is still hot enough to burn. The KCA System allows extra air into the exhaust system so that the spent fuel charge can continue to burn. This continued burning action tends to burn up a great deal of the normally unburned gases, as well as changing a significant portion of the carbon monoxide into carbon dioxide.

### **Air Suction Valve -**

The air suction valve is essentially a check valve which allows fresh air to flow only from the air cleaner into the exhaust port. Any air that has passed

the air suction valve is prevented from returning. Inspect the air suction valve in accordance with the Periodic Maintenance Chart. Also, inspect the air suction valve whenever stable idling cannot be obtained, engine power is greatly reduced, or there are abnormal engine noises.

Air suction valve removal and inspection should be done by an authorized Kawasaki dealer.

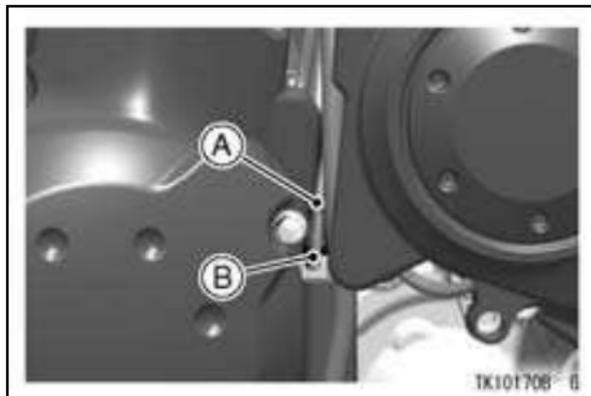
### Air Cleaner

A clogged air cleaner restricts the engine's air intake, increasing fuel consumption, reducing engine power, and causing spark plug fouling.

The air cleaner element must be cleaned in accordance with the Periodic Maintenance Chart. In dusty, rainy, or muddy conditions, the air cleaner element should be serviced more frequently than the recommended interval by an authorized Kawasaki dealer.

### Oil Draining

- Inspect the drain hose located on the rear side of the engine to see if any oil or water has run down from the air cleaner housing.



- A. Drain Hose**
- B. Plug**

- If there is any oil in the hose, remove the plug from the lower end of the drain hose and drain the oil.

 **WARNING**

**Oil on tires will make them slippery and can cause an accident and injury. Be sure to install the plug in the drain hose after draining.**

## **Throttle Control System**

Check the throttle grip play in accordance with the Periodic Maintenance Chart, and adjust it if necessary.

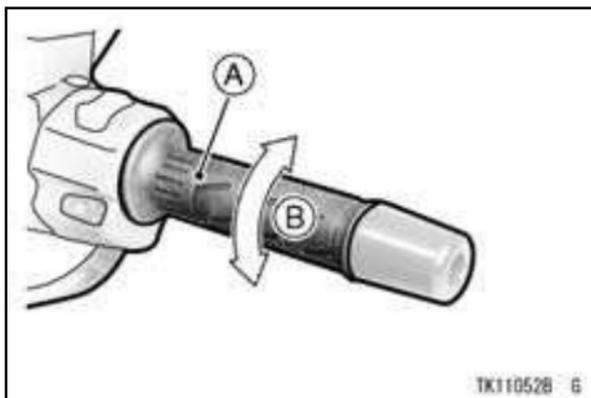
### **Throttle Grip -**

The throttle grip controls the butterfly valves in the throttle body. If the throttle grip has excessive play due to either cable stretch or maladjustment, it will cause a delay in throttle response, especially at low engine speed. Also, the throttle valve may not open fully at full throttle. On the other hand, if the throttle grip has not play, the throttle will be hard to control, and the idle speed will be erratic.

## 118 MAINTENANCE AND ADJUSTMENT

### Inspection

- Check that the throttle grip play is correct by lightly turning the throttle grip back and forth.



- A. Throttle Grip
- B. Throttle Grip Play

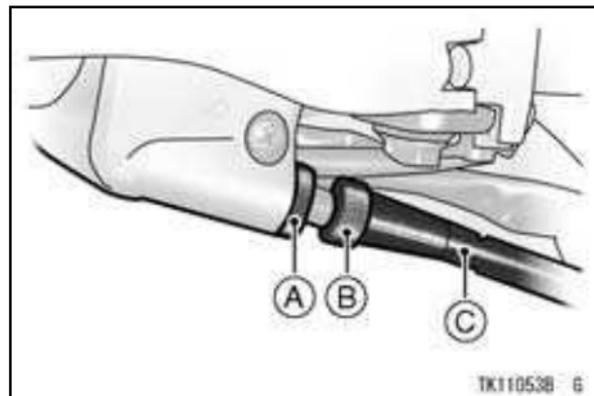
### Throttle Grip Play

2 ~ 3 mm (0.08 ~ 0.12 in.)

- If there is improper play, adjust it.

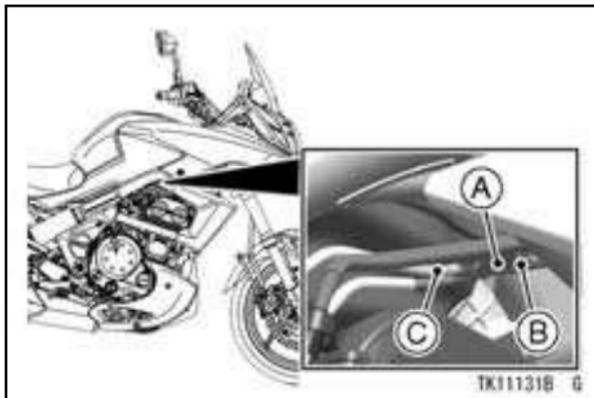
### Adjustment

- Loosen the locknut at the upper end of the throttle cable, and turn the throttle cable adjuster in completely so as to give the throttle grip plenty of play.



- A. Locknut
- B. Adjuster
- C. Throttle Cable (Accelerator Cable)

- If the throttle grip play cannot be adjusted with the accelerator cable adjuster at the throttle grip, use the decelerator cable adjuster located under the fuel tank.
- Turn out the decelerator cable adjusting nut until there is no play when the throttle grip is completely closed.
- Tighten the locknut.



- A. Adjuster  
 B. Locknut  
 C. Throttle Cable (Decelerator Cable)

- Turn out the accelerator cable adjuster until a play of 2 ~ 3 mm (0.08 ~ 0.12 in.) is obtained at the throttle grip.
- Tighten the locknut.
- With the engine idling, turn the handlebar to each side. If handlebar movement changes the idle speed, the throttle cables may be improperly adjusted or incorrectly routed, or they may be damaged. Be sure to correct any of these conditions before idling.

**⚠ WARNING**

Operation with improperly adjusted, incorrectly routed, or damaged cable could result in an unsafe riding condition. Be sure the control cable is adjusted and routed correctly, and is free from damage.

## Engine Vacuum Synchronization

Engine vacuum synchronization must be checked and adjusted periodically in accordance with the Periodic Maintenance Chart by an authorized Kawasaki dealer.

### NOTE

- *Poor engine vacuum synchronization will cause unstable idling, sluggish throttle response, and reduce engine power and performance.*

## Idle Speed

The idle speed check should be performed in accordance with the Periodic Maintenance Chart or whenever the idle speed is disturbed.

### Adjustment

- Start the engine, and warm it up thoroughly.
- Adjust the idle speed by turning the idle adjusting screw.

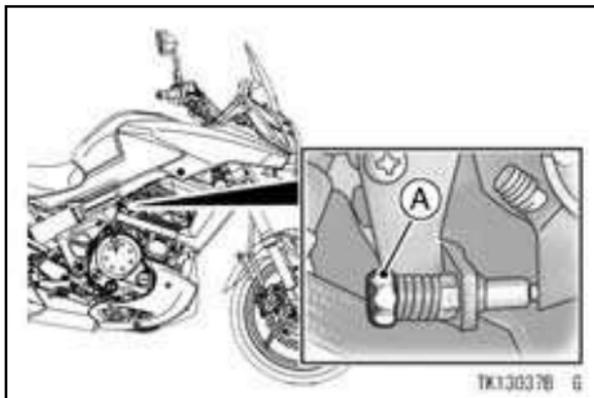
### NOTE

- *While the engine is cold, the fast idle system automatically raises the engine idling speed.*

### Idle Speed

1 250 ~ 1 350 r/min (rpm)
---------------------------

adjusted or incorrectly routed, or they may be damaged. Be sure to correct any of these conditions before riding.



**A. Idle Adjusting Screw**

- Open and close the throttle a few times to make sure that the idle speed does not change. Readjust if necessary.
- With the engine idling, turn the handlebar to each side. If handlebar movement changes the idle speed, the throttle cables may be improperly

**⚠ WARNING**

**Operation with damaged cables could result in an unsafe riding condition. Replace damaged control cables before operation.**

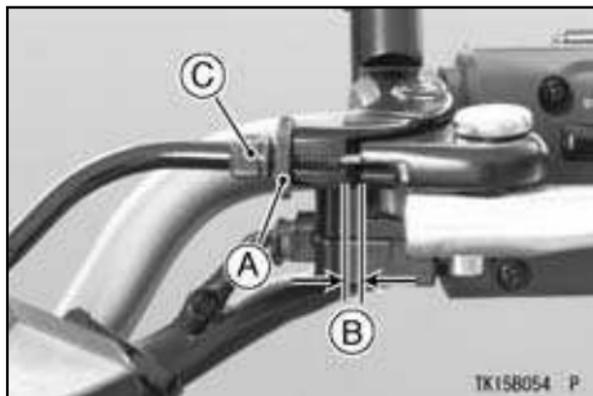
### Clutch

Due to friction plate wear and clutch cable stretch over a long period of use, the clutch operation should be checked each day before riding the motorcycle, and in accordance with the Periodic Maintenance Chart.

#### *Inspection*

- Check that the clutch lever operates properly and that the inner cable slides smoothly. If there is any irregularity, have the clutch cable checked by an authorized Kawasaki dealer.

- Check the clutch lever play as shown in the figure.



- A. Locknut**
- B. Clutch Lever Play**
- C. Adjuster**

#### **Clutch Lever Play**

2 ~ 3 mm (0.08 ~ 0.12 in.)

If the play is incorrect, adjust the lever play as follows.

*Adjustment* **WARNING**

Excess clutch cable play could prevent clutch disengagement and cause a crash resulting in serious injury or death. When adjusting the clutch cable, be sure the upper end of the outer cable is fully seated in its fitting so that it doesn't slip into place later and create excessive cable play.

- Loosen the locknut, and turn the adjuster at the clutch lever so that the clutch lever will have the proper play.
- If it cannot be done, have the clutch cable adjusted by an authorized Kawasaki dealer.

**NOTE**

- *After the adjustment is made, start the engine and check that the clutch does not slip and releases properly.*

 **DANGER**

Exhaust gas contains carbon monoxide, a colorless, odorless poisonous gas. Inhaling carbon monoxide can cause serious brain injury or death. **DO NOT** run the engine in enclosed areas. Operate only in a well-ventilated area.

## Drive Chain

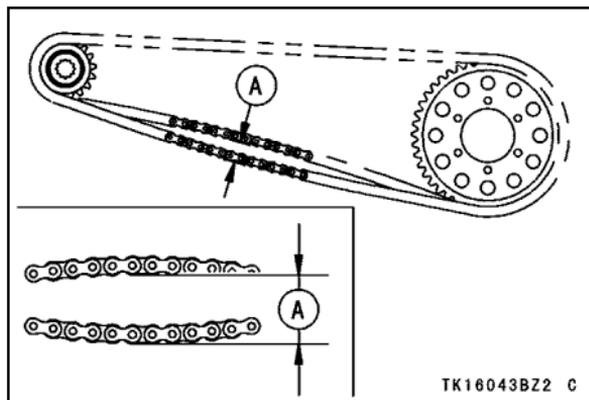
The drive chain slack and lubrication must be checked each day before riding the motorcycle, and in accordance with the Periodic Maintenance Chart for safety and to prevent excessive wear. If the chain becomes badly worn or maladjusted - either too loose or too tight - the chain could jump off the sprockets or break.

### 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 before each ride.**

### *Chain Slack Inspection*

- Set the motorcycle up on its side stand.
- 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.



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**A. Chain Slack**

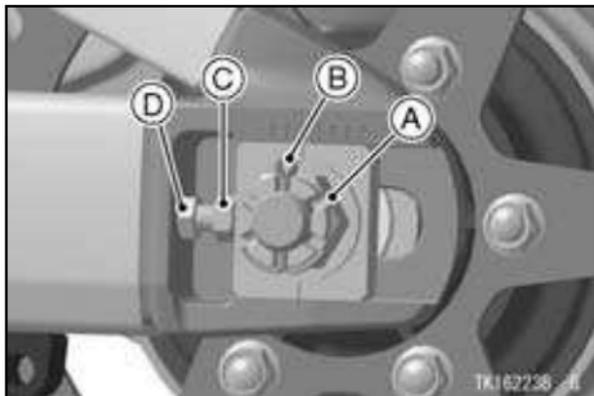
- If the drive chain is too tight or too loose, adjust it so that the chain slack will be within the standard value.

### Drive Chain Slack

Standard	25 ~ 35 mm (1.0 ~ 1.4 in.)
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### Chain Slack Adjustment

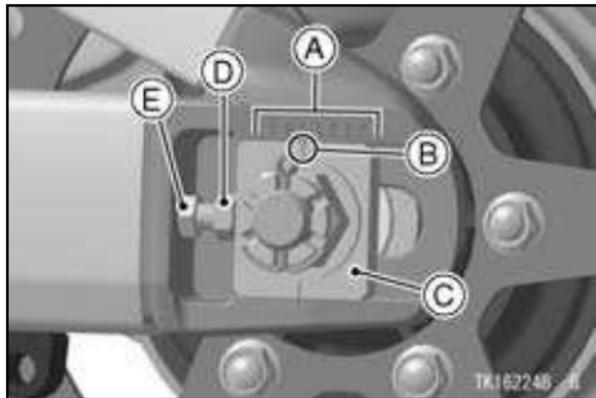
- Remove the cotter pin, and loosen the rear axle nut.
- Loosen the left and right chain adjuster locknuts.



- A. Rear Axle Nut
- B. Cotter Pin
- C. Adjuster
- D. Locknut

## 126 MAINTENANCE AND ADJUSTMENT

- 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 out both chain adjusters evenly until the drive chain has the correct amount of slack. To keep the chain and wheel properly aligned, the notch on the left wheel alignment indicator should align with the same swingarm mark that the right indicator notch aligns with.



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

### NOTE

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

## **⚠ WARNING**

**Misalignment of the wheel will result in abnormal wear, and may result in an unsafe riding condition. Align the rear wheel using the marks on the swingarm or measuring the distance between the center of the axle and swingarm pivot.**

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

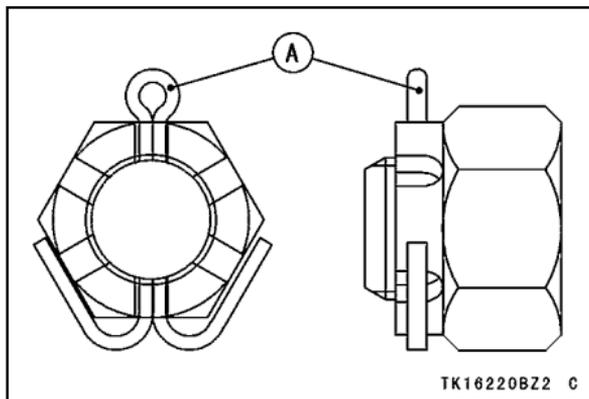
### **Tightening Torque**

Rear Axle Nut:  
108 N·m (11.0 kgf·m, 80 ft·lb)

## **NOTE**

- *If a torque wrench is not available, this item should be serviced by a Kawasaki dealer.*

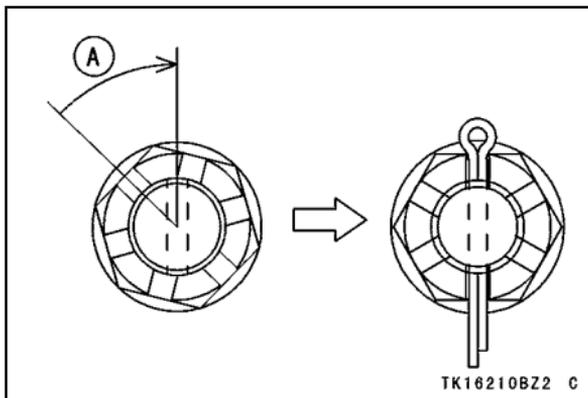
- Rotate the wheel, measure the chain slack again at the tightest position, and readjust if necessary.
- Install a new cotter pin through the rear axle nut and axle, and spread its ends.



**A. 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 shaft, 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.*

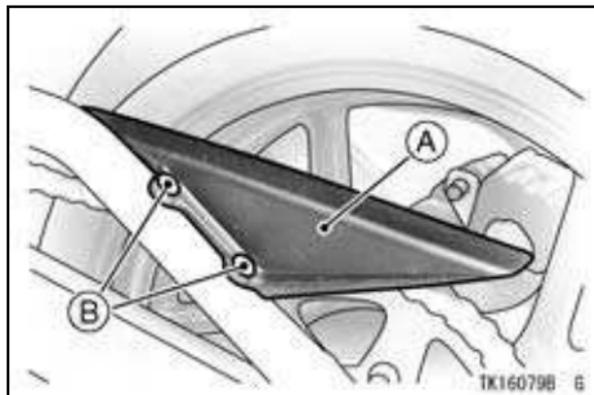
**A. Turning Clockwise****⚠ WARNING**

**A loose axle nut can lead to an accident resulting in serious injury or death. Tighten the axle nut to the proper torque and install a new cotter pin.**

- Check the rear brake (see Brakes section).

*Wear Inspection*

- Remove the bolts to take off the chain cover.

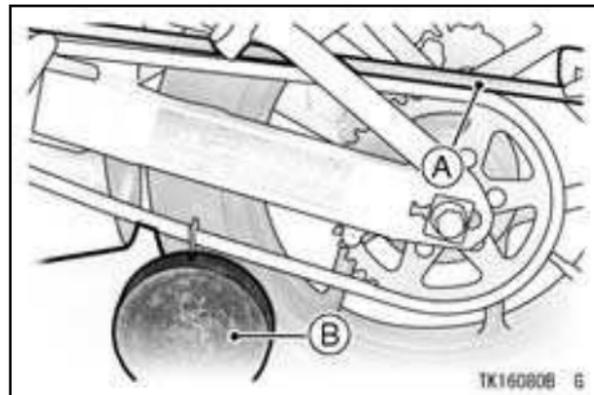


- A. Chain Cover**
- B. Bolts**

- Stretch the chain taut either by using the chain adjusters, or by hanging a 10 kg (22 lb) weight on the chain.
- Measure the length of 20 links on the straight part of the chain from the pin center of the 1st pin to the pin center

of the 21st pin. Since the chain may wear unevenly, take measurements at several places.

- If the length exceeds the service limit, the chain should be replaced.



- A. Measure**
- B. Weight**

*Drive Chain 20-Link Length*

Service Limit	319 mm (12.56 in.)
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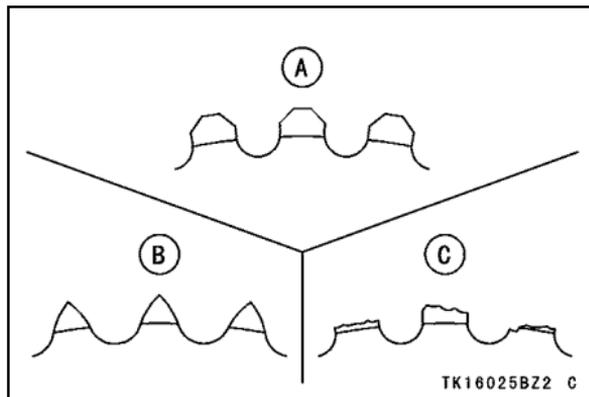
## WARNING

For safety, use only the standard chain. It is an endless type and should not be cut for installation; have it installed by an authorized Kawasaki dealer.

- Rotate the rear wheel to inspect the drive chain for damaged rollers, and loose pins and links.
- Also inspect the sprockets for unevenly or excessively worn teeth, and damaged teeth.

## NOTE

- *Sprocket wear is exaggerated for illustration. See Service Manual for wear limits.*



- A. Good Teeth**
- B. Worn Teeth**
- C. Damaged Teeth**

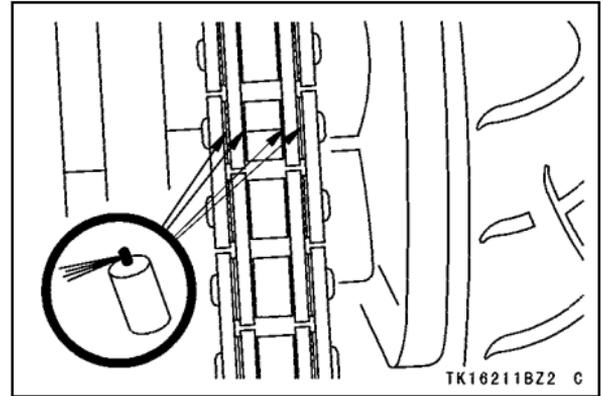
- If there is any irregularity, have the drive chain and/or the sprockets replaced by an authorized Kawasaki dealer.

### *Lubrication*

Lubrication is necessary after riding through rain or on wet roads, or any time that the chain appears dry.

Use a lubricant for sealed chains to prevent deterioration of chain seals. If the chain is especially dirty, clean it using a cleaner for sealed chains following the instructions supplied by the chain cleaner manufacturer.

- Apply lubricant to the sides of the rollers so that it will penetrate to the rollers and bushings. Apply lubricant to the seals so that the seals will be coated with lubricant. Wipe off any excess lubricant.

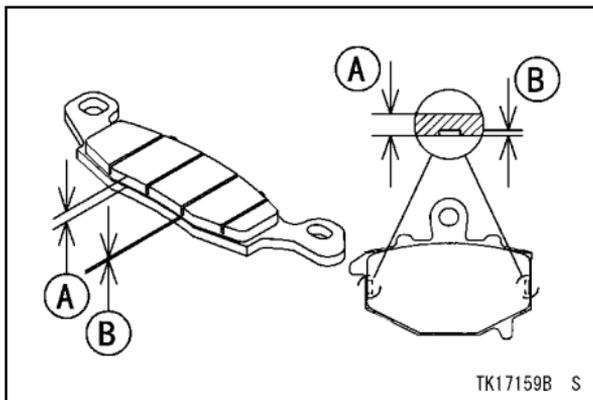


- Wipe off any lubricant that gets on the tire surface.

## Brakes

### *Brake Wear Inspection*

Inspect the brakes for wear. For each front and rear disc brake caliper, if the thickness of either pad is less than 1 mm (0.04 in.), replace both pads in the caliper as a set. Pad replacement should be done by an authorized Kawasaki dealer.



- A. Lining Thickness  
B. 1 mm (0.04 in.)

### **Brake Fluid -**

In accordance with the Periodic Maintenance Chart, inspect the brake fluid level in both the front and rear brake fluid reservoirs and change the brake fluid. The brake fluid should also be changed if it becomes contaminated with dirt or water.

### *Fluid Requirement*

Use heavy-duty brake fluid only from a container marked DOT4.

## **NOTICE**

**Do not spill brake fluid onto any painted surface.**

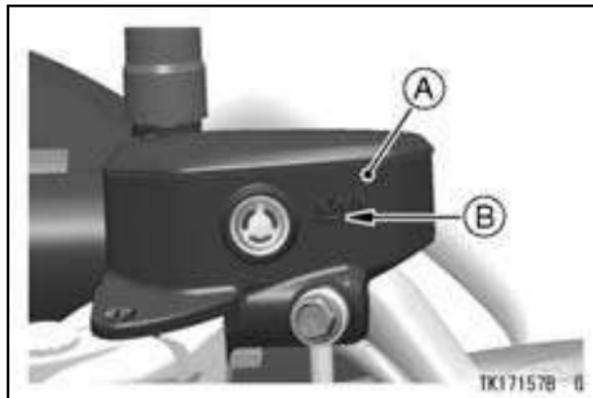
**Do not use fluid from a container that has been left open or that has been unsealed for a long time.**

**Check for fluid leakage around the fittings.**

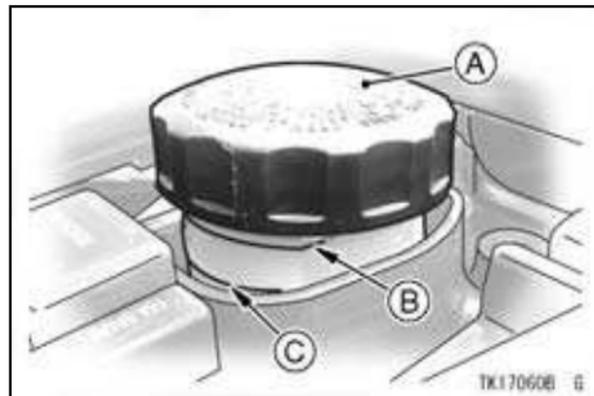
**Check brake hose for damage.**

*Fluid Level Inspection*

- The brake fluid level in the front brake fluid reservoir must be kept above the line (lower level line) next to the gauge and that in the rear brake fluid reservoir (located under the seat) must be kept between the upper and lower level lines (reservoirs held horizontal).



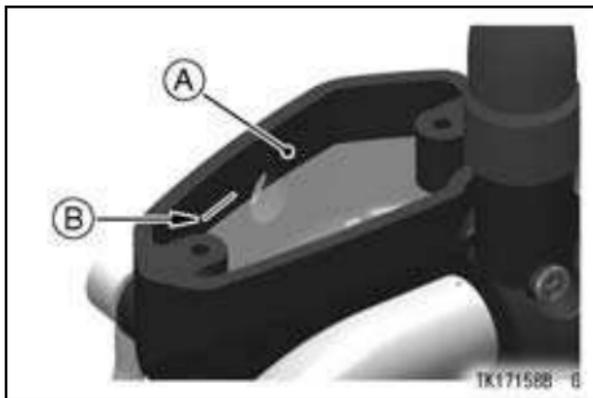
**A. Front Brake Fluid Reservoir**  
**B. Lower Level Line**



**A. Rear Brake Fluid Reservoir**  
**B. Upper Level Line**  
**C. Lower Level Line**

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- If the fluid level in either reservoir is lower than the lower level line, check for fluid leaks in the brake lines, and fill the reservoir to the upper level line. Inside the front brake fluid reservoir is a stepped line showing the upper level line.



A. Front Brake Fluid Reservoir

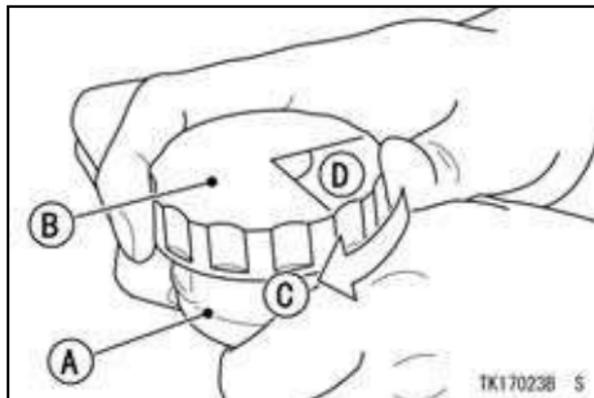
B. Upper Level Line

### **⚠ WARNING**

**Mixing brands and types of brake fluid can reduce the brake system's effectiveness and cause an accident resulting in injury or death. Do not mix two brands of brake fluid. Change the brake fluid in the brake line completely if the brake fluid must be refilled but the type and brand of the brake fluid that is already in the reservoir are unidentified.**

**NOTE**

- *First, tighten 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

**Fluid Change**

Have the brake fluid changed by an authorized Kawasaki dealer.

**Front and Rear Brakes -**

Disc and disc pad wear is automatically compensated for and has no effect on the brake lever or pedal action. So there are no parts that require adjustment on the front and rear brakes.

**⚠ WARNING**

**Air in the brake lines diminish braking performance and can cause an accident resulting in injury or death. If the brake lever or pedal feels mushy when it is applied, there might be air in the brake lines or the brake may be defective. Have the brake checked immediately by an authorized Kawasaki dealer.**

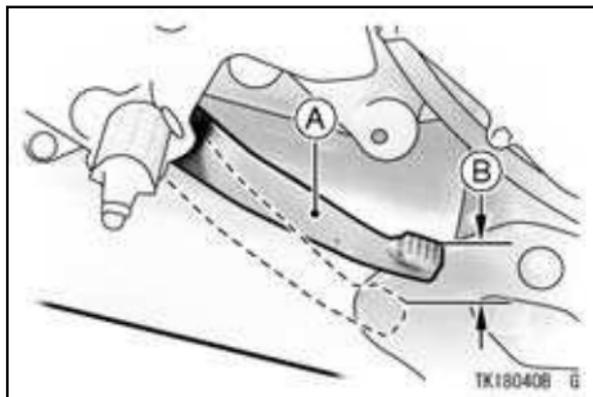
### Brake Light Switches

When either the front or rear brake is applied, the brake light goes on. The front brake light switch requires no adjustment, but the rear brake light switch should be adjusted in accordance with the Periodic Maintenance Chart.

#### *Inspection*

- Turn the ignition key to “ON”.
- The brake light should go on when the front brake is applied.
- If it does not, ask an authorized Kawasaki dealer to inspect the front brake light switch.

- Check the operation of the rear brake light switch by depressing the brake pedal. The brake light should go on after the proper pedal travel.



**A. Brake Pedal**

**B. 10 mm (0.39 in.)**

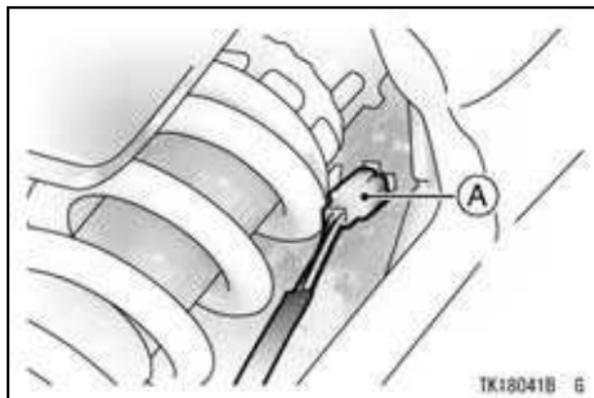
- If it does not, adjust the rear brake light switch.

#### **Brake Pedal Travel**

10 mm (0.39 in.)

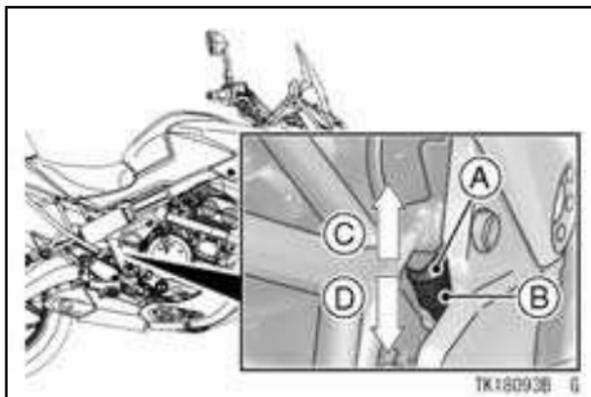
*Adjustment*

- Disconnect the connector.



A. Connector

- To adjust the rear brake light switch, move the switch up or down by turning the switch body.



A. Rear Brake Light Switch

B. Adjusting Nut

C. Lights sooner

D. Lights later

- Connect the connector.

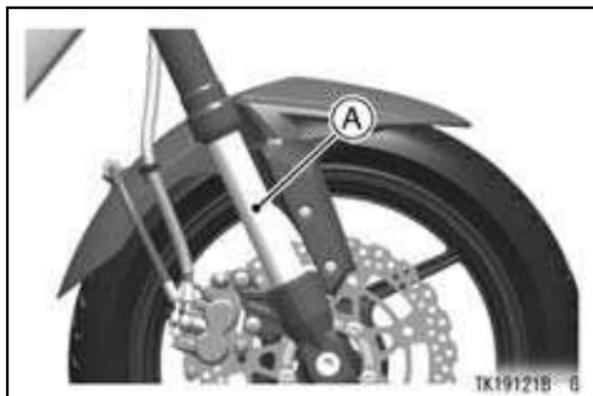
### Front Fork

The front fork operation and oil leakage should be checked in accordance with the Periodic Maintenance Chart.

#### *Front Fork Inspection*

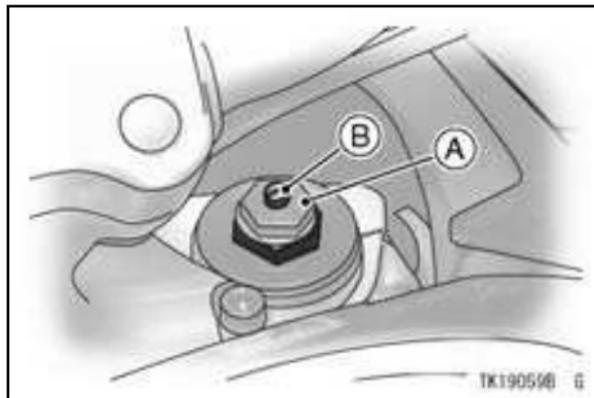
- Holding the brake lever, pump the front fork up and down by several times to inspect smooth stroke.
- Visually inspect the front fork for oil leakage, scoring or scratches on the outer surface of the inner tube.

- If there is any doubt about the front fork, it should be checked by an authorized Kawasaki dealer.



**A. Inner Tube**

On the top of each front fork leg is a spring preload adjuster and on the spring preload adjuster of the right front fork leg is a rebound damping force adjuster so that the spring force and damping force can be adjusted for different riding and loading conditions. Weaker spring force and damping force are for comfortable riding, but they should be increased for high speed riding or riding on rough roads.



**A. Spring Preload Adjuster**  
**B. Rebound Damping Force Adjuster**

### *Spring Preload Adjustment*

- Turn the spring preload adjuster into the nut to increase spring force and out to decrease spring force. The adjusting range is as follows.

### **Adjusting Range**

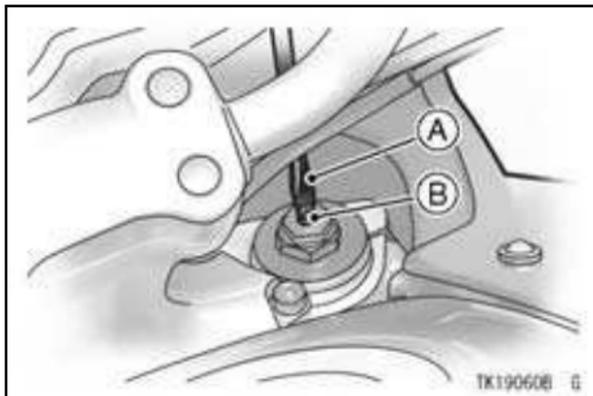
15 turns out*
---------------

\*: Counterclockwise from the fully seated position

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### *Rebound Damping Force Adjustment*

- Turn the rebound damping force adjuster all the way into the spring preload adjuster with a standard tip screwdriver. This makes the damping force greatest.
- Turn out the adjuster to decrease damping force.



- A. Standard Tip Screwdriver  
B. Rebound Damping Force Adjuster

The standard setting positions of the spring preload adjuster and rebound damping force adjuster for an average -build rider of 68 kg (150 lb) with no passenger and no accessories are as follows:

Spring Preload Adjuster	7 turns out*
Rebound Damping Force Adjuster	1 3/4 turns out*

\*: Counterclockwise from the fully seated position

### ***NOTICE***

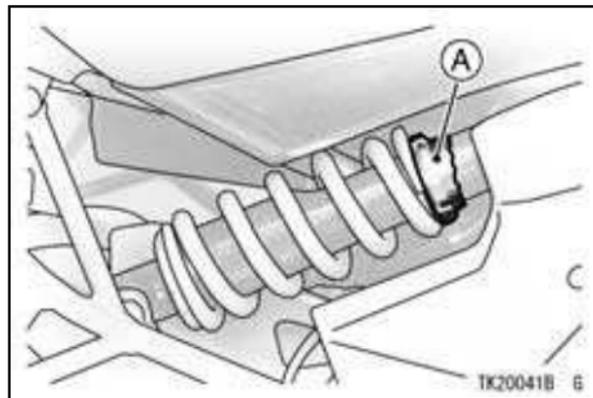
**Do not force to turn the rebound damping force adjuster from the fully seated position, as the adjusting mechanism may be damaged.**

## Rear Shock Absorber

The rear shock absorber operation and oil leakage should be checked in accordance with the Periodic Maintenance Chart.

### *Rear Shock Absorber Inspection*

- Press down on the seat several times to inspect the stroke.
- Visually inspect the rear shock absorber for oil leakage.
- If there is any doubt about the rear shock absorber, it should be checked by an authorized Kawasaki dealer.



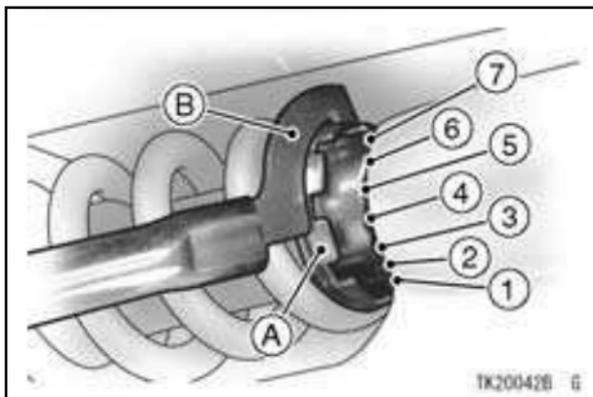
**A. Rear Shock Absorber**

The rear shock absorber can be adjusted by changing the spring preload and rebound damping force for various riding and loading conditions.

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### *Spring Preload Adjustment*

The spring preload adjuster on the rear shock absorber has 7 positions.



A. Spring Preload Adjuster

B. Wrench

- In accordance with the following table, turn the preload adjuster with the wrench from the tool kit.

Position	1	2	3	4	5	6	7
Spring Action	————→						Strong

The standard setting position for an average-build rider of 68 kg (150 lb) with no passenger and no accessories is No. 5.

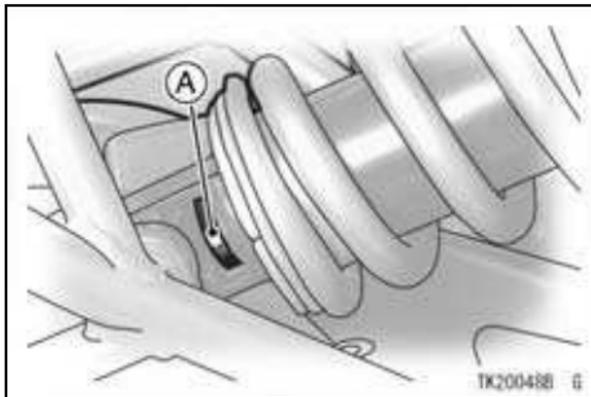
### ***NOTICE***

**Be careful not to damage the motorcycle parts when adjusting the spring preload.**

### *Rebound Damping Force Adjustment*

The rebound damping force adjuster is located at the lower end of the rear shock absorber.

with no passenger and no accessories is as follows:



**A. Rebound Damping Force Adjuster**

- Turn the rebound damping force adjuster towards the H mark to make the damping force greatest.
- Turn the adjuster towards the S mark to decrease damping force.

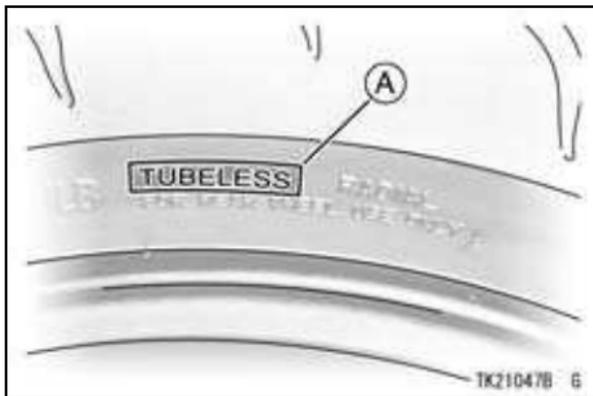
The standard setting position of the rebound damping force adjuster for an average-build rider of 68 kg (150 lb)

Rebound Damping Force Adjuster	5 clicks*
--------------------------------	-----------

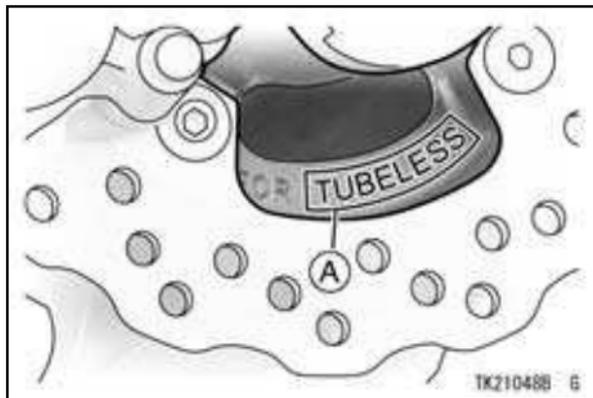
\*: out from the fully seated position

### Wheels

Tubeless tires are installed on the wheels of this motorcycle. The indications of TUBELESS on the tire side wall and the rim show that the tire and rim are specially designed for tubeless use.



**A. TUBELESS Mark**



**A. TUBELESS Mark**

The tire and rim form a leakproof unit by making airtight contacts at the tire chamfers and the rim flanges instead of using an inner tube.

 **WARNING**

Installing a tube inside a tubeless-type tire can create excessive heat build up that can damage the tube and cause rapid deflation. The tires, rims, and air valves on this motorcycle are designed only for tubeless type wheels. The recommended standard tires, rims, and air valves must be used for replacement. Do not install tube-type tires on tubeless rims. The beads may not seat properly on the rim causing tire deflation. Do not install a tube inside a tubeless tire. Excessive heat build-up may damage the tube causing tire deflation.

**Tires -***Payload and Tire Pressure*

Failure to maintain proper inflation pressures or observe payload limits for your tires may adversely affect handling and performance of your motorcycle and can result in loss of control. The maximum recommended load in addition to vehicle weight is 180 kg (397 lb), including rider, passenger, baggage, and accessories.

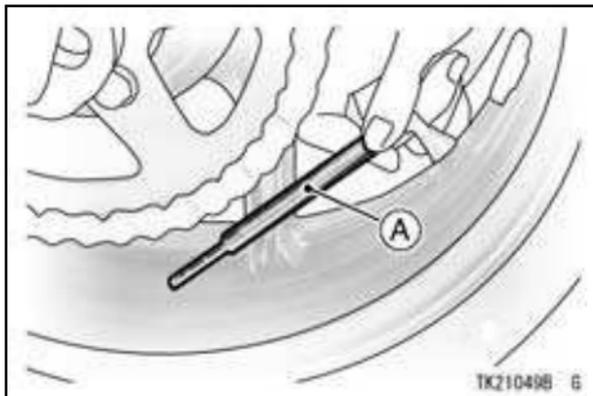
- Remove the air valve cap.
- Check the tire pressure often, using an accurate gauge.
- Make sure to install the air valve cap securely.

**NOTE**

- *Measure the tire pressure when the tires are cold (that is, when the motorcycle has not been ridden more than a mile during the past 3 hours).*

## 146 MAINTENANCE AND ADJUSTMENT

- *Tire pressure is affected by changes in ambient temperature and altitude, and so the tire pressure should be checked and adjusted when your riding involves wide variations in temperature or altitude.*



**A. Tire Pressure Gauge**

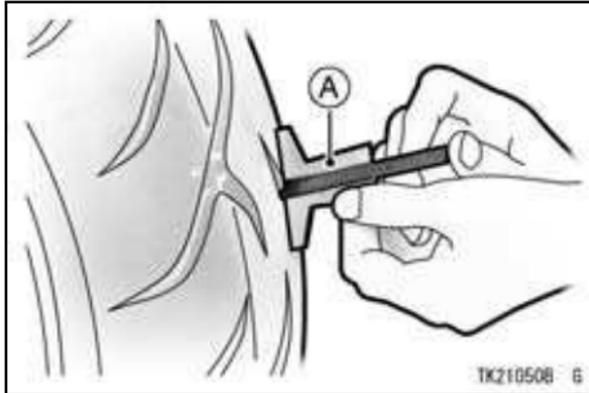
### **Tire Air Pressure (when cold)**

Front	225 kPa (2.25 kgf/cm <sup>2</sup> , 32 psi)
Rear	250 kPa (2.50 kgf/cm <sup>2</sup> , 36 psi)

### *Tire Wear, Damage*

As the tire tread wears down, the tire becomes more susceptible to puncture and failure. An accepted estimate is that 90% of all tire failures occur during the last 10% of tread life (90% worn). So it is false economy and unsafe to use the tires until they are bald.

- In accordance with the Periodic Maintenance Chart, measure the depth of the tread with a depth gauge, and replace any tire that has worn down to the minimum allowable tread depth.



A. Tire Depth Gauge

### Minimum Tread Depth

Front	—	1 mm (0.04 in.)
Rear	Under 130 km/h (80 mph)	2 mm (0.08 in.)
	Over 130 km/h (80 mph)	3 mm (0.12 in.)

- Visually inspect the tire for cracks and cuts, replacing the tire in case of bad damage. Swelling or high spots indicate internal damage, requiring tire replacement.
- Remove any imbedded stones or other foreign particles from the tread.

### NOTE

- *Have the wheel balance inspected whenever a new tire is installed.*


**WARNING**

Tires that have been punctured and repaired do not have the same capabilities as undamaged tires and can suddenly fail, causing an accident resulting in serious injury or death. Replace damaged tires as soon as possible. To ensure safe handling and stability, use only the recommended standard tires for replacement, inflated to the standard pressure. If it is necessary to ride on a repaired tire, do not exceed 100 km/h (60 mph) until the tire is replaced.

**NOTE**

- *When operating on public roadways, keep maximum speed under traffic law limits.*

**Standard Tire (Tubeless)**

Front	Make, Type: DUNLOP, SPORTMAX RADIAL D221FAG Size: 120/70 ZR17 M/C (58W)
Rear	Make, Type: DUNLOP, SPORTMAX D221G Size: 160/60 ZR17 M/C (69W)

**Replacement Tire (Tubeless) KLE650C Model only**

Front	Make, Type: PIRELLI, SCORPION SYNC FRONT Size: 120/70 ZR17 M/C (58W)
Rear	Make, Type: PIRELLI, SCORPION SYNC RADIAL Size: 160/60 ZR17 M/C (69W)

 **WARNING**

**Mixing tire brands and types can adversely affect handling and cause an accident resulting in injury or death. Always use the same manufacturer's tires on both front and rear wheels.**

 **WARNING**

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

**Battery**

The battery installed in this motorcycle is a sealed type, so it is not necessary to check the battery electrolyte level or add distilled water.

The sealing strip should not be pulled off once the specified electrolyte has been installed in the battery for initial service.

However, in order to maximize battery life and ensure that it will provide the power needed to start the motorcycle you must properly maintain the battery's charge. When used regularly, the charging system in the motorcycle helps keep the battery fully charged. If your motorcycle is only used occasionally or for short periods of time, the battery is more likely to discharge.

Due to their internal composition, batteries continually self discharge. The discharge rate depends on the

## 150 MAINTENANCE AND ADJUSTMENT

type of battery and ambient temperature. As temperature rises, so does the discharge rate. Every 15°C (59°F) doubles the rate.

Electrical accessories, such as digital clocks and computer memory, also draw current from the battery even when the key is switched off. Due to a combination of such “key-off” draws and hot temperature, a battery can go from fully charged to completely discharged in a matter of days.

Self-discharge		
Temperature	Approx. number of days from 100% charged to 100% discharged	
	Lead -Antimony	Lead -Calcium
	Battery	Battery
40°C (104°F)	100 Days	300 Days
25°C (77°F)	200 Days	600 Days
0°C (32°F)	550 Days	950 Days

Current Drain		
Discharging Ampere	Days from 100% charged to 50% discharged	Days from 100% charged to 100% discharged
7 mA	60 Days	119 Days
10 mA	42 Days	83 Days
15 mA	28 Days	56 Days
20 mA	21 Days	42 Days
30 mA	14 Days	28 Days

In extremely cold weather the fluid in an inadequately charged battery can easily freeze, which can crack the case and buckle the plates. A fully charged battery can withstand sub-freezing temperature with no damage.

### **Battery Sulfation -**

A common cause of battery failure is sulfation.

Sulfation occurs when the battery is left in a discharged condition for an extended time. Sulfate is a normal by product of the chemical reactions within a battery. But when continuous discharge allows the sulfate to crystallize in the cells, the battery plates become permanently damaged and will not hold a charge. Battery failure due to sulfation is not warrantable.

### **Battery Maintenance -**

It is the owner's responsibility to keep the battery fully charged. Failure to do so can lead to battery failure and leave you stranded.

If you are riding your vehicle infrequently, inspect the battery voltage weekly using a voltmeter. If it drops below 12.8 volts, the battery should be charged using an appropriate charger (check with a Kawasaki dealer). If

## 152 MAINTENANCE AND ADJUSTMENT

you will not be using the motorcycle for longer than two weeks, the battery should be charged using an appropriate charger. Do not use an automotive-type quick charger that may overcharge the battery and damage it.

### NOTE

○ *Leaving the battery connected causes the electrical components (clock etc) to make the battery discharged, resulting the over discharge of the battery. In this case, the repair or replacement of the battery is not included in the warranty. If you do not drive for four weeks or more, disconnect the battery from the vehicle.*

**Kawasaki-recommended chargers are:**

Battery Mate 150-9

OptiMate 4

Yuasa MB-2040/2060  
Christie C10122S

If the above chargers are not available, use equivalent one.

For more details, ask a Kawasaki dealer.

### Battery Charging -

- Remove the battery from the motorcycle (see Battery Removal).
- Attach the leads from the charger and charge the battery at a rate (amperage × hours) that is indicated on the battery. If it is not possible to read the rate, charge the battery at an amperage that is about 1/10th of the battery capacity.
- The charger will keep the battery fully charged until you are ready to re-install the battery in the motorcycle (see Battery Installation).

**NOTICE**

Never remove the sealing strip, or the battery can be damaged. Do not install a conventional battery in this motorcycle, or the electrical system cannot work properly.

Make	Siam Furukawa
Type	FTX12-BS

**NOTE**

- *If you charge the sealed battery, never fail to observe the instructions shown in the label on the battery.*

** WARNING**

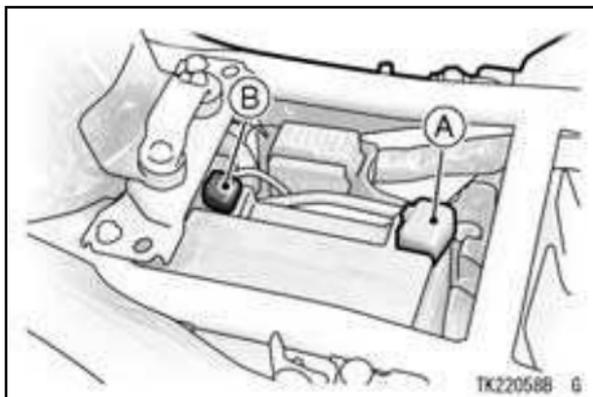
Lead is a toxic substance. Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.

*Battery Removal*

- Remove the seat (see Seat section in the GENERAL INFORMATION chapter).
- Slide the red cap.

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- Disconnect the cables from the battery, first from the (-) terminal and then the (+) terminal.



A. Red Cap ((+) Terminal)

B. (-) Terminal

- Take the battery out.
- Clean the battery using a solution of baking soda and water. Be sure that the cable connections are clean.

### *Battery Installation*

- Place the battery in the rear fender front.
- Connect the (+) cable to the (+) terminal, and then connect the (-) cable to the (-) terminal.

### **NOTICE**

**Installing the (-) cable to the (+) terminal of the battery or the (+) cable to the (-) terminal of the battery can seriously damaged the electrical system.**

- Put a light coat of grease on the terminals to prevent corrosion.
- Cover the red cap.
- Reinstall the removed parts.

## Headlight Beam

### *Horizontal Adjustment*

The headlight beam is adjustable horizontally. If not properly adjusted horizontally, the beam will point to one side rather than straight ahead.

- Turn the horizontal adjuster clockwise or counterclockwise until the beam points straight ahead.

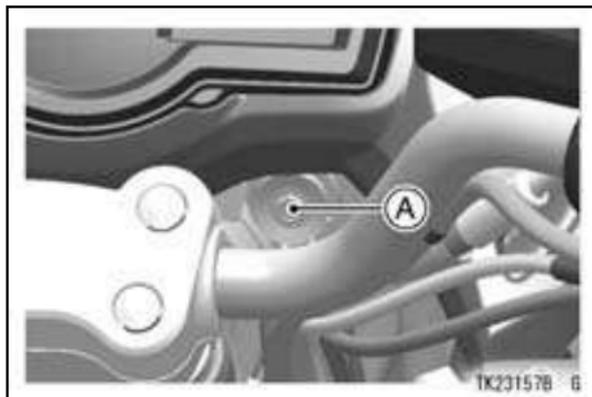


**A. Horizontal Adjuster**

### *Vertical Adjustment*

The headlight beam is adjustable vertically. If adjusted too low, neither low nor high beam will illuminate the road far enough ahead. If adjusted too high, the high beam will fail to illuminate the road close ahead, and the low beam will blind oncoming drivers.

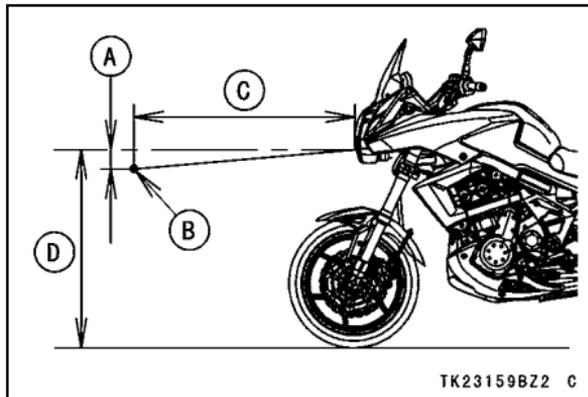
- Turn the vertical adjuster clockwise or counterclockwise to adjust its vertical angle.



**A. Vertical Adjuster**

**NOTE**

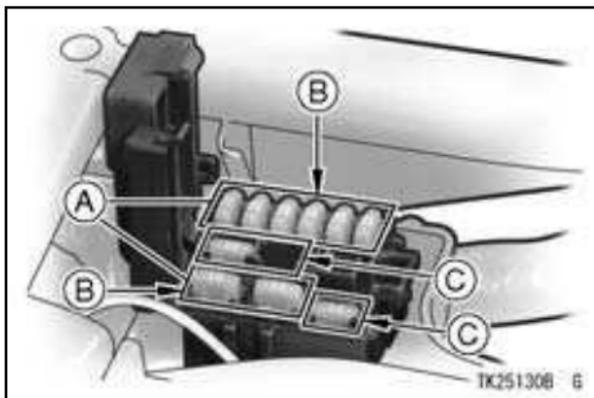
- On high beam, the brightest point should be slightly below horizontal. The proper angle is 0.4 degrees below horizontal. This is a 50 mm (2.0 in.) drop at 7.6 m (25 ft) measured from the center of the headlight, with the motorcycle on its wheels and the rider seated.



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

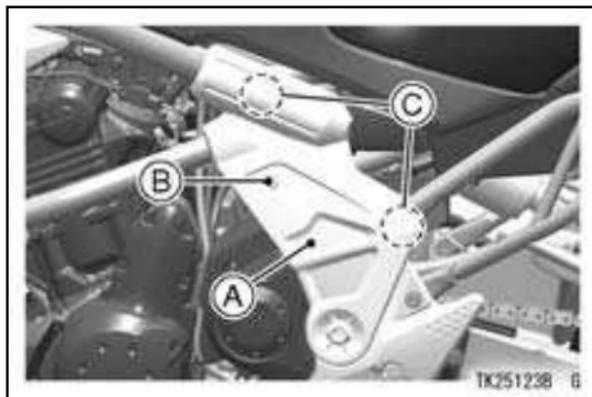
## Fuses

Fuses are arranged in the fuse box located under the seat. The main fuse is mounted on the starter relay behind the left side cover. If a fuse fails during operation, inspect the electrical system to determine the cause, and then replace it with a new fuse of proper amperage.



- A. Fuse Box
- B. Fuses
- C. Spare Parts

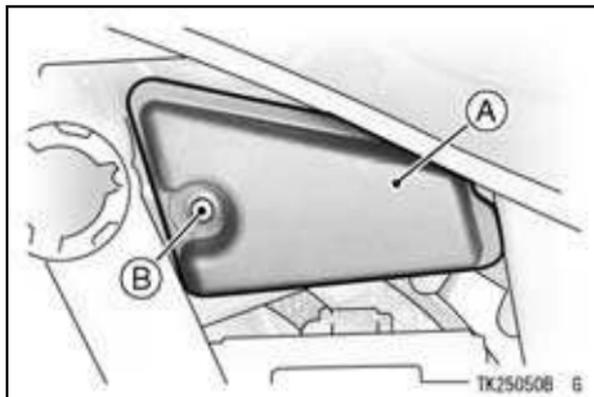
- Remove the bolt.
- Clear the projections from the grommets, and remove the left frame cover upward.



- A. Left Frame Cover
- B. Bolt
- C. Projections and Grommets

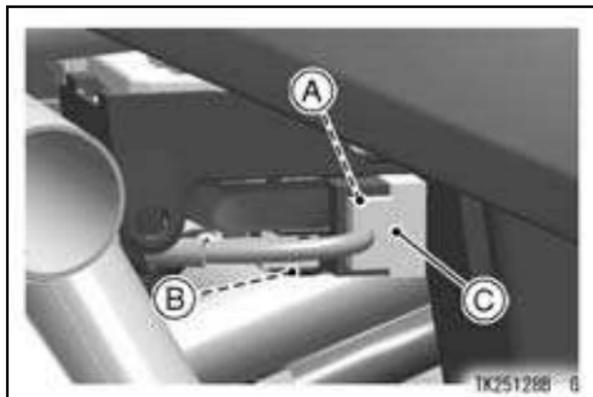
## 158 MAINTENANCE AND ADJUSTMENT

- Remove the cover by removing the bolt.



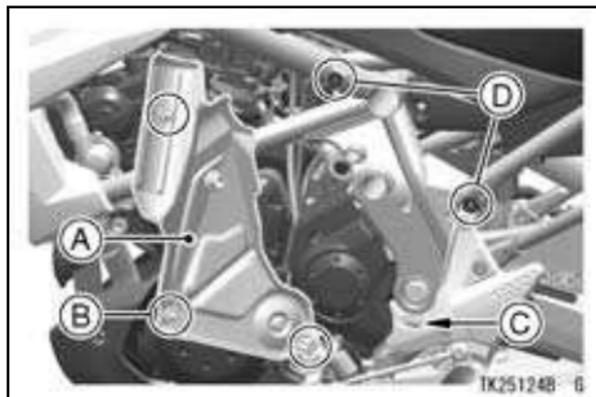
- A. Cover
- B. Bolt

- Disconnect the connector.



- A. Main Fuse
- B. Spare Fuse
- C. Connector

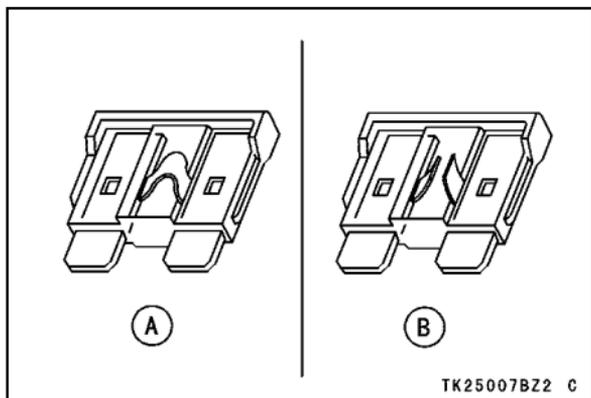
- Install the left frame cover as follows.
- Fit the projection to the slot.
- Fit the projections to the grommets.
- Tighten the bolt.



- A. Left Frame Cover**  
**B. Projections**  
**C. Slot**  
**D. Grommets**

## **⚠ WARNING**

**Substituting fuses can cause wiring to overheat, catch fire and/or fail. Do not use any substitute for the standard fuse. Replace the blown fuse with a new one of the correct capacity, as specified on the fuse box and main fuse.**



- A. Normal**  
**B. Failed**

## General Lubrication

Lubricate the points shown below, with either motor oil or regular grease, in accordance with the Periodic Maintenance Chart or whenever the vehicle has been operated under wet or rainy conditions.

Before lubricating each part, clean off any rusty spots with rust remover and wipe off any grease, oil, dirt, or grime.

### NOTE

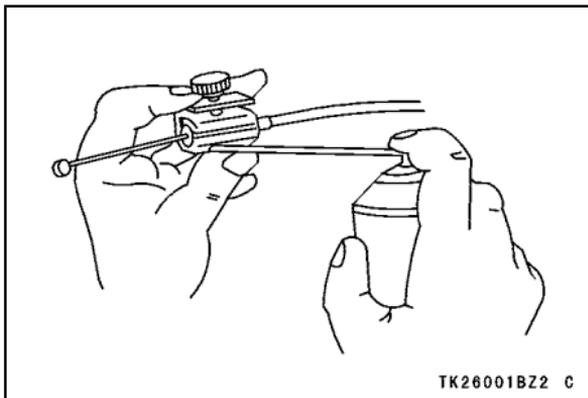
- *A few drops of oil are effective to keep bolts and nuts from rusting and sticking. This makes removal easier. Badly rusted nuts, bolts, etc., should be replaced with new ones.*

## Apply motor oil to the following pivots -

- Side Stand
- Clutch Lever
- Front Brake Lever
- Rear Brake Pedal

## Lubricate the following cables with a pressure cable lubber -

- (K) Clutch Inner Cable
- (K) Throttle Inner Cables



**Apply grease to the following points -**

- **(K)** Clutch Inner Cable Upper End
- **(K)** Throttle Inner Cable Upper Ends

**(K):** Should be serviced by an authorized Kawasaki dealer.

**NOTE**

- *After connecting the cables, adjust them.*

**Cleaning Your Motorcycle***General Precautions*

Frequent and proper care of your Kawasaki motorcycle will enhance its appearance, optimize overall performance, and extend its useful life. Covering your motorcycle with a high quality, breathable motorcycle cover will help protect its finish from harmful UV rays, pollutants, and reduce the amount of dust reaching its surfaces.

 **WARNING**

**Build-up of debris or flammable material in and around the vehicle chassis, engine, and exhaust can cause mechanical problems and increase the risk of fire.**

**When operating the vehicle in conditions that allow debris or flammable material to collect in and around the vehicle, inspect the engine, electrical component and exhaust areas frequently. If debris or flammable materials have collected, park the vehicle outside and stop the engine. Allow the engine to cool, then remove any collected debris. Do not park or store the vehicle in an enclosed space prior to inspecting for build-up of debris or flammable materials.**

- Be sure the engine and exhaust are cool before washing.
- Avoid applying degreaser to seals, brake pads, and tires.
- Always use non-abrasive wax and cleaner/polisher.
- Avoid all harsh chemicals, solvents, detergents, and household cleaning products such as ammonia-based window cleaners.
- Gasoline, brake fluid, and coolant will damage the finish of painted and plastic surfaces: wash them off immediately.
- Avoid wire brushes, steel wool, and all other abrasive pads or brushes.
- Use care when washing the windshield, headlight lens, and other plastic parts as they can easily be scratched.
- Avoid using pressure washers; water can penetrate seals and electrical

components and damage your motorcycle.

- Avoid spraying water in delicate areas such as in air intakes, fuel system, brake components, electrical components, muffler outlets, and fuel tank openings.

### *Washing Your Motorcycle*

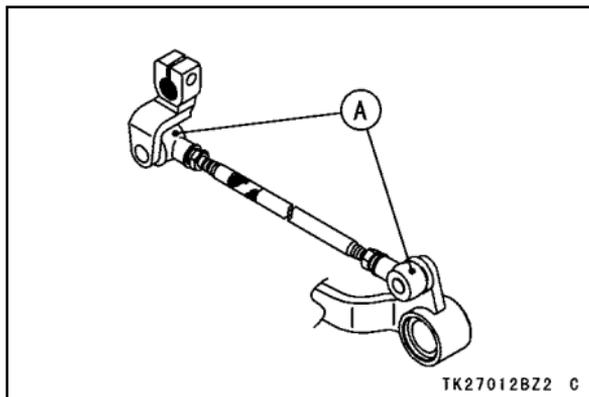
- Rinse your bike with cold water from a garden hose to remove any loose dirt.
- Mix a mild neutral detergent (designed for motorcycles or automobiles) and water in a bucket. Use

a soft cloth or sponge to wash your motorcycle. If needed, use a mild degreaser to remove any oil or grease which build up.

- After washing, rinse your motorcycle thoroughly with clean water to remove any residue (residue from the detergent can damage parts of your motorcycle).
- Use a soft cloth to dry your motorcycle. As you dry, inspect your motorcycle for chips and scratches. Do not let the water air dry as this can damage the painted surfaces.

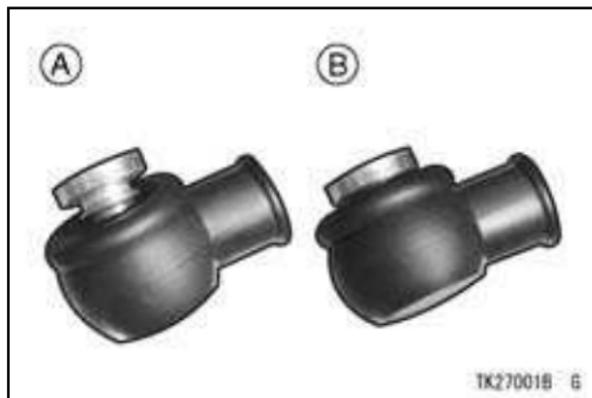
## 164 MAINTENANCE AND ADJUSTMENT

- After cleaning your motorcycle, check the rubber boot covering the shift pedal ball joint for correct installation. Be sure the sealing lip of the rubber boot fits into the groove of the ball joint.



**A. Rubber Boot**

- If the boot is damaged, replace it with a new one. If the boot is not positioned in the groove correctly, place it in the correct position.



- A. Not correct position**  
**B. Correct position**

- Start the engine and let it idle for several minutes. The heat from the engine will help dry moist areas.
- Carefully ride your motorcycle at a slow speed and apply the brakes

several times. This helps the brakes dry and restores its normal operating performance.

- Lubricate the drive chain to prevent rusting.

### NOTE

- *After riding in an area where the roads are salted or near the ocean, immediately wash your motorcycle with cold water. Do not use warm water as it accelerates the chemical reaction of the salt. After drying, apply a corrosion protection spray on all metal and chrome surfaces to prevent corrosion.*
- *Condensation may form on the inside of the headlight lens after riding in the rain, washing the motorcycle or humid weather. To remove the moisture, start the engine and turn on the*

*headlight. Gradually the condensation on the inside of the lens will clear off.*

### *Semi-gloss Finish*

To clean the semi-gloss finish;

- When washing the motorcycle, always use a mild neutral detergent and water.
- The semi-gloss finish effect may be lost when the finish is excessively rubbed.
- If any doubt, consult an authorized Kawasaki dealer.

### *Painted Surfaces*

After washing your motorcycle, coat painted surfaces, both metal and plastic, with a commercially available motorcycle/automotive wax. Wax should be applied once every three months or as conditions require. Avoid surfaces with “satin” or “flat” finishes. Always

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use non-abrasive products and apply them according to the instructions on the container.

### *Windshield and Other Plastic Parts*

After washing use a soft cloth to gently dry plastic parts. When dry, treat the windshield, headlight lens, and other non-painted plastic parts with an approved plastic cleaner/polisher product.

## **NOTICE**

**Plastic parts may deteriorate and break if they come in contact with chemical substances or household cleaning products such as gasoline, brake fluid, window cleaners, thread-locking agents, or other harsh chemicals. If a plastic part comes in contact with any harsh chemical substance, wash it off immediately with water and a mild neutral detergent, and then inspect for damage. Avoid using abrasive pads or brushes to clean plastic parts, as they will damage the part's finish.**

### *Chrome and Aluminum*

Chrome and uncoated aluminum parts can be treated with a chrome/aluminum polish. Coated aluminum

should be washed with a mild neutral detergent and finished with a spray polish. Aluminum wheels, both painted and unpainted can be cleaned with special non-acid based wheel spray cleaners.

#### *Leather, Vinyl, and Rubber*

If your motorcycle has leather accessories, special care must be taken. Use a leather cleaner/treatment to clean and care for leather accessories. Washing leather parts with detergent and water will damage them, shortening their life.

Vinyl parts should be washed with the rest of the motorcycle, then treated with a vinyl treatment.

The sidewalls of tires and other rubber components should be treated with a rubber protectant to help prolong their useful life.

### **WARNING**

**Rubber protectants can be slippery and, if used on the tread area, cause loss of traction resulting in accident causing injury or death. Do not apply rubber protectant to any tread area.**

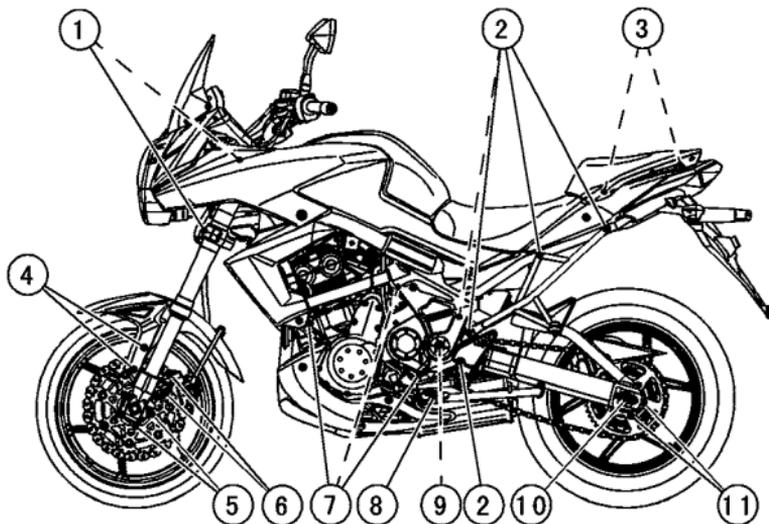
### Bolt and Nut Tightening

In accordance with the Periodic Maintenance Chart, it is very important to check the tightness of the bolts and nuts listed here. Also, check to see that each cotter pin is in place and in good condition. Please ask your authorized Kawasaki dealer for torque values.

1. Clutch Lever Clamp Bolts
2. Handlebar Holder Bolts
3. Steering Stem Head Bolt
4. Steering Stem Nut
5. Front Master Cylinder Clamp Bolts



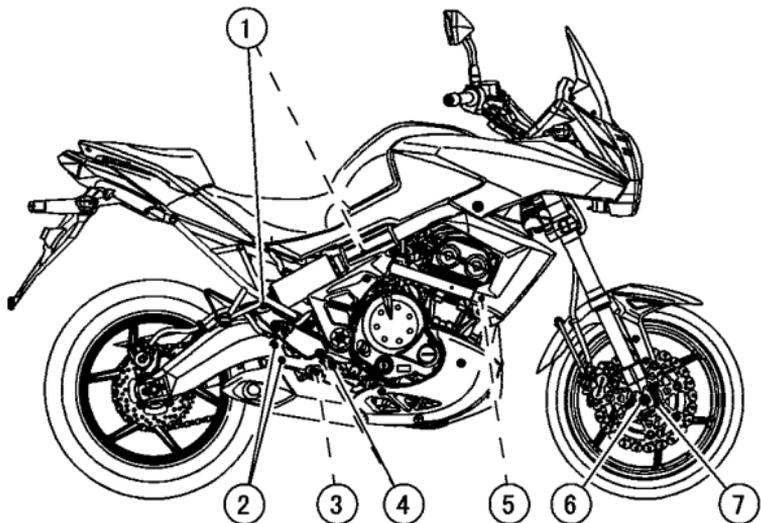
1. Front Fork Clamp Bolts
2. Footpeg Stay Bolts
3. Tandem Grip Mounting Bolts
4. Front Fender Bolts
5. Brake Disc Mounting Bolts
6. Caliper Mounting Bolts
7. Engine Mounting Bolts and Nuts
8. Side Stand Bolt
9. Swingarm Pivot Shaft Nut
10. Rear Axle Nut
11. Rear Sprocket Nuts



TK28105BZ7 C

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1. Rear Shock Absorber Bolts
2. Rear Master Cylinder Mounting Bolts
3. Brake Pedal Bolt
4. Muffler Body Mounting Bolts
5. Exhaust Pipe Manifold Holder Nuts
6. Front Axle
7. Front Axle Clamp Bolt



TK28106B27 C

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## STORAGE

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### Preparation for Storage

- Clean the entire vehicle thoroughly.
- Run the engine for about five minutes to warm the oil, shut it off, and drain the engine oil.



### WARNING

**Motorcycle oil is a toxic substance. Dispose of used oil properly. Contact your local authorities for approved disposal methods or possible recycling.**

- Put in fresh engine oil.
- Empty the fuel from the fuel tank by the pump or siphon.

 **WARNING**

**Gasoline is extremely flammable and can be explosive under certain conditions, creating the potential for serious burns. Turn the ignition key to "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. Gasoline is a toxic substance. Dispose of gasoline properly. Contact your local authorities for approved disposal methods.**

- Empty the fuel system by running the engine at idle speed until the engine stalls (If left in for a long time, the fuel will break down and could clog the fuel system.).
- Reduce tire pressure by about 20%.
- Set the motorcycle on a box or stand so that both wheels are raised off the ground (If this cannot be done, put boards under the front and rear wheels to keep dampness away from the tire rubber.).
- Spray oil on all unpainted metal surfaces to prevent rusting. Avoid getting oil on rubber parts or in the brakes.
- Lubricate the drive chain and all the cables.
- Remove the battery, and store it where it will not be exposed to direct sunlight, moisture, or freezing temperatures. During storage it should be given a slow charge (one ampere or less) about once a month. Keep the battery well charged especially during cold weather.
- Tie plastic bags over the muffler to prevent moisture from entering.

- Put a cover over the motorcycle to keep dust and dirt from accumulating on it.

### **Preparation after Storage**

- Remove the plastic bags from the muffler.
- Install the battery in the motorcycle and charge the battery if necessary.
- Fill the fuel tank with fuel.
- Check all the points listed in the Daily Checks section.
- Lubricate the pivots, bolts, and nuts.

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## TROUBLESHOOTING GUIDE

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### **Engine Does Not Start -**

#### *Starter Motor Won't Turn*

- Engine stop switch off
- Transmission not in neutral
- Fuse blown
- Battery cables do not make good electrical contact with battery terminals
- Battery discharged

#### *Engine Cranks, But Won't Start*

- No fuel in tank
- Fuel line clogged
- Fuel broken down
- Engine flooded
- Spark plugs not in good contact
- Spark plugs fouled or wet

- Incorrect spark plug gap
- Incorrect valve clearance
- No first turning the ignition key to "OFF" when the motorcycle falls down.

### **Engine Stalls -**

#### *Just When Shifting Into 1st Gear*

- Side stand has been left down
- Clutch does not properly disengage

#### *While Riding*

- No fuel in tank
- Fuel tank air vent is obstructed
- Overheating
- Battery discharged

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## YOUR WARRANTY/OWNER SATISFACTION

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Welcome to the Kawasaki family!

Congratulations on buying your Kawasaki vehicle. You've chosen a great, high-quality product with state-of-the-art features and built to Kawasaki's high standards. Your satisfaction is important to your authorized Kawasaki dealer and to Kawasaki Motors Corp., U.S.A. Here is some important information regarding your vehicle's limited warranty.

Frequently Asked Questions

### **What is a Limited Warranty?**

The most important thing to know about your warranty is that it protects you from manufacturing defects in material or workmanship during the warranty period. You can find the warranty period in the Kawasaki Limited Warranty Certificate your Kawasaki dealer provided to you at the time of sale. The warranty does not cover the cost of regularly-scheduled maintenance. The warranty also does not apply to the normal wear of items such as tires, brake pads, transmission drive belts, chains, sprockets, etc.

## 176 YOUR WARRANTY/OWNER SATISFACTION

### **What is the Good Times Protection Plan?**

Much of the warranty coverage offered by the limited warranty can be extended by purchasing Kawasaki's Good Time™ Protection Plan (GTPP). See your Kawasaki dealer or go to [Kawasaki.com](http://Kawasaki.com) for more information if you don't already have the GTPP.

### **What Am I Responsible For?**

You are responsible for maintaining your vehicle according to the maintenance schedule shown in this owner's manual.

You are responsible for notifying your dealer immediately if there is a problem, and you, as the owner, will need to authorize the dealer to inspect the unit.

You will be responsible for paying for routine maintenance, including the first scheduled service. You can have the required servicing done by your Kawasaki dealer (recommended) or an equally-qualified service facility. You can also do your own maintenance work if you have the proper tools, service references, and mechanical skills. However, if a failure is found to be caused by improper servicing, it would not be covered by the limited warranty.

You may purchase a Kawasaki Service Manual and any necessary special tools directly from your Kawasaki dealer.

You will be responsible for paying for repairs needed because of an accident, to replace worn parts such as tires, chains, brakes, and for repairs needed because of a lack of maintenance, misuse or racing.

Whether you do it yourself or take your vehicle to a Kawasaki dealer, be sure to record your service in the Maintenance Record section of this Owner's Manual. Keep all receipts for the service and/or items necessary to perform the maintenance so that in the event of a failure you can document the service history.

### **What Are The Dealership's Responsibilities?**

Your Kawasaki dealer offers a wide range of services, parts, accessories, and information on your product and on Kawasaki.

Each dealer is independently owned and operated and is responsible for the dealership's operations, its repair, warranty, and service work, and its personnel.

## **178 YOUR WARRANTY/OWNER SATISFACTION**

Your dealer is responsible for completing the set up and pre-delivery service of your new Kawasaki vehicle. The dealership should also explain its operation, maintenance, and warranty provisions so you understand them at the time of purchase or at any other time you have questions.

The dealership is responsible for inspecting your Kawasaki vehicle if there is a failure, investigating the cause of the problem, and getting any needed authorization from Kawasaki if the repair is one that will be covered by the limited warranty. The dealership will also file all necessary paperwork. The dealership is responsible for correctly completing any necessary repairs, whether they are covered by the limited warranty or not.

### **How Do I Get Warranty Service?**

If there is a problem with your vehicle within the limited warranty period, you will need to schedule a service appointment and provide any maintenance records to an authorized Kawasaki dealer for inspection and diagnosis. You can go to any Kawasaki dealer for warranty repairs. Your Kawasaki dealer will inspect your vehicle and give you the results of the inspection. The dealer will perform the repairs at no cost to you if it is determined that the problem is covered by the warranty.

Kawasaki will work with your dealer to resolve any warranty issues. No authorization for warranty work can be given until your vehicle has been inspected by a Kawasaki dealer.

### **What if I am not Satisfied With My Warranty Service?**

If you aren't satisfied with your dealership's repair work or operations, it is best to discuss the situation with the appropriate dealership manager. If you have already done this, then contact the dealership's owner or general manager to request a review of the issue.

If you are unable to resolve a problem after consulting with the dealership management and need further assistance, contact Kawasaki Motors Corp., U.S.A. at the address below. Please be certain to provide the model, vehicle identification number (VIN), mileage or hours of use, accessories, dates that events occurred and what action has been taken by both you and your dealer. Include the name and address of the dealership. To assist us in resolving your inquiry, please include copies of related receipts and any other pertinent information including the name of the dealership personnel with whom you have been working. Upon receipt of your correspondence, Kawasaki Motors Corp., U.S.A. will contact the dealership and work with it in resolving your problem.

## 180 YOUR WARRANTY/OWNER SATISFACTION

### **Want to Contact Kawasaki?**

This owner's manual should answer most of your questions about your Kawasaki. Your Kawasaki dealer should either be able to answer any other questions you might have immediately or be able to find the answer for you.

Please send your correspondence to:

Consumer Services

Kawasaki Motors Corp., U.S.A.

P.O. Box 25252

Santa Ana, CA 92799-5252

(949) 460-5688

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## REPORTING SAFETY DEFECTS

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**(For Products Sold in the United States of America, District of Columbia, and U.S. Territories Only)**

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Kawasaki Motors Corporation, U.S.A.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Kawasaki Motors Corporation, U.S.A.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (or 366-0123 in Washington, D.C. area) or write to: NHTSA, U.S. Department of Transportation, Washington, D.C. 20590. You can also obtain other information about motor vehicle safety from the Hotline.

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## ENVIRONMENTAL PROTECTION

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To help preserve the environment, properly discard used batteries, tires, oils and fluids, or other vehicle components that you might dispose of in the future. Consult your authorized Kawasaki dealer or local environmental waste agency for their proper disposal procedure. This also applies to disposal of the entire vehicle at the end of its life.

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**MAINTENANCE RECORD**


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Owner Name.....

Address .....

Phone Number .....

Engine Number .....

Vehicle Number.....

Key Code .....

Selling Dealer Name .....

Phone Number .....

Warranty Start Date .....

**Note:** Keep this information and a spare key in a secure location.

Date	Odometer Reading	Maintenance Performed	Dealer Name	Dealer Address









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## LOCATION OF LABELS

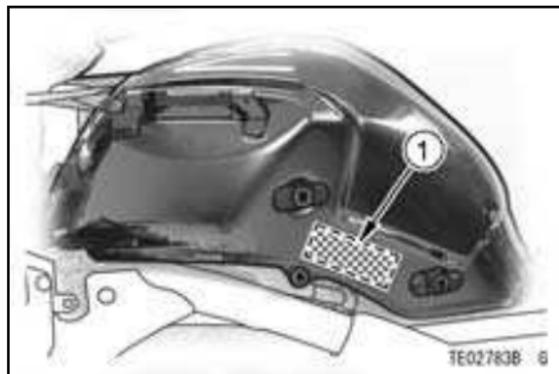
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All warning labels which are on your vehicle are repeated here. Read labels on your vehicle and understand them thoroughly. They contain information which is important for your safety and the safety of anyone else who may operate your vehicle. Therefore, it is very important that all warning labels be on your vehicle in the locations shown. If any label is missing, damaged, or worn, get a replacement from your Kawasaki dealer and install it in the correct position.

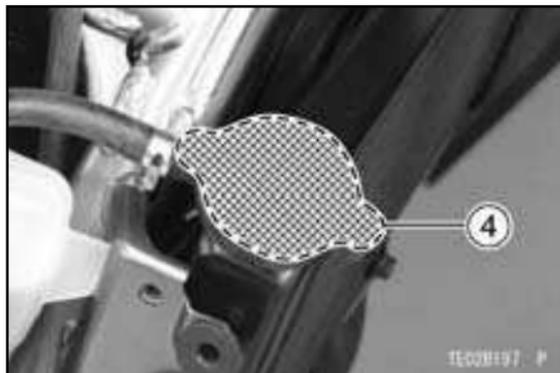
### NOTE

- *The sample warning labels in this section have part numbers to help you and your dealer obtain the correct replacement.*

- *Refer to the actual vehicle label for model specific data grayed out in the illustration.*

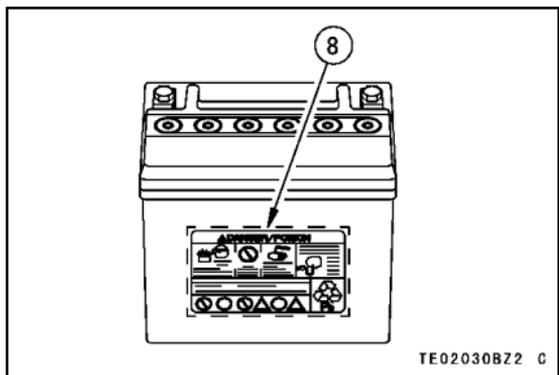
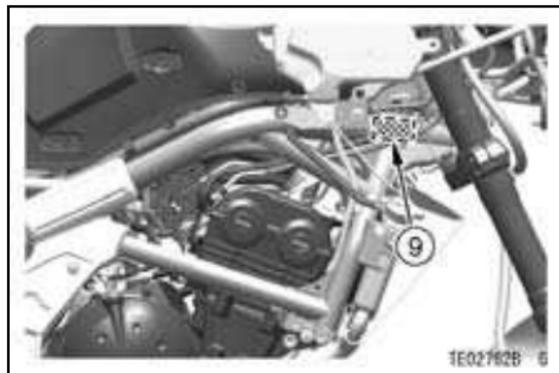
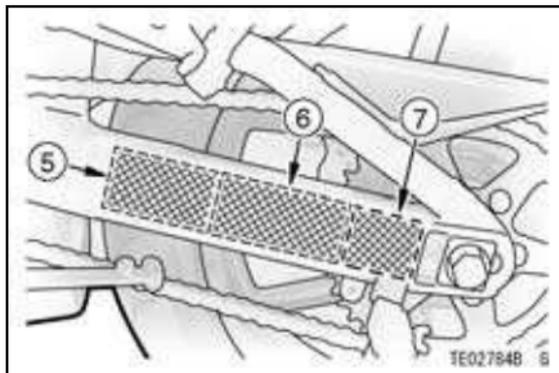


1. Vehicle Emission Control Information

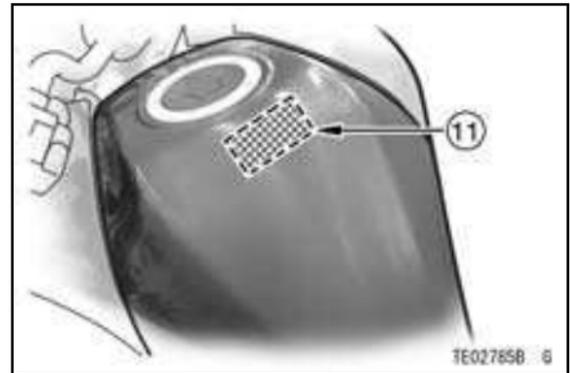
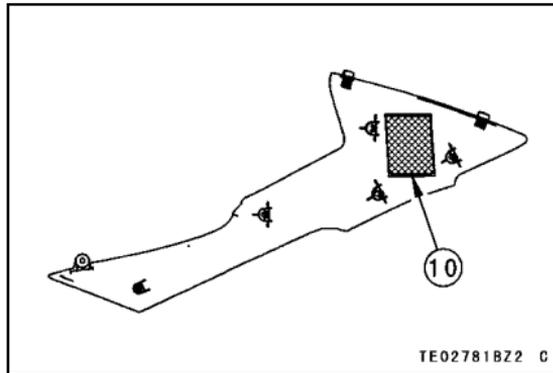


- 2. Brake Fluid (Front)
- 3. Brake Fluid (Rear)
- 4. Radiator Cap Danger

## 190 LOCATION OF LABELS



- 5. Tire and Load Data
- 6. Important Drive Chain Information
- 7. Noise Emission Control Information
- 8. Battery Poison/Danger
- 9. Weight and Manufacture



\*10. Vacuum Hose Routing Diagram

\*11. Fuel Level

\*: only on California model





## 194 LOCATION OF LABELS

### (5) KLE650D Model

(7)

TIRE AND LOAD DATA			
The stability and handling characteristics of this motorcycle could become unsafe by the use of improper tire inflation pressures, overinflated tires, unsuitable replacement tires, or exceeding the tire load limits shown here to the limit. Replace the tire with only the standard tire, maintain the inflation pressures specified.			
	Air Pressure (PSI)	Size & Make Type (Tubeless Tire)	Maximum Tread Depth
FRONT	40 to 38PSI Load 180/150	225 4PR (1.750/1.600) 120-100/100 (C169W) 120-100/100 (C169W) 120-100/100 (C169W)	1 mm (0.04 in.)
REAR	40 to 38PSI Load 130/110	250 4PR (1.560/1.400) 180-60/217M (C169W) 180-60/217M (C169W) 180-60/217M (C169W)	UP TO 132 mm (5.200 in.) TO 130 mm (5.118 in.) OVER 132 mm (5.200 in.) TO 130 mm (5.118 in.)

56053-0218

TE03577D S

MOTORCYCLE NOISE EMISSION CONTROL INFO
THIS [ ] MOTORCYCLE MEETS EPA NOISE EMISSION REQUIREMENTS BY THE FEDERAL TEST PROCEDURE. MODIFICATIONS WHICH CAUSE THIS MOTORCYCLE TO EXCEED FEDERAL NOISE STANDARDS ARE PROHIBITED BY FEDERAL LAW.
SEE OWNER'S MANUAL. [ ]
MODEL SPECIFIC CODE [ ]
SEE VEHICLE IDENTIFICATION NUMBER ON STEERING HEAD
NOISE LIMIT/CLOSING RPM
[ ] DBA/[ ] RPM

TE03523D S

(6)

(8)

IMPORTANT DRIVE CHAIN INFORMATION
To prevent an accident and/or damage to the motorcycle, the drive chain must be properly maintained. It should be lubricated every 600mi (400mi) and adjusted as often as necessary to keep chain slack at about 25-35mm (1-1.4in) measured midway between sprockets on the lower chain run with the motorcycle on the side stand. The standard chain is an OAI100 O10520V92 with estimated service life of 15000-45000mi (9000-28000mi), depending on the severity of use and the frequency of lubrication and adjustment. For safety, replace the chain with only the standard chain any time it wears to over 31mm (1.25in), measured over a 20-link portion, pulled straight with 98N (22.05lb) of tension. See the Owner's Manual for chain information.

56033-0366

TE03522D S

▲ DANGER / POISON			
SHIELD EYES EXPLOSIVE GASES (CAN CAUSE BLINDNESS OR INJURY)	NO SPARKS FLAMES SMOKING	SULFURIC ACID CAN CAUSE BLINDNESS OR SEVERE BURNS	FLUSH EYES IMMEDIATELY WITH WATER GET MEDICAL HELP FAST
KEEP OUT OF THE REACH OF CHILDREN			
IN U.S.A. DISTR. BY KAWASAKI MOTORS CORP. USA P.O. BOX 25252 SANTA ANA, CA 92799-5252			

TE03294D S



## 196 LOCATION OF LABELS

(11) only on California model



56071-0158

TE03715D S

# KLE650CE

# KLE650DE



\* 9 9 9 8 7 - 1 7 9 3 \*



**KAWASAKI HEAVY INDUSTRIES, LTD.**  
Motorcycle & Engine Company  
Part No. 99987-1793

Printed in Thailand

GB