



Kawasaki

KZ650-B2



MS
CYCLE
CORPORATION
MILWAUKEE, WISCONSIN

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

WARNING

This warning symbol identifies special instructions or procedures which, if not correctly followed, could result in personal injury, or loss of life.

CAUTION

This caution symbol identifies special instructions or procedures which, if not strictly observed, could result in damage to or destruction of equipment.

"Note" indicates points of particular interest for more efficient and convenient operation.

NOTICE

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

FOREWORD

We wish to thank you for choosing this fine Kawasaki Motorcycle. It is the end product of Kawasaki's advanced engineering, exhaustive testing, and continuous striving for superior reliability, safety, and performance. By giving your motorcycle the proper care and maintenance outlined in this manual, you will ensure it a long, trouble-free life.

Before starting to ride your motorcycle, please read this manual thoroughly in order to know your motorcycle's capabilities, its limitations, and above all, how to operate it safely.

In addition to this owner's manual, for those who would like more detailed information on their Kawasaki Motorcycle, a Service Manual is now available for purchase from any Kawasaki Dealer.

Due to improvements in design and performance during production, in some cases there may be minor discrepancies between the actual vehicle and the illustrations and text in this manual.

KAWASAKI HEAVY INDUSTRIES, LTD.
ENGINE AND MOTORCYCLE GROUP

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//////////////////// SPECIFICATIONS //////////////////////

PERFORMANCE

Maximum Horsepower	64 HP @8,500 rpm
Maximum Torque	5.8 kg-m (41.9 ft-lbs) @7,000 rpm
Minimum Turning Radius	2.4 m (94.5 in)
Braking Distance	12 m @50 kph (39.4 ft @31 mph)

DIMENSIONS

Overall Length	2,170 mm (85.4 in)
Overall Width	870 mm (34.3 in)
Overall Height	1,160 mm (45.7 in)
Wheelbase	1,420 mm (55.9 in)
Road Clearance	145 mm (5.7 in)
Dry Weight	211 kg (465 lbs)

ENGINE

Type	DOHC 4 cylinder, 4-stroke, air-cooled
Displacement	652 cc (39.77 cu in)
Bore x Stroke	62 x 54 mm (2.44 x 2.13 in)
Compression Ratio	9.5:1
Fuel	Unleaded gasoline
Starting	Electric starter and kick
Carburetors	MIKUNI VM24SS

Ignition System
Ignition Timing
Spark Plugs

Lubrication
Engine Oil
Engine Oil Capacity

TRANSMISSION

Type
Clutch
Primary Reduction Ratio
Final Reduction Ratio
Overall Drive Ratio
Gear Ratio: 1st
 2nd
 3rd
 4th
 5th

FRAME

Castor
Trail

Battery and coil
BTDC 10° @1,500 rpm ~35° @3,200 rpm
NGK B7ES, ND W22ES-U, CHAMPION N-4-MC,
or equivalent
Forced lubrication (wet sump)
SE class SAE 10W40, 10W50, 20W40, or 20W50
3.5 ℓ (3.7 US qt)

5-speed, constant mesh, return shift
Wet, multi disc
2.55 (27/23 x 63/29)
2.63 (42/16)
5.95 (@5th gear)
2.33 (35/15)
1.63 (31/19)
1.27 (28/22)
1.04 (26/25)
0.89 (24/27)

63°
108 mm (4.3 in)

Tire Size:	Front	3.25H-19 4PR
	Rear	4.00H-18 4PR
Tire Pressure:	Front	2.0 kg/cm ² (28 psi)
	Rear	2.25 kg/cm ² (32 psi)
Fuel Tank Capacity		17.2 ℓ (4.5 US gal)

ELECTRICAL EQUIPMENT

Battery	12V 10AH
Headlight	12V 50/35W
Tail/Brake Light	12V 8/27W (3/32 CP)
Turn Signal/Running Position Lights	12V 23/8W
Turn Signal Lights	12V 23W
Meter Lights	12V 3.4W
Neutral Indicator Light	12V 3.4W
Turn Signal Indicator Lights	12V 3.4W
High Beam Indicator Light	12V 3.4W
Oil Pressure Warning Light	12V 3.4W
Brake Light Failure Indicator Light	12V 3.4W
Horn	12V 2.5A
Fuses	20A (Main)
	10A (Head)
	10A (Tail)

Specifications subject to change without notice.

//////////////////////////////////// **CONSUMER INFORMATION** //////////////////////////////////////

Vehicle Minimum Stopping Distance on Dry Pavement

These figures indicate braking performance that can be met or exceeded by the vehicle to which they apply, without locking the wheels, under different conditions of loading. The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

Description of vehicle to which this table applies: Model KZ650-B2

A. Fully Operational Service Brake

Load: Light



Maximum



0 50 100 150 200

Stopping distance in feet from 60 mph.

Manufacturer: **Kawasaki Heavy Industries, Ltd.**

Acceleration and Passing Ability

These figures indicate passing times and distances that can be met or exceeded by the vehicle to which they apply, in the situations diagramed on the next page. The low-speed pass assumes an initial speed of **20** mph and a limiting speed of **35** mph. The high-speed pass assumes an initial speed of **50** mph and a limiting speed of **80** mph.

Note: The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

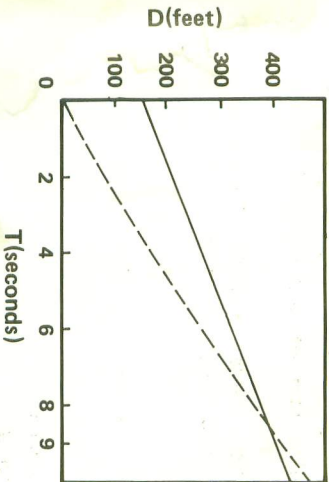
Description of vehicle to which this table applies. Model KZ650-B2

Summary Table:

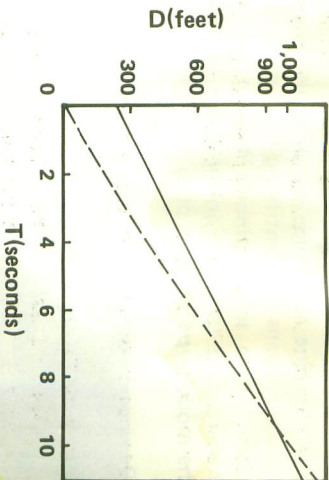
Low-speed pass	395 feet;	8.62 seconds
High-speed pass	953.8 feet;	9.43 seconds

Graphic Determination of Passing Time and Distance

LOW-SPEED PASS:

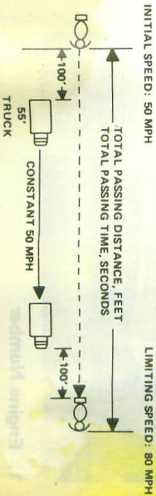
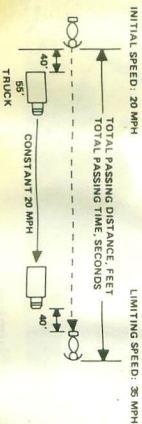


HIGH-SPEED PASS:



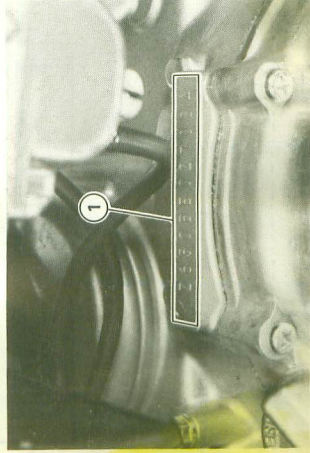
LOW-SPEED

HIGH-SPEED

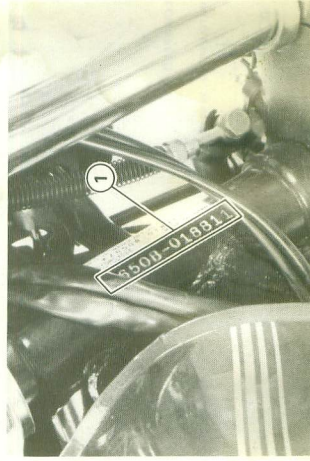


..... SERIAL NUMBER LOCATIONS

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.

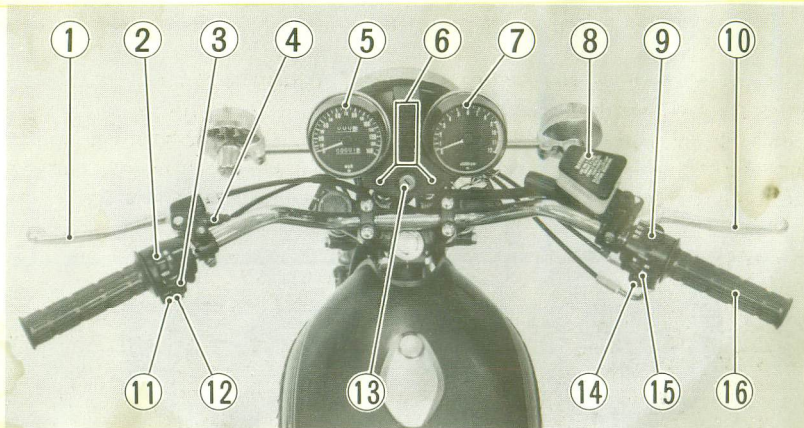


1. Engine Number



1. Frame Number

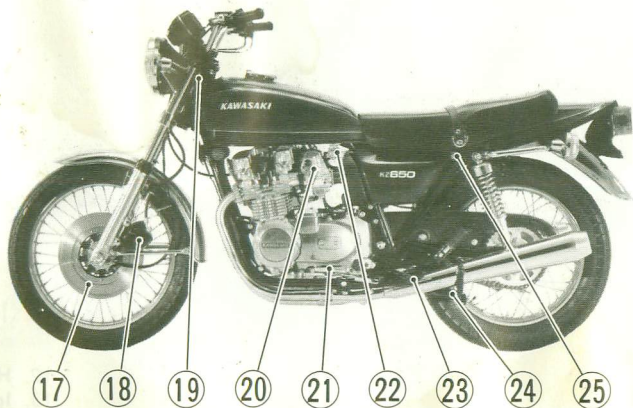
LOCATION OF PARTS



1. Clutch Lever
2. Dimmer Switch
3. Turn Signal Switch
4. Starter Lockout Switch
5. Speedometer
6. Indicator Lights

7. Tachometer
8. Brake Fluid Reservoir
9. Engine Stop Switch
10. Front Brake Lever
11. Horn Button

12. Hazard Switch
13. Ignition Switch
14. Starter Button
15. Headlight Switch
16. Throttle Grip

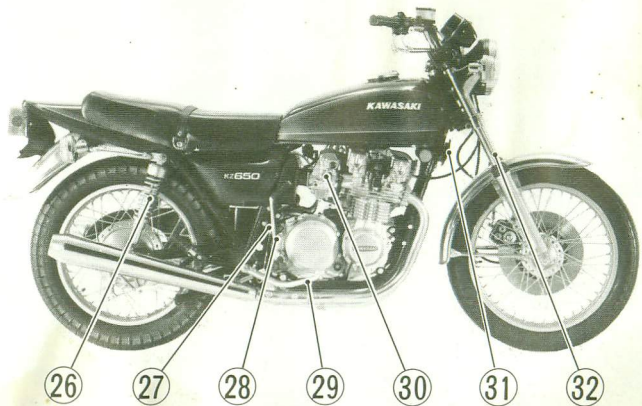


- 17. Disc
- 18. Caliper
- 19. Steering Lock

- 20. Choke Lever
- 21. Shift Pedal
- 22. Fuel Tap

- 23. Side Stand
- 24. Center Stand
- 25. Seat Lock

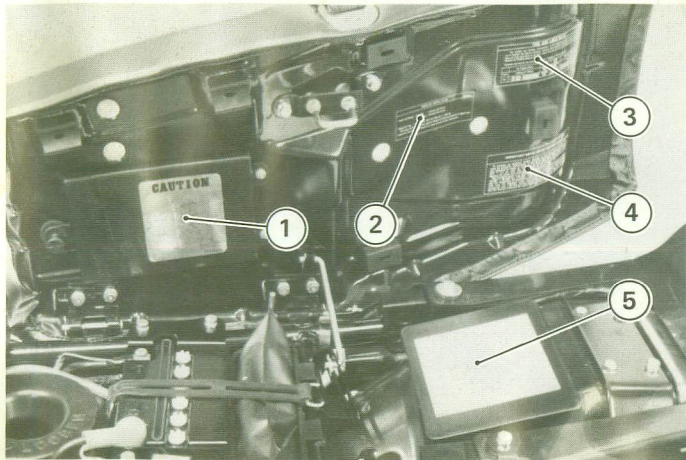
12 LOCATION OF PARTS



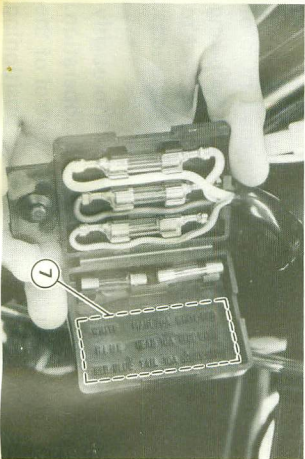
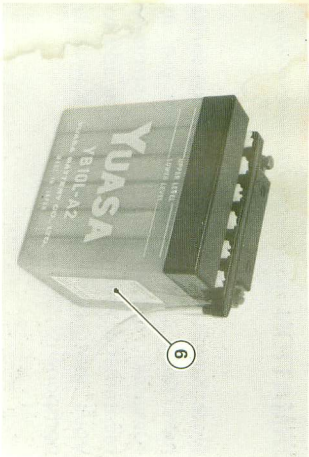
- 26. Rear Shock Absorber
- 27. Rear Brake Light Switch
- 28. Kick Pedal
- 29. Rear Brake Pedal

- 30. Carburetor
- 31. Horn
- 32. Front Fork

////////////////// LOCATION OF CAUTION LABELS //////////////////



- | | |
|------------------------------|--------------------------------------|
| 1. Battery Vent Hose Routing | 4. Important Drive Chain Information |
| 2. Engine Oil and Oil Filter | 5. Daily Safety Checks |
| 3. Tire and Load Data | |



6. Battery Poison/Danger Label
(only on US model)
7. Fuse Box
8. Brake Fluid

LOADING 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 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. 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 of them 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, sudden movements, and by interfering with the operator. You should instruct any passenger before riding to keep his feet on the passenger footpegs, sit still while the motorcycle is in motion, and not to interfere with the operation of the motorcycle. Do not carry animals on your motorcycle.

2. 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.

3. 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.
4. 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.
5. Do not install accessories or carry baggage that impairs the performance of the motorcycle. Make sure that you have not adversely affected any lighting component, road clearance, banking capability (i.e. lean angle),

control operation, wheel travel, front fork movement, or any other aspect of the motorcycle's operation.

6. Weight attached to the handlebar or front fork will increase the mass of the steering assembly and can result in an unsafe riding condition.
7. Fairings, windshields, backrests, and other large items have the capability of adversely affecting stability and handling of the motorcycle, not only because of 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.

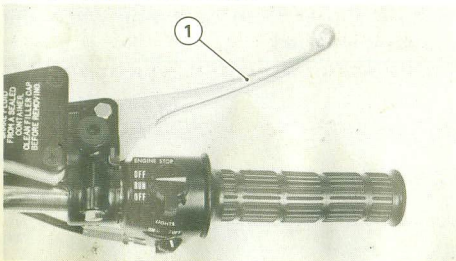
8. This motorcycle was not intended to be equipped with a sidecar or to be used to tow any trailer or other vehicle. Kawasaki does not manufacture sidecars or trailers and cannot predict the effects of such accessories on handling or stability, but can only warn that the effects can be adverse and that 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.

GENERAL INFORMATION

Brake Lever and Pedal

The lever on the right side of the handlebar operates the front brake, and the foot pedal on the right side operates the rear brake.

When stopping, always apply both brakes at the same time if stopping quickly; normally the front brake should be applied a little more than the rear brake. When turning a corner it is better not to brake at all, but if this is unavoidable, use only the rear brake.

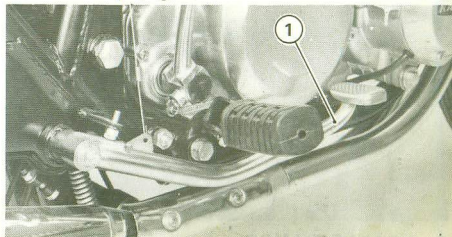


1. Front Brake Lever

The front brake is hydraulic disc brake type. The reservoir for it must be kept filled with disc brake fluid or the brake will not operate.

See Pg. 77 for a list of recommended brake fluids and for other important brake information.

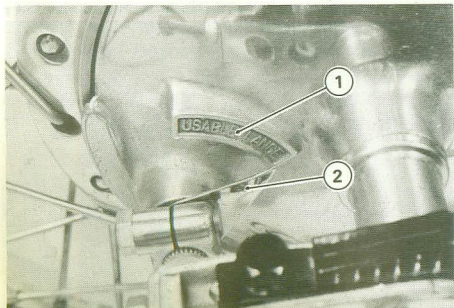
When either the front or rear brake is applied, the brake light goes on. The front brake employs a pressure switch which requires no adjustment, but the rear brake light switch should be adjusted if necessary (Pg. 80).



1. Rear Brake Pedal

On the rear brake panel is a brake lining wear indicator. If the indicator does not point within the **USABLE RANGE** when the brake is fully applied, the brake shoe linings have worn past the service limit. In this case, the brake shoes must be replaced and the drum and other brake parts examined.

Note: So that it remains in its proper position, do not remove the brake lining wear indicator.



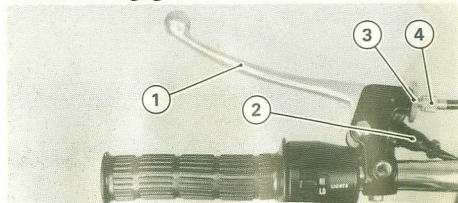
1. **USABLE RANGE**
2. **Brake Lining Wear Indicator**

Clutch Lever

The clutch lever on the left side of the handlebar disengages the clutch when pulled in.

If the clutch lever develops too much travel before it will disengage the clutch; take up the excess play by loosening the knurled locknut, backing out the adjuster, and then tightening the knurled locknut. When this adjustment will no longer take up lever play, readjust the clutch completely (Pg. 69).

Note: A starter lockout switch is built into the clutch lever holder. It prevents the electric starter from operating when the clutch is engaged.



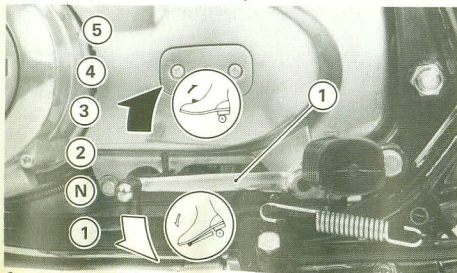
1. **Clutch Lever**
2. **Starter Lockout Switch**
3. **Knurled Locknut**
4. **Adjuster**

Shift Pedal

The transmission is a 5-speed, return shift type with neutral halfway between 1st and 2nd gears.

A "return shift" means that to go back to 1st gear from a higher gear, you must return the way you came, shifting back through the gears one by one.

To shift to the next higher gear; disengage the clutch (i.e., pull the clutch lever in), lift the shift pedal up as far as it will go, and then release it. To shift to the next lower gear; disengage the clutch, push the shift pedal down as far as

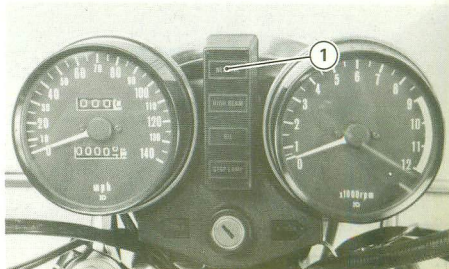


1. Shift Pedal

it will go, and then release it. If the engine is stopped, releasing the clutch lever and rolling the motorcycle slightly while shifting will help shifting back to neutral.

When the transmission is in neutral, the green neutral indicator light will be lit.

CAUTION Make it a point when shifting to lift up or push down the shift pedal fully. If shifting is done carelessly, the transmission may jump out of gear, causing overrev damage to the engine.

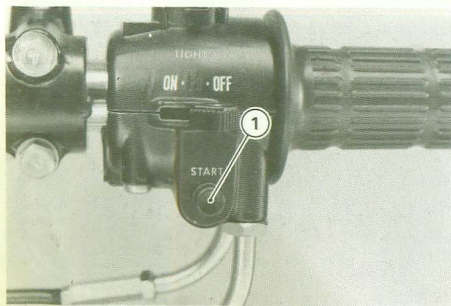


1. Neutral Indicator Light

Electric Starter

The button marked **START**, located on the right side of the handlebar, operates the electric starter when pushed with the clutch lever pulled in.

When the battery is low or if the motorcycle is to be ridden for just a short distance, it is better to kick start the engine to prolong battery life. This is especially true during the winter season when cold weather weakens the battery.



1. Starter Button

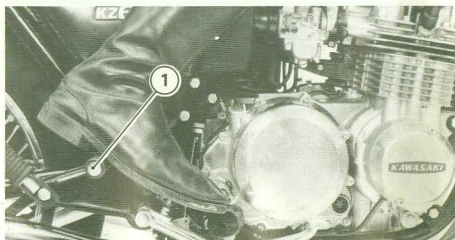
Kick Pedal

The kick pedal is located at the right side of the engine.

Fold up the right rear footpeg, and with your instep on the kick pedal and kick pedal play taken up, throw your weight down sharply on the pedal to start the engine.

CAUTION ○Before starting the engine, check the neutral indicator light to make sure the transmission is in neutral.

○Be sure that the kick pedal is up before moving off.



1. Kick Pedal

Key

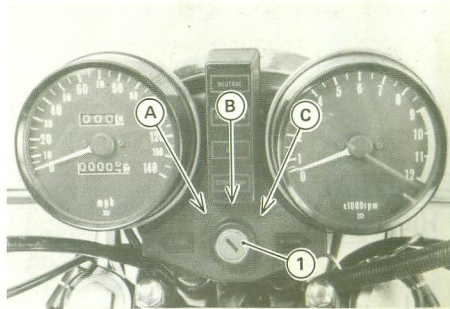
This motorcycle has a combination key, which is used for the ignition switch, steering lock, seat lock, and fuel tank cap.

Ignition Switch

This is a three-positions, key-operated switch. The key can be removed from the switch when it is in the **OFF** or **PARK** position.

Note: The motorcycle for Canada is designed so that the lights are on whenever the ignition switch is in the **ON** position. To avoid battery discharge, always start the engine immediately after turning the ignition switch to **ON**.

OFF	Engine off. All electrical circuits off.
ON	Engine on. All electrical equipment can be used.
PARK	Engine off. Tail light on. All other electrical circuits cut off.



1. Ignition Switch

A. OFF position

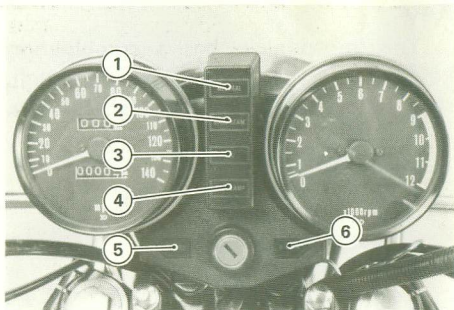
B. ON position

C. PARK position

Indicator Lights

There are six indicator lights on the switch panel.

1. Neutral Indicator Light
2. High Beam Indicator Light
3. Oil Pressure Warning Light
4. Brake Light Failure Indicator Light
5. Left Turn Signal Indicator Light
6. Right Turn Signal Indicator Light

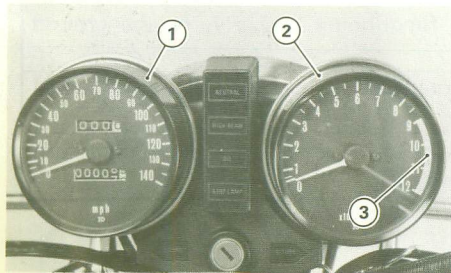


NEUTRAL	When the gears are in neutral, the green indicator light is lit.
HIGH BEAM	When the headlight is on high beam, the blue indicator light is lit.
OIL	The red oil pressure warning light goes on whenever the ignition switch is in the ON position with the engine not running, and goes off when the engine oil has reached sufficient pressure. (Refer to the maintenance and adjustment section for detailed information.)

<p>STOP LAMP</p>	<p>The indicator light labeled "STOP LAMP", located on the switch panel, is used to detect brake light failure.</p> <p>If the brake light is functioning properly, the brake light failure indicator light goes on whenever one or both brakes are applied, and goes off whenever the brake or brakes are released.</p> <p>If the brake light is not functioning properly, the light will still go on whenever one or both brakes are applied; however, when neither brake is applied, the light will flash on and off indicating that the brake light circuit or the brake light itself is faulty.</p> <p>If the indicator light does not go on when a brake is applied, one of the brake switches, the indicator light switch inside the left side cover, or the indicator light itself is not functioning properly, or the ground circuit is interrupted.</p>
<p>L-TURN</p>	<p>When the turn signal switch is turned on left, the orange left turn signal indicator light flashes on and off.</p>
<p>R-TURN</p>	<p>When the turn signal switch is turned on right, the orange right turn signal indicator light flashes on and off.</p>

Speedometer and Tachometer

The speedometer shows the speed of the vehicle. In the upper part of the speedometer face is the trip meter, which shows the distance traveled since it was last reset to zero. The trip meter can be reset to zero by turning the reset wheel. In the lower part of the speedometer face is the odometer. The odometer shows the total distance that the vehicle has been ridden.

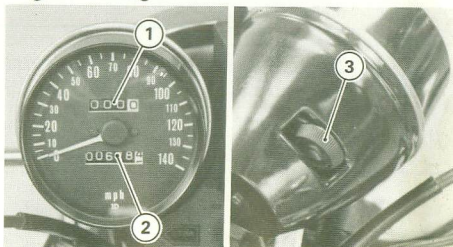


1. Speedometer
2. Tachometer

3. Red Zone

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

CAUTION Engine 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.

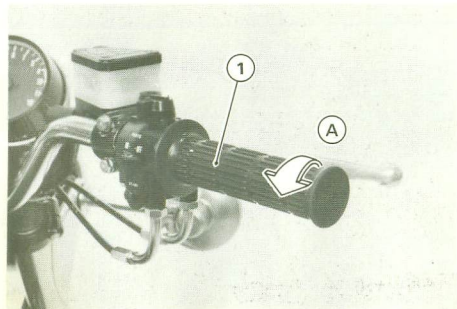


1. Trip Meter
2. Odometer

3. Reset Wheel

Throttle Grip

The right handlebar grip controls the throttle. Viewed from the right grip end, twisting it counterclockwise opens the throttle, which raises engine speed; twisting it clockwise closes the throttle, which lowers engine speed. The throttle grip should be adjusted to give it sufficient, but not excessive play (Pg. 65).



1. Throttle Grip

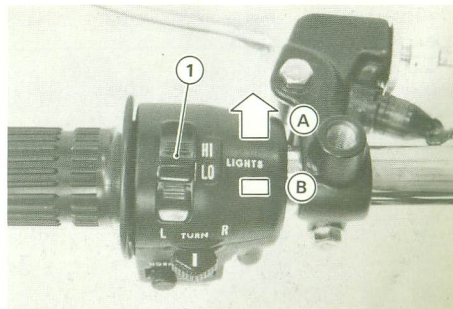
A. Increase speed

Dimmer Switch

High or low beam can be selected with the dimmer switch. When the headlight is on high beam, a blue high beam indicator light is lit.

HI.....High Beam

LO.....Low Beam



1. Dimmer Switch

A. High Beam

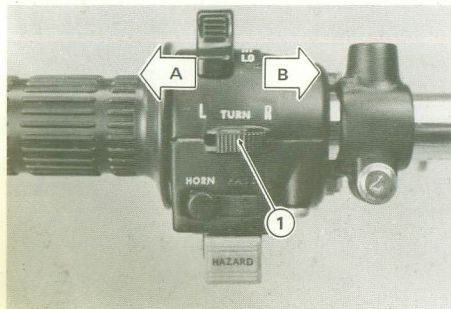
B. Low Beam

Turn Signal Switch

The turn signals are operated by the turn signal switch located on the left side of the handlebar.

When the switch is operated, one of the turn signal indicator lights flashes on and off together with the turn signals.

L.....Left
R.....Right



1. Turn Signal Switch

A. Left B. Right

Horn Button

The horn is operated by the horn button located on the left side of the handlebar.

If the horn does not operate properly, check that the battery is good and that the horn is mounted securely with nothing touching it. If the horn itself is at fault; it should be adjusted, repaired, or replaced immediately.



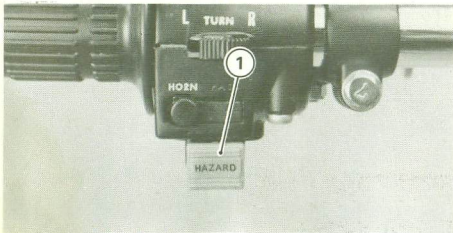
1. Horn Button

Hazard Switch

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

Push the hazard switch with the ignition switch **ON**, or with the ignition switch on **PARK** position if you leave the motorcycle for a while, then all the turn signals will flash on and off.

CAUTION If you leave the hazard switch kept on for a long time, the battery might be totally discharged. So be careful not to use it for more than 30 minutes.

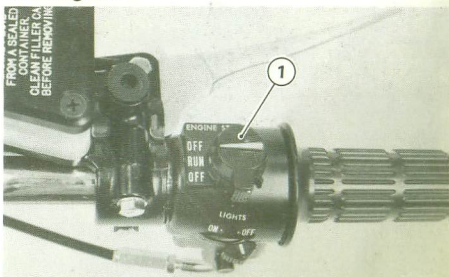


1. Hazard Switch

Engine Stop Switch

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

The engine stop switch is for emergency use. If some emergency requires stopping the engine, flick the engine stop switch to either of the **OFF** positions. **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.

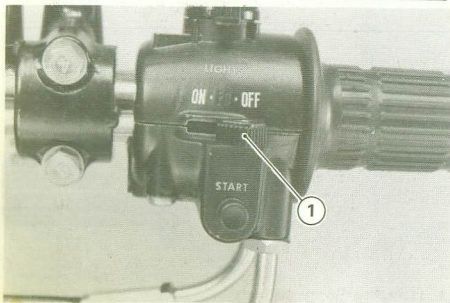


1. Engine Stop Switch

Headlight Switch (not on Canadial model)

The headlight switch has two positions: **OFF** and **ON**.

OFF	The headlight is off with the switch in the OFF position.
ON	The head, tail, meter, and running position lights come on if the switch is pushed forward to the ON position with the ignition switch in the ON position.



1. Headlight Switch

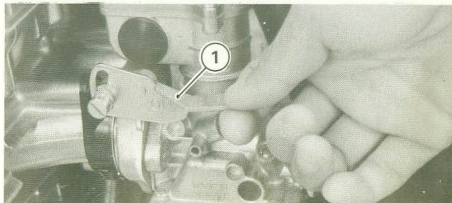
Choke Lever

To provide a rich starting mixture when the engine is cold, there is a choke lever on the left side of the carburetor.

Pull it all the way up and leave it up until the engine begins to warm up. As the engine becomes warm and engine rpm increases, push down the choke lever gradually so that engine speed stays below **2,500 rpm**.

Once the engine has sufficiently warmed up and before moving off, return the choke lever all the way back down.

Note: If the choke lever is left pulled up too long after the engine is warm, it will cause spark plug fouling and poor fuel economy.



1. Choke Lever

Fuel Tank

Unleaded gasoline should be used in the fuel tank. Avoid filling the tank in the rain or where heavy dust is blowing so that the fuel does not get contaminated.

CAUTION

○Never fill the tank completely to the top! As the gasoline expands in a warm tank, it may overflow from the vents in the tank cap.
○Always put in gasoline with the ignition switch key turned off, and the motorcycle away from any source of sparks.

FUEL REQUIREMENTS

Lead Content.

Your Kawasaki engine is designed to use unleaded gasoline, which offers extended spark plug life compared to leaded gasolines. Low lead, leaded regular, or

premium gasolines can be used with some reduction in spark plug life.

Octane Rating.

The octane rating of a gasoline is a measure of its resistance to detonation or "knocking". Use a gasoline with an octane rating equal to or higher than that shown in the table below.

Octane Rating Method	Minimum Rating
Antiknock Index $\frac{(\text{RON} + \text{MON})}{2}$	87
Research Octane No. (RON)	91

The Antiknock Index is an average of the Research Octane No. (RON) and the Motor Octane No. (MON). The Antiknock Index is posted on service station pumps in the U.S.A. Research Octane No. is a commonly used term describing a gasoline's octane rating.

Fuel Tank Cap

To open the fuel tank cap: insert the ignition switch key into the cap, turn the key to the right, and open the cap. The fuel tank cap is locked when pushed back into place.

Fuel Tap

The fuel tap is an automatic type which shuts off the fuel supply when the engine is stopped in the **ON** or **RES** position.

The fuel tap has three positions: **ON**, **RES** (reserve), and **PRI** (prime). If the fuel runs out with the tap in the **ON** position, turn the tap to **PRI**, leave it for a few seconds, and then turn it to **RES**. The last **2.4 liters (0.6 US gal)** of fuel can be used by turning the fuel tap to **RES**.

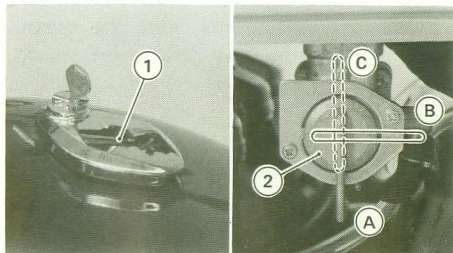
The **PRI** position bypasses the automatic control and is useful for priming

the engine after running out of gas, or for completely draining the tank.

Note: Since riding distance is limited when on **RES**, refuel at the earliest opportunity.

Make certain that the fuel tap is turned to **ON** (Not **RES**), after filling up the fuel tank.

When the cold engine is started, first turn the tap to **PRI**, leave it for a moment, and return it to **ON**.



1. Fuel Tank Cap
2. Fuel Tap
- A. ON Position

- B. PRI position
- C. RES position

Steering Lock

To help prevent theft, the handlebar can be locked in the full right position.

To lock the steering:

1. Turn the handlebar to the right.
2. Insert the ignition switch key.
3. Turn the key to the left.
4. Push the key in, and turn it to the right.
5. Pull the key out.

WARNING Unlock the steering before starting the engine. Attempting to drive with the steering locked could cause an accident.

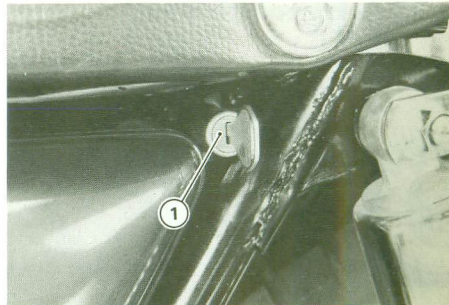


1. Steering Lock

Seat Lock

To open the seat: insert the ignition switch key into the seat lock, turn the key to the right, and swing open the seat.

The seat is locked when pushed back into place.



1. Seat Lock

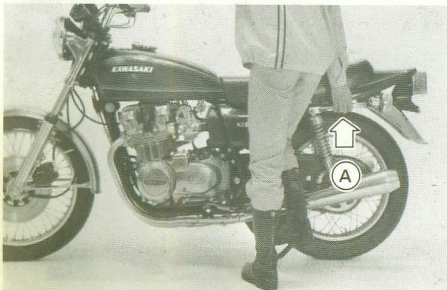
Stands

The motorcycle is equipped with two stands: a center stand and a side stand.

Note: When using the side stand, have the handlebar turned to the left.

Whenever the side stand is used, make it a firm practice to kick the stand fully up before sitting on the motorcycle.

WARNING Forgetting and leaving the side stand down while riding could cause an accident.

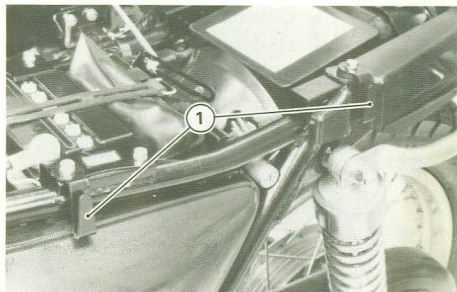


A. Lift here

To set the motorcycle up on the center stand, step down firmly on the stand and then lift the motorcycle up and to the rear using the grab rail as a handhold. Don't pull up on the seat to lift it as this will only damage the seat.

Helmet Hooks

The rider's helmet can be secured to the motorcycle using the helmet hooks located under the seat.



1. Helmet Hooks

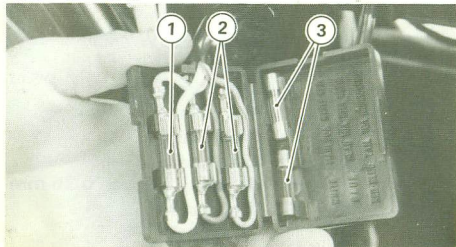
Fuses

The fuse box is located inside the right side cover, and it contains three fuses and two spare fuses. If a fuse blows during operation, inspect the electrical system to determine the cause, and then replace the fuse.

CAUTION

○Do not use any substitute for the standard fuse.

○Replace the fuse with one of the correct capacity, as specified in the fuse box for each circuit.

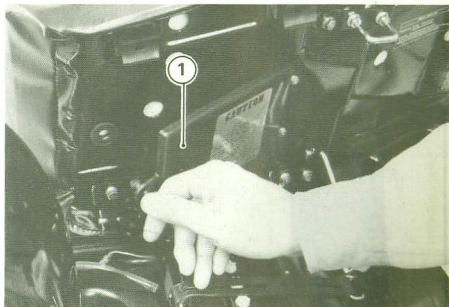


1. 20A Fuse
2. 10A Fuses

3. Spare Fuses

Document Container

A receptacle for the owner's manual and any papers or documents that should be kept with the motorcycle is located on the bottom of the seat.



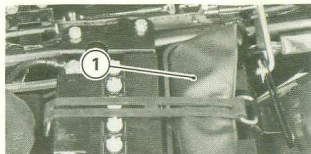
1. Document Container

Tool Kit

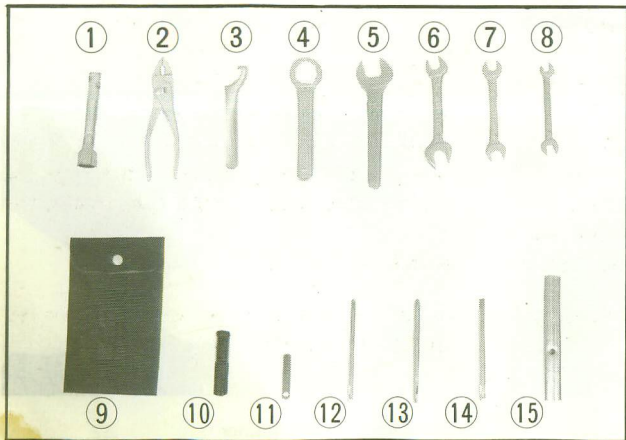
The tool kit is located under the seat behind the battery. The minor adjustments and replacement of parts explained in this manual can be performed with these tools.

CAUTION

Avoid placing objects near the battery terminals. Don't overfill the tool case, or the battery may be damaged.



1. Tool Kit



1. Spark Plug Wrench
2. Pliers
3. Hook Wrench
4. Axle Wrench 27 mm
5. Open End Wrench 22 mm
6. Open End Wrench 14 x 17 mm
7. Open End Wrench 12 x 13 mm
8. Open End Wrench 8 x 10 mm
9. Tool Case
10. Screwdriver Grip
11. Thickness Gauge 0.35 mm
12. Phillips Bit #2
13. Phillips Bit #3
14. Screwdriver
15. Wrench Extender

//////////////////// BREAKING IN //////////////////////

The first **1,600 km (1,000 mi)** 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 rpm during the break-in period.

Distance traveled	Maximum engine rpm
0 ~ 800 km (0 ~ 500 mi)	4,000 rpm
800 ~ 1,600 km (500 ~ 1,000 mi)	6,000 rpm

- 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 **950 ~ 1,050 rpm** to give the oil a chance to work up into all the engine parts.
- Do not race the engine while the gears are in neutral.

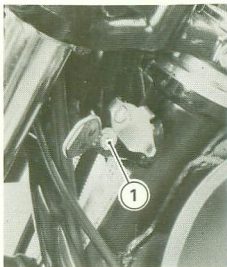
In addition to the above, the owner should take the motorcycle to an authorized Kawasaki Dealer for initial maintenance service at **800 km (500 mi)**.

//////////////////// HOW TO RIDE THE MOTORCYCLE //////////////////////

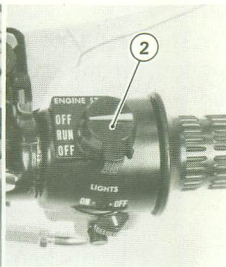
Starting the Engine

- Check that the steering is unlocked.
- Turn the engine stop switch to **RUN**.
- Turn the ignition switch on.
- Make certain the gears are in neutral. The green neutral indicator light should be lit.
- If the engine is cold, pull up the choke lever, leaving the throttle completely closed.
- **Push the starter button with the clutch lever pulled in**, or kick the engine over until the engine starts. Warm it up at less than **2,500 rpm**.
- When the engine is warm enough to idle without use of the choke lever, push down the choke lever.

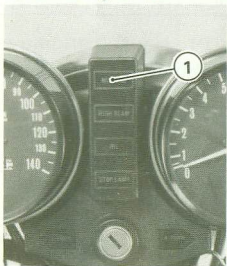
Note: ○ When the engine is already warm or on hot days, open the throttle part way instead of using the choke lever, and then start the engine.



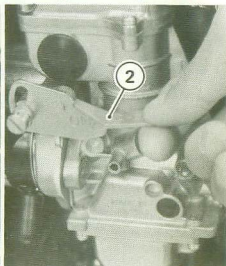
1. Steering Lock



2. Engine Stop Switch



1. Neutral Indicator Light



2. Choke Lever

○If the engine is flooded, kick with the throttle fully open until the engine starts.

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 on 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.

Shifting Gears

- Close the throttle while pulling in the clutch lever at the same time.
- Shift into the next higher or lower gear.
- Open the throttle part way, and release the clutch lever.

WARNING When shifting down to a lower gear, do not shift at such a high speed that the engine is suddenly jerked into high rpm or into the red zone. Not only can this cause engine damage, but the rear wheel may skid and cause an accident. Downshifting should be done below 6,000 rpm for each gear.

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 finally in 1st gear just when you get completely stopped.
- When stopping, always apply both brakes at the same time if stopping quickly; normally the front brake should be applied a little more than the rear. Downshift or fully disengage the clutch as necessary to keep the engine from stalling or to stop more quickly.
- Never lock the brakes and cause the tires to skid. When turning a corner it is better not to brake at all, but if this is unavoidable, use only the rear brake.
- For emergency braking, disregard downshifting, and concentrate on applying the brakes as hard as possible without skidding.

Stopping the Engine

- Close the throttle completely.
- Shift the gears into neutral.
- Turn the ignition switch off, or if only stopping for a short time (less than one hour) on the road at night, turn it to **PARK** position.
- Lock the steering.

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 and insufficient riding skills can create a dangerous situation known as throttle failure. Two of the most common causes of throttle failure are:

1. During removal of the air cleaner by the owner, dirt is allowed to enter and jam the carburetor.
2. A novice may forget which direction the throttle rotates; then jerk the throttle wide open thinking he has shut it off; panic when the machine accelerates suddenly instead of slowing down; and "freeze", holding the throttle wide open.

Kawasaki has provided an engine stop switch or button on all its motorcycles which may be used to safely stop your motorcycle in an emergency. Alternatively, your motorcycle may be stopped by applying the brakes and disengaging the clutch. But if the engine stop switch is used, turn off the ignition switch after stopping the motorcycle.

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. Gloves and suitable footwear should also be used for added protection in case of a mishap.

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

On rainy days, 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, reduce speed, and grip the fuel tank with the knees when necessary 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 rpm to avoid damage to the engine from over-revving.

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

Daily Safety 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.

WARNING Failure to perform these checks every day you ride may result in serious damage or a severe accident.

Gasoline	Adequate supply in tank, no leaks.
Engine Oil	Oil level correct (Pg. 50).
Tires	Air pressure: Front 2.0 kg/cm ² (28 psi) Rear 2.25 kg/cm ² (32 psi)
Drive Chain	Check condition, slack 20 ~ 30 mm (0.8 ~ 1.2 in); adequate lubrication (Pg. 72).

Nuts, bolts, fasteners.....	Check security of steering and suspension components, axles, and all controls.
Steering	Action smooth but not loose from lock to lock. No binding of control cables.
Brakes: front and rear	Function properly, indicator illuminates, no fluid leakage.
Throttle	Functions properly, returns smoothly.
Clutch	Functions properly.
Engine	No abnormal noise.
Electrical equipment	All lights and horn work.
Engine stop switch	Functions (Pg. 29).

If any irregularities are found during these checks, refer to maintenance and adjustment, contact your dealer, or refer to the service manual for action required to put the unit in safe operating condition.

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 to the proper pressure, and check the wheel balance.
Spark Plugs	The standard plug is NGK B7ES , ND W22ES-U , or CHAMPION N-4-MC , but for prolonged high speed operation, use the next colder heat range spark plug, NGK B8ES , ND W24ES , or CHAMPION N-3-MC .
Gasoline	Have sufficient fuel for high fuel consumption during high speed operation.
Engine Oil	To avoid seizure and resulting loss of control, make certain the oil level is at the upper level mark.
Electrical Equipment	Make certain that the headlight, tail/brake light, turn signals, horn, etc. all work properly.
Miscellaneous	Make certain that all nuts and bolts are tight and that all safety related parts are in good condition.



////////////////////// MAINTENANCE AND ADJUSTMENT ////////////////////////

The maintenance and adjustments outlined in this section are easily carried out and must be done in accordance with the Periodic Maintenance Chart to keep the motorcycle in good running condition. Especially, initial maintenance is vitally important and must not be neglected.

If you are in doubt as to the adjustment or vehicle operation, please ask your authorized Kawasaki Dealer to check the motorcycle.

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

Periodic Maintenance Chart

Operation	Frequency	Whichever comes first 	** Odometer Reading							See Page
										
			800 km (500 mi)	5,000 km (3,000 mi)	10,000 km (6,000 mi)	15,000 km (9,000 mi)	20,000 km (12,000 mi)	25,000 km (15,000 mi)	30,000 km (18,000 mi)	
Every										
Battery electrolyte level—check	month	●	●	●	●	●	●	●	92	
Brake adjustment—check		●	●	●	●	●	●	●	76	
Brake wear—check			●	●	●	●	●	●	80	
Brake fluid level—check	month	●	●	●	●	●	●	●	77	
* Brake fluid—change	year			●		●		●	77	
Clutch—adjust		●	●	●	●	●	●	●	69	
Carburetors—adjust		●	●	●	●	●	●	●	68	
Throttle cables—adjust		●	●	●	●	●	●	●	65	
Steering play—check		●	●	●	●	●	●	●	81	
Spoke tightness and rim runout—check		●	●	●	●	●	●	●	84	
Drive chain wear—check			●	●	●	●	●	●	73	
Front fork—inspect/clean		●	●	●	●	●	●	●	82	
Rear shock absorbers—inspect		●	●	●	●	●	●	●	83	
Nuts, Bolts, Fasteners—check and torque		●		●		●		●	100	
Spark plugs—clean and gap		●	●	●	●	●	●	●	53	
Camshaft chain—adjust		●	●	●	●	●	●	●	59	
Points, timing—check		●	●	●	●	●	●	●	55,56	

Operation	Frequency	** Odometer Reading								
		Whichever comes first	800 km (500 mi)	5,000 km (3,000 mi)	10,000 km (6,000 mi)	15,000 km (9,000 mi)	20,000 km (12,000 mi)	25,000 km (15,000 mi)	30,000 km (18,000 mi)	See Page
		Every								
Valve clearance—check		●	●	●	●	●	●	●	60	
Air cleaner element—clean			●	●	●	●	●	●	63	
Air cleaner element—replace	5 cleanings			●	●	●	●	●	64	
Fuel system—clean		●	●	●	●	●	●	●	97	
Tire tread wear—check			●	●	●	●	●	●	85	
Engine oil—change	year	●	●	●	●	●	●	●	51	
Oil filter—change		●	●	●	●	●	●	●	51	
General lubrication—perform			●	●	●	●	●	●	98	
*Front fork oil—replace				●	●	●	●	●	82	
Timing advancer—lubricate				●	●	●	●	●	—	
Swing arm—lubricate				●	●	●	●	●	99	
*Wheel bearings—grease	2 years					●	●	●	—	
*Speedometer gear housing—grease	2 years					●	●	●	—	
*Brake camshaft—grease	2 years					●	●	●	—	
*Steering stem bearings—grease	2 years					●	●	●	—	
Drive chain—lubricate	Every 300 km (200 mi)								72	
Drive chain—adjust	Every 800 km (500 mi)								76	

* Should be serviced by an authorized Kawasaki Dealer.

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

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 in accordance with the periodic maintenance chart (Pg. 49).

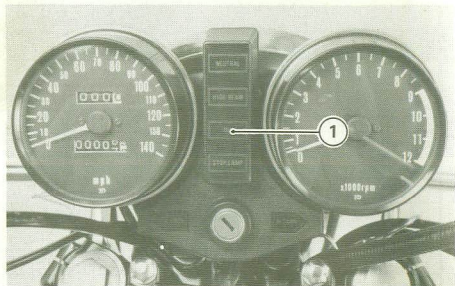
CAUTION Motorcycle operation with insufficient, deteriorated, or contaminated engine oil will cause accelerated wear and may result in engine or transmission seizure.

Oil Level

- Situate the motorcycle so that it is perpendicular to the ground (on its center stand).
- 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.

CAUTION

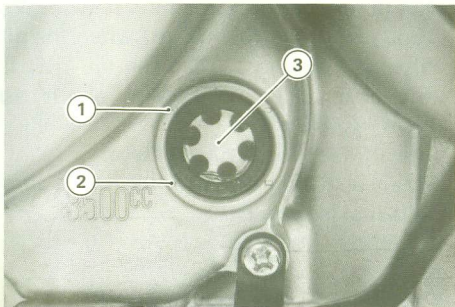
Run the engine at idle speed at least until the oil pressure warning light turns off. Racing the engine before the oil reaches every part can cause engine seizure.



1. Oil Pressure Warning Light

- 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 gauge in the lower right side of the engine. With the motorcycle held

level or on the center stand, the oil level should come up between the lines next to the gauge.



1. Upper Level 3. Oil Level Gauge
2. Lower Level

- If the oil level is too high, remove the excess oil, using a syringe or some other suitable device.
- If the amount of oil is insufficient, add the correct amount of oil through the oil filler opening. Fill, using the same

type and make of oil that is already in the engine.

CAUTION If the engine oil gets extremely low or if the oil pump or oil passages clog up or otherwise do not function properly, the red oil pressure warning light in the switch panel will light. If this light stays on when the engine speed is above 1,100 rpm, stop the engine immediately and find the cause.

WARNING If the engine is run without oil, it will be severely damaged. In addition, the engine may suddenly seize, locking the rear wheel and causing an accident if the clutch lever is not pulled in fast enough.

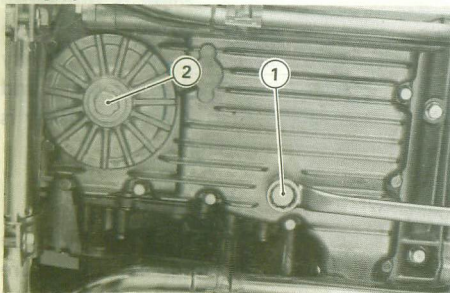
Engine Oil and Oil Filter Change

The engine oil and oil filter must be changed periodically (Pg. 49) to ensure long engine life. Not only do dirt and metal filings collect in the oil, but the oil

itself loses its lubricative quality if used too long.

To change the oil and oil filter:

- Warm the engine up thoroughly.
- Position the vehicle on its center stand, and place the oil pan beneath the engine.
- Remove the drain plug. If the oil filter is to be changed, remove the oil filter mounting bolt, and drop out the oil filter.

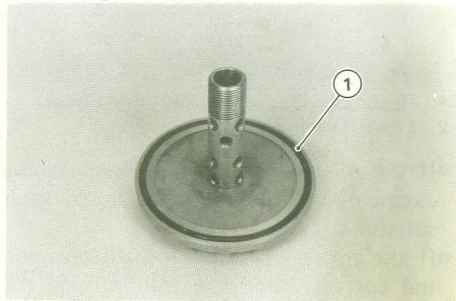


1. Engine Oil Drain Plug
2. Oil Filter Mounting Bolt

- With the drain plug and oil filter back in place, fill the engine up to the upper level with **SE** class **SAE 10W40, 10W50, 20W40, or 20W50** motor oil. It will take about **3.5 liters (3.7 US qt)** when the oil filter is changed. When the oil filter is not changed, a refill takes about **3.0 liters (3.2 US qt)**.

Note: ○Check for **O** ring damage.

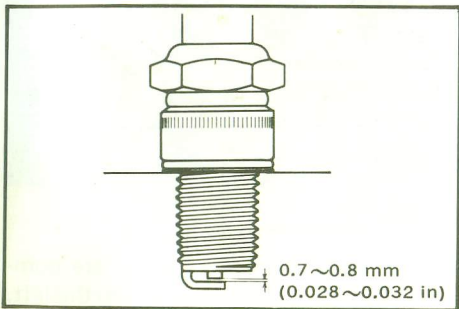
○When installing the oil filter, make sure the **O** ring is in place.



1. O ring

Spark Plug Maintenance

The standard spark plug is a **NGK B7ES**, **ND W22ES-U**, or **CHAMPION N-4-MC**. It should have a **0.7 ~ 0.8 mm (0.028 ~ 0.032 in)** gap, and be tightened to **2.8 kg-m (20 ft-lbs)** of torque.



Maintenance

The spark plugs should be taken out periodically for cleaning and to reset the

gaps (Pg. 48). If either plug is oily or has carbon built up on it, have it cleaned, preferably in a sand-blasting device, and then clean off any abrasive particles. The plug may also be cleaned using a high flash-point solvent and a wire brush or other suitable tool. Measure the gap with a wire-type thickness gauge, and adjust the gap if incorrect by bending the outer electrode. Replace if necessary.

Heat Range

To find out whether the right temperature plugs are being used, pull them out and examine the ceramic insulator around the center electrode. If the ceramic is a light brown color, the spark plugs are correctly matched to engine temperature. If the ceramic is burned white, the plugs should be replaced with the next colder type, **NGK B8ES**, **ND W24ES**, or **CHAMPION N-3-MC**.

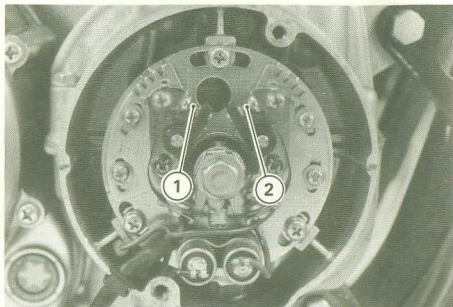
Ignition Timing Adjustment

Incorrect ignition timing can cause poor performance, knocking, overheating, and serious engine damage. Periodic adjustment will be necessary to compensate for wear of parts, and the ignition timing must be checked whenever ignition related parts have been disassembled or replaced.

Correct ignition timing is achieved by first obtaining the correct contact breaker point gaps (this can also be achieved by adjusting the dwell angles to the specified amount) and then changing the position of the adjusting plates. Often the first step returns the timing very close to the correct original setting. Once the timing has been adjusted, it may be checked for accuracy by the use of a strobe light.

There are two sets of contact breaker points; the left set marked "1 4" fires spark plugs 1 and 4 simultaneously, and the right set marked "2 3" fires plugs

2 and 3 180° later. The gap for each set of points must be adjusted separately.

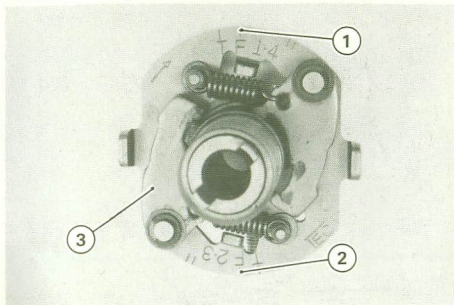


1. Contact Breaker Points "1 4"
2. Contact Breaker Points "2 3"

Note: Spark plugs and cylinders are numbered consecutively, starting from the left.

There are two "F" marks on the timing advancer, which can be viewed through the inspection window by turning the crankshaft. One is marked "1 4" and the other one is marked "2 3". After the gap

is adjusted for both sets of points, timing must be adjusted for each F mark.



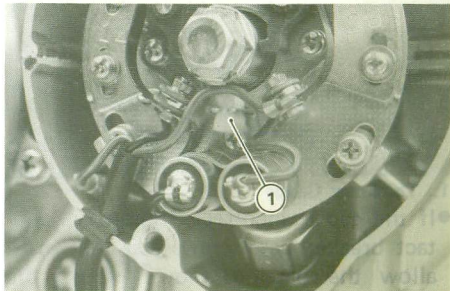
1. F mark "1 4" 3. Timing Advancer
2. F mark "2 3"

Point Gap Adjustment

- Remove the contact breaker cover.
- Clean the points with clean paper or cloth, using an oil-free solvent. A business card soaked in trichloroethylene can be used to remove traces of oil. To repair light damage, use emery cloth or

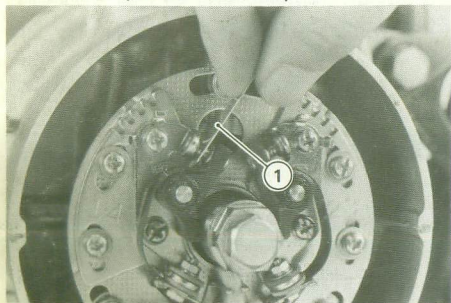
an oilstone. If the points are badly worn down or damaged, or if the spring is weak, replace the contact breaker.

- Lubricate the point cam oil felt sparingly with suitable point cam lubricant. Do not overlubricate. Replace the oil felt if it is worn.



1. Oil Felt
- Using a 17 mm wrench on the crankshaft, turn the engine clockwise until the contact breaker points are at their widest opening.

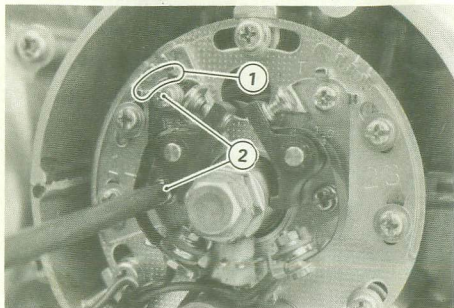
- Measure the size of the point gap with a thickness gauge. The proper gap is 0.3 ~ 0.4 mm (0.012 ~ 0.016 in).



1. Thickness Gauge

- If the gap is incorrect, loosen the contact breaker base screws just enough to allow the base to move. Open the points using a slot screwdriver on the contact breaker base pry point, and insert a thickness gauge of 0.35 mm (0.014 in) between the points. Tighten the contact breaker base screws, and remove the

thickness gauge. Again turn the crankshaft, and recheck the point gap.



1. Pry Point

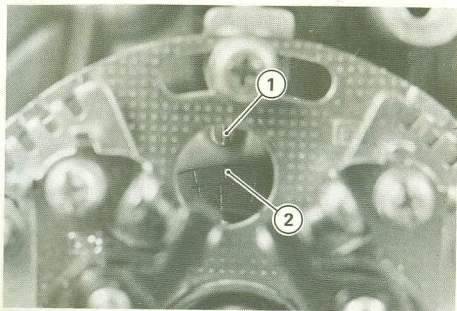
2. Contact Breaker Base Screws

- Check and adjust the other contact breaker point gap, following the steps above.

Timing Adjustment

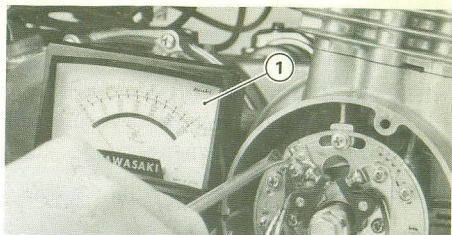
- Turn the ignition switch off.
- Turn the engine stop switch off.

- Turn the crankshaft so that the "F" mark on the timing advancer is aligned with the timing mark.



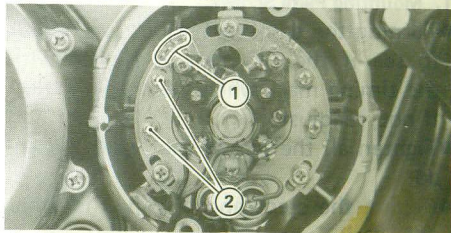
1. Timing Mark 2. F mark

- Set an ohmmeter to the $R \times 1$ range and connect it across the appropriate set of points, one lead to the wire coming from the points (or to the spring leaf), and the other ohmmeter lead to chassis ground (engine, frame, contact breaker mounting, etc.). Make sure that both leads are securely connected.



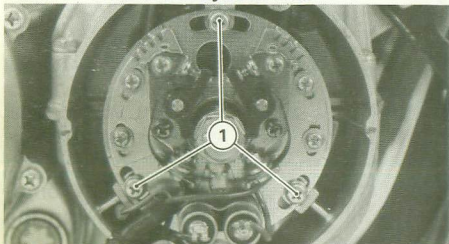
1. Ohmmeter

- Loosen the adjusting plate screws and turn the adjusting plate using a screwdriver in the pry points so that the contacts are just opening. The ohmmeter needle will flicker just when the points begin to open or close.



1. Pry Points 2. Adjusting Plate Screws

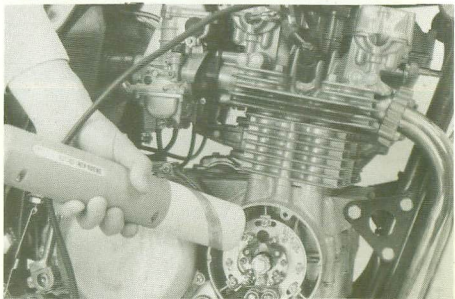
- If the adjusting plate will not travel far enough to allow correct timing adjustment, loosen the mounting plate screws and turn the mounting plate to provide more room for adjustment.



1. Mounting Plate Screws

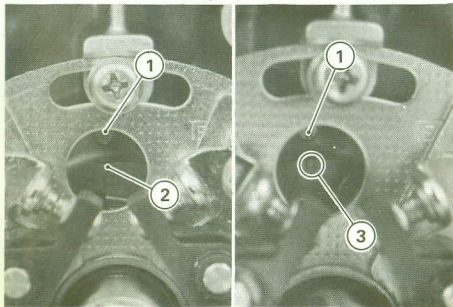
- Turning the crankshaft clockwise, check to see if the "F" mark is aligned with the timing mark when the needle jumps. If not, readjust.
- Tighten all the screws that were loosened.
- Repeat the steps above using the other "F" mark.

- Disconnect the ohmmeter leads, and turn the engine stop switch back to the "RUN" position.
- Connect a strobe light lead to the spark plug lead numbered "4" in order to check the ignition timing for the "1" and "4" cylinders under operating condition.



- Start the engine, and direct the light at the timing mark. At idle speed the timing mark and the "F" mark on the timing advancer must be aligned for

correct low rpm ignition timing. At 3,000 ~ 3,400 rpm, the timing mark and the lines on the timing advancer must be aligned for correct high rpm ignition timing. If both low and high rpm ignition timing are incorrect, adjust the timing as just explained. If either low or high rpm ignition timing is correct but the other is not, ask your dealer to check the engine.



1. Timing Mark
2. F mark

3. Lines

- Next, move the strobe light lead to the spark plug lead numbered "3", and check the ignition timing for cylinders "2" and "3".
- Install the contact breaker cover.

Camshaft Chain Adjustment

To keep the chain from making noise, periodic adjustment is necessary in accordance with the Periodic Maintenance Chart (Pg. 48).

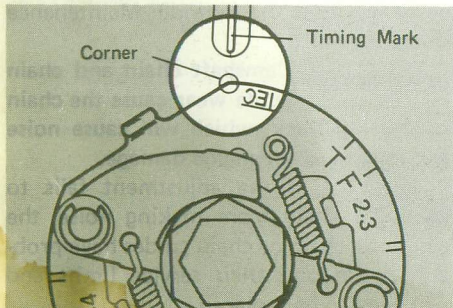
CAUTION Camshaft chain and chain guide wear cause the chain to develop slack, which will cause noise and may result in engine damage.

However, if the adjustment fails to keep the chain from making noise, the camshaft chain or chain guides have probably worn past their service limits and will need to be replaced.

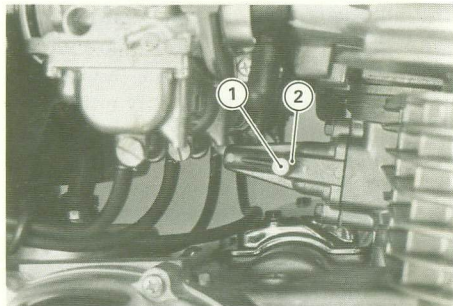
WARNING

Take care not to touch the cylinder or exhaust pipes when they are hot to prevent a burn.

- Remove the contact breaker cover.
- Using a 17 mm wrench, turn the crankshaft clockwise about two turns, and set the corner near the #2 and #3 T mark on the timing advancer so that it aligns with the mark on the right engine cover.



- Loosen the chain tensioner locknut and bolt. (With the bolt loose, a spring inside takes up slack automatically).



1. Adjusting Bolt 2. Locknut

- Tighten the bolt to 0.8 kg-m (69 in-lbs) of torque, and then tighten the locknut.
- Install the contact breaker cover.

Valve Clearance Inspection

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

CAUTION

If valve clearance is left unadjusted, the 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.

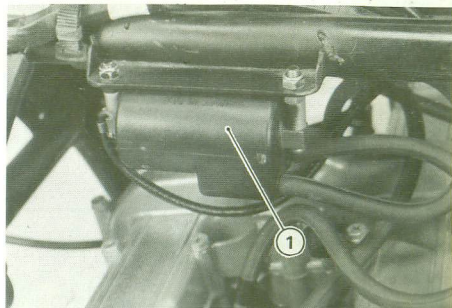
Valve clearance for each valve should be checked and, if incorrect, adjusted in accordance with the Periodic Maintenance Chart (Pg. 49) and any time that clearance may have been affected by disassembly.

Inspection should be performed periodically and requires no special tools. Adjustment, however, involves camshaft removal and re-timing and should be done only by a Kawasaki Dealer or by following the instructions in the Shop Manual. **Note:** Valve clearance must be checked when the ENGINE IS COLD.

To check the valve clearance:

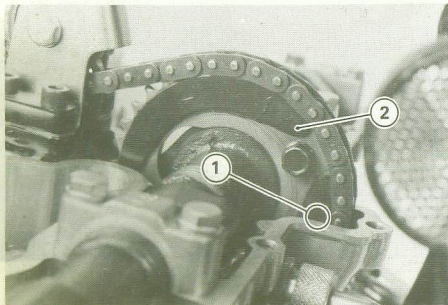
- Remove the fuel tank.

- Remove the spark plug caps from all plugs.
- Remove the ignition coils.

**1. Ignition Coil**

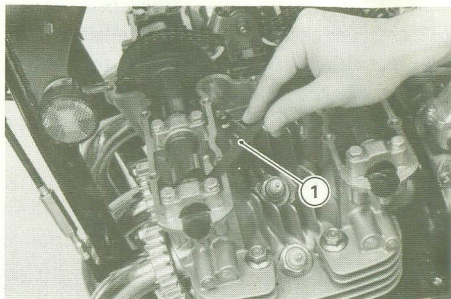
- Remove the cylinder head cover bolts, and lift the cover off the cylinder head and out of the way.
- Remove the contact breaker cover.
- To check the exhaust camshaft valves, use a 17 mm wrench on the crankshaft

to turn the crankshaft so that the line adjoining the "EX" mark on the exhaust camshaft sprocket is pointing to the front aligned with the cylinder head surface.



1. Line 2. Exhaust Camshaft Sprocket

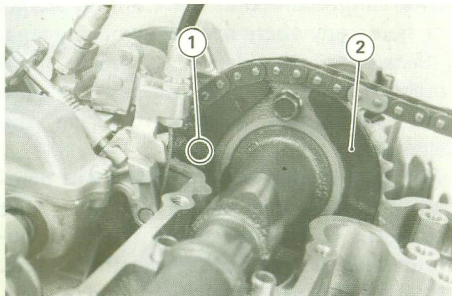
● Insert a thickness gauge between the cam and the valve lifter, and measure the two valves (#1 and #3) for which there is clearance. The correct clearance is 0.08 ~ 0.18 mm (0.003 ~ 0.007 in).



1. Thickness Gauge

- Turn the crankshaft until the "EX" marked line is pointing to the rear aligned with the cylinder head surface ($\frac{1}{2}$ rotation), and measure the other two valves (#2 and #4).
- To check the inlet camshaft valves, turn the crankshaft so that the inlet camshaft sprocket arrow adjoining the "T" mark is pointing to the rear aligned with the cyl-

inder head surface, and measure the two valves (#1 and #3) for which there is clearance.



1. Arrow

2. Inlet Camshaft Sprocket

- Turn the crankshaft until the "T" marked arrow is pointing to the front aligned with the cylinder head surface ($\frac{1}{2}$ rotation), and measure the other two valves (#2 and #4).

- If the valve clearance is incorrect, ask your Kawasaki Dealer to adjust the valve clearance.
- Install the cylinder head cover, contact breaker cover, ignition coils, spark plug caps, and fuel tank.

Air Cleaner Maintenance

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

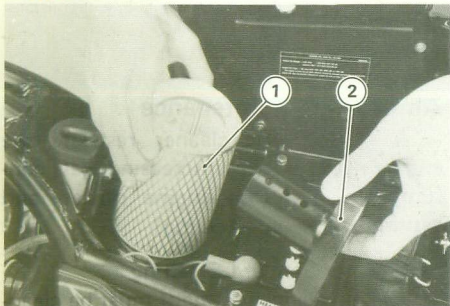
Air Cleaner Element Cleaning

The air cleaner element must be cleaned periodically (Pg. 49). In dusty areas, the element should be cleaned more frequently than the recommended interval. After riding through rain or on muddy

roads, the element should be cleaned immediately.

ELEMENT REMOVAL

- Unlock and lift up the seat.
- Remove the fuel tank.
- Remove the air cleaner cap, and pull out the element.



1. Element 2. Air Cleaner Cap

ELEMENT CLEANING

- Clean the element in a bath of a high flash-point solvent.

- After the element is clean, dry it with compressed air or by shaking it.

CAUTION ○Clean the element in a well-ventilated area, and take ample care that there are no sparks or flame anywhere near the working area. ○Because of the danger of highly flammable liquids, do not use gasoline or a low flash-point solvent to clean the element.

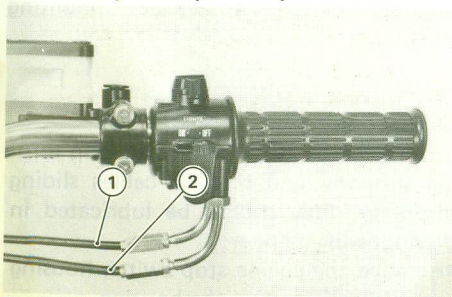
- A break in the element material or damage to the sponge gasket will allow dirt and dust to pass through into the carburetor and eventually damage the engine. If any part of the element is damaged, the element must be replaced.
- Don't oil the element or carburetion will be upset.

Element Replacement

The element should be changed periodically (Pg. 49), or if it is damaged.

Throttle Cable Adjustment and Lubrication

There are two throttle cables, the accelerator cable for opening the throttle valves and decelerator cable for closing them. If the cables are too loose from either cable stretch or maladjustment, the excessive play in the throttle grip will cause a delay in throttle response, especially at low rpm. Also, the throttle valves may not open fully at full throttle.

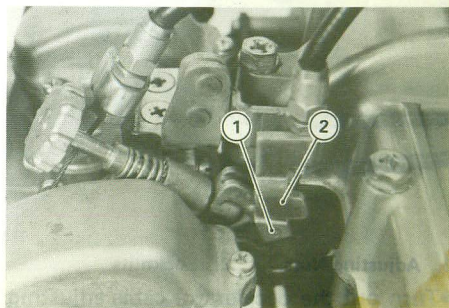


1. Accelerator Cable 2. Decelerator Cable

On the other hand if the cables are too tight, the throttle will be hard to control, and the idle speed will be erratic.

To check the throttle cable adjustment

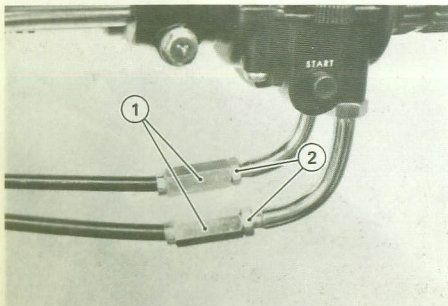
- Check that there is 2 ~ 3 mm (0.08 ~ 0.12 in) throttle grip play.
- Push the throttle grip completely closed. At this time there should be no clearance between the cable bracket and the stopper.



1. Cable Bracket 2. Stopper

If one of the above checks shows it to be maladjusted, adjust the throttle cable as follows:

- Loosen the locknuts, and screw both throttle cable adjusting nuts in fully at the upper end of the throttle cables so as to give the throttle grip plenty of play.



1. Adjusting Nuts 2. Locknuts

- Turn out the decelerator cable adjusting nut until there is no clearance between

the cable bracket and the stopper when the throttle grip is completely closed.

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

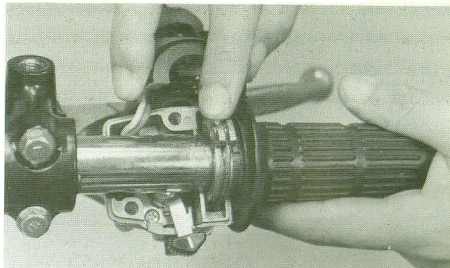
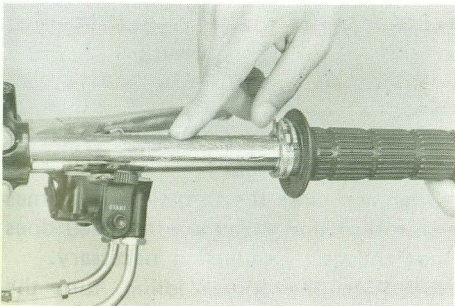
Note: If the throttle cables can not be adjusted by using the cable adjusting nuts at the upper end of the throttle cables, use the cable adjuster at the lower end of the throttle cables. Do not forget to securely tighten the adjuster mounting nuts.

Lubrication

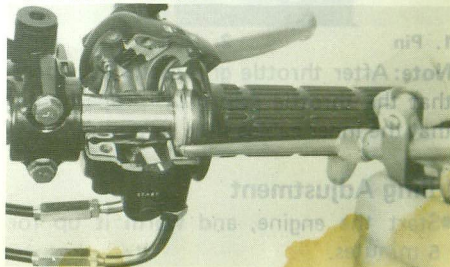
In order to keep the throttle grip turning properly and throttle cables sliding smoothly, they should be lubricated in the following manner:

- Remove the engine stop switch housing screws, and open up the housing.

- Remove the throttle cable tips from their catch in the throttle grip, and take off the throttle grip.
- Wipe the old grease from the grip position on the handlebar, and apply a light coat of grease in its place.

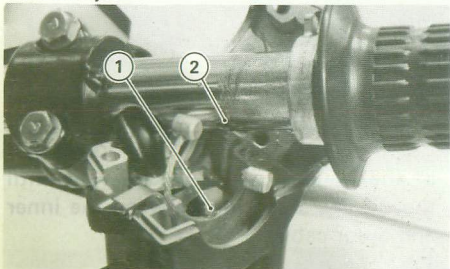


- Fill the compartment in the lower half of the housing with oil, and wait until the oil has seeped in between the inner and outer cables.



- Install the throttle grip and throttle cable tips.
- Apply a light coat of grease on the exposed portion of the throttle inner cables.

- Making sure that the pin in the lower half of the housing fits into the hole in the handlebar, reassemble the engine stop switch housing. Tighten the screws securely.



1. Pin

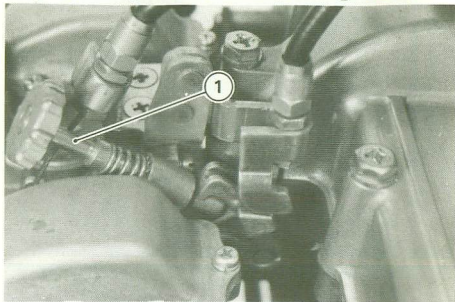
2. Hole

Note: After throttle grip assembly, check that the throttle grip turns properly and that the inner cables slide smoothly.

Idling Adjustment

- Start the engine, and warm it up for 5 minutes.

- Adjust idle speed to 950 ~ 1,050 rpm by turning the idle adjusting screw.



1. Idle Adjusting Screw

- Open and close the throttle a few times to make sure that the idle speed does not change. Readjust if necessary.

Note: With the engine idling, turn the handlebar to each side. If handlebar movement changes idle speed, the throttle cables may be improperly adjusted or incorrectly routed, or they may be damaged.

WARNING Operation with improperly adjusted, incorrectly routed, or damaged cables could result in an unsafe riding condition.

Clutch Adjustment and Lubrication

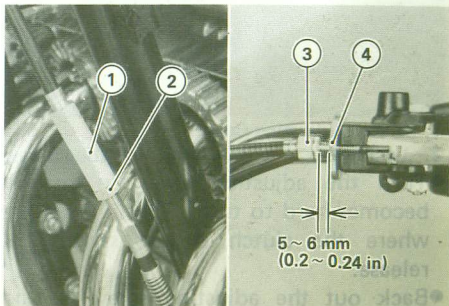
Due to friction plates wearing and clutch cable stretching over a long period of use, the clutch must be adjusted periodically (Pg. 48).

WARNING To avoid a serious burn, never touch a hot engine or exhaust pipe during clutch adjustment.

To adjust the clutch

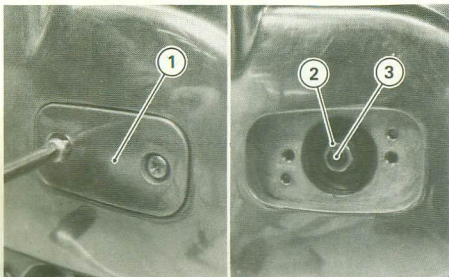
- Loosen the locknut at the middle of the clutch cable, and turn the adjusting nut to give the cable plenty of play.

- Loosen the knurled locknut just enough so that the adjuster will turn freely, and then turn the adjuster to make a 5 ~ 6 mm (0.2 ~ 0.24 in) gap between the adjuster and knurled locknut.



1. Adjusting Nut
2. Locknut
3. Adjuster
4. Knurled Locknut

- Remove the clutch adjusting cover and gasket.
- Loosen the locknut, and back out the clutch adjusting screw a couple of turns.

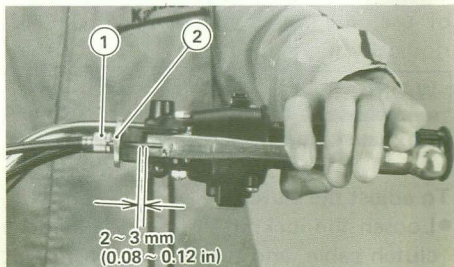


1. Clutch Adjusting Cover
 2. Locknut 3. Clutch Adjusting Screw

- Turn the adjusting screw in until it becomes hard to turn. This is the point where the clutch is just starting to release.
- Back out the adjusting screw $\frac{1}{2}$ turn from that point, and tighten the locknut without changing the adjusting screw position.
- Make sure the lower end of the clutch outer cable is properly fitted into the hole in the engine sprocket cover.

WARNING If the cable is not fully seated in the engine sprocket cover hole, it could slip into place later and the clutch would not disengage.

- Take up all the cable play with the adjusting nut at the middle of the cable, and then tighten the locknut.
- Turn the adjuster at the clutch lever so that the clutch lever will have 2 ~ 3 mm (0.08 ~ 0.12 in) of play, and tighten the knurled locknut.



1. Adjuster 2. Knurled Locknut

- Install the clutch adjusting cover and gasket.

Note: ○ After the adjustment is made, start the engine and check that the clutch has no slippage and that it releases properly.

○ For minor corrections while riding, use the adjuster at the clutch lever.

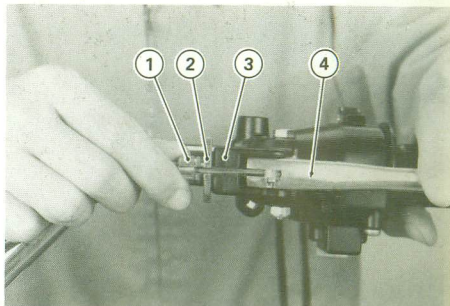
Clutch Cable Lubrication

The exposed portions of the inner cable should be lubricated in the following manner:

CABLE UPPER END REMOVAL

- Remove the clutch adjusting cover.
- Loosen the locknut, and back out the clutch adjusting screw a couple of turns.
- Loosen the knurled locknut at the clutch lever, and screw the adjuster fully in.

- Line up the slots in the clutch lever holder, knurled locknut, and adjuster.



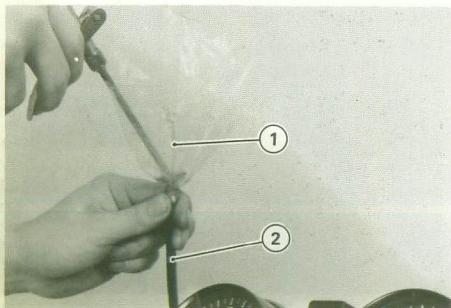
1. Adjuster
2. Knurled Locknut
3. Lever Holder
4. Clutch Lever

- Free the inner cable from the lever.

CABLE LUBRICATION

The most satisfactory way is to allow the oil to seep in between the inner and

outer cable by forming some sort of reservoir to hold the oil. Lubricate the cable as shown.



1. Inner Cable

2. Outer Cable

After lubricating the clutch cable, wipe off spilled oil.

Note: After connecting the upper end of the clutch cable, adjust the clutch (Pg. 69).

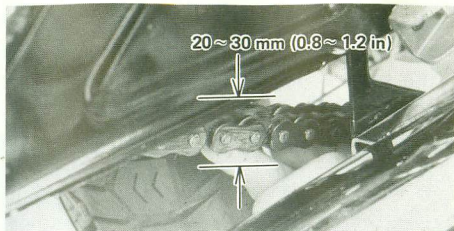
Drive Chain Maintenance

The drive chain must be kept properly adjusted 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 sprocket or break.

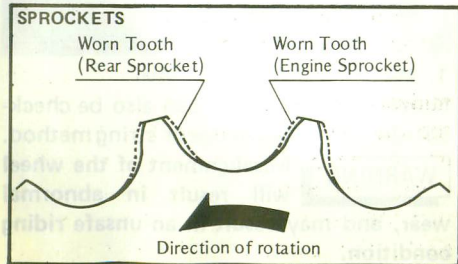
WARNING A jumped or broken chain could snag on the engine sprocket or lock the rear wheel, severely damaging the motorcycle and causing it to go out of control.

Inspection

With the motorcycle resting on the center stand, the chain should have a 20 ~ 30 mm (0.8 ~ 1.2 in) slack measured midway between the sprockets. Rotate the rear wheel around to find the place where the chain is tightest (because it wears unevenly). If there is less than 15 mm (0.6 in) or more than 35 mm (1.4 in) slack, the chain should be readjusted.



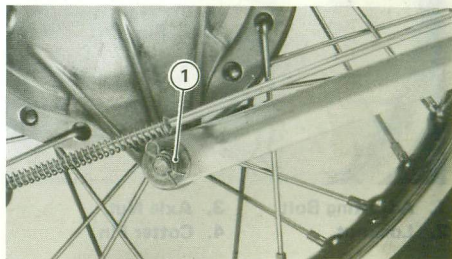
In addition to checking the slack, rotate the rear wheel to inspect the drive chain and sprockets for **damaged rollers, loose pins and links, unevenly or excessively worn teeth, and damaged teeth.**



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

Adjustment

- Loosen the nut at the rear end of the torque link.

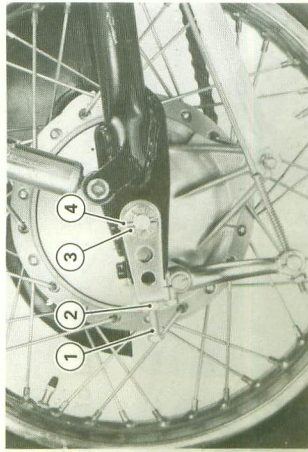


1. Torque Link Nut

CAUTION If you don't loosen the torque link nut, it may lead to brake panel fracture when the chain adjusters are set.

- Remove the cotter pin, and loosen the axle nut.

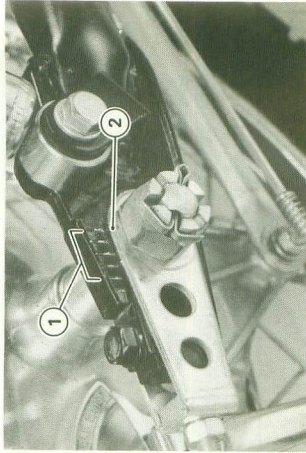
- Loosen the left and right chain adjuster locknuts.



1. Adjusting Bolt
2. Locknut
3. Axle Nut
4. Cotter Pin

- If the chain is too tight, back out the left and right chain adjusting bolts evenly, and kick the wheel forward until the chain is too loose.
- Turn the left and right chain adjusting bolts evenly until the drive chain has the correct amount of slack. To keep the

chain and wheel aligned, the notch on the left chain adjuster should align with the same swing arm mark that the right chain adjuster notch aligns with.



1. Marks
2. Notch

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.

- Tighten both chain adjuster locknut (Make sure the axle stays aligned).
- Center the brake panel assembly in the brake drum. This is done by tightening the axle lightly, spinning the wheel, and depressing the brake pedal forcefully. The partially tightened axle allows the brake panel assembly to center itself within the brake drum.

Note: This procedure can prevent a soft, or "spongy feeling" brake.

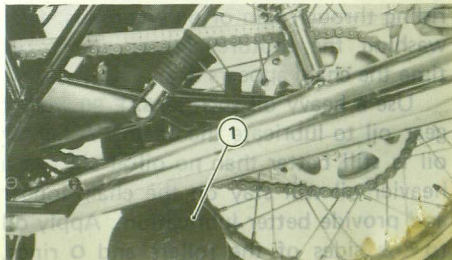
- Tighten the axle nut securely.
- Rotate the wheel, measure the amount of slack, and readjust if necessary.
- Insert a new cotter pin through the axle nut and axle, and spread its ends.
- Tighten the torque link rear nut securely.

WARNING If the axle and torque link nuts are not securely tightened and the cotter pin is not installed, an unsafe riding condition may result.

- Check the rear brake and rear brake light switch (Pg. 78, 80).

Chain Replacement

Check chain wear by first stretching the chain tight [adjust it taut or hang a 10 kg (20 lb) weight on it] and then measure the length of 20 links. If the distance from the center of the 1st pin to the center of the 21st pin is more than 323 mm (12.7 in), the chain should be replaced.



1. Weight

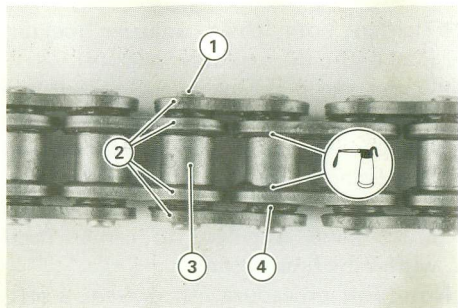
WARNING

For safety, use only the standard chain: ENUMA EK530SH-T₃O, 102 links. This is an endless type and should not be cut for installation; have it installed by a Kawasaki Dealer.

Chain Lubrication

To minimize chain wear, the drive chain should be lubricated periodically (Pg. 49). It should also be oiled after riding through rain or on wet roads, after washing the motorcycle, or any other time the chain appears dry.

Use a heavy oil such as SAE 90 weight gear oil to lubricate the chain. A lighter oil is still better than no oil at all, but a heavier oil will stay on the chain longer and provide better lubrication. Apply oil to the sides of the rollers and O rings. Wipe off any excess oil.



1. Pin
3. Links

3. Roller
4. O ring

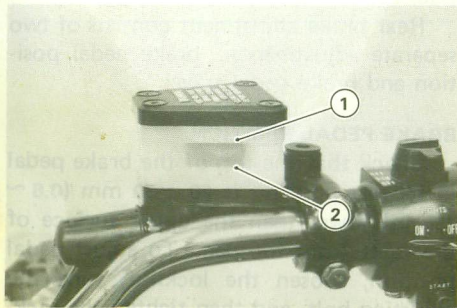
Brake Adjustment

Front Brake

The disc brake used on the front wheel requires no adjustment.

DISC BRAKE FLUID

The disc brake fluid reservoir must be filled up to the level line with one of the recommended brake fluids. Fill the reservoir up to the upper level line (reservoir held horizontal). If none of the recommended brake fluids are available, use extra heavy-duty brake fluid only from a container marked **D.O.T.3**.



1. Upper Level

2. Lower Level

Recommended Disc Brake Fluid

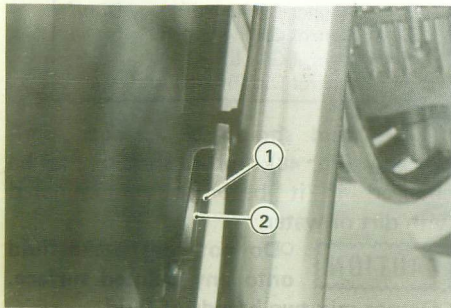
Atlas Extra Heavy Duty
Shell Super Heavy Duty
Texaco Super Heavy Duty
Wagner Lockheed Heavy Duty
Castrol Girling-Green
Castrol GT (LMA)
Castrol Disc Brake Fluid

The fluid should be changed periodically (Pg. 48), or it should also be changed if it becomes contaminated with dirt or water.

- CAUTION**
- Do not spill brake fluid onto any painted surface.
 - Do not mix two brands of fluid.
 - 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 for brake hose and brake pipe damage.

BRAKE PAD REPLACEMENT

The brake pads must be replaced when they are worn down through the red line.



1. Brake Pad

2. Red Line

Note: Disc brake maintenance except for adding fluid should be performed only by a Kawasaki Dealer.

WARNING

If the brake lever comes close to the handlebar

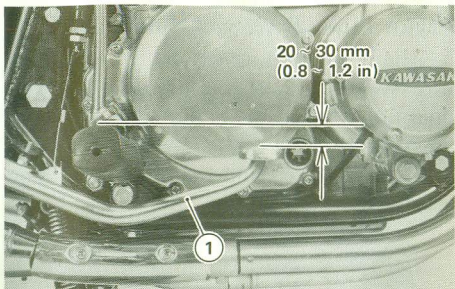
when it is applied, or if it feels mushy, there might be air in the brake lines or the brake may be defective. Since it is dangerous to operate the motorcycle under such conditions, have the brake checked immediately.

Rear Brake Adjustment

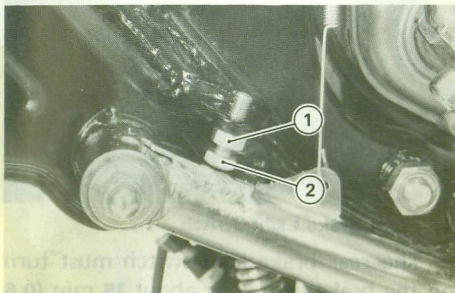
Rear brake adjustment consists of two separate adjustments: brake pedal position and brake pedal travel.

BRAKE PEDAL POSITION

Check that the top of the brake pedal in its rest position is 20 ~ 30 mm (0.8 ~ 1.2 in) lower than the upper surface of the right front footpeg. To adjust pedal position, loosen the locknut, turn the adjusting bolt, and then tighten the locknut.



1. Rear Brake Pedal

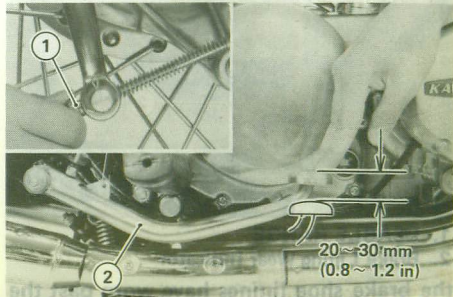


1. Locknut

2. Adjusting Bolt

BRAKE PEDAL TRAVEL

●The brake pedal should have 20 ~ 30 mm (0.8 ~ 1.2 in) of travel from the rest position to the fully applied position when the pedal is pushed down lightly by hand. Adjustment is made by turning the adjusting nut at the end of the brake rod.



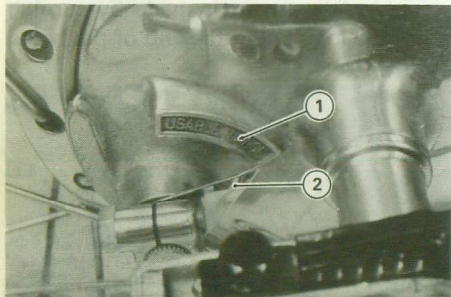
1. Adjusting Nut

2. Rear Brake Pedal

- Check the rear brake light switch.
- Check for brake drag.
- Check braking effectiveness.

CAUTION

On the rear brake panel is a brake lining wear indicator. If the brake lining wear indicator does not point within the **USABLE RANGE** when the brake is fully applied,

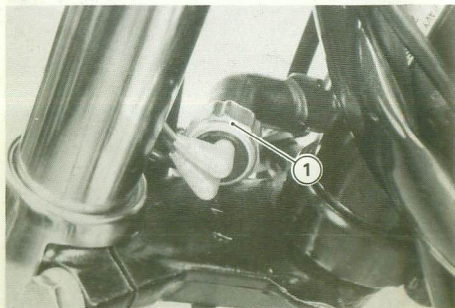


1. **USABLE RANGE**
2. **Brake Lining Wear Indicator**

the brake shoe linings have worn past the service limit. In this case, the brake shoes must be replaced and the drum and other brake parts examined by an authorized Kawasaki Dealer.

Brake Light Switch Adjustment

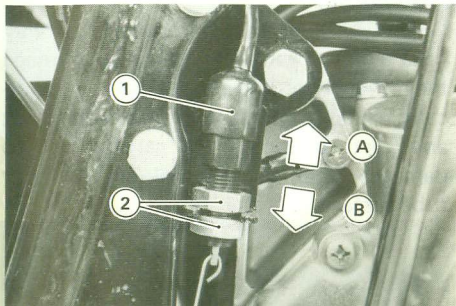
The front brake light switch is a pressure switch and is not adjustable. If it does not turn on the brake light with light pressure on the brake lever, the switch must be replaced and the brake lines bled afterward.



1. **Front Brake Light Switch**

The rear brake light switch must turn on the brake light after about 15 mm (0.6 in) of brake pedal movement.

Adjust it by loosening the two mounting nuts, moving the switch up or down, and tightening the mounting nuts when the switch is properly positioned.



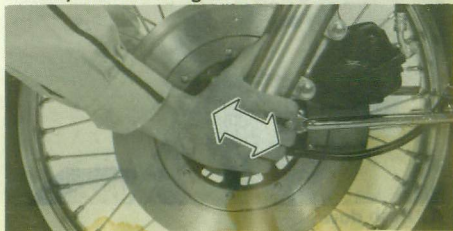
- | | |
|----------------------------|------------------|
| 1. Rear Brake Light Switch | A. Lights sooner |
| 2. Mounting Nuts | B. Lights later |

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

Steering Inspection

The steering should be checked periodically (Pg. 48).

To check the steering adjustment, first place a stand or block under the engine so that the front wheel is raised off the ground. Push the handlebar lightly to either side; if it continues moving under its own momentum, the steering is not too tight. Squatting in front of the motorcycle, grasp the lower ends of the front fork at the axle, and push and pull the front fork end back and forth; if play is felt, the steering is too loose.

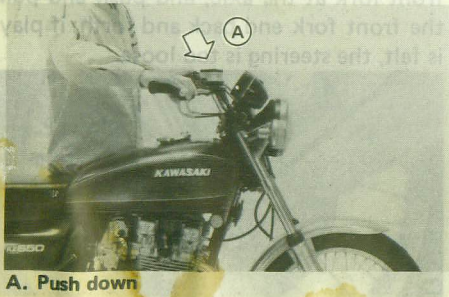


Note: Since the steering adjustment is sensitive and crucial for safe operation, have it performed only by an authorized Kawasaki Dealer.

Front Fork Maintenance

Inspection

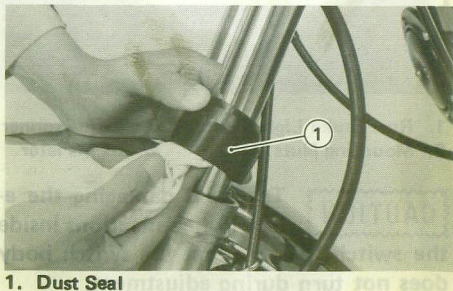
Pushing down on the handlebar with the front brake fully applied, check that the front fork functions properly. Check the dust seals for damage, and look for any signs of oil leakage.



In case of improperly functioning shock absorbers, dust seal damage, or oil leakage; consult your authorized Kawasaki Dealer.

Maintenance

Dirt or sand that has worked its way past a dust seal will eventually damage the oil seal causing oil leakage. Periodically, slide up the dust seals and clean out any dirt or sand. Be careful not to damage either the oil seal or the inner tube surface.



Since the front fork oil deteriorates with use, have the oil in both tubes changed periodically by your authorized Kawasaki Dealer (Pg. 49).

Rear Shock Absorber Inspection and Adjustment

Inspection

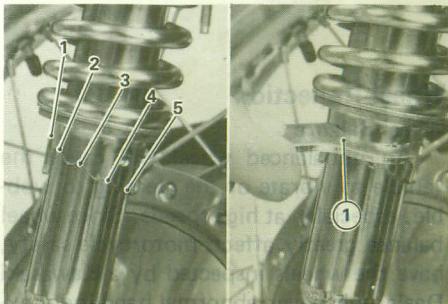
Since the rear shock absorbers are sealed units and can not be disassembled, only external checks of operation are necessary.

Check that the rear shock absorbers function properly and that there is no oil leakage and no mounting bushing damage. Make sure that the mounting fasteners are tight.

In case any irregularity is found during inspection, consult your authorized Kawasaki Dealer.

Adjustment

The rear shock absorbers have 5 positions so that the springs can be adjusted for different road and loading conditions.



1. Hook Wrench

If the spring action feels too soft or too stiff, adjust it in accordance with the following table:

Position	1	2	3	4	5
Spring Action	Stronger →				

WARNING If the rear shock absorbers are not adjusted equally, handling may be impaired.

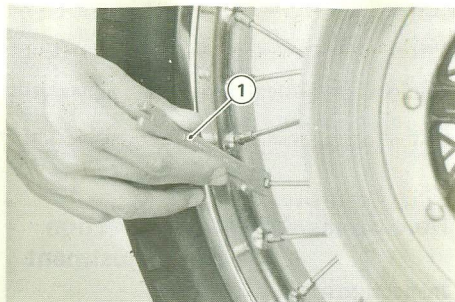
Wheel Inspection

Wheel Balance

An unbalanced wheel will cause the vehicle to vibrate or the steering to wobble, especially at high speeds. Since wheel balance greatly affects motorcycle safety, have the wheels inspected by a Kawasaki Dealer whenever abnormal handling is experienced during riding. Also, have the wheel balance inspected whenever a new tire is fitted.

Spokes and Rim

Spoke tightness should be inspected periodically (Pg. 48).



1. Spoke Wrench

The rim axial runout should be under 3 mm (0.12 in), and the rim radial runout should be under 2 mm (0.08 in). A certain amount of runout (warp) can be corrected by centering the rim, i.e., by loosening some spokes and tightening others to change the positions of different parts of the rim. If the rim is badly warped however, it should be replaced.

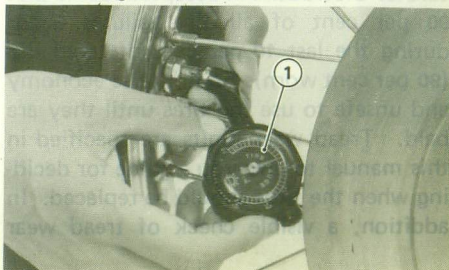
Note: If necessary, ask your authorized Kawasaki Dealer to inspect and adjust.

Tires and Tubes

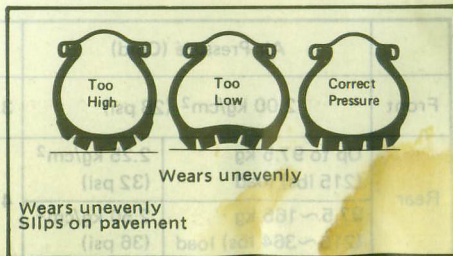
Remember that tire pressure is affected by changes in ambient temperature and altitude, and so the tire pressure should be checked and adjusted when your riding involves wide variations in temperature or altitude.

Proper tire inflation pressure is essential for safety, comfort, and economy. Abnormally high or low tire air pressure has a bad effect on stability and handling. Underinflation could result in tire failure due to flexing, and overinflation could result in tire failure due to the decreased ability of the tire to cushion shock. Improper inflation will also cause the tire treads to wear unevenly, with most wear along the outside of the treads when the tire is underinflated, and along the center of the tread when the tire is overinflated. Use an accurate tire pressure gauge often and 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).



1. Tire Pressure Gauge



Near the end of useful life, the tires become increasingly vulnerable to puncture or blowout. An accepted fact is that 90 per cent of all tire failures occur during the last 10 per cent of tread life (90 per cent worn). So it is false economy and unsafe to use the tires until they are bald. Tread wear limits are specified in this manual to give you a guide for deciding when the tires should be replaced. In addition, a visible check of tread wear

should be made frequently.

Replace any tire that has worn down to the minimum allowable tread depth.

In the event of a flat tire resulting from a punctured tube, replace the tube only with a Kawasaki replacement tube. Repair of the tube is not recommended, but if undertaken it must be done with extreme care to prevent a subsequent flat tire, and possible loss of control.

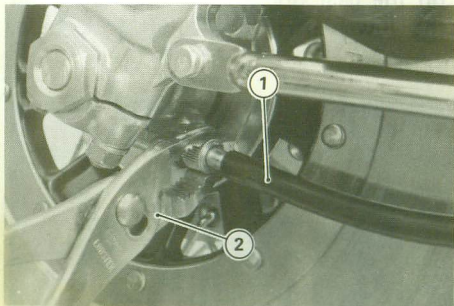
	Air Pressure (Cold)		Tire Size	Make Type	Minimum Tread Depth	
Front	2.00 kg/cm ² (28 psi)		3.25H-19 4PR	DUNLOP F6B or equivalent	1 mm (0.04 in)	
Rear	Up to 97.5 kg (215 lbs) load	2.25 kg/cm ² (32 psi)	4.00H-18 4PR	DUNLOP K87 MARKIIM or equivalent	Normal Speed	2 mm (0.08 in)
	97.5 ~ 165 kg (215 ~ 364 lbs) load	2.50 kg/cm ² (36 psi)			Over 80 MPH	3 mm (0.12 in)

Wheel Removal

If a wheel must be removed from the motorcycle for tire repair or replacement, carry out the following step:

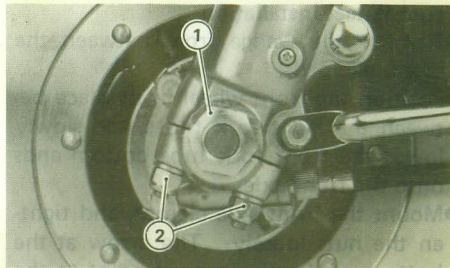
Front Wheel Removal

- Disconnect the lower end of the speedometer cable with pliers.



1. Speedometer Cable 2. Pliers

- Loosen the front axle clamp nuts, but do not remove them. Then loosen the front axle nuts.

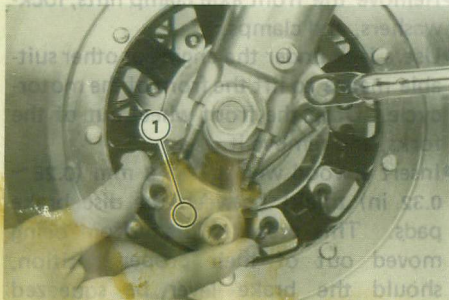


1. Axle Nut 2. Axle Clamp Nuts

- Remove the front axle clamp nuts, lock-washers, and clamps.
- Use a jack under the engine or other suitable means to lift the front of the motorcycle. Drop the front wheel out of the forks, and remove it.
- Insert a wood wedge [7 ~ 8 mm (0.28 ~ 0.32 in) thick] between the disc brake pads. This prevents them from being moved out of their proper position, should the brake lever be squeezed accidentally.

Front Wheel Installation

- Remove the wedge from between the disc brake pads.
- Position the front wheel in its place between the front fork tubes, and slowly lower the front fork tube bottom ends onto the front axle.
- Mount the front axle clamps, and tighten the nuts loosely. The arrow at the bottom of the clamp must point to the front.



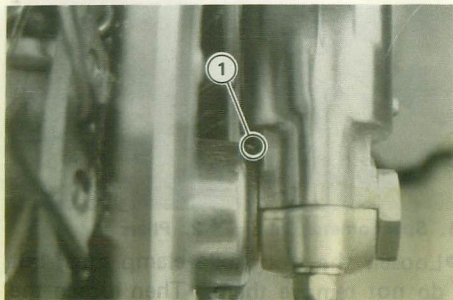
1. Arrow

- Tighten the axle nuts securely.

WARNING

If the axle is not securely tightened, an unsafe riding condition may result.

- Turn the speedometer gear housing so that it points to the two o'clock position. Be sure that the small projection on the gear housing does not catch on the lower part of the left fork tube.

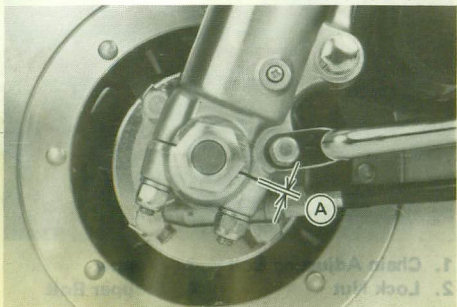


1. Projection

CAUTION

Failure to correctly align the speedometer gear housing may result in early breakage of the gear housing or speedometer cable.

- Tighten first the front axle clamp nut and then rear nut securely. There will be a gap at the rear of the clamp after tightening.



A. Gap

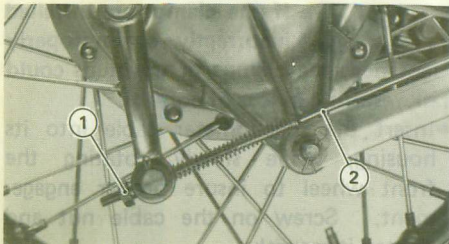
WARNING

If the clamps are installed incorrectly or improperly tightened, the clamps or the studs could fail, resulting in loss of control.

- Insert the speedometer cable into its housing, while slowly rotating the front wheel to insure proper engagement. Screw on the cable nut and tighten it securely.

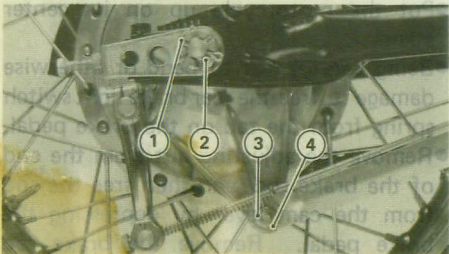
Rear Wheel Removal

- Put the motorcycle up on its center stand.
- Being careful not to bend or otherwise damage it, free the rear brake light switch spring from the tab on the brake pedal.
- Remove the adjusting nut from the end of the brake rod, and then free the rod from the cam lever by depressing the brake pedal. Remove the brake rod spring and link pin.



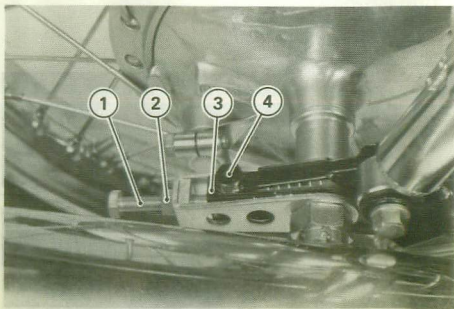
1. Adjusting Nut 2. Brake Rod

- Take out the clip from the rear torque link bolt, and remove the torque link rear nut and bolt.



1. Cotter Pin 3. Torque Link Nut
2. Axle Nut 4. Clip

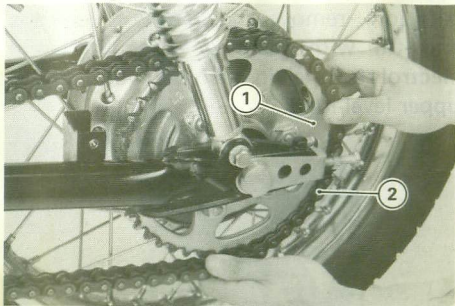
- Remove the cotter pin, and loosen the axle nut.
- Loosen the left and right chain adjuster locknuts, fully loosen both chain adjusting bolts, and then push the wheel forward so that the chain can be easily removed from the rear sprocket.



1. Chain Adjusting Bolt 3. Stopper
2. Lock Nut 4. Stopper Bolt

- Remove the chain adjuster stopper bolts, and take out the chain adjuster stoppers.

- Remove the chain cover.
- Remove the drive chain from the rear sprocket, and hang it to the left side of the swing arm.



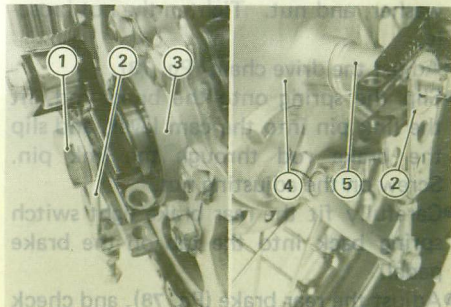
1. Rear Sprocket 2. Drive Chain

- Pull out the wheel, remove the axle nut, and pull off the axle.

Rear Wheel Installation

- Check to see that the coupling sleeve, rubber damper, and brake panel are in place.

- Slide the axle through the left chain adjuster, coupling, rear hub, brake panel, collar, and right chain adjuster from the left to right. The chain adjusters should be installed with the notch mark side facing out.



1. Rear Axle 4. Brake Panel
2. Chain Adjusters 5. Collar
3. Coupling

- Attach the rear axle nut loosely.
- Put the rear wheel into the swing arm end, and install the chain adjuster

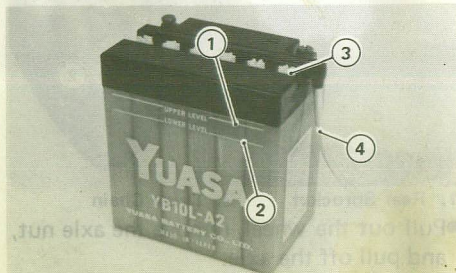
stoppers. Tighten the bolts with lock-washers.

- Fit the drive chain onto the rear sprocket.
- Insert the torque link bolt into the brake panel, and install the torque link, lock-washer, and nut. Tighten the nut loosely.
- Adjust the drive chain (Pg. 73).
- Slip the spring onto the brake rod, fit the link pin into the cam lever, and slip the brake rod through the link pin. Screw on the adjusting nut.
- Carefully fit the rear brake light switch spring back into the tab on the brake pedal.
- Adjust the rear brake (Pg. 78), and check the rear brake light switch adjustment (Pg. 80).
- Insert the clip into the torque link bolt.
- Insert the new cotter pin into the rear axle. Spread its end.

Battery Maintenance

Battery Electrolyte Level Inspection

Keep the electrolyte level between the upper and lower level marks. When it gets low, remove the battery filler caps and fill with distilled water until the electrolyte level in each cell reaches the upper level mark.



1. Upper Level
2. Lower Level

3. Filler Cap
4. Battery Vent Hose



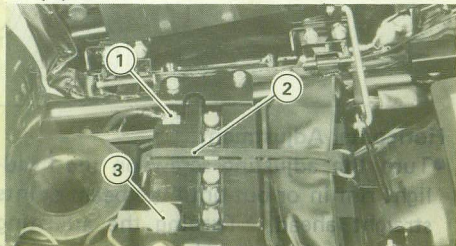
Add only distilled water in the battery. Ordinary tap water is not a substitute for distilled

water and will shorten the life of the battery.

Battery Removal and Installation

Battery removal is necessary when the battery electrolyte specific gravity reading is below 1.2, indicating the need for battery recharging.

- a. Unlock the seat, swing the seat open, remove the battery band, and disconnect first the ground (—) negative cable connection and then the positive (+) cable.



1. — Terminal 3. + Terminal
2. Battery Band

- b. Battery installation is performed in the reverse order of removal. Make sure that the battery case rubber dampers are properly in place, and pay particular attention to the battery vent hose routing. Connect the capped lead to the positive (+) terminal, cover it with its protective cap, and then connect the black lead to the negative (—) terminal.

CAUTION ○Always remove the battery from the motorcycle for charging it. If the battery is charged while still installed, battery electrolyte may spill and corrode the frame or other parts of the motorcycle.

○Because the battery gives off an explosive gas mixture of hydrogen and oxygen, keep any sparks or open flame away from the battery during charging.

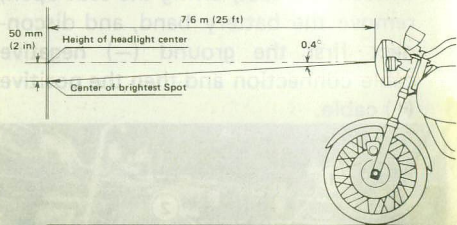
○Route the battery vent hose as shown in the caution label (Pg. 14).

- Make sure the battery vent hose end is kept away from the chain. Electrolyte from the battery vent hose can corrode and dangerously weaken the chain.
- Do not let the battery vent hose get folded or pinched, and route it away from the exhaust system.
- Keep the battery terminals clean, and put a light coat of grease on them to prevent corrosion.

Headlight Beam Adjustment

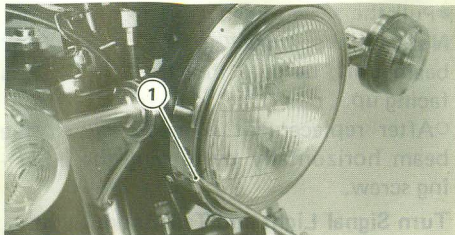
The headlight beam is adjustable both horizontal and vertical directions. It should be aimed straight ahead, with the brightest spot slightly below horizontal on high beam. The proper angle is 0.4 degrees down. This is a 50 mm (2 in) drop at 7.6 m (25 ft), measured from the center of the headlight, with the motorcycle on its wheels and the rider seated. If not

properly adjusted horizontally, the beam will point to one side rather than straight ahead. If adjusted too low vertically, neither low nor high beam will illuminate the road far enough ahead. If adjusted too high vertically, high beam will fail to illuminate the road close ahead, and low beam will blind oncoming drivers.



Horizontal Adjustment

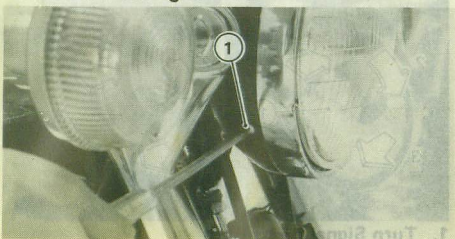
- Turn the adjusting screw on the headlight rim in or out until the beam points straight ahead. Turning the adjusting screw clockwise makes the headlight beam point to the left.



1. Adjusting Screw

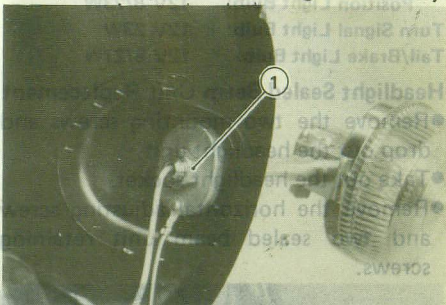
Vertical Adjustment

- Remove the two screws from the lower side of the headlight housing, and drop out the headlight unit.



1. Mounting Screw

- Loosen the headlight housing mounting nut, and adjust the headlight vertically.



1. Mounting Nuts

- Tighten the headlight housing mounting nuts and remount the headlight unit.

Bulb Replacement

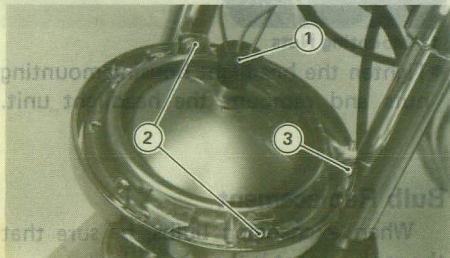
When exchanging bulbs, be sure that the replacement is the proper bulb.

The proper bulbs are as follows:

- H.L. Sealed Beam Unit:** 12V 50/35W
Turn Signal/Running
Position Light Bulb: 12V 8/23W
Turn Signal Light Bulb: 12V 23W
Tail/Brake Light Bulb: 12V 8/27W

Headlight Sealed Beam Unit Replacement

- Remove the two mounting screws and drop out the headlight unit.
- Take out the headlight socket.
- Remove the horizontal adjusting screw and two sealed beam unit retaining screws.



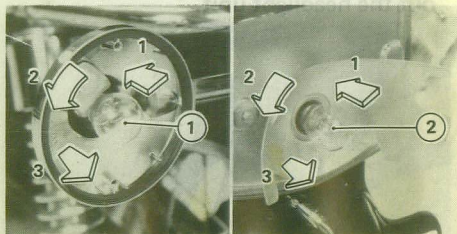
1. Headlight Socket 3. Adjusting Screw
 2. Retaining Screw

- Pull the sealed beam unit from the rim.
- Note:** ○ When installing the new sealed beam unit, be sure that the **TOP** mark is facing up.

- After replacement is made, adjust the beam horizontally by turning the adjusting screw.

Turn Signal Light and Tail/Brake Light Bulb Replacement

- Remove the lens, press the bulb inwards, twist it to the left, and pull it out.



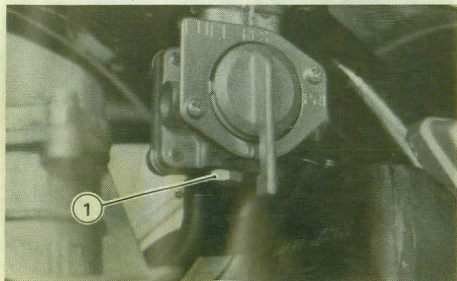
1. Turn Signal Light Bulb
 2. Tail/Brake Light Bulb

Note: When installing a lens, tighten the screws uniformly, but not too tightly, in order to avoid damaging the lens.

Fuel System Cleaning

Accumulation of water in the fuel tank will restrict the flow of fuel and cause the carburetor to malfunction. The fuel system should be cleaned out periodically in the following manner (Pg. 49):

- Remove the drain plug at the bottom of the fuel tap.



1. Drain Plug

- Holding a container under the fuel tap, turn the tap to the "PRI" position to drain the tank until only gasoline comes out, and then close the tap.

Note: If water has accumulated in the fuel tank, water may also have accumulated in the float bowl. In this case have the carburetor checked by your authorized Kawasaki Dealer.

WARNING

- Clean the fuel system in a well-ventilated area, and take ample care that there are no sparks or flame anywhere near the working area.
- Never clean out the fuel system when the engine is still warm.
- Wipe any fuel off the engine before starting it.

Lubrication

In order to get maximum service life from all parts and to keep the motorcycle running safely, it must be kept properly lubricated.

Using SAE 30 motor oil, lubricate the points indicated whenever they are dry, after riding through rain, or after washing the motorcycle.

After several thousand kilometers of service, in addition to the points shown here, other parts should be inspected and lubricated by a Kawasaki Dealer.

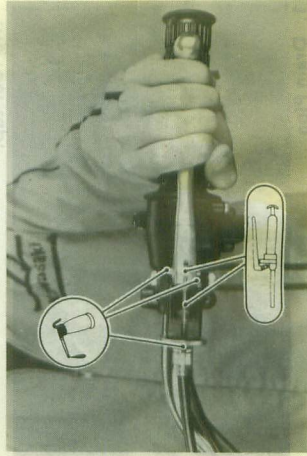
WARNING

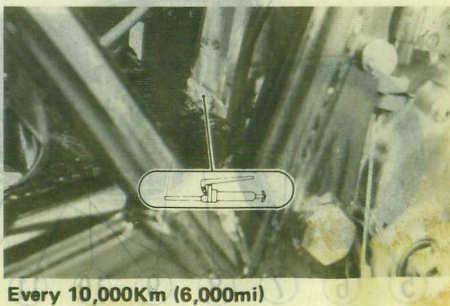
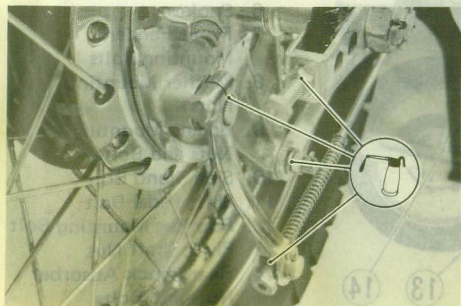
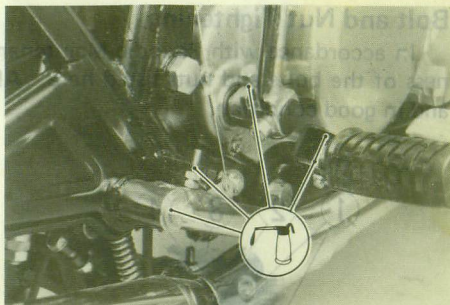
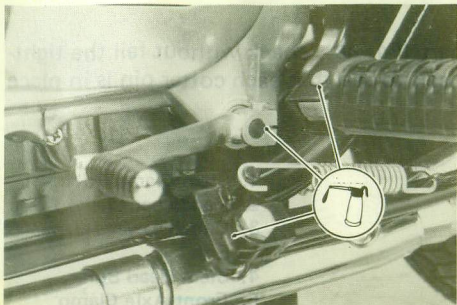
Clean the fuel system in a well-ventilated area, and

take simple care that there are no sparks or flame anywhere near the working area.

Never clean out the fuel system when the engine is still warm.

Wipe any fuel from the engine before starting.

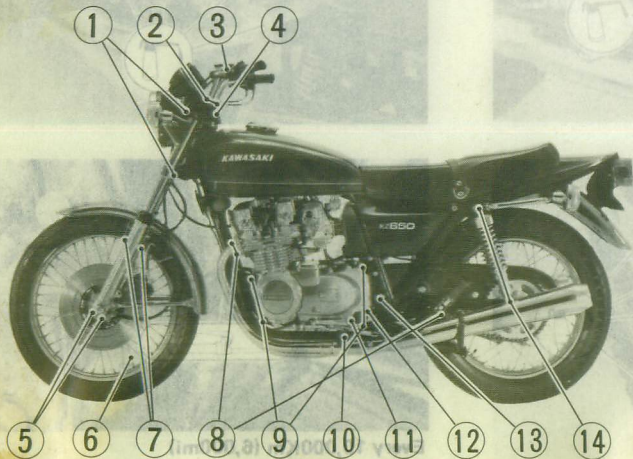




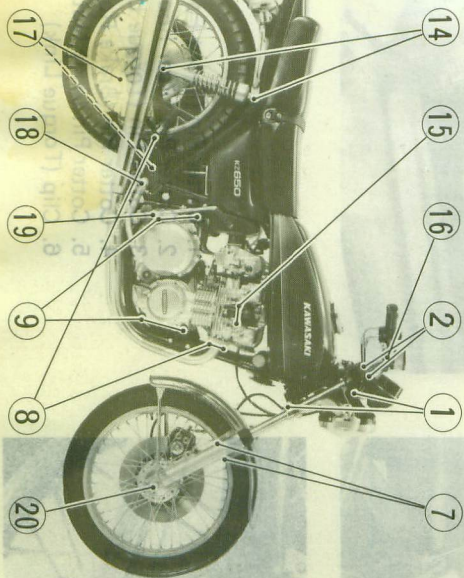
Every 10,000Km (6,000mi)

Bolt and Nut Tightening

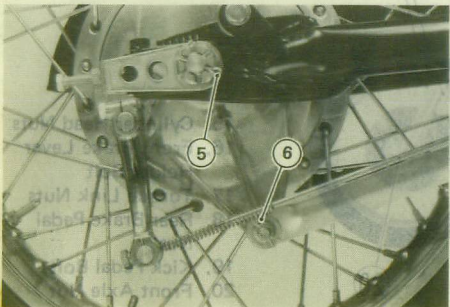
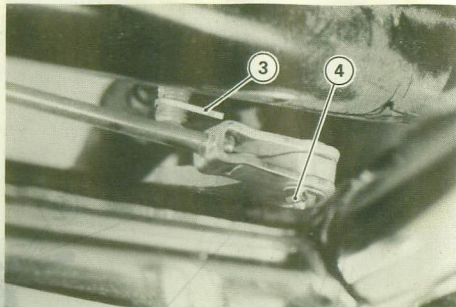
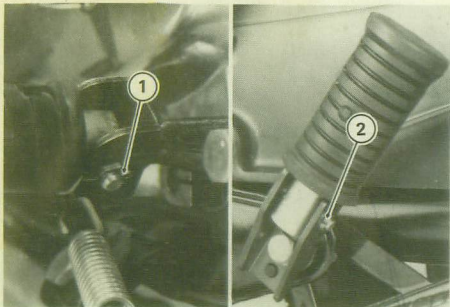
In accordance with Periodic Maintenance Chart (Pg. 48), check without fail the tightness of the bolts and nuts listed here. Also, check to see that each cotter pin is in place and in good condition.



1. Stem Clamp Bolts
2. Handlebar Clamp Bolts
3. Clutch Lever Holder Bolt
4. Stem Head Bolt
5. Front Axle Clamp Nuts
6. Spokes
7. Front Fender Mounting Bolts
8. Muffler Mounting Nuts
9. Engine Mounting Nuts and Bolts
10. Side Stand Bolt
11. Shift Pedal Bolt
12. Footpeg Mounting Bolt
13. Pivot Shaft Nut
14. Rear Shock Absorber Nuts and Bolts



15. Cylinder Head Nuts
16. Front Brake Lever Holder Bolt
17. Torque Link Nuts
18. Rear Brake Pedal Nut
19. Kick Pedal Bolt
20. Front Axle Nut



1. Cotter Pin (Front Footpeg)
2. Cotter Pin (Rear Footpeg)
3. Cotter Pin (Torque Link)
4. Cotter Pin (Brake Rod)
5. Cotter Pin (Axle Nut)
6. Clip (Torque Link)

CLEANING

1) Preparation for washing

Before washing, precautions must be taken to keep water off the following parts:

- Rear opening of the mufflers Cover with plastic bags secured with rubber bands.
- Clutch and brake levers, hand grips Cover with plastic bags.
- Ignition switch Cover the keyhole with tape.
- Air cleaner intake Close up the openings with tape, or stuff in rags.

2) Where to be careful

Avoid spraying water with any great force near the following places:

- Speedometer and tachometer
- Rear hub

If water gets inside the rear hub, the rear brake will not function until it dries out.

- Under the fuel tank and the seat

If water gets into the ignition coils or into the spark plug cap, the spark will jump through the water and be grounded out. When this happens, the motorcycle will not start and the affected parts must be wiped dry.

3) After washing

- Remove the plastic bags and tape, and clear the air cleaner intakes.
- Lubricate the chain and other points listed in the Lubrication Section (Pg. 76, 98, 99).
- Test the brakes before motorcycle operation.
- Start the engine and run it for 5 minutes.

STORAGE

When the motorcycle is to be stored for any length of time, such as during the winter season, it should be prepared for storage as follows:

- Clean the entire vehicle thoroughly.
- Empty the gasoline from the fuel tank, and empty the carburetors by unscrewing the drain plug at the bottom of each carburetor. (If left in for a long time, the gasoline will sour.)
- Remove the empty fuel tank, pour about $\frac{1}{2}$ pint of motor oil into the tank, roll the tank around to coat the inner surfaces thoroughly, and pour out the excess oil.
- Remove the spark plugs and put several drops of **SE** class **SAE 30** oil into each cylinder. Kick the engine over slowly a few times to coat the cylinder walls with oil, and install the spark plugs.
- 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.

- Tie a plastic bag over the exhaust pipes to prevent moisture from entering.
- Put a cover over the motorcycle to keep dust and dirt from collecting on it.

To put the motorcycle back into use after storage:

- Check the electrolyte level in the battery, charge the battery if necessary, and install it in the motorcycle. Be careful that the battery vent hose is not pinched and that it is routed away from the chain.
- Bring tire pressure up to normal:

Front tire	2.0 kg/cm ² (28 psi)
Rear tire	2.25 kg/cm ² (32 psi)
- Make sure the spark plugs are tight.
- Fill the fuel tank with fuel.
- Run the engine for about five minutes to warm the oil, and drain the engine oil.
- Put in fresh engine oil (Pg. 50).
- Check all the points listed under Daily Safety Checks (Pg. 44, 45).
- Lubricate the chain and the other points listed in the Lubrication Section (Pg. 76, 98, 99).

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

////////////////////// TROUBLESHOOTING GUIDE ////////////////////////

Engine doesn't start

- ★Clutch lever not pulled
- ★No gasoline in tank
- ★Throttle opened with choke on (cold)
- ★Gasoline not reaching carburetors
 - ☆Fuel tap lever position incorrect
 - ☆Fuel tap obstructed or defective
- ★Flooded
- ★Starter motor not rotating
 - ☆Battery voltage low
 - ☆Relay not contacting or operating
 - ☆Starter defective
- ★Starter clutch not operating
- ★Compression leakage
 - ☆Cylinder wear

☆Piston ring trouble

- ☆Valve trouble
- ☆Spark plugs loose
- ☆Cylinder head not sufficiently tightened down
- ★No spark to plug
- ☆Points or plugs dirty or defective
- ☆High tension wire defective
- ☆Condenser defective

Engine stops

- ★No gasoline
- ★Fuel tap clogged or lever position wrong
- ★Fuel tank cap air vents obstructed
- ★Carburetors maladjusted

★Overheated

- ☆Engine oil low
 - ☆Incorrect spark plugs
 - ☆Carburetors adjusted too lean
 - ☆Timing maladjusted
 - ☆Carbon built up in combustion chamber
 - ☆Clutch slipping
- ★Mixture too rich or too lean**
- ☆Carburetors defective or maladjusted
 - ☆Carburetor link mechanism loose
 - ☆Air cleaner clogged or damaged

No power

- ★Compression leakage**
 - ☆Cylinder wear
 - ☆Piston ring trouble
 - ☆Valve trouble

★Spark plugs loose

- ☆Cylinder head not sufficiently tightened down
- ★Clutch slipping**
 - ☆Clutch maladjusted or assembled wrong
 - ☆Clutch parts worn
- ★Ignition timing maladjusted**
- ★Timing not advancing**
- ★Engine oil incorrect**
- ★Carburetor or fuel pipe clogged**
- ★Mixture too rich or too lean (see above)**
- ★Incorrect firing**
 - ☆Spark plug defective
 - ☆Points dirty or defective
 - ☆Ignition coil defective
 - ☆Condenser defective

MEMO

changed oil at 2630
miles with Valvoline 20W-40W
oil

Kawasaki Motorcycle

Repairs - Lawn mower Repair

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